

Current Clinical Psychiatry
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Raymond A. Levy
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Horst Kächele *Editors*

Psychodynamic Psychotherapy Research

Evidence-Based Practice
and Practice-Based Evidence

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Editors

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Foreword by Robert J. Waldinger

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*To my mother and father and others who have helped
me live with passion and conviction.*

Raymond A. Levy

*To my mom and dad who have helped so many.
I hope this book helps preserve what you value so dearly*

J. Stuart Ablon

*I would like to dedicate this book to Helmut Thomä,
born on May 6, 1921, on the occasion of his 90th birthday.
His 40-year long mentorship in matters of psychoanalysis
enabled me to fuse theoretical aspirations, down-to-earth
research, and satisfaction in clinical work.*

Horst Kächele

Foreword

This book helps put to rest a dangerous myth. The myth is that psychodynamic psychotherapy does not work – or, at best, that there is no way to demonstrate its efficacy in treating mental illness. The danger is that this powerful form of treatment could be swept aside in current debates about which forms of mental health care are evidence based and therefore worth making available to those in need. Insurance companies, government agencies, and the pharmaceutical industry all push for mental health care that is brief, intermittent, and focused on quick fixes, despite the fact that many people struggle with emotional difficulties that can only be addressed over time using special psychodynamic skills. Modern psychodynamic therapy provides relief to people who are crippled with fear, haunted by past traumas, caught in repetitive patterns of unhappy relationships, and desperate to end lives of unbearable depression. It is often the only form of mental health care that gets people “unstuck” when other treatments have failed.

The science behind this clinical truth is elegantly displayed in this book edited by Dr. Levy, Dr. Ablon, and Dr. Kächele. A broad and rich compendium, *Psychodynamic Psychotherapy Research: Evidence-Based Practice and Practice-Based Evidence* brings the reader up to date on the latest developments in research while setting the agenda for further empirical work for decades to come. The chapters in this book, authored by international leaders in the field, provide an overview of our current understanding of how and for whom dynamic psychotherapy works. They also preview cutting-edge methods of studying behavioral and neural responses to psychodynamic interventions that promise to yield fresh and novel understandings of how dynamic treatments bring about therapeutic change.

This volume begins appropriately with two major reviews of the evidence base for dynamic psychotherapy. Shedler’s chapter, from the original publication in the *American Psychologist*, is a rigorous overview of existing research and a critique of the myth that dynamic psychotherapy is not an evidence-based treatment. The chapter by Rabung and Leichsenring – a major update of their 2008 publication in the *Journal of the American Medical Association* – subjects their original work to stringent follow-up testing and expands upon their rigorous meta-analysis. The fact that these areas were originally discussed in highly prestigious journals at the center of academic discourse in medicine and psychology demonstrates the growing recognition of psychodynamic psychotherapies as empirically supported.

An essential question regarding treatment is whether psychodynamic therapy is effective for specific disorders. The book presents chapters that provide evidence for the efficacy of dynamic psychotherapy in treating the particular categories of mental illness that are most prevalent in the population – depression (Huber et al. Taylor) and anxiety (Slavin-Mulford and Hilsenroth) – as well as that most costly of illnesses, borderline personality disorder (Levy et al.). Far from the stereotype that psychodynamic treatments are appropriate only for the “worried well,” a growing body of evidence points to their efficacy in dealing with the most pressing mental health problems of our time. Moreover, this book includes documentation of evidence that psychodynamic therapies foster enduring change that may decrease vulnerability to relapse.

New methods allow us to investigate questions that were never dreamed of when psychodynamic treatments were developed or were at best only the subject of speculation. Chapters in this volume provide clear, accessible, and erudite discussions of tools in the domains of neuroimaging, brain chemistry, and cognitive science that are furthering our understanding of how the human mind processes thoughts and emotions in both adaptive and maladaptive ways. Although in its infancy, social neuroscience has begun to shed new light on such core aspects of psychodynamic theory as the unconscious and transference. Moreover, psychodynamic theory informs creative uses of these new technologies to study concepts such as empathy and attachment.

The most interesting question in the field is no longer *whether* dynamic psychotherapy works but *how* it works. The search for mechanisms or “active ingredients” that bring about therapeutic change has led investigators down a variety of creative and fruitful paths. Process research, once the province of single-case studies, can now be carried out on larger numbers of patients and treatment sessions using sophisticated methods that have been part of the research conversation for more than a quarter century. In this volume, Smith-Hansen and colleagues review this work and chart new avenues for future research. Other chapters focus on the particular roles of transference interpretation, attachment, the therapeutic alliance, and defense interpretation in fostering therapeutic change.

The very foundations of psychotherapy research are called into question in a provocative chapter by Luyten et al. They point out that many of the assumptions of prior psychotherapy studies are borrowed from drug trials and do not adequately address issues specific to talking therapies. They call for a new research paradigm that encompasses a dialectic between relatedness and self-definition that they posit to be at the core of human development.

The editors have wisely included an entire section on single-case studies. To be sure, modern empirical methods have shed light on the limitations of single-case approaches to understanding treatment. Indeed, concepts such as the “schizophrenogenic mother” grew out of work with individual patients that were never submitted to rigorous empirical tests before being used to inform treatment. Such unfortunate episodes in the history of mental health have prompted many to recoil from individual case studies. However, such an extreme reaction risks throwing out the proverbial baby with the bath water. The fact remains that many of the most creative and innovative hypotheses that are eventually verified by empirical research are born in the consulting room out of practitioners’ work with individual patients. Levy, Ablon, and Kächele include chapters that describe innovative approaches to single-case study and in this way make the clear statement that this mode of generating new knowledge remains a legitimate and vital part of psychotherapy research.

Finally, the book incorporates chapters that explain state-of-the-art methods for assessing change in psychodynamic therapy. Such measurement tools are essential to our efforts to increase the evidence base for psychodynamic treatments of all varieties. Moreover, they offer the potential to challenge our preconceptions of what constitutes change in therapy and how it is fostered. In the future, we would do well to expand our work on change to study how it is that *different* active ingredients – be they transference interpretations, replacement of dysfunctional automatic thoughts, or fluoxetine – can offer relief to people suffering from the *same* ailments. It is here that frameworks such as dynamical systems theory (chaos theory) may help us understand illness and maladaptive behaviors as “attractor states” that may be disrupted and reorganized by any of a number of interventions [1].

Of course, we will welcome the day when the case for the efficacy of psychodynamic psychotherapy no longer needs to be made. We will welcome a time when scientists, practitioners, and policy makers no longer need to be introduced to or reminded of the empirical support for this powerful form of mental health care. In the meantime, books such as this one are invaluable resources for students, practitioners, and researchers alike.

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Reference

1. Thelen E, Smith LB, Lerner RM, Damon W. Dynamic systems theories. In: Handbook of child psychology. Theoretical models of human development. Vol 1, 6th ed. Hoboken: Wiley; 2006. pp 258–312.

Preface

The *Psychodynamic Psychotherapy Research: Evidence-Based Practice and Practice-Based Evidence* continues the important work of our first book published in 2009 (*Handbook of Evidence-Based Psychodynamic Psychotherapy: Bridging the Gap Between Science and Practice*), presenting in one volume significant developments in research in psychodynamic psychotherapy by excellent clinician researchers. The demand for ongoing research initiatives in psychodynamic psychotherapy from both internal and external sources has increased in recent years, and this volume continues to demonstrate the efficacy and effectiveness of a psychodynamic approach to psychotherapeutic interventions in the treatment of psychological problems. Research continues to help all clinicians think critically about our clinical interventions so we can avoid losing ourselves in our subjectively preferred ideas and concepts without empirical support. Psychotherapy in general and psychodynamic psychotherapy specifically need to sustain their involvement in the evidence-based movement within the larger healthcare system. We recognize and value the importance of clinical supervision in refining and validating interventions within psychodynamic psychotherapy, and we offer the work in this volume in the spirit of ongoing discussion between researchers and clinicians about the value of specific approaches to specific patients with specific psychiatric and psychological problems. Multiple forms of treatment interventions have been developed over the past 50 years, and we support the current emphasis on personalized medicine. We offer the work in this volume in the spirit of including psychodynamic psychotherapy in the effort to advance understanding of finding the right treatment for the right patient.

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Acknowledgments

We are pleased to once again thank many supporters of our work in the Department of Psychiatry at Massachusetts General Hospital. Dr. Jerrold Rosenbaum, the Series Editor, has continued to assist our efforts in creating this volume specifically and has also led efforts to develop the practice, teaching, and study of psychodynamic psychotherapy within the department. Toward this end, we are excited that Dr. Bob Waldinger, who wrote the Foreword to this volume, has joined our department as Director of the Center for Psychodynamic Therapy and Research.

We are grateful to the larger psychodynamic community, which has welcomed our first volume and encouraged us to continue our efforts resulting in this follow-up volume. The international community of psychodynamic clinicians and researchers, represented by more than 500 active members of a psychodynamic psychotherapy research listserv, has demonstrated sustained interest in the work of this book.

Springer Science+Business Media and our Editor, Richard Lansing, have encouraged us to produce this volume and offered the opportunity to continue our efforts in a series of follow-up volumes over the next years. We are pleased with their support and their successful efforts to promote the book around the globe.

Our Psychotherapy Research Program seminar has stimulated ideas, questioned some current psychodynamic wisdom, and encouraged us to continue to publish psychodynamic research that refines current practice. We appreciate the interest of Jeremy Nahum, John Kelley, Helen Riess, Josh Roffman, and Ira Lable. Special thanks to Josh Roffman, for volunteering his time reviewing the neuroscience chapters that have been included.

Thanks to Horst Kächele: this volume includes much work from European researchers who have labored over the years to produce research that has perhaps not been adequately recognized in the United States.

And, of course, we are grateful to the committed clinician researchers whose life work comprises the chapters included in this volume. We know firsthand how arduous and at times thankless this crucial work is, so we are glad to showcase the work of such talented and committed professionals. We appreciate the continued contributions of those who offered chapters in 2009 and welcome the new authors.

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Introduction, Part I

Psychodynamic Psychotherapy Research: Process, Outcome, and the Brain

This second volume of empirical research in psychodynamic psychotherapy attests to the enduring efforts of an international group of dedicated clinician researchers intent on studying modern psychodynamic psychotherapy approaches to relieving suffering for many patients. This volume follows in a long tradition of books that have offered evidence of the efficacy and effectiveness of psychodynamic psychotherapy treatment [1–7]. The book includes several chapters reflecting research that is currently being conducted in Europe. We are grateful to Horst Kächele who is responsible for helping to include much of this work, probably long overdue in the United States.

Before presenting a review of the chapters in the book, it is important to note that the psychotherapy research culture remains controversial, filled with scientific and political tension. The controversy reflects differing opinions about what research designs and, therefore, research findings should be considered legitimate science. Controversy also hovers around whether psychodynamic treatment deserves a place at the table in an era of emphasis on brain-based interventions.

Some in the research community still believe that only randomized controlled trials (RCTs) represent legitimate tests of treatment efficacy. In the past decade, the prominence of the RCTs as the design of choice has spawned numerous manualized treatments that can be tested in short-term therapy trials. At its worst, this type of either-or thinking leads to narrow definitions of which treatments should be considered empirically supported, empirically validated, or evidence based. Many clinicians and researchers, including ourselves, have vehemently opposed such a singular view. Among them, Wachtel [8] states, “These criteria, moreover, were remarkably tendentious, a set of standards that constituted an ideological litmus test much more than any genuine requirement of adherence to the scientific method...the problem was not that the various task forces that advocated for these shifting labels and fixed criteria were attempting to impose scientific discipline on an unwilling, antiscientific community of practitioners; it was that the recommendations of these task forces were not sufficiently respectful of the canons of science.” Both our previous volume and this current volume are testimonies to the importance of considering multiple methods and research designs to inform clinicians making treatment decisions. Both RCTs and naturalistic designs are flawed and yet both have made significant contributions to the literature and knowledge base about what works for whom.

Perhaps the most important question that psychotherapy researchers have been struggling with is not what works for whom, but why and how a given treatment works. Psychotherapy process research remains our primary interest and has emerged as a significant focus of much psychodynamic research recently. Examining the specifics of what actually occurs within a treatment hour as determined by objective raters and relating these processes to outcome hold the most promise for unlocking the mysteries of the very effective intervention we call psychotherapy. Through decades of diligent process research, the importance of the therapeutic relationship has emerged as the primary process

indicator and predictor of successful treatment [5, 9, 10]. (See Chapters 21, 23, and 24 in this volume.) However, researchers and clinicians alike still struggle with the question of whether the salient variables in all treatments are common factors which are responsible for change in psychotherapy. As this book attests to, as researchers, we continue our search for the therapeutic action of treatments, for the active ingredients that lead to change.

Many clinician researchers now agree that the emphasis of future research should be on isolating the principles and interventions of effective psychotherapy treatments [8, 11–13]. We are hopeful that research in psychodynamic psychotherapy and psychotherapy in general will continue to move further away from strict adherence to singular schools of thought in favor of research aimed at determining the treatment processes that lead to sustained change [14]. In Chapter 23 by Smith-Hansen et al. on process research in this book, we make several recommendations for future research, drawing on ideas of Kazdin [13] and Luyten's Commentary on the coming of age of psychoanalytic treatment for the section on Theory, Technique, and Process in this book. In order to move the field forward in attempting to develop evidence-based interventions that will lead to treatment processes that sustain change in our patients, we recommend:

1. Examining treatment process in both manualized and naturalistic treatments, both in single-case and group-level studies.
2. Using theory as a guide and testing theoretically powerful questions.
3. Including more frequent measurements during treatments in order to examine change over time (e.g., what changes first, what changes next) and including extended follow-up periods to capture changes occurring after termination.
4. Examining the role of multiple possible mediators and mechanisms in a single study.
5. Developing models that capture the complex interactions of relational and technical factors.
6. Using sophisticated statistical models as alternative methods for examining issues related to causation.
7. Examining the bi-directional, reciprocal influences between therapist and patient in contrast to an outdated notion that the therapist exerts a unidirectional influence on the patient.
8. Developing paradigms to study therapist responsiveness to pre-existing patient characteristics and to moment-to-moment changes in the session.

As Jorgensen [14] has reminded us, "It is impossible to pinpoint any single factor that is crucial in every therapy. What is needed is a non-dogmatic, multiple factor model that successfully incorporates the knowledge obtained from the many existing theories of psychotherapy-induced change." The current volume provides wonderful examples of how such recommendations can be applied to the study of multiple populations and problems.

If a focus on RCTs defined the previous decade of psychotherapy research and a focus on process research defines the current decade, then an emphasis on genetics and neuroscience will likely define the decade to come. Determined not to be late to the game this time, it is crucial for psychodynamic psychotherapy to stake its rightful claim as a brain-based treatment. We, therefore, emphasize in this volume the contributions of several researchers who do just that.

The reader will find up-to-date sections on: Outcome Research; Theory, Technique, and Process; Single-Case Studies; and Assessing Change. They all include novel designs and thought-provoking results. Besides, the reader will also find a rich section on Neurobiology of Psychotherapy that includes coverage of neuroimaging and biomarkers, discussing cutting-edge studies offering the possibility of understanding how the brain is affected by interventions based on psychodynamic principles and treatment techniques. Finally, the reader will enjoy useful appendices containing new and updated measures and practical information.

Outcome Research

The section on Outcome Research includes two meta-analyses, one by Shedler and one by Rabung and Leichsenring, which provide clear evidence of the efficacy of psychodynamic psychotherapy. Rabung and Leichsenring's chapter emphasizes treatments in long-term psychodynamic psychotherapy and follows their earlier meta-analysis of short-term psychodynamic treatments that appeared in our first volume. Shedler's chapter solidifies the claim that "empirical evidence supports the efficacy of psychodynamic psychotherapy." The two chapters in this volume and the earlier work on short-term treatments provide empirical data in support of psychodynamic psychotherapy as an equal to other evidence-based treatment orientations. Several chapters support the claims that psychodynamic psychotherapy is helpful to patients in psychological distress, and Shedler's chapter solidifies the claim empirically, demonstrating effect sizes equal to those of other treatment orientations. Further review of the important chapters in this section is very thoroughly done in Jeremy Safran and Alexandra Shaker's excellent invited Commentary.

Theory, Technique, and Process

Patrick Luyten, in his invited Commentary of the Theory, Technique, and Process section, points out that "as is demonstrated in each of these chapters, psychoanalytic treatment research not only may inform clinical practice, but also has the potential to change psychoanalytic practice. In fact, there is no point in denying that psychoanalytic practice has already changed under the influence of research findings, both explicitly and implicitly, and will continue to be changed by research." Luyten invites us to read each of the chapters with eager anticipation as he believes that each reflects "the coming of age of psychoanalytic treatment research." Luyten's Commentary reviews each chapter while placing it in the larger context of the intensifying emphasis on process research. He connects the chapters to other research initiatives and findings in his sweeping review of their meaning for psychodynamic psychotherapy treatments. He also includes an important section on implications for psychoanalytic research and training.

In their chapter, Wong and Hayward teach us about implicit emotional learning as the foundation of psychoanalytic treatment, partially through the use of a clinical case to demonstrate their research findings. The chapter integrates learning theory with psychoanalytic principles.

Single-Case Studies

Three chapters reflect the added value of research to traditional intensive supervisory efforts when studying a single psychoanalytic case. As Fonagy and Moran [15] said in 1993, "The attention to repeated observations, more than any other single factor, permits knowledge to be drawn from the individual case and has the power to eliminate plausible alternative explanations." Horst Kächele, one of the earliest psychoanalyst researchers, offers an in-depth understanding of the entirety of a psychoanalytic case with over 500 sessions. In their writing, Kächele, Schachter, and Thomä, all psychoanalysts, create a research chapter with analysts' emotional sensibilities. We are treated to multiple levels of intensive empirical analysis of variables of interest to analytic thinkers and clinicians. In the process, we feel inspired to make use of tape recordings of psychoanalyses and long-term psychodynamic psychotherapies. This chapter will be riveting for any analytic or dynamic thinker interested in learning about the value of empirical research for clinical practice.

R. Levy et al. demonstrate the richness of the understanding of the therapeutic process of a single psychotherapy session using an empirical measure, the Psychotherapy Process Q-set [16]. The chapter also offers a partial explanation of the rating procedure and the thinking of the particular raters, R. Levy and Ablon.

Katzenstein et al. utilize the Psychotherapy Process Q-set to conduct an intensive empirical study of a long-term psychotherapy treatment that reveals specific patient–therapist repetitive interaction structures that are critical to positive outcome. Of course, patient and therapist have their subjective ideas about the critical components of the therapy, but the chapter offers the view of an impartial other. Interestingly, in this case, there are verbatim statements from the patient that suggest her idea about the critical processes that helped her change conforms to that of the research team.

Assessing Change

The Assessing Change section contains three chapters that focus on specific instruments available to researchers. Siefert and DeFife provide a helpful guide to new researchers by describing ten particularly useful outcome measures commonly used in psychotherapy research. DeFife and Westen discuss the current debate about the use of objective research measures in assessing patients, in this case patients with personality disorders, during the initial evaluation. They end by suggesting a structured clinical interview for assessing patients with personality disorders that they believe contributes to an effective treatment approach. And Hörz et al. introduce the Structured Clinical Interview of Personality Organization, derived from Kernberg’s ideas, that has been shown to be effective in assessing severity and change in personality pathology.

Neuroimaging, Biomarkers, and Neurobiology

As Roffman, Gerber, and Glick state in their chapter, “Despite decades of parallel progress in psychodynamic psychotherapy and neuroscientific research, until recently, there was little meaningful interaction between these fields of study... In the last ten years, though, a remarkable synergy between these fields has begun to emerge, with powerful (and overwhelmingly positive) implications for the future of psychotherapy.” Toward this end, the section on Neurobiology of Psychotherapy contains two reviews of findings from neuroimaging studies. Roffman, Gerber, and Glick completely update their chapter from our first book and take us on a tour of broad-based psychotherapy-related neuroimaging findings. After reporting the updated findings, they discuss the implications for the future of psychotherapy. Viamontes’ chapter reviews neuroimaging findings with a focus on the neurobiology of emotions and memory and then specifically discusses the neural substrates of adaptive change in psychotherapy. These two chapters complement each other well and offer the reader an interesting brain-based view into the future. Eric Kandel [17] has recently stated that “Analysis is the most elaborate and nuanced view of the mind that we have....But analysis is not empirical and we need independent evidence for two points – whether it works (under what circumstances and for whom), and, if so, how it works, that is, what alteration does it produce in the brain? Neurobiology should join forces with psychoanalysis to do this. I think it would be an enormous advance.”

In a chapter from a group of Finnish researchers, Lehtonen et al. report on the effects of psychodynamic psychotherapy on the serotonin transport (SERT) function in depressive patients. Lehtonen et al. state that “these findings warrant a conclusion that there is a sub-group of patients in the major depression spectrum, especially those showing signs of rejection sensitivity and other atypical symptoms, whose responses to dynamic psychotherapy are reflected in an increase in SERT binding. Patients with classic symptoms of major depression show similar clinical improvement, but no

changes in SERT binding.” Although the findings emerge from a study with very few subjects, the suggestion that dynamic psychotherapy has an impact at the molecular level is an exciting one for the future of research and for the enduring value of dynamic treatment. And, in a brief chapter, again from Finland, Karlsson’s 2010 PET study demonstrates an increase in serotonin 1A receptors after 6 months of psychodynamic psychotherapy, whereas a control group treated with SSRIs did not show serotonin receptor changes. Of course, we cannot draw firm conclusions from this penetrating and innovative work, but the findings indicate that psychotherapy has a direct impact on the brain in at least some depressed patients. And, as Karlsson states, “the artificial separation between interventions targeting either brain or mind is outdated. Psychotherapy clearly changes brain functions and there is evidence that medication changes abilities traditionally considered to belong to the mind as distinct from the brain.”

In a study with similar aims described the chapter by Ghaznavi et al., psychodynamic psychotherapy research is shown to be central to the larger field of psychiatry. The study hopes to determine the specific areas of the brain that are affected by psychodynamic psychotherapy interventions, in this case a 16-session manualized CCRT treatment for depression. The eventual aim is to identify biomarkers in patients that suggest that treatments based on psychodynamic principles have an increased likelihood of being helpful. If neuroimaging of subjects discovers specific, repetitive pathways in the brain that are affected differentially in patients, it would be possible to determine which patients are pre-disposed toward psychodynamic treatments by administering relatively simple neuroimaging pre-tests. It is the hope of Ghaznavi, Witte, Levy, and Roffman that findings will bring us closer to the aims of the new emphasis on personalized medicine, i.e., finding the right treatment for the right person.

In a further brain-based chapter, Glen Gabbard takes us on a tour of neurobiologically based treatment principles for patients with Borderline Personality Disorder (BPD). This accessible and applicable chapter reminds us that the characteristics of such patients often derive from early childhood trauma, which demands that psychotherapy treatments be sustained over an extended period of time. Gabbard expertly reviews the principles and interventions that can be utilized in current treatments based on our knowledge of brain function in patients with BPD. In a related chapter, Buchheim et al. report findings on neural correlates of attachment dysregulation from studies with BPD patients. Buchheim and her colleagues also suggest that the specific neural findings may provide evidence of the possible mechanisms related to the fearful intolerance of aloneness in these patients.

Finally, Andrew Gerber, in his invited Commentary on the chapters in the Neurobiology of Psychotherapy section, offers three principle mechanisms of action in psychotherapy, anchored in what he says is known about both psychotherapeutic change and neural mechanisms of learning. He also warns us about five common pitfalls in the use of neuroimaging studies in making statements relevant to psychotherapy. His Commentary functions as an overview of the current state of research and a view into one expert’s suggestions for future research initiatives. It is clearly an exciting time for the collaboration of psychodynamic psychotherapy and neuroscience. This research is only one way in which psychodynamic psychotherapy has taken its place in the search to discover the right treatment for the right person.

Appendices

Finally, there are two important appendices that add further interest and value to this collection. The first displays the Child Psychotherapy Q-set, (CPQ) published for the first time in English by Celeste Schneider, a student of Enrico Jones, as well as the adult version of the Psychotherapy Process Q-set, revised in April 2009, by the members of our Psychotherapy Research Program in the Department of Psychiatry at Massachusetts General Hospital. The revised PQS-R is also published for the first time.

The second appendix, a list of Manualized Treatments in psychodynamic psychotherapy that have been used for research purposes, is introduced by Kächele et al., who reviews the history and role of manualized treatments. They conclude with a clear statement that our clinical judgment must have the last word in determining the appropriateness of treatments rather than allowing adherence to strict empirical research findings to be the final factor in treatment choice.

Conclusion

We hope these chapters stimulate ideas and questions and lead to further important research. And we hope that clinician researchers will be inspired by the hard work and complex findings embedded in this volume. We three editors feel inspired by the efforts of our contributors and appreciate the willingness of all to participate. We hope the book stands as a call to action for further research in the spirit of finding the right treatments for the right people. Our capacity to improve our ability to help patients thrive and be relieved of psychological distress depends on such efforts.

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References

1. Hubble MA, Duncan BL, Miller SD. The heart and soul of change: what works in therapy. Washington, DC: American Psychological Association; 1999.
2. Lamb W, Jones E. The effectiveness of psychoanalysis and longer-term psychodynamic psychotherapy: a meta-analysis. Paper presented at the American Psychoanalytic Association meeting, Jan 2009.
3. Leichsenring F, Rabung S. Analyzing effectiveness of long-term psychodynamic psychotherapy. *J Am Med Assoc*. 2008; 300: 1551–1565.
4. Shedler J. The efficacy of psychodynamic psychotherapy. *Am Psychol*. 2010; 65: 98–109.
5. Wampold BE. The great psychotherapy debate: models, methods, and finding. 2nd ed. New York: Routledge; 2008.
6. Levy R, Ablon SJ. Handbook of evidence-based psychodynamic psychotherapy: bridging the gap between science and practice. New York: Springer Science+ Business Media; 2009.
7. Leichsenring F. Are psychodynamic and psychoanalytic therapies effective? A review of empirical data. *Int J Psychoanal*. 2005; 86: 841–868.
8. Wachtel PL. Beyond “ESTs”: problematic assumptions in the pursuit of evidence-based practice. *Psychoanal Psychol*. 2010; 27: 251–272.
9. Safran JD, Muran CJ, Proskurov B. Alliance, negotiation and rupture resolution. In: Levy RA, Ablon JS, editors. Handbook of evidence-based psychodynamic psychotherapy: bridging the gap between science and practice. New York: Springer Science+ Business Media; 2009.
10. Beutler LE, Castonguay LG, Follette WC. Therapeutic factors in dysphoric disorders. *J Clin Psychol*. 2006; 62: 639–647.
11. Blatt SJ, Luyten P. Reactivating the psychodynamic approach to classify psychopathology. In: Millon T, Kuegar R, Simonsen E, editors. Contemporary directions in psychopathology: toward the DSM-V, ICD-11, and beyond. New York: Guilford Press; 2010. pp 483–513.
12. Blatt SJ, Zuroff DC, Hawley LL, Auerbach JS. Predictors of sustained therapeutic change. *Psychother Res*. 2010; 20: 37–54.
13. Kazdin AE. Mediators and mechanisms of change in psychotherapy research. *Annu Rev Clin Psychol*. 2007; 3: 1–27.
14. Jorgensen CR. Active ingredients in individual psychotherapy: searching for common factors. *PSA Psychol*. 2004; 24: 516.
15. Fonagy P, Moran G. Selecting single case research designs for clinicians. In: Miller NE, Luborsky L, Barber JP, Docherty JP, editors. Psychodynamic treatment research: a handbook for clinical practice. New York: Basic Books; 1993. pp 62–95.
16. Jones EE. Therapeutic action: a guide to psychoanalytic therapy. Northvale: Aronson & Co; 2000.
17. Arehart-Treichel J. Analysis can use dose of neuroscience, says Kandel. *Psychiatr News*. March 4, 2011; 46(5):1.

Introduction, Part II

European Psychotherapy Research: The History, the Current State, and Recommendations for the Future

The dating of the beginning of systematic psychodynamic psychotherapy research may depend on one's outlook on what constitutes research. Freud and Breuer were explorers charting new territory when they published the case studies on hysteria in 1895. However, Freud was aware of the necessity of systematic data collection when, in the 1920s, he asked his disciples to collect many deeply analyzed cases to prove the point he attacked Jung on [1].

The development of a scientific field of psychodynamic psychotherapy research can be dated to the year 1930 when the psychoanalyst Fenichel produced 10-year outcome statistics on more than 700 patients being treated at the Berlin Psychoanalytic Institute based on therapists' evaluations [2]. The *British Medical Journal* discussed psychotherapy outcome as early as 1935, reporting on 500 cases [3]. However, before the field really started to blossom, the shadows and nightmares of the Hitler Regime all over Europe – except Britain – wiped out the early tentative steps, and made qualified academics from psychiatry and psychology leave the burned ground and settle in large numbers in North America.

In post-war continental Europe, psychotherapy has been very much involved in fighting the sequelae of the war, of the concentration camps, of the separation of children from their parents. Many countries developed a rich clinical culture, setting priorities that would not foster the development of formal research. Hence, it may not be by chance that the year 1952 not only saw Hans-Juergen Eysenck's [4] powerful attack on the then prevailing psychoanalytic therapies but also listened to softer voices from the British psychoanalyst Edward Glover [5] pleading for formal research in psychoanalysis. The North American psychiatrist and psychoanalyst Lawrence Kubie [6] discussed problems and techniques of psychoanalytic validation in a first symposium on psychoanalysis as a science [7].

In post-war Germany, where the generation that had been trained during the Third Reich had to re-establish psychotherapy as a field, the early 1950s marked the move toward systematic research, mainly naturalistic. One of the very first German outcome studies was published by Annemarie Dührssen in 1953, reporting on ratings of therapists of a sample of patients treated at the Berlin Institute of Psychogenic Disorders [8]. At the Munich University policlinic, Cremerius [9] reported on over 600 cases that had been followed up for many years.¹ One must appreciate the self-critical outcome study of the Norwegian psychoanalyst Harald Schjeldrup studying lasting effects of the psychoanalytic treatments he provided to his 28 patients before the German invasion had set an end to his clinical practice [10]. He had been professor and director at the Institute of Psychology since 1922. He realized that “a number of statistics on the results of psychoanalytic treatments have been published. But the figures do not provide an adequate basis for an assessment of the effectiveness of analytic therapy, either absolutely or in comparison with other forms of psychotherapy” [10].

Annemarie Dührssen reported on follow-up data on 1,004 patients [11]. These findings clearly contributed to the efforts to include psychoanalytic-oriented treatments of neurotic disturbances in

¹ This study is even highly praised by Eysenck and Beech [13] for the relentless pursuit of long-term follow-up.

insurance coverage for the general population. Comparing the effectiveness and efficacy of the treatments to a control sample strengthened the case [12]. All but 15% of patients showed improvement, the largest group showing very considerable improvement maintained at follow-up. A substantial reduction in insurance claims for physical problems was associated with psychoanalytic treatment in the 5-year period following therapy.

Though we can trace a few happy awakenings of psychotherapy research after the war in Europe as well, the appearance of the first edition of *the Handbook of Psychotherapy and Behavior Change* by Bergin and Garfield in 1971 confronted the European academic psychotherapy community with the striking fact that a field had developed with only one European representative as author of one of the chapters of the Handbook: Hans Juergen Eysenck [13]. Trying to understand the European share in the new field, I went through the outcome chapter by Bergin [14]. The result of this search was a meager one: out of about 180 references, some 15 derive from European stock, British and continental:

Fenichel's [2] report was referred to in detail, also the aforementioned *BMJ* discussion from 1935 [3]; the various contributions by Eysenck, especially his negative but very seminal paper on "The Effects of Psychotherapy" [4], were cited. There were also some behavior therapists like Gelder and Marks [15] from the Maudsley Hospital on desensitization; Jonckheere [16], a Belgian colleague, from 1965 reporting on 72 neurotic patients treated with a variety of interventions; the Norwegian psychology professor Harald Schjelderup [10]; another Scandinavian named Kringlen [17] on long-term prognosis of obsessional neurosis; and just a little bit of David Malan, an unpublished manuscript from the year 1967. It did not cite the flagship study of Malan's brief psychotherapy [18].

Bergin's overview missed a few European references that marked the slow beginnings of European psychodynamic treatment research [9, 18–20].

When, after many battles, the University in Vienna opened the Institute for Depth Psychology and Psychotherapy in 1972, Hans Strotzka, as newly elected chair in his introductory lecture, pointed out that "in contrast to all other comparable countries, Austria is lacking nearly completely any effort to objectify the indications for psychotherapeutic treatments and the selection of adequate treatment methods. It lacks any effort to objectify the course of treatment and its outcome" [21]. Strotzka made the comparison to the medical practitioner who solely based on his own experience would select the appropriate antibiotics for his patients. He left no doubt that this situation would not be tolerated in somatic medicine and thus claimed that the field of psychotherapy could not continue to support the highly individualistic notions prevailing in Austrian psychotherapists' minds. He strongly invoked the social responsibility to engage in empirical research [21]. In the same year at a meeting of the European psychoanalytic associations, he addressed the problem that the kind of patients treated in psychoanalysis cannot be referred to by reading the (I quote him) "excellent Handbook, especially the chapters by Garfield and by Luborsky. As cultural aspects are of high relevance, the validity of the American results has to be considered very restricted for central European populations" [22].

German populations were the object of a few naturalistic psychodynamic studies in the 1970s: the Heidelberg follow-up project [23, 24]; the Berlin study [25]; the Stuttgart follow-up study [26]. All these efforts were directed at evaluating the clinical reality; even the notion of a randomized-controlled experiment was not yet in researchers' minds.

This milestone for the development of formal psychodynamic research was provided by the first RCT comparing psychodynamic focal therapy to client-centered therapy conducted by A. E. Meyer at the Hamburg Collaborative Research Program [27]. The findings largely confirmed the equivalence of both kinds of treatment with small advantage for the client-centered modality. However, at the time of the 12-year follow-up, the differences were more salient in terms of matching of patients and therapists [28].

In Britain, the research group around David Shapiro in Sheffield had implemented a RCT comparing the effectiveness of cognitive-behavioral and psychodynamic-interpersonal psychotherapy [29]. Although they secured interesting differences of various dosages with respect to the severity of depression, they also became quite critical about the use of the drug-metaphor for psychotherapy [30].

A salient feature of European psychotherapy research is intricately tied up with the vast diversity of the service delivery systems. It may come as no surprise that generally the more northern countries in Europe (Scandinavian) have deployed more systematic efforts on psychotherapeutic care and its evaluation [31].

Specific turning points for the development of formalized psychodynamic psychotherapy research were the first international conference on Psychoanalytic Process Research Strategies in 1985 and the international meeting of the Society for Psychotherapy Research in Ulm in 1987. Research programs from a variety of European countries were presented demonstrating that one of the most frequent activities was process research [32]. Research on non-verbal interaction was much appreciated [33–35].

The development of psychodynamic psychotherapy research in the 1990s was characterized by a growing diversification of research approaches. Process-outcome research, large scale multi-site studies on the treatment of specific diseases, and health care system research became the leading paradigms [36].

Detailed process research on multiple cases combined with sophisticated outcome measurement became state of the art [37, 38]. Other studies focused on specific disorders like eating disorders [39] and Crohn's disease [40]. The multi-center study on the psychodynamic treatment of eating disorders initiated by the Center for Psychotherapy Research in Stuttgart included a wide range of inpatient and outpatient modalities all over Germany [41]; it also was implemented in many European countries [42]. This study paradigmatically involved academics and non-university institutions, signaling a move to large-scale network operations.

The present European situation is marked by a need to comply with the requirements of Evidence-Based Medicine. The meta-analysis by Grawe and his co-authors [43] ranking behavior therapy as the first line treatment and psychodynamic therapy as a second choice motivated intensive efforts of psychodynamic psychoanalytic researchers. The results of these recent efforts are documented in this volume.²

The future is always difficult to predict. The most recent developments are connected to what Ken Howard in 1987 termed consumer-oriented psychotherapy research. We need to understand the contingencies between patients' needs and therapists' competence in order to better serve these needs. It is obvious from the chapters in this volume that psychodynamic treatment research has made major advances in this direction.

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References

1. Freud S. From the history on an infantile neurosis. SE vol XVII; 1918. pp 1–122.
2. Fenichel O. Statistischer Bericht über die therapeutische Tätigkeit 1920–1930. In: Radó S, Fenichel O, Müller-Braunschweig C, editors. Zehn Jahre Berliner Psychoanalytisches Institut. Poliklinik und Lehranstalt. Wien: Internationaler Psychoanalytischer Verlag; 1930. pp 13–19.
3. Luff MC, Garrod M. The after-results of psychotherapy in 500 adult cases. *Brit Med J*. 1935; 2: 54–59.
4. Eysenck HJ. The effects of psychotherapy: an evaluation. *J Consult Psychol*. 1952; 16: 319–324.
5. Glover E. Research methods in psycho-analysis. *Int J Psychoanal*. 1952; 33: 403–409.
6. Kubie LS. Problems and techniques of psychoanalytic validation and progress. In: Pumpian-Mindlin E, editor. *Psychoanalysis as science. The Hixon lectures on the scientific status of psychoanalysis*. New York: Basic Books; 1952. pp S 46–124.
7. Pumpian-Mindlin E, editor. *Psychoanalysis as science. The Hixon lectures on the scientific status of psychoanalysis*. New York: Basic Books; 1952.
8. Dührssen A. Katamnestische Untersuchungen bei Patienten nach analytischer Psychotherapie. *Z Psychother Med Psychol*. 1953; 3:167–170.
9. Cremerius J. Die Beurteilung des Behandlungserfolges in der Psychotherapie. Berlin: Springer; 1962.
10. Schjelderup H. Lasting effects of psychoanalytic treatments. *Psychiatry*. 1955; 18: 109–133.

² Some of the chapters included here are based on presentations at the conference on Psychoanalytic Process Research Strategies III in Ulm, June 2009.

11. Dührssen A. Katamnestiche Ergebnisse bei 1004 Patienten nach analytischer Psychotherapie. *Z Psychosom Med.* 1962; 8: 94–113.
12. Dührssen AM, Jorswieck E. Eine empirisch-statistische Untersuchung zur Leistungsfähigkeit psychoanalytischer Behandlung. *Nervenarzt.* 1965; 36: 166–169.
13. Eysenck HJ, Beech HR. Counter conditioning and related methods. In: Bergin AE, Garfield SL, editors. *Handbook of psychotherapy and behavior change.* New York: Wiley; 1971. pp S 543–611.
14. Bergin A. The evaluation of therapeutic outcomes. In: Bergin AE, Garfield SL, editors. *Handbook of psychotherapy and behavior change.* New York: Wiley; 1971. pp S 217–270.
15. Gelder MG, Marks IM, Wolff HH. Desensitization and psychotherapy in the treatment of phobic states: a controlled inquiry. *Br J Psychiatry.* 1967; 113: 53–73.
16. Jonckheere P. Considerations sur la psychothérapie. *Acta Neurologica et Psychiatrica Belgica.* 1965; 65: 667–684.
17. Kringlen E. Obsessional neurosis: a long term follow up. *Br J Psychiatry.* 1965; 111: 709.
18. Malan DH. A study of brief psychotherapy. London: Tavistock; 1963. German version: *Psychoanalytische Kurztherapie. Eine kritische Untersuchung.* Bern/Stuttgart: Huber/Klett; 1965.
19. Beckmann D, Richter HE, Scheer JW. Kontrolle von Psychotherapieresultaten. *Psyche.* 1969; 23: 805–823.
20. Boor C de, Künzler E. Die psychosomatische Klinik und ihre Patienten. Stuttgart: Klett; 1963.
21. Strotzka H. Soziologische Kategorien psychoanalytischer Patienten. In: Strotzka H, editor. *Neurose, Charakter und soziale Umwelt. Beiträge zu einer speziellen Neurosenlehre.* Munich: Kindler Taschenbücher; 1973. pp 179–194.
22. Strotzka H. Die soziale Verantwortung des Psychotherapeuten. In: Strotzka H, editor. *Neurose, Charakter, soziale Umwelt.* Kindler Taschenbücher, München: Kindler Taschenbuecher; 1973. Pp 203–214.
23. Kordy H, von Rad M, Senf W. Success and failure in psychotherapy: hypotheses and results from the Heidelberg follow-up project. *Psychother Psychosom.* 1983; 40: 211–227.
24. Kordy H, von Rad M, Senf W. Time and its relevance for a successful psychotherapy. *Psychother Psychosom.* 1988; 49: 212–222.
25. Rudolf G. Untersuchung und Befund bei Neurosen und Psychosomatischen Erkrankungen. *Materialien zum Psychischen und Sozial- Kommunikativen Befund (PSKB).* Basil: Beltz; 1981.
26. Göllner R, Volk W, Ermann M. Analyse von Behandlungsergebnissen eines zehn-jährigen Katamneseprogrammes. In: Beese F, editor. *Stationäre Psychotherapie.* Goettingen: Vandenhoeck & Rupprecht; 1978.
27. Meyer AE. The Hamburg short psychotherapy comparison experiment. *Psychother Psychosom.* 1981; 35: 77–220.
28. Meyer AE, Stühr U, Wirth P, Rüster P. 12 year follow-up studies of the Hamburg short psychotherapy experiment. *Psychother Psychosom.* 1988; 50(4): 192–200.
29. Shapiro DA, Barkham M, Rees A, Hardy GE, Reynolds S, Startup M. Effects of treatment duration and severity of depression on the effectiveness of cognitive-behavioral and psychodynamic-interpersonal psychotherapy. *J Consult Clin Psychol.* 1994; 62: 522–534.
30. Shapiro DA, Harper H, Startup M, Reynolds S, Bird D, Suokas A. The high-watermark of the drug metaphor: a meta-analytic critique of process-outcome research. In: Russel RL, editor. *Reassessing psychotherapy research.* New York: Guilford; 1994. pp 1–35.
31. Kächele H, Pimoradi S. Psychotherapy in European Public Mental Health Services. *Int J Psychother.* 2009; 13: 40–48.
32. Czogalik D. Interactional processes in psychotherapy. In: Beutler LE, Crago M, editors. *Psychotherapy research: an international review of programatic studies.* Washington: APA; 1991. pp 26–233.
33. Bänninger-Huber E. Prototypical affective microsequences in psychotherapeutic interaction. *Psychother Res.* 1992; 4: 291–306.
34. Krause R, Lütolf P. Facial indicators of transference processes within psychoanalytic treatment. In: Dahl H, Kächele H, Thomä H, editors. *Psychoanalytic process research strategies.* Berlin: Springer; 1988. pp 41–256.
35. Merten J, Ullrich B, Anstadt T, Buchheim P, Krause R. Experiencing of affects and facial behavior in the psychotherapeutic process and its relation to success. *Psychother Res.* 1996; 6: 198–212.
36. Kächele H, Kordy H. Outcome research. In: von Uexküll T, editor. *Psychosom Med.* New York: Urban & Schwarzenberg; 1993.
37. Strauß B. Empirische Untersuchungen zur stationären Gruppenpsychotherapie. *Gruppenpsychother Gruppensdynam.* 1992; 28: 125–149.
38. Tschuschke V, Catina A, Beckh T, Salvini D. Wirkfaktoren in stationärer analytischer Gruppenpsychotherapie. *Psychother Psychol Med.* 1992; 42: 91–101.
39. Herzog W, Deter HC, Vandereycken W, editors. *The course of eating disorders. Long-term follow-up studies of anorexia and bulimia nervosa.* Berlin: Springer; 1992.
40. Wietersheim J von. Die Wirksamkeit von Psychotherapie aus der Sicht von M. Crohn-Patienten. *Ergebnisse einer multizentrischen Studie.* Frankfurt: VAS-Verlag für akademische Schriften; 1999.
41. Kächele H, Kordy H, Richard M, Studiengruppe MZ-ESS. Therapy amount and outcome of inpatient psychodynamic psychotherapy of eating disorders. Results of a multi center study across Germany. *Psychother Res.* 2001; 11: 239–257.
42. Kordy H, Krämer B, Palmer RJ, Papezova H, Pellet J, Richard M, Treasure J, COST Action B6. Remission, recovery, relapse, and recurrence in eating disorders: conceptualization and illustration of a validation strategy. *J Clin Psychol.* 2002; 58: 833–846.
43. Grawe K. Psychotherapieforschung zu Beginn der neunziger Jahre. *Psychol Rundschau.* 1992; 43: 132–162.

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Part I

Outcome Research

Chapter 1

Commentary: Research on Short- and Long-Term Psychoanalytic Treatment – The Current State of the Art

Jeremy D. Safran and Alexandra G. Shaker

Keywords Psychoanalytic Treatment • Outcome Research • Empirical Evidence • Evidence Based psychoanalysis

It is a great pleasure to have the opportunity to read and comment on the chapters in this section. Some of the chapters provide superb summaries and updates on innovative psychoanalytic research programs. Others provide comprehensive reviews of the research on the psychoanalytic treatment of specific disorders. Together, they constitute an immensely satisfying summary of state-of-the-art research findings on psychoanalytic process and outcome.

The section begins with Jonathan Shedler's already classic *American Psychologist* article on the efficacy of psychodynamic therapy (Chap. 2). This masterfully written chapter summarizes the results of eight meta-analytic reviews of the research on the efficacy of psychodynamic therapy and concludes that the effects sizes for psychodynamic treatments are as large as those reported for other therapies that have been promoted as empirically supported, including cognitive-behavioral therapy. He also concludes that the evidence indicates that patients receiving psychodynamic treatment maintain therapeutic gains. Moreover, existing evidence suggests that these gains continue to increase after treatment ends. Shedler also reviews some of the more promising research on the efficacy of psychoanalytically oriented treatments of borderline personality (a more in-depth and extensive review of this research can be found in Chap. 8).

While none of the research reviewed in this chapter is new, Shedler has made a tremendously important contribution to the field by summarizing it all in one place, and by demonstrating the skill and persistence necessary to navigate his way through what we happen to know was a rather rigorous and arduous review process, likely to have been influenced by the fact that his conclusions challenge the accepted/received view. The compelling narrative constructed by Shedler, in combination with the widely read nature of *American Psychologist*, have already led to widespread attention and stirred up considerable controversy.

Shedler's chapter is followed by Rabung and Leichsenring's chapter (Chap. 3) that includes a review of their widely cited *Journal of the American Medical Association (JAMA)* meta-analysis on studies of long-term psychodynamic therapy (LTPP) [1], followed by a review of various critiques of their meta-analysis published in the form of letters submitted to *JAMA*, and their responses to them. The original meta-analysis included 11 RCT studies and 12 quasi-experimental studies. All patients in the studies were diagnosed with either personality disorders or chronic and/or multiple mental disorders. Their rationale for including only studies with patients meeting these criteria was

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that it is precisely for this particular population that longer-term psychodynamic treatment is likely to be indicated (as opposed to less difficult or chronic cases that may benefit from short-term treatment). They concluded that the studies included in their review showed large and significant effect sizes across a wide spectrum of outcome domains and that LTPP is both effective and superior to less intensive or shorter-term therapies for this patient population.

This is the first time the critiques of the original *JAMA* meta-analysis and the authors' responses to them have all been assembled in one place, and the final product makes for compelling reading. Since both sides of this controversy are well detailed in the Rabung and Leichsenring chapter, we leave it to the reader to review the chapter carefully and draw his or her own conclusions. We would, however, like to commend Rabung and Leichsenring for their careful consideration of the critiques and their careful, thorough, and well-reasoned responses to them.

In an era when the prevailing wisdom tends to be that short-term treatments are appropriate for all conditions and that longer-term treatment is neither necessary nor cost effective, the compelling results of the meta-analysis described in Rabung and Leichsenring's chapter as well as their response to their critics are particularly timely. It is important to bear in mind, however, that the studies included in it are "long term" *relative* to the majority of treatments included in randomized clinical trials. Treatments of the duration and intensity of the studies included in this meta-analysis may well be closer to the norm to many treatments conducted in the real world (e.g., see Westen and colleagues [2]) than the type of short-term therapy typically studied in randomized clinical trials. But what about longer-term, intensive, psychoanalytic treatment? Because of the logistical and methodological problems associated with studying this type of treatment, it is rare to find studies that are not naturalistic in nature or that have reliable measures administered at intake, termination, and follow-up intervals. The next two chapters summarize important attempts to fill this niche.

The Huber et al. (Chap. 4) is a unique contribution to the literature providing one of the most compelling sources of evidence to date that long-term psychoanalysis has unique benefits. Although both Seligman's [3] effectiveness study and Howard et al.'s [4] research on the dose-effect response provide some evidence that longer-term treatments offer advantages over short-term treatments, the methodological difficulties associated with evaluating the relative effectiveness of long-term intensive psychoanalytic treatment versus shorter-term, less intensive treatments (either psychodynamic or cognitive-behavioral) are extremely difficult to overcome. The practical difficulties associated with use of a randomized clinical trial in this context are virtually insurmountable. By using a quasi-experimental design, however, which balances considerations of internal validity and external validity, Huber et al. are able to provide credible evidence not only for the unique benefits of longer-term, intensive psychoanalytic treatment over shorter-term, less intensive treatment (both psychodynamic and cognitive-behavioral), but also for the benefits of psychodynamic treatment over cognitive-behavioral treatment of equivalent intensity and duration. Since the Munich Psychotherapy Study is still a work in progress, data from the 3-year follow-up interval are not in yet. Future research in this vein will also need to address concerns raised by critics (e.g., the lack of adherence ratings, questions about what can and cannot be inferred from this type of quasi-experimental design). Nevertheless, we do see the Munich Psychotherapy Study as an important and innovative step forward. Moreover, it is our understanding that Huber et al. are now conducting process ratings to determine both adherence and the active ingredients of the treatments. Once completed, these rating have the potential of further enhancing both the rigor and implications of their research.

The Knekt et al. (Chap. 5) reports on the results of an ambitious, methodologically complex study that is still in progress. It combines a randomized clinical trial of three different treatment modalities: solution-focused therapy (SFT), short-term psychodynamic psychotherapy (STPP), and long-term psychodynamic psychotherapy (LTPP). The study also has an additional arm comparing a group of patients self-selected for long-term open-ended psychoanalysis. The complexity of the methodology extends beyond the addition of the nonrandomly assigned psychoanalytic arm. In addition, there are differences in the intensity and length of the SFT (one every 2 weeks for 12 sessions),

STPP (once a week for 20 sessions), LTPP (2–3 times per week for approximately 3 years), and PA (sessions four times per week for approximately 5 years). The plan is to follow patients for a 10-year interval. At present, they have data from the 5-year follow-up period.

Because of the various methodological confounds associated with the study, findings inevitably need to be interpreted cautiously. Bearing this in mind, however, the chapter reports a number of interesting preliminary findings. At the time of the first year follow-up, patients in STPP had greater improvement in their psychiatric symptoms than those in the LTPP group, and patients in SFT had greater improvement in their symptoms of depression than those in the LTPP group.

At the 3-year follow-up, the findings were opposite, and those in the LTPP group had a stronger treatment effect than those in the two short-term conditions, with regard to symptoms of both depression and anxiety. On one hand, these findings can be interpreted as evidence of the advantages of LTPP over STPP and SFT. On the other, however, given the confound of treatment duration with treatment intensity, in addition to the fact that it appears that patients were terminating the LTPP condition at around the time of the 3-year follow-up (as opposed to patients in the other conditions who had terminated treatment over 2 years ago), it is difficult to know quite how to interpret the findings.

Knekt et al. also report that, at the end of the 5-year follow-up interval, the symptom levels in the psychoanalysis group were lower than in the long-term psychotherapy group. Again, however, the various confounds already mentioned make it difficult to interpret these findings. At the 10-year follow-up interval, it will be somewhat easier to interpret the meaning of differences emerging between treatment modalities.

Notwithstanding the various methodological confounds intrinsic to this study, Knekt et al. are collecting an extremely rich data set that is likely to yield a variety of suggestive findings over time regarding such issues as cost-effectiveness, treatment sufficiency (i.e., is the treatment meeting the needs of the patient or are they seeking additional treatment with medication, etc.), patient suitability for different modalities, and the feasibility and value of using certain types of quasi-controlled psychotherapy research methodologies in real-world settings.

Taylor (Chap. 6) reviews a number of different studies and meta-analyses (some also reviewed in other chapters in this book) that evaluate the effectiveness of either short-term or longer-term psychodynamic treatment for depression. On the basis of the literature reviewed, he concludes that the effects sizes for short-term psychodynamic treatments for depression are similar to those of other forms of psychotherapy. He also concludes that the effects of cognitive-behavioral treatments may be evident more rapidly than those of psychodynamic treatments and that patients receiving longer-term psychoanalytic treatment may result in qualitatively different types of changes than short-term treatments. These qualitatively different types of changes (presumably the type of structural change investigated by Grande et al. in Chap. 9) may play an important role in relapse prevention.

Taylor's chapter also reflects on the limitations of many of the assumptions and features dominating the prevailing research paradigm (e.g., the discrete nature of diagnostic categories, the reliance on randomized clinical trials as the "gold standard" of research (or what he refers to as the "guardian of truth")), the failure to use outcome measures that assess more subtle and meaningful dimensions of change, the failure to take into account the chronic and recurrent nature of depression, and the bias towards viewing short-term treatment as more adequate than in fact it may be for a variety of problems.

Slavin-Mulford and Hilsenroth's (Chap. 7) reviews a number of important studies on psychodynamic treatments for anxiety disorders. To our knowledge, this is the first review of psychodynamic treatments for anxiety disorders that has been published. They discuss research that examines both the efficacy and effectiveness of psychodynamic therapy for anxiety disorders. In presenting the findings of Pierloot and Vinck [5] and Brom et al. [6], Slavin-Mulford and Hilsenroth argue that one distinction between cognitive and behavioral treatments and psychodynamic treatments in the context of anxiety disorders is that it may be that after therapy has terminated, those who receive psychodynamic treatment will continue to make therapeutic gains, whereas those who have received cognitive and behavioral treatments may experience rapid symptom reduction during the initial stages of treatment, but their gains may diminish following termination.

Slavin-Mulford and Hilsenroth discuss the importance of both efficacy and effectiveness studies in order to achieve internal and external validity in treatment research. Their review of Crits-Cristoph and colleagues' 1996 and 2005 studies [7, 8] and Milrod and colleagues' 2000 and 2001 studies [9, 10] presents highly compelling evidence for the effectiveness of psychodynamic treatments for anxiety disorders.

In this chapter, Slavin-Mulford and Hilsenroth call attention to the limited nature of any research methodology and the need for a range of approaches in treatment studies. While the research presented in this chapter demonstrates mixed findings with regard to psychodynamic treatment for anxiety disorders, the authors present a number of studies conducted in a range of settings, emphasizing the various contributions to the field that different research methodologies can bring to the table.

Levy et al. (Chap. 8) provide a superb review of the research on psychoanalytically oriented treatments for borderline personality disorder (BPD). Studies in this area, while still limited in number, are some of the most promising in the field. For many years, the received wisdom was that dialectical behavior therapy was the only treatment for BPD with any form of empirical backing. Given the serious nature of this disorder, the difficulties and anxieties that clinicians commonly experience when treating BPD patients, and the cost to the health care system, DBT has become widely disseminated and immensely popular in the field. In this chapter, Levy et al. review their own groundbreaking research on Kernberg's transference-focused therapy (TFP) [11, 12], and Bateman and Fonagy's [13] highly promising study regarding the effectiveness of mentalization-based therapy and long-term stability of changes resulting from it. They also provide cogent critiques of the Giesen-Bloo et al. [14] study demonstrating the superiority of schema-focused therapy to TFP. In addition, they review the recently published Doering et al. [15] RCT, which provides independent corroboration of the efficacy of TFP for BPD. Finally, they review the recently published RCT by McMain et al. [16] that compared DBT to a general psychiatric management based on the American Psychiatric Treatment Guidelines, which combined a psychodynamic individual psychotherapy (based on Gunderson's [17] model of treatment), with pharmacotherapy and case management. This study found no significant differences between the two treatment conditions across a wide spectrum of dimensions. The finding of therapeutic equivalence in the McMain et al. [16] study is particularly noteworthy given the fact that McMain is a DBT proponent (given the important impact of researcher theoretical allegiance on outcome) [18]. A noteworthy finding in the Levy et al. study [19] reviewed in this chapter is the finding that, while at termination, patients receiving DBT showed equivalent changes to those receiving TFP, only patients in the TFP positions showed changes in both reflective functioning and attachment status (as assessed by the Adult Attachment Interview). Both of these measures can be conceptualized as indices of internal representations or internal structure. It will be important to see whether changes in attachment status and reflective functioning have implications for the sustainability of treatment effects at follow-up.

This brings us to the closing chapter in the section by Grande et al. (Chap. 9), which summarizes their innovative efforts to investigate and document the impact of structural change in psychoanalytic treatment. While psychoanalysts have long argued that one of the important goals of treatment consists of change in psychic structure, until now there, has been little if any empirical evidence for this assertion. A number of obstacles have traditionally hindered research in this area. One is a lack of agreement about what we mean by psychic structure. Another related problem is the difficulty of operationalizing the construct. Finally, it is difficult to document the value of structural change. Given the consistent finding of "therapeutic equivalence" in psychotherapy outcome research, it becomes particularly important not only to verify that structural change does take place but also that such change is valuable.

The development of the Heidelberg Structural Changes Scale (HSCS) provides an innovative method for measuring structural change in a way that is meaningful across a range of diverse psychoanalytic perspectives. Grande et al.'s finding that structural change at termination (as assessed by the HSCS) is predictive of patients' retrospective evaluations of treatment success, at the 3-year

follow-up point, while symptom change is not, provides compelling evidence of the meaningfulness of the construct of psychic change. It also provides evidence that change in psychic structure is a goal worth aspiring to in tangible terms that therapists across diverse theoretical traditions should be able to agree upon. While acknowledging the limitations of assessing change retrospectively (at the 3-year follow-up point), in our opinion, the authors do make a plausible case for the value of such retrospective evaluations. Important future directions for research will include [1] evaluating change at follow-up using pre–post assessments, and [2] evaluating whether different treatment modalities have different impacts on changes at this level.

Collectively, the chapters in this section provide an important review of state-of-the-art research on the effectiveness of both short-term and long-term psychoanalytically oriented treatment for a variety of disorders. They summarize promising evidence regarding the effectiveness of these treatment modalities and highlight limitations in the research. They also spell out methodological problems that bedevil the field and that make it difficult to study longer-term psychoanalytic treatments in particular. They also provide a glimpse of innovative attempts to grapple with some of these problems and of promising research avenues for the future. One of the more promising findings discussed in a number of the chapters is the evidence beginning to emerge that the gains of psychoanalytically oriented treatment may actually continue to increase after termination. Findings of this type are consistent with the hypothesis that helpful psychoanalytically oriented treatment leads to underlying structural change, which may serve a relapse prevention function and actually facilitate continuing change after treatment. This hypothesis is directly tested in the innovative research reported in the chapters by both Levy et al. and Grand et al. (Chaps. 8 and 9).

Another consistent theme that is beginning to emerge is that patients in cognitive-behavioral treatments are likely to experience symptom reduction earlier in the treatment process than patients in psychoanalytically oriented treatments, but this pattern is likely to disappear and in some cases even reverse itself in psychoanalytically oriented treatments. Finally, while acknowledging the methodological difficulties associated with conducting research on long-term, intensive psychoanalytic treatment, a number of these chapters provide some of the most promising evidence to date regarding the unique value of this treatment modality. We would like to close by expressing our appreciation to the contributors for their important contributions, and to J. Stuart Ablon, Ray Levy Horst Kächele for soliciting and assembling these important contributions and inviting us to provide a commentary.

References

1. Leichsenring F, Rabung S. Effectiveness of long-term psychodynamic psychotherapy: a meta—analysis. *J Am Med Assoc.* 2008;300(13):1551–65.
2. Westen D, Novotny CM, Thompson-Brenner H. The empirical status of empirically supported psychotherapies: assumptions, findings, and reporting in controlled clinical trials. *Psychol Bull.* 2004;130:631–63.
3. Seligman MEP. The effectiveness of psychotherapy: the consumer reports study. *Am Psychol.* 1995;50:965–74.
4. Howard KI, Kopta SM, Krause MS, Orlinsky DE. The dose-effect relationship in psychotherapy. *Am Psychol.* 1986;41:159–64.
5. Pierloot R, Vinck J. Differential outcome of short-term dynamic psychotherapy and systematic desensitization in the treatment of anxious out-patients: a preliminary report. *Psychol Belg.* 1978;18(1):87–98.
6. Brom D, Kleber RJ, Defares PB. Brief psychotherapy for posttraumatic stress disorders. *J Consult Clin Psychol.* 1989;57(5):607–12.
7. Crits-Cristoph P, Connolly MB, Azarian K, Crits-Cristoph K, Shappell S. An open trial of brief supportive-expressive psychotherapy in the treatment of generalized anxiety disorder. *Psychother-Theory Res.* 1996;33(3):418–30.
8. Crits-Cristoph P, Connolly Gibbons MB, Narducci J, Schamberger M, Gallop R. Interpersonal problems and the outcome of interpersonally oriented psychodynamic treatment of GAD. *Psychother-Theory Res.* 2005;42:211–23.

9. Milrod B, Busch F, Leon AC, Shapiro T, Aronson A, Roiphe J, et al. Open trial of psychodynamic psychotherapy for panic disorder: a pilot study. *Am J Psychiatry*. 2000;157(11):1878–80.
10. Milrod B, Busch F, Leon AC, Aronson A, Roiphe J, Rudden M, et al. A pilot trial of brief psychodynamic psychotherapy for panic disorder. *J Psychother Pract Res*. 2001;10:239–45.
11. Clarkin JF, Yeomans FE, Kernberg OF. *Psychotherapy for borderline personality*. New York: Wiley; 1999.
12. Clarkin JF, Yeomans F, Kernberg OF. *Psychotherapy of borderline personality*. New York: Wiley; 2006.
13. Bateman AW, Fonagy P. Mentalization-based treatment of BPD. *J Pers Disord*. 2004;18(1):36–51.
14. Giesen-Bloo JH, Arntz A, van Dyck R, Spinhoven P, Van Tilburg W, Dirksen C, Van A, et al. Outpatient psychotherapy for borderline personality disorder: a randomized clinical trial of schema focused therapy versus transference focused psychotherapy. *Arch Gen Psychiatry*. 2006;63:649–58.
15. Doering S, Hörz S, Rentrop M, Fischer-Kern M, Schuster P, Benecke C, Buchheim A, Martius P, Buchheim P. Transference-Focused psychotherapy vs. treatment by community psychotherapists for borderline personality disorder: a randomized controlled trial. *Br J Psychiatry*. 2010;196:389–95.
16. McMain SF, Links PS, Gnam WH, Guimond T, Cardish RJ, Korman L, Streiner DL. A randomized trial of dialectical behavior therapy versus general psychiatric management for borderline personality disorder. *Am J Psychiat*. 2009;166:1365–74.
17. Gunderson JG. *Borderline personality disorder: a clinical guide*. Washington, DC: American Psychiatric; 2006.
18. Luborsky L, Barrett MS. Theoretical allegiance. In: Norcross JC, Beutler LE, Levant RF, editors. *Evidence based practices in mental health*. Washington, DC: American Psychological Association; 2006.
19. Levy KN, Clarkin JF, Kernberg OF. Change in attachment and reflective function in the treatment of borderline personality disorder with transference focused psychotherapy. *J Consult Clin Psychol*. 2006;74:1027–40.

Chapter 2

The Efficacy of Psychodynamic Psychotherapy *

Jonathan Shedler

Keywords Meta-analysis • Psychoanalysis • Psychodynamic psychotherapy • Psychotherapy outcome • Psychotherapy process

There is a belief in some quarters that psychodynamic concepts and treatments lack empirical support, or that scientific evidence shows that other forms of treatment are more effective. The belief appears to have taken on a life of its own. Academicians repeat it to one another, as do healthcare administrators, as do healthcare policy makers. With each repetition, its apparent credibility grows. At some point, there seems little need to question or revisit it because “everyone” knows it to be so.

The scientific evidence tells a different story: considerable research supports the efficacy and effectiveness of psychodynamic psychotherapy. The discrepancy between perceptions and evidence may be due, in part, to biases in the dissemination of research findings. One potential source of bias is a lingering distaste in the mental health professions for past psychoanalytic arrogance and authority. In decades past, American psychoanalysis was dominated by a hierarchical medical establishment that denied training to non-MDs and adopted a dismissive stance toward research. This did not win friends in academic circles. When empirical findings emerged that supported nonpsychodynamic treatments, many academicians greeted them enthusiastically and were eager to discuss and disseminate them. When empirical evidence supported psychodynamic concepts and treatments, it was often overlooked.

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This chapter brings together findings from several empirical literatures that bear on the efficacy of psychodynamic treatment. It will first outline the distinctive features of psychodynamic psychotherapy. It will next review empirical evidence for the efficacy of psychodynamic treatment, including evidence that patients who receive psychodynamic psychotherapy not only maintain therapeutic gains but continue to improve over time. Finally, it will consider evidence that nonpsychodynamic therapies may be effective in part because the more skilled practitioners utilize interventions that have long been central to psychodynamic theory and practice.

Distinctive Features of Psychodynamic Technique

Psychodynamic or *psychoanalytic psychotherapy*¹ refers to a range of treatments based on psychoanalytic concepts and methods that involve less frequent meetings and may be considerably briefer than *psychoanalysis* proper. Session frequency is typically once or twice per week, and the treatment may be either time limited or open ended. The essence of psychodynamic psychotherapy is exploring those aspects of self that are not fully known, especially as they are manifested and potentially influenced in the therapy relationship.

Undergraduate textbooks too often equate psychoanalytic or psychodynamic therapies with some of the more outlandish and inaccessible speculations made by Sigmund Freud roughly a century ago [1], rarely presenting mainstream psychodynamic concepts as understood and practiced today. Such presentations, along with caricatured depictions in the popular media, have contributed to widespread misunderstanding of psychodynamic treatment; for discussion of how clinical psychoanalysis is represented and misrepresented in undergraduate curricula, see [2–5]. To help dispel possible myths and facilitate greater understanding of psychodynamic practice, this section reviews core features of contemporary psychodynamic technique.

Blagys and Hilsenroth [6] conducted a search of the *PsycLit* database to identify empirical studies that compared the process and technique of manualized psychodynamic psychotherapy with that of manualized cognitive behavioral therapy. Seven features reliably distinguished psychodynamic therapy from other therapies, *as determined by empirical examination of actual session recordings and transcripts*; note that the features listed in the following text concern process and technique only, not underlying principles that inform these techniques; for a discussion of concepts and principles, see [7–9]:

1. *Focus on affect and expression of emotion.* Psychodynamic psychotherapy encourages exploration and discussion of the full range of a patient's emotions. The therapist helps the patient describe and put words to feelings, including contradictory feelings, feelings that are troubling or threatening, and feelings that the patient may not initially be able to recognize or acknowledge (this stands in contrast to a cognitive focus, where the greater emphasis is on thoughts and beliefs; [10, 11]). There is also a recognition that *intellectual* insight is not the same as emotional insight which resonates at a deep level and leads to change; this is one reason why many intelligent and psychologically minded people can explain the reasons for their difficulties, yet their understanding does not help them overcome those difficulties.
2. *Exploring attempts to avoid distressing thoughts and feelings.* People do a great many things, knowingly and unknowingly, to avoid aspects of experience that are troubling. This avoidance (in theoretical terms, defense and resistance) may take coarse forms, such as missing sessions, arriving late, or being evasive. It may take subtle forms that are difficult to recognize in ordinary social discourse, such as subtle shifts of topic when certain ideas arise, focusing on incidental aspects of

¹ I use the terms *psychodynamic* and *psychoanalytic* interchangeably.

an experience rather than on what is psychologically meaningful, attending to facts and events to the exclusion of affect, focusing on external circumstances rather than one's own role in shaping events, and so on. Psychodynamic psychotherapists actively focus on and explore avoidances.

3. *Identifying recurring themes and patterns.* Psychodynamic psychotherapists work to identify and explore recurring themes and patterns in patients' thoughts, feelings, self-concept, relationships, and life experiences. In some cases, a patient may be acutely aware of recurring patterns that are painful or self-defeating but feel unable to escape them (e.g., a man who repeatedly finds himself drawn to romantic partners who are emotionally unavailable; a woman who regularly sabotages herself when success is at hand). In other cases, the patient may be unaware of the patterns until the therapist helps him or her recognize and understand them.
4. *Discussion of past experience (developmental focus).* Related to identifying of recurring themes and patterns is the recognition that past experience, especially early experiences of attachment figures, affects our relation to, and experience of, the present. Psychodynamic psychotherapists explore early experiences, the relation between past and present, and the ways in which the past tends to "live on" in the present. The focus is not on the past for its own sake, but rather on how the past sheds light on *current* psychological difficulties. The goal is to help patients free themselves from the bonds of past experience in order to live more fully in the present.
5. *Focus on interpersonal relations.* Psychodynamic psychotherapy places heavy emphasis on patients' relationships and interpersonal experience (in theoretical terms, object relations and attachment). Both adaptive and nonadaptive aspects of personality and self-concept are forged in the context of attachment relationships, and psychological difficulties often arise when problematic interpersonal patterns interfere with a person's ability to meet emotional needs.
6. *Focus on the therapy relationship.* The relationship between therapist and patient is itself an important interpersonal relationship, one that can become deeply meaningful and emotionally charged. To the extent that there are repetitive themes in a person's relationships and manner of interacting, these themes tend to emerge in some form in the therapy relationship. For example, a person prone to distrust others may view the therapist with suspicion; a person who fears disapproval, rejection, or abandonment may fear rejection by the therapist, whether knowingly or unknowingly; a person who struggles with anger and hostility may struggle with anger toward the therapist; and so on (these are relatively crude examples; the repetition of interpersonal themes in the therapy relationship is often more complex and subtle than these examples suggest). The recurrence of interpersonal themes in the therapy relationship (in theoretical terms, transference and countertransference) provides a unique opportunity to explore and rework them *in vivo*. The goal is greater flexibility in interpersonal relationships and an enhanced capacity to meet interpersonal needs.
7. *Exploration of wishes and fantasies.* In contrast to other therapies where the therapist may actively structure sessions or follow a predetermined agenda, psychodynamic psychotherapy encourages patients to speak freely about whatever is on their minds. When patients do this (and most patients require considerable help from the therapist before they can truly speak freely), their thoughts naturally range over many areas of mental life, including desires, fears, fantasies, dreams, and daydreams (which in many cases the patient has not previously attempted to put into words). All of this material is a rich source of information about how the person views self and others, interprets and makes sense of experience, avoids aspects of experience, or interferes with a potential capacity to find greater enjoyment and meaning in life.

The last sentence hints at a larger goal that is implicit in all of the others: The goals of psychodynamic psychotherapy include, but extend beyond, symptom remission. Successful treatment should not only relieve symptoms (i.e., get *rid* of something) but also foster the positive presence of psychological capacities and resources. Depending on the person and the circumstances, these might include the capacity to have more fulfilling relationships, make more effective use of one's talents and abilities, maintain a realistically based sense of self esteem, tolerate a wider range of affect, have

more satisfying sexual experiences, understand self and others in more nuanced and sophisticated ways, and face life's challenges with greater freedom and flexibility. Such ends are pursued through a process of self reflection, self exploration, and self discovery that takes place in the context of a safe and deeply authentic relationship between therapist and patient. (For a jargon-free introduction to contemporary psychodynamic thought, see *That was Then, This is Now: An Introduction to Contemporary Psychodynamic Therapy* ([7]; freely available for download at <http://psychsystems.net/shedler.html> [12]).

How Effective Is Psychotherapy in General?

In psychology and in medicine more generally, meta-analysis is a widely accepted method for summarizing and synthesizing the findings of independent studies [13–15]. Meta-analysis makes the results of different studies comparable by converting findings into a common metric, allowing findings to be aggregated or pooled across studies. A widely used metric is *effect size*, which is the difference between treatment and control groups, expressed in standard deviation units.² An effect size of 1.0 means that the average treated patient is one standard deviation healthier on the normal distribution or bell curve than the average untreated patient. An effect size of .8 is considered a large effect in psychological and medical research, an effect size of .5 is considered a moderate effect, and an effect size of .2 is considered a small effect [17].

The first major meta-analysis of psychotherapy outcome studies included 475 studies and yielded an overall effect size (various diagnoses and treatments) of .85 for patients who received psychotherapy compared to untreated controls [18]. Subsequent meta-analyses have similarly supported the efficacy of psychotherapy. The influential review by Lipsey and Wilson [19] tabulated results for 18 meta-analyses concerned with general psychotherapy outcomes, which had a median effect size of .75. It also tabulated results for 23 meta-analyses concerned with outcomes in cognitive behavioral therapy (CBT) and behavior modification, which had a median effect size of .62. A meta-analysis by Robinson et al. [20] summarized the findings of 37 psychotherapy studies concerned specifically with outcomes in the treatment of depression, which had an overall effect size of .73. These are relatively large effects. (For a review of psychotherapy efficacy and effectiveness research, see [21]).

To provide some points of reference, it is instructive to consider effect sizes for antidepressant medications. An analysis of FDA databases (published and unpublished studies) reported in the *New England Journal of Medicine* found effect sizes of .26 for fluoxetine (Prozac), .26 for sertraline (Zoloft), .24 for citalopram (Celexa), .31 for escitalopram (Lexapro), and .30 for duloxetine (Cymbalta). The overall mean effect size for antidepressant medications approved by the FDA between 1987 and 2004 was .31 [22].³ A meta-analysis reported in the prestigious *Cochrane Library* [24] found an effect size of .17 for tricyclic antidepressants compared to active placebo (an active placebo mimics the side effects of an antidepressant drug but is not itself an antidepressant).⁴

²This score, known as the *standardized mean difference*, is used to summarize the findings of randomized control trials. More broadly, the concept *effect size* may refer to any measure that expresses the magnitude of a research finding [16].

³The measure of effect size in this study was Hedges' *g* [23] rather than Cohen's *d* [17] which is more commonly reported. The two measures are based on slightly different computational formulas, but in this case, the choice of formula would have made no difference: "Because of the large sample size (over 12,000), there is no change in going from *g* to *d*; both values are .31 to two decimal places" (Rosenthal R, Personal communication to Marc Diener).

⁴Although antidepressant trials are intended to be double-blind, the blind is easily penetrated because the adverse effects of antidepressant medications are physically discernable and widely known. Study participants and their doctors can therefore figure out whether they are receiving medication or placebo, and effects attributed to medication may be inflated by expectancy and demand effects. Use of "active" placebos better protects the blind, and the resulting effect sizes are approximately half as large as those otherwise reported.

These are relatively small effects. Methodological differences between medication trials and psychotherapy trials are sufficiently great that effect sizes may not be directly comparable, and the findings should not be interpreted as conclusive evidence that psychotherapy is more effective. Effect sizes for antidepressant medications are reported to provide reference points that will be familiar to many readers; for more comprehensive listings of effect size reference points, see, e.g., [19, 25].

How Effective Is Psychodynamic Psychotherapy?

A recent and especially methodologically rigorous meta-analysis of psychodynamic psychotherapy, published by the *Cochrane Library*,⁵ included 23 randomized controlled trials of 1,431 patients [26]. The studies compared patients with a range of common mental disorders⁶ who received short-term (<40 h) psychodynamic psychotherapy with controls (wait list, minimal treatment, or “treatment as usual”), yielding an overall effect size of .97 for general symptom improvement. The effect size increased to 1.51 when the patients were assessed at long-term follow-up (>9 months post-treatment). In addition to change in general symptoms, the meta-analysis reported an effect size of .81 for change in somatic symptoms, which increased to 2.21 at long-term follow-up; an effect size of 1.08 for change in anxiety ratings, which increased to 1.35 at follow up; and an effect size of .59 for change in depressive symptoms, which increased to .98 at follow up.⁷ The consistent trend toward larger effect sizes at follow-up suggests that psychodynamic psychotherapy sets in motion psychological processes that lead to ongoing change, even after therapy has ended.

A meta-analysis reported in *Archives of General Psychiatry* included 17 high quality randomized controlled trials (RCTs) of short-term (average 21 sessions) psychodynamic psychotherapy, reporting an effect size of 1.17 for psychodynamic psychotherapy compared to controls [27]. The pretreatment to post-treatment effect size was 1.39, which increased to 1.57 at long-term follow-up, which was an average of 13 months post-treatment. Translating these effect sizes into percentage terms, the authors noted that patients treated with psychodynamic psychotherapy were “better off with regard to their target problems than 92% of the patients before therapy.”

A newly released meta-analysis examined the efficacy of short-term psychodynamic psychotherapy for somatic disorders [28]. It included 23 studies involving 1,870 patients who suffered from a wide range of somatic conditions (e.g., dermatological, neurological, cardiovascular, respiratory, gastrointestinal, musculoskeletal, genitourinary, immunological). The study reported an effect size of .69 for improvement in general psychiatric symptoms and .59 for improvement in somatic symptoms. Among studies that reported data on healthcare utilization, 77.8% reported significant reductions in healthcare utilization due to psychodynamic psychotherapy—a finding with potentially enormous implications for healthcare reform.

A meta-analysis reported in the *American Journal of Psychiatry* examined the efficacy of both psychodynamic psychotherapy (14 studies) and CBT (11 studies) for personality disorders [29]. The meta-analysis reported pretreatment to post-treatment effect sizes using the longest term follow-up available. For psychodynamic psychotherapy (mean length of treatment was 37 weeks), the mean

⁵ More widely known in medicine than in psychology, the Cochrane Library was created to promote evidence-based practice and is considered a leader in methodological rigor for meta-analysis.

⁶ These included nonpsychotic symptom and behavior disorders commonly seen in primary care and psychiatric services, e.g., non bipolar depressive disorders, anxiety disorders, and somatoform disorders, often mixed with interpersonal or personality disorders [26].

⁷ The meta-analysis computed effect sizes in a variety of ways. The findings reported here are based on the single method that seemed most conceptually and statistically meaningful (in this case, a random effects model, with a single outlier excluded). See the original source for more fine-grained analyses [26].

follow-up period was 1.5 years, and the pretreatment to post-treatment effect size was 1.46. For CBT (mean length of treatment was 16 weeks), the mean follow-up period was 13 weeks, and the effect size was 1.0. The authors concluded that both treatments demonstrated effectiveness. A more recent review of short-term (average 30.7 sessions) psychodynamic psychotherapy for personality disorders included data from seven randomized controlled trials [30]. The study assessed outcome at the longest follow-up period available (an average of 18.9 months post-treatment) and reported an effect size of .91 for general symptom improvement ($N=7$ studies) and .97 for improvement in interpersonal functioning ($N=4$ studies).

Two recent studies examined the efficacy of *long-term* psychodynamic treatment. A meta-analysis reported in the *Journal of the American Medical Association* [31, 32] compared long-term psychodynamic therapy (>1 year or 50 sessions) with shorter term therapies for the treatment of complex mental disorders (defined as multiple or chronic mental disorders, or personality disorders), yielding an effect size of .65 for longer term versus shorter term therapy.⁸ The pretreatment to post-treatment effect size was 1.03 for overall outcome, which increased to 1.25 at long-term follow up ($P<.01$), an average of 23 months post-treatment. Effect sizes increased from treatment completion to follow-up for all five outcome domains assessed in the study (overall effectiveness, target problems, psychiatric symptoms, personality functioning, and social functioning). A second meta-analysis, reported in the *Harvard Review of Psychiatry*, examined the effectiveness of long-term psychodynamic psychotherapy (average 150 sessions) for adult outpatients with a range of DSM diagnoses [33]. For patients with mixed/moderate pathology, the pretreatment to post-treatment effect was .78 for general symptom improvement, which increased to .94 at long-term follow-up, an average of 3.2 years post-treatment. For patients with severe personality pathology, the pretreatment to post-treatment effect was .94, which increased to 1.02 at long-term follow-up, an average of 5.2 years post-treatment.

These meta-analyses represent the most recent and methodologically rigorous evaluations of psychodynamic psychotherapy. Especially noteworthy is the recurring finding that the benefits of psychodynamic psychotherapy not only endure but increase with time, a finding that has now emerged in at least five independent meta-analyses [26, 27, 31, 34, 35]. In contrast, the benefits of other (nonpsychodynamic) empirically supported therapies tend to decay over time for the most common disorders (e.g., depression, generalized anxiety; [35–38]).⁹

Table 2.1 summarizes the meta-analytic findings described previously and adds additional findings to provide further points of reference. Except as noted, effect sizes listed in the table are based on comparisons of treatment and control groups and reflect initial response to treatment (not long-term follow-up).

Studies supporting the efficacy of psychodynamic psychotherapy span a range of conditions and populations. Randomized controlled trials support the efficacy of psychodynamic psychotherapy for depression, anxiety, panic, somatoform disorders, eating disorders, substance-related disorders, and personality disorders [39, 40].

Findings concerning personality disorders are particularly intriguing. A recent study of patients with borderline personality disorder [41] not only demonstrated treatment benefits that equaled or exceeded those of another evidence-based treatment, dialectical behavior therapy (DBT; [42]), but also showed changes in underlying psychological mechanisms (intrapsychic processes) believed to mediate symptom change in borderline patients (specifically, changes in reflective function and attachment organization; [43]). These intrapsychic changes occurred in patients who received psychodynamic psychotherapy but not in patients who received DBT.

⁸ The authors had initially reported a higher effect size [31]; the value of .65 reported here is the more conservative value reported in a subsequent publication [32].

⁹ The exceptions to this pattern are specific anxiety conditions such as panic disorder and simple phobia, for which short-term, manualized treatments do appear to have lasting benefits [38].

Table 2.1 Illustrative effect sizes from meta-analyses of treatment outcome studies

Treatment type and reference	Description	Effect size	N of studies or meta-analyses
<i>General psychotherapy</i>			
Smith, Glass, and Miller [18]	Various therapies and disorders	.85	475 studies
Lipsey and Wilson [19]	Various therapies and disorders	.75 ^a	18 meta-analyses
Robinson et al. [20]	Various therapies, for depression	.73	37 studies
<i>CBT and related therapies</i>			
Lipsey and Wilson [19]	CBT and behavior therapy, various disorders	.62 ^b	23 meta-analyses
Haby et al. [102]	CBT for depression, panic, and generalized anxiety	.68	33 studies
Churchill et al. [103]	CBT for depression	1.0	20 studies
Cuijpers et al. [104]	Behavioral activation for depression	.87	16 studies
Öst [105]	Dialectical behavior therapy, primarily for borderline personality disorder	.58	13 Studies
<i>Antidepressant medication</i>			
Turner et al. [22]	FDA-registered studies of antidepressants approved between 1987 and 2004	.31	74 studies
Moncrieff et al. [24]	Tricyclic antidepressants versus active placebo	.17	9 studies
<i>Psychodynamic psychotherapy</i>			
Abbass et al. [26]	Various disorders, general symptom improvement	.97	12 studies
Leichsenring et al. [27]	Various disorders, change in target problems	1.17	7 studies
Anderson and Lambert [34]	Various disorders and outcomes	.85	9 Studies
Abbass, Kisely, and Kroenke [28]	Somatic disorders, change in general psychiatric symptoms	.69	8 studies
Messer and Abbass [30]	Personality disorders, general symptom improvement	.91	7 studies
Leichsenring and Leibling [29]	Personality disorders, pretreatment to post-treatment	1.46 ^c	14 studies
Leichsenring and Rabung [31, 32]	Long-term psychodynamic psychotherapy versus shorter-term therapies for complex mental disorders, overall outcome	.65	7 studies
de Maat et al. [33]	Long-term psychoanalytic psychotherapy, pretreatment to post-treatment	.78 ^c	10 studies

^aMedian effect size across 18 meta-analyses (from [19], 1993, Table 2.1)

^bMedian effect size across 23 meta-analyses (from [19], 1993, Table 2.2)

^cPretreatment to post-treatment (within group) comparison

Such intrapsychic changes may account for long-term treatment benefits. A newly released study showed enduring benefits of psychodynamic psychotherapy 5 years after treatment completion (and 8 years after treatment initiation). At 5-year follow-up, 87% of patients who received “treatment as usual” continued to meet diagnostic criteria for borderline personality disorder, compared to 13% of patients who received psychodynamic psychotherapy [44]. No other treatment for personality pathology has shown such enduring benefits.

These last findings must be tempered with the caveat that they rest on two studies and therefore cannot carry as much evidential weight as findings replicated in multiple studies conducted by independent research teams. More generally, it must be acknowledged that there are far more empirical outcome studies of other treatments, notably CBT, than of psychodynamic treatments. The discrepancy in sheer number of studies is traceable, in part, to the indifference to empirical research of earlier generations of psychoanalysts, a failing that continues to haunt the field and that contemporary investigators labor to address.

A second caveat is that many psychodynamic outcome studies have included patients with a range of symptoms and conditions, rather than focusing on specific diagnostic categories (e.g., defined by *Diagnostic and Statistical Manual of Mental Disorders* [45] diagnostic criteria). To what

extent this is a limitation is open to debate. A concern often raised about psychotherapy efficacy studies is that they use highly selected and unrepresentative patient samples and consequently, findings do not generalize to real-world clinical practice (e.g., [38]). Nor is there universal agreement that DSM diagnostic categories define discrete or homogeneous patient groups (given that psychiatric comorbidity is the norm, and diagnosable complaints are often embedded in personality syndromes; [46, 47]). Be that as it may, an increasing number of studies of psychodynamic treatments do focus on specific diagnoses (e.g., [39–41, 44, 48, 49]).

A Rose by Another Name: Psychodynamic Process in Other Therapies

The “active ingredients” of therapy are not necessarily those presumed by the theory or treatment model. For this reason, randomized controlled trials that evaluate a therapy as a “package” do not necessarily provide support for its theoretical premises or for the specific interventions that derive from them. For example, the available evidence indicates that the mechanisms of change in cognitive therapy (CT) are *not* those presumed by the theory. Kazdin [50], reviewing the empirical literature on mediators and mechanisms of change in psychotherapy, concluded: “Perhaps we can state more confidently now than before that whatever may be the basis of changes with CT, it does not seem to be the cognitions as originally proposed” (p. 8).

There are also profound differences in the way therapists practice, even therapists ostensibly providing the same treatment. What takes place in the clinical consulting room reflects the qualities and style of the individual therapist, the individual patient, and the unique patterns of interaction that develop between them. Even in controlled studies designed to compare manualized treatments, therapists interact with patients in different ways, implement interventions differently, and introduce processes not specified by the treatment manuals [51]. In some cases, investigators have had difficulty determining from verbatim session transcripts which manualized treatment was being provided [52].

For these reasons, studies of therapy “brand names” can be highly misleading. Studies that look beyond brand names by examining session videotapes or transcripts may reveal more about what is helpful to patients [50, 53, 54]. Such studies indicate that the active ingredients of other therapies include unacknowledged psychodynamic elements.

One method of studying what actually happens in therapy sessions makes use of the *Psychotherapy Process Q-Sort* (PQS; [55]). The instrument consists of 100 variables that assess therapist technique and other aspects of therapy process based on specific actions, behaviors, and statements during sessions. In a series of studies, blind raters scored the 100 PQS variables from archival, verbatim session transcripts for hundreds of therapy hours from outcome studies of both brief psychodynamic and cognitive behavioral therapy [56, 57].¹⁰

In one study, the investigators asked panels of internationally recognized experts in psychoanalytic and cognitive behavioral therapy to use the PQS to describe “ideally” conducted treatments [56]. Based on the expert ratings, the investigators constructed prototypes of ideally conducted psychodynamic and cognitive behavioral therapy. The two prototypes differed considerably.

The psychodynamic prototype emphasized unstructured, open-ended dialog (e.g., discussion of fantasies and dreams); identifying recurring themes in the patient’s experience; linking patient’s feelings and perceptions to past experiences; drawing attention to feelings regarded by the patient as unacceptable (e.g., anger, envy, excitement); pointing out defensive maneuvers; interpreting ward-off or unconscious wishes, feelings, or ideas; focusing on the therapy relationship as a topic of discussion; and drawing connections between the therapy relationship and other relationships.

¹⁰The cognitive therapy study was an RCT for depression; the psychodynamic psychotherapy studies were panel studies for mixed disorders and for PTSD, respectively. See the original source for more detailed descriptions [55].

The CBT prototype emphasized dialogue with a more specific focus, with the therapist structuring the interaction and introducing topics; the therapist functioning in a more didactic or teacher-like manner; the therapist offering explicit guidance or advice; discussion of the patient's treatment goals; explanation of the rationale behind the treatment and techniques; focusing on the patient's current life situation; focusing on cognitive themes such as thoughts and belief systems; and discussion of tasks or activities ("homework") for the patient to attempt outside of therapy sessions.¹¹

In three sets of archival treatment records (one from a study of cognitive therapy and two from studies of brief psychodynamic psychotherapy), the researchers measured therapists' adherence to each therapy prototype, without regard to the treatment model the therapists *believed* they were applying [56]. *Therapist adherence to the psychodynamic prototype predicted successful outcome in both psychodynamic and cognitive therapy.* Therapist adherence to the CBT prototype showed little or no relation to outcome in either form of therapy. The findings replicated those of an earlier study which employed different methodology and also found that psychodynamic interventions, not CBT interventions, predicted successful outcome in both cognitive and psychodynamic treatments [57].

An independent team of investigators using different research methods also found that psychodynamic methods predicted successful outcome in cognitive therapy [58]. The study assessed outcomes in cognitive therapy conducted according to Beck's treatment model [59], and the findings had been reported as evidence for the efficacy of cognitive therapy for depression [60].¹²

Investigators measured three variables from verbatim transcripts of randomly selected therapy sessions in a sample of 64 outpatients. One variable assessed quality of the working alliance (the concept *working alliance* or *therapeutic alliance* is now widely recognized and often considered a nonspecific or "common" factor in many forms of therapy; many do not realize that the concept comes directly from psychoanalysis and has played a central role in psychoanalytic theory and practice for over four decades; see [61, 62]). The second variable assessed therapist implementation of the cognitive treatment model (i.e., addressing distorted cognitions believed to cause depressive affect). The third variable, labeled *experiencing*, beautifully captures the essence of psychoanalytic process:

"At the lower stages of [*experiencing*], the client talks about events, ideas, or others (Stage 1); refers to self but without expressing emotions (Stage 2); or expresses emotions but only as they relate to external circumstances (Stage 3). At higher stages, the client focuses directly on emotions and thoughts about self (Stage 4), engages in an exploration of his or her inner experience (Stage 5), and *gains awareness of previously implicit feelings and meanings* (Stage 6). The highest stage [7] refers to an ongoing process of in-depth self-understanding" ([58], p. 499; emphasis added).

Especially noteworthy is the phrase *gains awareness of previously implicit feelings and meanings*. The term *implicit* refers, of course, to aspects of mental life that are not initially conscious. The construct measured by the scale harkens back to the earliest days of psychoanalysis and its central goal of making the unconscious conscious [63].¹³

In this study of manualized cognitive therapy for depression, the following findings emerged: (1) Working alliance predicted patient improvement on all outcome measures. (2) Psychodynamic process ("experiencing") predicted patient improvement on all outcome measures. (3) Therapist adherence to the cognitive treatment model (i.e., focusing on distorted cognitions) predicted *poorer* outcome. A subsequent study using different methodology replicated the finding that interventions aimed at cognitive change predicted poorer outcome [64]. However, discussion of interpersonal relations and exploration of past experiences with early caregivers—both core features of psychodynamic technique—predicted successful outcome.

¹¹ See the original source for more complete descriptions of the two therapy prototypes [56].

¹² The study is one of the archival studies analyzed by Jones and his associates [56, 57].

¹³ Although the term "experiencing" derives from the humanistic therapy tradition, the *phenomenon* assessed by the scale – a trajectory of deepening self-exploration, leading to increased awareness of implicit or unconscious mental life – is the core defining feature of psychoanalysis and psychoanalytic psychotherapy.

These findings should not be interpreted as indicating that cognitive techniques are harmful, and other studies have reported positive relations between CBT technique and outcome [65–67]. Qualitative analysis of the verbatim session transcripts suggested that the poorer outcomes associated with cognitive interventions were due to implementation of the cognitive treatment model in dogmatic, rigidly insensitive ways by certain of the therapists [58]. (No school of therapy appears to have a monopoly on dogmatism or therapeutic insensitivity. Certainly, the history of psychoanalysis is replete with examples of dogmatic excesses.) On the other hand, the findings *do* indicate that the more effective therapists facilitated therapeutic processes that have long been core, centrally defining features of psychoanalytic theory and practice.

Other empirical studies have also demonstrated links between psychodynamic methods and successful outcome, whether or not the investigators explicitly identified the methods as “psychodynamic” (e.g., [68–76]).

The Flight of the Dodo

The heading of this section is an allusion to what has come to be known in the psychotherapy research literature as the dodo bird verdict. After reviewing the psychotherapy outcome literatures of the time, Rosenzweig [77] and subsequently Luborsky, Singer, and Luborsky [78] reached the conclusion of the dodo bird in *Alice in Wonderland*: “Everyone has won and all must have prizes.” Outcomes for different therapies were surprisingly equivalent and no form of psychotherapy proved superior to any other. In rare instances where studies find differences between active treatments, the findings virtually always favor the preferred treatment of the investigators (the investigator allegiance effect; [79]).

Subsequent research has done little to alter the Dodo bird verdict [21, 80]. For example, studies that have directly compared CBT with short-term psychodynamic psychotherapy for depression have failed to show greater efficacy for CBT over psychodynamic psychotherapy, or vice versa [48, 49]. Leichsenring [49] noted that both treatments appeared to qualify as empirically supported therapies (ESTs) according to the criteria specified by the American Psychological Association Division 12 Task Force [81, 82]. Some of the studies compared psychodynamic treatments of only eight sessions duration, which most practitioners would consider inadequate, with 16-session CBT treatments. Even in these studies, outcomes were comparable [83, 84].

There are many reasons why outcome studies may fail to show differences between treatments, even if important differences really exist. Others have discussed the limitations and unexamined assumptions of current research methods [38, 53, 85]. Here, I focus on one salient limitation: the mismatch between what psychodynamic psychotherapy aims to accomplish and what outcome studies typically measure.

As noted earlier, the goals of psychodynamic psychotherapy include, but extend beyond, alleviation of acute symptoms. Psychological health is not merely the absence of symptoms; it is the positive presence of inner capacities and resources that allow people to live life with a greater sense of freedom and possibility. Symptom-oriented outcome measures commonly used in outcome studies (e.g., the Beck Depression Inventory [86] or Hamilton Depression Rating Scale [87]) do not attempt to assess such inner capacities [54, 88]. Possibly, the Dodo bird verdict reflects a failure of researchers, psychodynamic and nonpsychodynamic alike, to adequately assess the range of phenomena that can change in psychotherapy.

The *Shedler–Westen Assessment Procedure* (SWAP; [89–91]) represents one method of assessing the kinds of inner capacities and resources that psychotherapy may develop. The SWAP is a clinician-report (not self-report) instrument that assesses a broad range of personality processes, both healthy and pathological. The instrument can be scored by clinicians of any theoretical orientation and

Table 2.2 Definition of mental health items from the Shedler–Westen Assessment Procedure (SWAP-200)

Is able to use his/her talents, abilities, and energy effectively and productively
Enjoys challenges; takes pleasure in accomplishing things
Is capable of sustaining a meaningful love relationship characterized by genuine intimacy and caring
Finds meaning in belonging and contributing to a larger community (e.g., organization, church, neighborhood, etc.)
Is able to find meaning and fulfillment in guiding, mentoring, or nurturing others
Is empathic; is sensitive and responsive to other peoples' needs and feelings
Is able to assert him/herself effectively and appropriately when necessary
Appreciates and responds to humor
Is capable of hearing information that is emotionally threatening (i.e., that challenges cherished beliefs, perceptions, and self-perceptions) and can use and benefit from it
Appears to have come to terms with painful experiences from the past; has found meaning in, and grown from such experiences
Is articulate; can express self well in words
Has an active and satisfying sex life
Appears comfortable and at ease in social situations
Generally finds contentment and happiness in life's activities
Tends to express affect appropriate in quality and intensity to the situation at hand
Has the capacity to recognize alternative viewpoints, even in matters that stir up strong feelings
Has moral and ethical standards and strives to live up to them
Is creative; is able to see things or approach problems in novel ways
Tends to be conscientious and responsible
Tends to be energetic and outgoing
Is psychologically insightful; is able to understand self and others in subtle and sophisticated ways
Is able to find meaning and satisfaction in the pursuit of long-term goals and ambitions
Is able to form close and lasting friendships characterized by mutual support and sharing of experiences

has demonstrated high reliability and validity relative to a wide range of criterion measures [89, 92]. The SWAP includes an empirically derived *Healthy Functioning Index* comprised of the items listed in Table 2.2, which define and operationalize mental health *as consensually understood by clinical practitioners across theoretical orientations* [90, 91]. Many forms of treatment, including medications, may be effective in alleviating acute psychiatric symptoms, at least in the short run. However, not all therapies aim at changing underlying psychological processes such as those assessed by the SWAP. (A working version of the SWAP, which generates and graphs T-scores for a wide range of personality traits and disorders, is available at www.SWAPassessment.org.)

Researchers, including psychodynamically oriented researchers, have yet to conduct compelling outcome studies that assess changes in inner capacities and resources, but two studies raise intriguing possibilities and suggest directions for future research. One is a single case study of a woman diagnosed with borderline personality disorder, who was assessed with the SWAP by independent assessors (not the treating clinician) at the beginning of treatment and again after 2 years of psychodynamic psychotherapy [93]. In addition to meaningful decreases in SWAP scales that measure psychopathology, the patient's SWAP scores showed an increased capacity for empathy and greater sensitivity to others' needs and feelings; increased ability to recognize alternative viewpoints, even when emotions ran high; increased ability to comfort and soothe herself; increased recognition and awareness of the consequences of her actions; increased ability to express herself verbally; more accurate and balanced perceptions of people and situations; a greater capacity to appreciate humor; and, perhaps most importantly, she had come to terms with painful past experiences and had found meaning in them and grown from them. The patient's score on the SWAP *Healthy Functioning Index* increased by approximately two standard deviations over the course of treatment.

A second study used the SWAP to compare 26 patients beginning psychoanalysis with 26 patients completing psychoanalysis [94]. The latter group not only had significantly lower scores for SWAP

items assessing depression, anxiety, guilt, shame, feelings of inadequacy, and fears of rejection, but significantly higher scores for SWAP items assessing inner strengths and capacities (Table 2.2). These included greater satisfaction in pursuing long-term goals, enjoyment of challenges and pleasure in accomplishments, ability to utilize talents and abilities, contentment in life's activities, empathy for others, interpersonal assertiveness and effectiveness, ability to hear and benefit from emotionally threatening information, and resolution of past painful experiences. For the group completing psychoanalysis, the mean score on the *SWAP Healthy Functioning Index* was one standard deviation higher.

Methodological limitations preclude drawing causal conclusions from these studies, but they suggest that psychodynamic psychotherapy may not only alleviate symptoms but also develop inner capacities and resources that allow a richer and more fulfilling life. Measures such as the SWAP could be incorporated in future randomized controlled trials, scored by independent assessors blind to treatment condition, and used to assess such outcomes. Whether or not all forms of therapy aim for such outcomes, or researchers study them, *they are clearly the outcomes desired by many people who seek psychotherapy*. Perhaps, this is why psychotherapists, irrespective of their own theoretical orientations, tend to choose psychodynamic psychotherapy for themselves [95].

Discussion

One intent of this chapter was to provide an overview of some basic principles of psychodynamic psychotherapy for readers who have not been exposed to them, or, at least, who have not heard them presented by a contemporary practitioner who takes them seriously and uses them clinically. Another was to show that psychodynamic treatments have considerable empirically support. The empirical literature on psychodynamic treatments does, however, have significant limitations. First, the number of randomized controlled trials for other forms of psychotherapy, notably CBT, is considerably larger than that for psychodynamic psychotherapy, perhaps by an order of magnitude. Many of these trials, specifically the newer and better designed trials, are superior in methodological rigor (although some of the newest psychodynamic RCTs, e.g., [41], also meet the highest standards of methodological rigor). In too many cases, characteristics of patient samples have been too loosely specified, treatment methods have been inadequately specified and monitored, and control conditions have not been optimal (e.g., using wait-list controls or “treatment as usual” rather than active alternative treatments—a limitation that applies to research on empirically supported therapies more generally). These and other limitations of the psychodynamic research literature must be addressed by future research. The intent of this chapter is not to compare treatments or literatures, but to review the existing empirical evidence supporting psychodynamic treatments and therapy processes, which is often underappreciated.

In writing this chapter, it was impossible not to be struck by a number of ironies. One is that academicians who dismiss psychodynamic approaches, sometimes in vehement tones, often do so in the name of science. Some advocate a science of psychology grounded exclusively in the experimental method. Yet, the same experimental method yields findings that support both psychodynamic concepts (e.g., [96]) and treatments. In light of the accumulation of empirical findings, blanket assertions that psychodynamic approaches lack scientific support (e.g., [97–99]) are no longer defensible. Presentations that equate psychoanalysis with dated concepts that last held currency in the psychoanalytic community in the early twentieth century are similarly misleading; they are at best uninformed and at worst disingenuous.

A second irony is that relatively few clinical practitioners, including psychodynamic practitioners, are familiar with the research reviewed in this chapter. Many psychodynamic clinicians and educators seem ill-prepared to respond to challenges from evidence-oriented colleagues, students,

utilization reviewers, or policy makers, despite the accumulation of high quality empirical evidence supporting psychodynamic concepts and treatments. Just as antipsychoanalytic sentiment may have impeded dissemination of this research in academic circles, distrust of academic research methods may have impeded dissemination in psychoanalytic circles; see [100]. Such attitudes are changing, but they cannot change quickly enough.

Researchers also share responsibility for this state of affairs [7]. Many investigators take for granted that clinical practitioners are the intended consumers of clinical research (e.g., [81]), but many of the psychotherapy outcome studies and meta-analyses reviewed for this chapter are clearly not written for practitioners. On the contrary, they are densely complex and technical, and often seem written primarily for other psychotherapy researchers—a case of one hand writing for the other. As an experienced research methodologist and psychometrician, I must admit that deciphering some of these articles required hours of study and more than a few consultations with colleagues who conduct and publish outcome research. I am unsure how the average knowledgeable clinical practitioner could navigate the thicket of specialized statistical methods, clinically unrepresentative samples, investigator allegiance effects, inconsistent methods of reporting results, and inconsistent findings across multiple outcome variables of uncertain clinical relevance. If clinical practitioners are indeed the intended “consumers” of psychotherapy research, then psychotherapy research needs to be more consumer relevant [101].

With the caveats noted earlier, the available evidence indicates that effect sizes for psychodynamic psychotherapies are as large as those reported for other treatments that have been actively promoted as “empirically supported” and “evidence based.” It indicates that the (often unacknowledged) “active ingredients” of other therapies include techniques and processes that have long been core, centrally defining features of psychodynamic treatment. Finally, the evidence indicates that the benefits of psychodynamic treatment are lasting and not just transitory, and appear to extend well beyond symptom remission. For many people, psychodynamic psychotherapy may foster inner resources and capacities that allow richer, freer, and more fulfilling lives.

References

1. Freud S. Introductory lectures on psycho-analysis. The standard edition of the complete psychological works of Sigmund Freud 1917;16:241–463.
2. Bornstein R. Psychoanalysis in the undergraduate curriculum: the treatment of psychoanalytic theory in abnormal psychology texts. *Psychoanal Psychol.* 1988;5:83–93.
3. Bornstein R. Psychoanalysis in the undergraduate curriculum: an agenda for the psychoanalytic researcher. Accessed in 2010. Electronic publishing: <http://www.columbia.edu/~hc137/prs/v4n1/v4n1!2.htm>, 1995.
4. Hansell J. Writing an undergraduate textbook: an analyst’s strange journey. *Psychologist-Psychoanalyst.* 2005;24(4):37–8. Electronic publishing: <http://www.division39.org/pdfs/PsychPsychoanalyst1004c.pdf>.
5. Redmond J, Shulman M. Access to psychoanalytic ideas in American undergraduate institutions. *J Am Psychoanal Assoc.* 2008;56:391–408.
6. Blagys MD, Hilsenroth MJ. Distinctive activities of short-term psychodynamic-interpersonal psychotherapy: a review of the comparative psychotherapy process literature. *Clin Psychol Sci Pract.* 2000;7:167–88.
7. Shedler J. Why the scientist-practitioner schism won’t go away. *The General Psychologist.* 2006;41(2):9–10. Electronic publishing: <http://www.apa.org/divisions/div1/archive.html>.
8. McWilliams N. *Psychoanalytic psychotherapy: a practitioner’s guide.* NY: Guilford; 2004.
9. Gabbard GO. *Long-term psychodynamic psychotherapy: a basic text.* Washington, DC: American Psychiatric Publishing; 2004.
10. Blagys MD, Hilsenroth MJ. Distinctive activities of cognitive-behavioral therapy: a review of the comparative psychotherapy process literature. *Clin Psychol Rev.* 2002;22:671–706.
11. Burum BA, Goldfried MR. The centrality of emotion to psychological change. *Clin Psychol Sci Pract.* 2007;14:407–13.
12. Shedler J. That was then, this is now: psychoanalytic psychotherapy for the rest of us. Accessed in 2010. Electronic publishing: <http://psychsystems.net/shedler.html>, 2005.

13. Lipsey MW, Wilson DB. Practical meta-analysis. Thousand Oaks: Sage; 2001.
14. Rosenthal R. Meta-analytic procedures for social research. Newbury Park: Sage; 1991.
15. Rosenthal R, DiMatteo MR. Meta-analysis: recent developments in quantitative methods for literature reviews. *Annu Rev Psychol.* 2001;52:59–82.
16. Rosenthal R, Rosnow RL. Essentials of behavioral research: methods and data analysis. 3rd ed. New York: McGraw-Hill; 2008.
17. Cohen J. Statistical power analysis for the behavioral sciences. 2nd ed. Hillsdale: Lawrence Earlbaum Associates; 1988.
18. Smith ML, Glass GV, Miller TI. The benefits of psychotherapy. Baltimore: Johns Hopkins University Press; 1980.
19. Lipsey MW, Wilson DB. The efficacy of psychological, educational, and behavioral treatment: confirmation from meta-analysis. *Am Psychol.* 1993;48:1181–209.
20. Robinson LA, Berman JS, Neimeyer RA. Psychotherapy for the treatment of depression: a comprehensive review of controlled outcome research. *Psychol Bull.* 1990;108:30–49.
21. Lambert MJ, Ogles BM. The efficacy and effectiveness of psychotherapy. In: Lambert M, editor. *Bergin and Garfield's handbook of psychotherapy and behavior change.* 5th ed. NY: Wiley; 2004.
22. Turner EH, Matthews AM, Linardatos E, Tell RA, Rosenthal R. Selective publication of antidepressant trials and its influence on apparent efficacy. *N Engl J Med.* 2008;358:252–60.
23. Hedges LV. Estimation of effect size from a series of independent experiments. *Psychol Bull.* 1982;92:490–9.
24. Moncrieff J, Wessely S, Hardy R. Active placebos versus antidepressants for depression (review). *Cochrane Database Syst Rev.* 2004;1:CD003012.
25. Meyer GJ, Finn SE, Eyde LD, Kay GG, Moreland KL, Dies RR, Eisman EJ, Kubiszyn TW, Reed GM. Psychological testing and psychological assessment: a review of evidence and issues. *Am Psychol.* 2001;56:128–65.
26. Abbass AA, Hancock JT, Henderson J, Kisely S. Short-term psychodynamic psychotherapies for common mental disorders. *Cochrane Database Syst Rev.* 2006;4:CD004687.
27. Leichsenring F, Rabung S, Leibing E. The efficacy of short-term psychodynamic psychotherapy in specific psychiatric disorders: a meta-analysis. *Arch Gen Psychiatry.* 2004;61:1208–16.
28. Abbass A, Kisely S, Kroenke K. Short-term psychodynamic psychotherapy for somatic disorders: systematic review and meta-analysis of clinical trials. *Psychother Psychosom.* 2009;78:265–74.
29. Leichsenring F, Leibing E. The effectiveness of psychodynamic therapy and cognitive behavior therapy in the treatment of personality disorders: a meta-analysis. *Am J Psychiatry.* 2003;160:1223–32.
30. Messer SB, Abbass AA. Evidence-based psychodynamic therapy with personality disorders. In: J. Magnavita, editor. *Evidence-based treatment of personality dysfunction: principles, methods and processes.* Washington, DC: American Psychological Association Press; 2010.
31. Leichsenring F, Rabung S. Effectiveness of long-term psychodynamic psychotherapy: a meta-analysis. *J Am Med Assoc.* 2008;300:1551–65.
32. Leichsenring F, Rabung S. Analyzing effectiveness of long-term psychodynamic psychotherapy reply. *J Am Med Assoc.* 2009;301:932–3.
33. de Maat S, de Jonghe F, Schoevers R, Dekker J. The effectiveness of long-term psychoanalytic therapy: a systematic review of empirical studies. *Harv Rev Psychiatry.* 2009;17(1):1–23.
34. Anderson EM, Lambert MJ. Short-term dynamically oriented psychotherapy: a review and meta-analysis. *Clin Psychol Rev.* 1995;15:503–14.
35. Gloaguen V, Cottraux J, Cucherat M, Blackburn I. A metaanalysis of the effects of cognitive therapy in depressed patients. *J Affect Disord.* 1998;49:59–72.
36. Hollon SD, DeRubeis RJ, Shelton RC, et al. Prevention of relapse following cognitive therapy vs medications in moderate to severe depression. *Arch Gen Psychiatry.* 2005;62:417–22.
37. Maat S, Dekker J, Schoevers R, de Jonghe F. Relative efficacy of psychotherapy and pharmacotherapy in the treatment of depression: a meta-analysis. *Psychother Res.* 2006;16:562–72.
38. Westen D, Novotny CM, Thompson-Brenner H. The empirical status of empirically supported psychotherapies: assumptions, findings, and reporting in controlled clinical trials. *Psychol Bull.* 2004;130:631–63.
39. Leichsenring F. Are psychodynamic and psychoanalytic therapies effective? *Int J Psychoanal.* 2005;86:841–68.
40. Milrod B, Leon AC, Busch ZF, Rudden M, Schwalberg M, Clarkin J, Aronson A, Singer M, Turchin W, Klass ET, et al. A randomized control trial of psychoanalytic psychotherapy for panic disorder. *Am J Psychiatry.* 2007;164:265–72.
41. Clarkin JF, Levy KN, Lenzenweger MF, Kernberg OF. Evaluating three treatments for borderline personality disorder: a multiwave study. *Am J Psychiatry.* 2007;164:922–8.
42. Linehan MM. Cognitive behavioral treatment of borderline personality disorder. New York: Guilford; 1993.

43. Levy KN, Meehan KB, Kelly KM, Reynoso JS, Weber M, Clarkin JF, Kernberg OF. Change in attachment patterns and reflective function in a randomized control trial of transference focused psychotherapy for borderline personality disorder. *J Consult Clin Psychol.* 2006;74:1027–40.
44. Bateman A, Fonagy P. 8-year follow-up of patients treated for borderline personality disorder: mentalization-based treatment versus treatment as usual. *Am J Psychiatry.* 2008;165:631–8.
45. American Psychiatric Association. *Diagnostic and statistical manual of mental disorders.* 4th ed. Washington, DC: American Psychiatric Association; 1994.
46. Blatt SJ, Zuroff DC. Empirical evaluation of the assumptions in identifying evidence based treatments in mental health. *Clin Psychol Rev.* 2005;25:459–86.
47. Westen D, Gabbard G, Blagov P. Back to the future: personality structure as a context for psychopathology. In: Krueger RF, Tackett JL, editors. *Personality and psychopathology.* New York: Guilford; 2006. p. 335–84.
48. Cuijpers P, van Straten A, Andersson G, van Oppen P. Psychotherapy for depression in adults: a meta-analysis of comparative outcome studies. *J Consult Clin Psychol.* 2008;76:909–22.
49. Leichsenring F. Comparative effects of short-term psychodynamic psychotherapy and cognitive-behavioral therapy in depression: a meta-analytic approach. *Clin Psychol Rev.* 2001;21:401–19.
50. Kazdin AE. Mediators and mechanisms of change in psychotherapy research. *Annu Rev Clin Psychol.* 2007;3:1–27.
51. Elkin I, Shea T, Watkins JT, Imber SD, Sotsky SM, Collins JF, Glass DR, Pilkonis PA, Leber WR, Docherty JP, Fiester SJ, Parloff MB. National institutes of mental health treatment of depression collaborative research program. *Arch Gen Psychiatry.* 1989;46:971–82.
52. Ablon JS, Jones EE. Validity of controlled clinical trials of psychotherapy: findings from the NIMH treatment of depression collaborative research program. *Am J Psychiatry.* 2002;159:775–83.
53. Goldfried MR, Wolfe BE. Psychotherapy practice and research: repairing a strained alliance. *Am Psychol.* 1996;51:1007–16.
54. Kazdin AE. Evidence-based treatment and practice: new opportunities to bridge clinical research and practice, enhance the knowledge base, and improve patient care. *Am Psychol.* 2008;63:146–59.
55. Jones EE. *Therapeutic action: a guide to psychoanalytic therapy.* Northvale: Jason Aronson; 2000.
56. Ablon JS, Jones EE. How expert clinicians' prototypes of an ideal treatment correlate with outcome in psychodynamic and cognitive-behavioral therapy. *Psychother Res.* 1998;8:71–83.
57. Jones EE, Pulos SM. Comparing the process in psychodynamic and cognitive behavioral therapies. *J Consult Clin Psychol.* 1993;61:306–16.
58. Castonguay LG, Goldfried MR, Wiser SL, Raue PJ, Hayes AM. Predicting the effect of cognitive therapy for depression: a study of unique and common factors. *J Consult Clin Psychol.* 1996;64:497–504.
59. Beck AT, Rush AJ, Shaw BF, Emory G. *Cognitive therapy of depression.* NY: Guilford; 1979.
60. Hollon SD, DeRubeis RJ, Evans MD, Wiemer MJ, Garvey MJ, Grove MW, Tuasn VB. Cognitive therapy and pharmacotherapy for depression: singly and in combination. *Arch Gen Psychiatry.* 1992;49:774–81.
61. Greenson RR. *The technique and practice of psychoanalysis.* New York: International Universities Press; 1967.
62. Horvath AO, Luborsky L. The role of the therapeutic alliance in psychotherapy. *J Consult Clin Psychol.* 1993; 61:561–73.
63. Freud S. Further remarks on the neuro-psychoses of defence. The standard edition of the complete psychological works of Sigmund Freud. 1896;3:157–185.
64. Hayes AM, Castonguay LG, Goldfried MR. Effectiveness of targeting the vulnerability factors of depression in cognitive therapy. *J Consult Clin Psychol.* 1996;64:623–7.
65. Feeley M, DeRubeis RJ, Gelfand LA. The temporal relation of adherence and alliance to symptom change in cognitive therapy for depression. *J Consult Clin Psychol.* 1999;67:578–82.
66. Strunk DR, DeRubeis RJ, Chiu AW, Alvarez J. Patients' competence in and performance of cognitive therapy skills: relation to the reduction of relapse risk following treatment for depression. *J Consult Clin Psychol.* 2007; 75:523–30.
67. Tang T, DeRubeis R. Sudden gains and critical session in cognitive-behavioral therapy for depression. *J Consult Clin Psychol.* 1999;67:894–904.
68. Barber J, Crits-Christoph P, Luborsky L. Effects of therapist adherence and competence on patient outcome in brief dynamic therapy. *J Consult Clin Psychol.* 1996;64:619–22.
69. Diener MJ, Hilsenroth MJ, Weinberger J. Therapist affect focus and patient outcomes in psychodynamic psychotherapy: a meta-analysis. *Am J Psychiatry.* 2007;164:936–41.
70. Gaston L, Thompson L, Gallagher D, Cournoyer L, Gagnon R. Alliance, technique, and their interactions in predicting outcome of behavioral, cognitive, and brief dynamic therapy. *Psychother Res.* 1998;8:190–209.
71. Hayes A, Strauss J. Dynamic systems theory as a paradigm for the study of cognitive change in psychotherapy: an application of cognitive therapy for depression. *J Consult Clin Psychol.* 1998;66:939–47.

72. Hilsenroth M, Ackerman S, Blagys M, Baity M, Mooney M. Short-term psychodynamic psychotherapy for depression: an evaluation of statistical, clinically significant, and technique specific change. *J Nerv Ment Dis.* 2003;191:349–57.
73. Høglend P, Bøgwald KP, Amlo S, Marble A, Ulberg R, et al. Transference interpretations in dynamic psychotherapy: do they really yield sustained effects? *Am J Psychiatry.* 2008;165:763–71.
74. Norcross JC, editor. *Psychotherapy relationships that work: therapist contributions and responsiveness to patients.* NY: Oxford University Press; 2002.
75. Pos AE, Greenberg LS, Goldman RN, Korman LM. Emotional processing during experiential treatment of depression. *J Consult Clin Psychol.* 2003;71:1007–16.
76. Vocisano C, Klein DN, Arnow B, Rivera C, Blalock JA, Rothbaum B, Vivian D, Markowitz JC, Kocsis JH, Manber R, Castonguay L, Rush AJ, Borian F, McCullough JP, Kornstein SG, Riso LP, Thase ME. Therapist variables that predict change in psychotherapy with chronically depressed outpatients. *Psychotherapy.* 2004;41:255–65.
77. Rosenzweig S. Some implicit common factors in diverse methods of psychotherapy. *Am J Orthopsychiatry.* 1936;6:412–5.
78. Luborsky L, Singer B, Luborsky L. Comparative studies of psychotherapy. *Arch Gen Psychiatry.* 1975;32:995–1008.
79. Luborsky L, Diguer L, Seligman DA, Rosenthal R, Krause ED, Johnson S, Halperin G, Bishop M, Berman JS, Schweizer E. The researcher's own therapy allegiances: a “wild card” in comparisons of treatment efficacy. *Clin Psychol Sci Pract.* 1999;6:95–106.
80. Wampold BE, Minami T, Baskin TW, Callen ST. A meta-(re)analysis of the effects of cognitive therapy versus “other therapies” for depression. *J Affect Disord.* 2002;68:159–65.
81. Task Force on Promotion and Dissemination of Psychological Procedures. Training in and dissemination of empirically-validated treatments: report and recommendations. *The Clinical Psychologist.* 1995;48:3–23.
82. Chambless DL, Baker M, Baucom DH, Beutler LE, Calhoun KS, et al. Update on empirically validated therapies, II. *The Clinical Psychologist.* 1998;51:3–16.
83. Barkham M, Rees A, Shapiro DA, Stiles WB, Agnew RM, Halstead J, Culverwell A, Harrington VMG. Outcomes of time-limited psychotherapy in applied settings: replication of the second Sheffield psychotherapy project. *J Consult Clin Psychol.* 1996;64:1079–85.
84. Shapiro DA, Barkham M, Rees A, Hardy GE, Reynolds S, Startup M. Effects of treatment duration and severity of depression on the effectiveness of cognitive-behavioral and psychodynamic-interpersonal psychotherapy. *J Consult Clin Psychol.* 1994;62:522–34.
85. Norcross JC, Beutler LE, Levant RF, editors. *Evidence based practices in mental health: debate and dialogue on the fundamental questions.* Washington, DC: American Psychological Association; 2005.
86. Beck AT, Ward CH, Mendelson M, Erbaugh J. An inventory for measuring depression. *Arch Gen Psychiatry.* 1961;4:561–71.
87. Hamilton MA. A rating scale for depression. *J Neurol Neurosurg Psychiatry.* 1960;23:56–61.
88. Blatt SJ, Auerbach JS. Psychodynamic measures of therapeutic change. *Psychoanal Inq.* 2003;23:268–307.
89. Shedler J, Westen D. The Shedler–Westen assessment procedure (SWAP): making personality diagnosis clinically meaningful. *J Pers Assess.* 2007;89:41–55.
90. Westen D, Shedler J. Revising and assessing axis II, part 1: developing a clinically and empirically valid assessment method. *Am J Psychiatry.* 1999;156:258–72.
91. Westen D, Shedler J. Revising and assessing axis II, part 2: toward an empirically based and clinically useful classification of personality disorders. *Am J Psychiatry.* 1999;156:273–85.
92. Westen D, Shedler J. Personality diagnosis with the Shedler–Westen assessment procedure (SWAP): integrating clinical and statistical measurement and prediction. *J Abnorm Psychol.* 2007;116:810–22.
93. Lingardi V, Shedler J, Gazillo F. Assessing personality change in psychotherapy with the SWAP-200: a case study. *J Pers Assess.* 2006;86:23–32.
94. Cogan R, Porcerelli JH. Clinician reports of personality pathology of patients beginning and patients ending psychoanalysis. *Psychol Psychother Theor Res Pract.* 2005;78(2):235–48.
95. Norcross JC. The psychotherapist's own psychotherapy: educating and developing psychologists. *Am Psychol.* 2005;60:840–50.
96. Westen D. The scientific legacy of Sigmund Freud: toward a psychodynamically informed psychological science. *Psychol Bull.* 1998;124:333–71.
97. Barlow DH, Durand VM. *Abnormal psychology: an integrative approach.* 4th ed. Pacific Grove: Brooks/Cole; 2005.
98. Crews F. The verdict on Freud. *Psychol Sci.* 1996;7:63–7.
99. Kihlstrom JF. A tumbling ground for whimsies? *Contem Psychol.* 1999;44:376–8.
100. Bornstein R. The impending death of psychoanalysis. *Psychoanal Psychol.* 2001;18:3–20.

101. Westen D, Novotny CM, Thompson-Brenner H. EBP $\neq$ EST: Reply to Crits-Christoph et al. (2005) and Weisz et al. (2005). *Psychol Bull.* 131:427–433.
102. Haby MM, Donnelly M, Corry J, Vos T. Cognitive behavioural therapy for depression, panic disorder and generalized anxiety disorder: a meta-regression of factors that may predict outcome. *Aust N Z J Psychiatry.* 2006;40:9–19.
103. Churchill R, Hunot V, Corney R, Knapp M, McGuire H, Tylee A, Wessely S. A systematic review of controlled trials of the effectiveness and cost-effectiveness of brief psychological treatments for depression. *Health Technol Assess.* 2001;5:1–173.
104. Cuijpers P, van Straten A, Warmerdam L. Behavioral activation treatments of depression: a meta-analysis. *Clin Psychol Rev.* 2007;27:318–26.
105. Öst LG. Efficacy of the third wave of behavioral therapies: a systematic review and meta-analysis. *Behav Res Ther.* 2008;46:296–321.

Chapter 3

Effectiveness of Long-Term Psychodynamic Psychotherapy: First Meta-Analytic Evidence and Its Discussion

Sven Rabung and Falk Leichsenring

Keywords Effectiveness • Efficacy • Mental disorders • Meta-analysis • Personality disorders • Psychoanalysis • Psychodynamic psychotherapy

Introduction

The evidence base of psychodynamic psychotherapy is heterogeneous [1, 2]. For short-term psychodynamic psychotherapy (STPP) there is some evidence available supporting its efficacy for specific disorders [3–7]. For long-term psychodynamic psychotherapy (LTPP), however, evidentiary outcome research has been scarce for a long time [1, 2, 8].

According to existing evidence, it generally applies that shorter-term psychotherapy is sufficient for most subjects suffering from acute mental distress [9]. On the other hand, evidence also shows that short-term treatments are not sufficiently effective for a considerable proportion of patients with chronic mental disorders or personality disorders [9–11]. Some studies imply that longer-term psychotherapy may be helpful for these patients [9, 10, 12–16]. This should not only be true of (long-term) psychodynamic therapy, but also of other psychotherapeutic approaches that are usually short term (e.g., for CBT) [15, 16].

Evidence-based treatments for patients suffering from complex mental disorders are exceptionally important. Personality disorders, for example, are quite common in general and clinical populations and are significantly associated with functional impairment [17–19]. In addition, many patients in clinical populations suffer from not just a single, but multiple mental disorders. Again, this is significantly related to greater impairment in social and occupational functioning [20, 21]. Not least, the chronicity of a mental disorder can be expected to be another important factor influencing both impairment and prognosis.

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Some studies suggested that LTPP may be helpful for these groups of patients. Strong evidence-based support, however, has been lacking for a long time. Until the year 2008, no meta-analysis addressing the outcome of LTPP had been published, although preliminary data have been reported by Lamb [22]. This chapter reports about the first meta-analysis on the effectiveness of LTPP, published in the *Journal of the American Medical Association* in 2008 [23]. In addition, we will include an overview of the discussion raised after release of that paper (e.g. [24]).

First Meta-Analysis on the Effectiveness of LTPP

Most meta-analyses usually address narrow research questions and, accordingly, use restricted inclusion criteria. Nevertheless, we attempted to meta-analytically and comprehensively compile all the existing evidence for LTPP for the first time. Thus, we decided to include as many studies as possible addressing the outcome of LTPP without a priori limiting our data collection on any specific form of LTPP, any specific patient group, or any specific control condition. A broad perspective on meta-analysis increases the power and generalizability and, consequently, the usefulness of results [25]. If results are not homogeneous, subgroup analysis can be carried out to examine the reasons. In line with the findings on dose–effect relationships described earlier, however, our meta-analysis placed special emphasis on complex mental disorders (i.e., personality disorders, chronic mental disorders, or multiple mental disorders). In order to maximize generalizability of results, this meta-analysis sought to include both studies with high internal validity (RCTs) and studies with high clinical representativeness (effectiveness studies) provided that they fulfilled predefined inclusion criteria.

Against this background, our meta-analysis addressed the following research questions:

1. How effective is LTPP, especially in complex mental disorders?
2. Is LTPP superior to shorter or less intensive forms of psychotherapeutic treatments?
3. Which patient, treatment, or study characteristics are related to the outcome of LTPP?

Methods

The meta-analysis has been carried out in accordance with recent guidelines for the reporting of meta-analyses [26, 27].

Definition of Long-Term Psychodynamic Psychotherapy

Psychodynamic psychotherapy serves as an umbrella concept encompassing treatments that operate on a continuum of supportive–interpretive psychotherapeutic interventions. An emphasis is placed on more interpretive or supportive interventions depending on the patient’s needs [8, 28]. Gunderson and Gabbard defined LTPP as “... a therapy that involves careful attention to the therapist–patient interaction, with thoughtfully timed interpretation of transference and resistance embedded in a sophisticated appreciation of the therapist’s contribution to the two-person field” ([8], p. 685). Regarding duration, there is no generally accepted “standard” for LTPP. In accordance with the definition given by Crits-Christoph and Barber ([29], p. 456) and other experts in the field, in our meta-analysis, we defined LTPP as lasting at least 1 year or 50 sessions.

Inclusion Criteria and Selection of Studies

We applied the following inclusion criteria (a) studies of LTPP meeting the definition given earlier, i.e., psychodynamic therapy lasting for at least 1 year or at least 50 sessions; (b) individual therapy; (c) clearly described samples of patients with mental disorders; (d) adult patients (at least 18 years of age); (e) prospective studies including pre- and post- or follow-up assessments (no retrospective studies, therapies must have been terminated); (f) reliable and valid outcome measures; (g) data to allow calculation of effect sizes; (h) concomitant (e.g., psychopharmacological) treatments were tolerable, but relevant studies were evaluated separately in order to control for effects of combined treatment versus LTPP alone; and (i) both efficacy and quasi-experimental effectiveness studies. These criteria are consistent with other recent meta-analyses of psychotherapy [5, 10].

We performed a computerized search using MEDLINE, PsycINFO, and Current Contents in order to collect studies of LTPP published between 1960 and May 2008. In addition, we performed manual searches in articles and textbooks and communicated with authors and experts in the field.

Data Extraction

The two authors independently extracted the following information from the papers included: author names, publication year, psychiatric disorder treated, age and sex of patients, duration of treatment, number of sessions, type of comparison group, sample sizes, use of treatment manuals, general clinical experience of therapists, specific experience with the patient group under study, specific training of therapists, study design, duration of follow-up period, and use of psychotropic medication. Disagreements between raters were resolved by consensus. Since evidence suggests that blinding is unnecessary for meta-analyses [30], the raters were not blinded with regard to treatment condition. Finally, effect sizes were independently assessed by the two raters. Inter-rater reliability was satisfactory ($r \geq 0.80$) for all outcome domains under study (discussed next).

Assessment of Effect Sizes and Statistical Analysis

We assessed effect sizes separately for target problems, general psychiatric symptoms, personality functioning, and social functioning. In addition, overall outcome was determined by averaging the effect sizes assessed in the four outcome domains in question. As outcome measures of target problems, we included both patient ratings of target problems [31] and measures referring to the symptoms specific to the patient group under study (e.g., a measure of impulsivity for studies examining borderline personality disorder). For general psychiatric symptoms, both broad measures of psychiatric symptoms such as the Symptom-Checklist SCL-90 [32] and specific measures that do not specifically refer to the disorder under study were included (e.g., an anxiety inventory applied in patients with personality disorders). For personality functioning, measures of personality characteristics (e.g., self-report inventories like the Defense Style Questionnaire) were included [33, 34]. Social functioning was assessed using the Social Adjustment Scale [35] and similar measures. If a study used more than one measure for one area of functioning (e.g., target problems), we assessed the effect size for each measure separately and calculated the mean effect size of these measures as the outcome in the respective area of functioning. If a study included more than one form of LTPP, each treatment condition was entered separately into the meta-analysis.

As the universal outcome measure, that can be determined for both controlled and uncontrolled trials, we calculated *within-group* effect sizes for all studies and treatment conditions using Cohen's *d* statistic as follows. For each measure, we subtracted the post-treatment mean from the pretreatment mean and divided the difference by the pretreatment standard deviation of the measure [36, 37]. If there was more than one treatment group, we calculated a pooled baseline standard deviation as suggested by Hedges and Rosenthal [37, 38]. If necessary, signs were reversed so that a positive effect size always indicated improvement. To examine the stability of psychotherapeutic effects, we assessed effect sizes separately for assessments at the termination of therapy and at follow-up. If there was more than one follow-up assessment, we included the one with the longest follow-up period. If data pertaining to completers and intent-to-treat samples were reported, we included the latter. To correct for bias related to small sample sizes, we calculated Hedges' *d* statistic, an unbiased measure of effect size in small samples ([39, p. 81], formula 10). As a measure of *between-group* effect size, we used the point biserial correlation r_p as suggested by Cohen and Rosenthal [36, 38]. The point biserial correlation also allowed us to test for differences between the within-group effect sizes of LTPP versus other forms of psychotherapy. As will be discussed later in more detail, this measure of a between-group effect size is not identical to that usually assessed in exclusively comparative meta-analyses since it considers treatment groups rather than patients as the unit of analysis. If the data necessary to calculate effect sizes were not published in an article, we asked the study authors for these data. We carried out tests for heterogeneity using the *Q* statistic [39]. The degree of heterogeneity was assessed by calculating the I^2 index [40]. In case of significant heterogeneity, we applied random-effect models [41, 42]. To control for publication bias, tests for asymmetry in funnel plots and file-drawer analyses were performed [42–44]. To test for differences between RCTs and effectiveness studies, we calculated point biserial correlations between type of study and effect size. Outcome data from RCTs and observational studies could only be combined if no significant differences exist. To analyze the effects of LTPP in complex mental disorders, we carried out subgroup analyses for (a) personality disorders, (b) chronic mental disorders, and (c) multiple mental disorders. Additional subgroup analyses were carried out to check for sensitivity. To test the impact of possible predictor or moderator variables on outcome (e.g., concomitant psychotropic medication, use of treatment manuals), we performed correlation analyses. To compare the effects of LTPP to those of other psychotherapeutic treatments, we performed comparative analyses for the subsample of studies providing a control group design. All statistical analyses were conducted using SPSS 15.0 [45] and MetaWin 2.0 [46]. Two-tailed tests of significance were carried out for all analyses. The significance level was defined to be $p=0.05$ unless otherwise stated.

Assessment of Study Quality

According to the inclusion criteria, only studies meeting defined quality standards were considered in our meta-analysis (only prospective studies, reliable and valid outcome measures, clearly described patient samples, adequate data). In addition, we assessed the quality of studies by use of a scale proposed by Jadad et al. [47]. This scale takes into account if a study was described as randomized, if a study was described as double blind, and if withdrawals and dropouts were described. In psychotherapy research, however, double blind studies cannot be realized, because the patients know or can easily find out which treatment they receive. Thus, all studies of psychotherapy would inevitably have to be given a score of zero points on this item. Instead of blinding therapists and patients, the respective requirement in psychotherapy research is that in case of observer-rated outcome measures, the ratings were carried out by raters blind to the treatment condition. Complementary, the patient perspective is of particular importance in psychotherapy. For this reason, outcome is often

assessed by self-report instruments. In line with these considerations, we decided to score this item if outcome was assessed by blinded raters or by reliable self-report instruments. With this modification, the three items of the Jadad scale were independently rated by the two authors for all studies included. For the total score of the scale, we achieved a satisfactory inter-rater reliability ($r=0.84$, $p<0.001$).

Results

Description of Studies Included

Twenty-three separate studies published between 1984 and 2008 met the inclusion criteria [12–14, 34, 48–73]. The results of six of the studies were reported in two journal articles each [12–14, 34, 50, 52, 56, 57, 60, 61, 65, 66]. For all of these studies, we included the data from both articles in our analysis. The studies are described in Table 3.1.

For eight of the studies, we received additional information from the authors [14, 53, 59, 60, 67, 69, 71, 73]. Five studies involved more than one LTPP treatment condition [49, 54, 56, 69, 72]. Each of these LTPP conditions was entered separately into our meta-analysis. For five studies, some control conditions had to be excluded from the meta-analysis for the following reasons [59, 60, 67–69]. The quasi-experimental comparison groups of the study by Rudolf et al. were not included in the meta-analysis because one comparison group could not be classified as either LTPP or STPP due to variability in treatment duration (5–200 sessions), the other condition represented inpatient treatment [68]. The CBT comparison group of the ongoing study by Huber et al. was not included because not enough data were available as yet [59]. For the Sandell et al. study, the low-dose therapy control group was not included, because data to calculate effect sizes were not available for this condition [69]. In the Knekt et al. study, assessments were made at predefined time points that did not exactly match end of therapy for the short-term treatment groups. Thus, the data of the short-term psychotherapy groups were not included [60]. Finally, only two of the four treatment conditions compared by Piper et al. could be considered (i.e., the individual long-term and short-term conditions); the group treatments were not included due to our inclusion criteria [67]. In the study by Wilczek et al., not all of the patients under study met the criteria for an Axis I or Axis II diagnosis [73]. Hence, we included data only from those patients diagnosed with character pathology at intake.

Study Design

Altogether, 11 RCTs [12, 14, 48, 53, 55, 56, 59, 60, 67, 71, 72] and 12 quasi-experimental studies could be included in the meta-analysis [34, 49, 51, 54, 62–65, 68–70, 73]. In all, eight controlled studies comparing LTPP to other methods of psychotherapy qualified to be included in the meta-analysis [12, 14, 48, 53, 55, 62, 67, 71].

Measures

The outcome measures used in these studies are specified in Table 3.1, each with an indication to which outcome area it was assigned. For references of the instruments, the reader is referred to the original studies.

Table 3.1 Studies of long-term psychodynamic psychotherapy (LTPP)

Study (authors)	Type	Disorder	Treatment		Dose/duration of treatment (follow-up interval)		Sample size (N) ^a		Outcome measures (domains) ^b
			LTPP	Non-LTPP comparison	LTPP	Non-LTPP comparison	LTPP	Non-LTPP comparison	
Bachar et al. [48]	RCT	Eating disorders	Self-psychological therapy	Cognitive therapy (CT); nutritional counseling (NC)	40 sessions, 12 months	CT: 12 months; NC: 6 months	17	CT: 17, NC: 10	DSM-SS (t), EAT 26 (t), SCL-90 (s), Selves Q (p)
Barber et al. [49]	OBS-C	Avoidant personality disorders	Supportive-expressive therapy	–	52 sessions	–	24	–	WISPI (t), BAI (s), BDI (s), HARS (s), HRSD (s), IIP (so), % Diagnosis
Bateman and Fonagy [12, 13] ^c	RCT	Obsessive-compulsive personality disorders	Supportive-expressive therapy	–	52 sessions	–	14	–	BDI (s), SCL-90-R (s), IIP (so), STAI-state (s), STAI-trait (p)
		Borderline personality disorders	Psychoanalytically oriented partial hospitalization	Psychiatric treatment as usual (TAU)	18 months	11.6 days inpatient treatment (90% of patients) plus 6 months partial hospitalization (72% of patients)	19	19	
Bond and Perry [34, 50] ^c	OBS	Chronic depression, anxiety, and/or personality disorders	Dynamic psychotherapy	–	110 sessions, 3 years	–	53	–	SCL-90 (s), HRSD (s), GAF (so), DSQ (p)
Clarkin et al. [51] ^c	OBS	Borderline personality disorders	Transference-focused psychotherapy	–	12 months	–	23	–	Parasuicide (t), services (so)
Clarkin et al.; Levy et al. [14, 52] ^c	RCT	Borderline personality disorders	Transference-focused psychotherapy	Dialectical-behavioral therapy (DBT); dynamic supportive treatment (DST)	12 months	DBT: 12 months; DST: 12 months	30	DBT: 30, DST: 30	Aggression scale(t), anger scale(t), Barrett scale (t), BDI (s), BSI (s), GAD (so), SAS (so), RF, coherence, resolution (p)
Dare et al. [53]	RCT	Anorexia nervosa	Focal psychoanalytic psychotherapy	Cognitive-analytic therapy (CAT); family therapy (FT); routine treatment (TAU)	24.9 sessions, 1 year	CAT: 12.9 sessions, 7 months; FT: 13.6 sessions, 1 year; TAU: 10.9 sessions, 1 year	21	CAT: 22, FT: 22, TAU: 19	BMI (t), ABW% (t), Morgan Russel (t)
Grande et al. [54]	OBS-C	Depressive and anxiety disorders ^d	Psychoanalytic therapy	–	310 sessions, 44.2 months (1 year)	–	37	–	SCL-90-R (s), IIP (so)
Gregory et al. [55]	RCT	Borderline personality disorders	Psychodynamic focal therapy	–	71.1 sessions, 24.2 months (1 year)	–	31	–	BEST (t), BDI (s), DES (s), SPS (so), % parasuicide, alcohol misuse, institutional care ^e
			Dynamic deconstructive psychotherapy	Treatment as usual (TAU)	57.5 sessions, 12–18 months	88.7 sessions, 12–18 months	15	15	

Høglend et al. [56, 57]	RCT	Depressive, anxiety, and personality disorders ^d	Dynamic psychotherapy with transference interpretation Dynamic psychotherapy with no transference interpretation Psychoanalytic therapy	– – –	33 sessions, 1 year (1 year, 2 years) 33 sessions, 1 year (1 year, 2 years)	– – –	52 48	Psychodn. F Sc (t), SCL-90-R (s), IIP (so), GAF (so)
Huber and Klug [59]	RCT	Depressive disorders	Psychoanalytic therapy	Psychodynamic focal therapy ^f	229 sessions, 48.8 months	60.6 sessions, 19.4 months	35	BDI (t), SCL-90-R (s), IIP (so)
Knekt et al. [60, 61] ^f	RCT	Depressive or anxiety disorders	Psychodynamic psychotherapy	Short-term psychodynamic psychotherapy (STPP) ^f ; solution-focused therapy (SFT) ^f	232 sessions, up to 3 years	STPP: 18.5 sessions 5.7 months; SFT: 9.8 sessions over up to 7.5 months	128 SFT: 97	BDI (t), HDRS (t), HARD (t), SCL-Anx (t), SCL-90-R (s), Work (so), SAS-W (so), perceived social (so)
Komer et al. [62]	OBS	Borderline personality disorders	Psychotherapy using the conversational model	Treatment as usual (TAU)	12 months	12 months	29	DSM-III-R score (t), GAF (so)
Leichsenring et al. [63]	OBS	Depressive, anxiety, and personality disorders ^d	Psychoanalytic therapy	–	253 sessions, 37.4 months (1 year)	–	36	GAS (t), SCL-90-R (s), FLZ (p), IIP (so)
Luborsky et al. [64]	OBS	Heterogeneous disorders	Psychoanalysis	–	> 50 sessions	–	17	GAF (so), HRSR (so)
Monsen et al. [65, 66]	OBS	Personality disorders	Psychodynamic psychotherapy	–	25.4 months (5 years)	–	25	Affect (t), MMPI (t), (D+Pt+St) (s), (F+pa+sc) (p)
Piper et al. [67]	RCT	Heterogeneous disorders; 30% personality disorders	Psychoanalytically oriented psychotherapy	Short-term psychodynamic psychotherapy (STPP)	76 sessions (6 months)	22 sessions (6 months)	30	TSP (t), TSPI (t), TSIA (t), TSIAT (t), TSTI (t), Cornell (s), DA (s), CATT (p), BSP (so), IBSD (so), SSIAM (so)
Rudolf et al. [68]	OBS	Depressive, anxiety, and personality disorders ^d	Psychoanalytic therapy	Psychodynamic focal therapy (PFT) ^f ; Psychodynamically oriented inpatient treatment (POI) ^f	265 sessions	PFT: 5–200 sessions; POI: 2.6 months	44	PSKB-SE 1(s), PSKB-SE 2 (p)
Sandell et al. [69]	OBS-C	Heterogeneous disorders	Psychoanalysis	Lower-dose therapies ^f	54 months (1 year, 2 years) 43 months	21 months	24	SCL-90-R (s), SOCS (p), SAS (so)
Stevenson and Meares [70]	OBS	Borderline personality disorders	Psychodynamic psychotherapy	–	(1 year, 2 years)	–	100	–
Svarthberg et al. [71]	RCT	Cluster C personality disorders	Self-psychological psychotherapy Dynamic psychotherapy	– Cognitive therapy (CT)	12 months 40 sessions, 16.9 months (6, 12, 24 months)	– 40 sessions, 18.3 months (6, 12, 24 months)	30 25	DSM-III score (t), Cornell (s), behavior (so) Millon (t), SCL-90-R (s), IIP (so)

(continued)

Table 3.1 (continued)

Study (authors)	Type	Disorder	Treatment		Dose/duration of treatment (follow-up interval)		Sample size (N) ^a		Outcome measures (domains) ^b
			LTPP	Non-LTPP comparison	LTPP	Non-LTPP comparison	LTPP	Non-LTPP comparison	
Vinnars et al. [72] ^c	RCT	Personality disorders	Manualized psychodynamic therapy	–	≥1 year (1 year, 3 years)	–	80	–	DSM-IV score (t), SCL-90-T (s), GAF (so), change in diagnosis ^e
Wilczek et al. [73]	OBS	Heterogeneous disorders; only character pathology patients included	Community-delivered psychoanalytic psychotherapy	–	≥1 year (1 year, 3 years) 159 sessions (6 months)–	–	76	–	KAPP (t), CPR-S-A ^c , GAF ^c

Note: RCT randomized controlled trial, OBS observational study, OBS-C observational study with control group

^aNo. of patients for intention to treat samples stated, if data available

^bOutcome domains: *t* target problems, *s* symptoms, *p* personality, *so* social functioning. Measures: *ABW* average body weight, *BAI* Beck anxiety inventory, *BDI* Beck depression inventory, *BEST* borderline evaluation of severity over time, *BMI* body mass index, *BSI* brief symptom inventory, *CATT* Cattell's H scale, *CPR-S-A* self-rating scale for affective syndromes, *DA* depression-anxiety subscale of psychiatric status schedule, *DES* dissociative experiences scale, *D + Pr + St* subjective discomfort, anxiety, social introversion subscales of MMPI, *DSM-III-R* diagnostic and statistical manual of mental disorders (third edition revised), *DSM-SS* DSM symptomatology scale for anorexia and bulimia, *DSQ* defense style questionnaire, *DST* dynamic supportive treatment, *EAT* eating attitudes test, *FLZ* life satisfaction questionnaire, *F + pa + sc F* projection, withdrawal subscales of MMPI, *FT* focal therapy, *GAF* global assessment of functioning scale, *HARS* Hamilton anxiety rating scale, *HAMD* Hamilton rating scale for depression, *HSRS*, health sickness rating scale, *IBSP* interpersonal behavior scale (discrepancy between present and ideal functioning), *IBSP* international behavior scale (present functioning), *IIP* inventory of interpersonal problems, *KAPP* Karolinska psychodynamic profile, *MMPI* Minnesota multiphasic personality inventory, *NSLD* number of sick-leave days, *PFS* psychodynamic functioning scales, *PPFS* perceived psychological functioning scale, *PSKB-SE* psychological and social-communicative state – self-report, *RF* reflexive function, *SAS* social adjustment scale, *SAS-W* work subscale of the social adjustment scale, *SCL-90-R* Symptom-Checklist-90 revised, *SFT* solution-focused therapy, *SOCs* sense of coherence scale, *SPS* social provisions scale, *SSIAM* structured and scaled interview to assess maladjustment, *STAI* state-trait anxiety inventory, *TSIA* and *TSIAI*, severity for all target objectives and most important objective, TSP and TSPI, severity for all target objectives and most important objective, TST and TSTI, severity for all target objectives and most important objective; *WAI* work ability index, *WISPI* Wisconsin personality disorders inventory, % diagnosis, percentage of patients fulfilling criteria for diagnosis. For further information on the outcome instruments, see original studies

^cLTPP combined with psychotropic medication in some patients of the sample

^dPredominant diagnoses in sample

^eThese outcome measures not included (no data to calculate effect size *d* for the respective treatment or patient group)

^fData of these comparison groups were not included in this meta-analysis

Sample Size

The 23 studies involved 1,053 patients treated with LTPP. For the comparative treatments, $N=257$.

Mental Disorders

The studies included cover a wide range of mental disorders (Table 3.1). Ten studies evaluated the effects of LTPP for patients with personality disorders [12–14, 34, 49, 51, 55, 62, 65, 70–72]. Nine studies examined patients with chronic mental disorders (defined as mental disorders lasting 1 year or longer) [34, 48, 53, 54, 59, 60, 63, 68, 69]. Multiple mental disorders (defined as two or more diagnoses of mental disorders) were treated in 14 studies [12, 14, 34, 49, 51, 54–56, 59, 63, 65, 68, 71, 72]. It is of note that these groups of studies overlap in part.

Treatment Manuals

Treatment manuals or manual-like guidelines were applied in 12 studies [12, 14, 48, 49, 51, 53, 55, 56, 62, 70–72].

Therapy Duration

The mean number of sessions carried out in the 23 studies of LTPP was 151.38 ($SD=154.98$; median: 73.50). The mean duration of therapy was 94.81 weeks ($SD=58.79$; median: 69.00).

Duration of Follow-up

For LTPP, the mean follow-up period was 93.23 weeks ($SD=64.93$).

Concomitant Psychotropic Medication

Outcome data for LTPP alone – that is without any concomitant psychotropic medication – were reported for 16 of the 23 studies [48, 49, 53, 54, 56, 59, 62–65, 67–71, 73]. In seven studies, some patients received concomitant psychotropic medication as needed [12, 14, 34, 51, 55, 60, 72].

Overall Outcome

To give a synopsis of the outcome achieved by LTPP in the 23 studies, Fig. 3.1 presents a forest plot listing the within-group, i.e., pre-treatment-to-post-treatment effect sizes of LTPP on overall outcome for each study. The effect sizes are displayed separately for RCTs and observational studies. A more detailed presentation of outcome data will be given later, following several paragraphs addressing the examination of possible sources of bias.

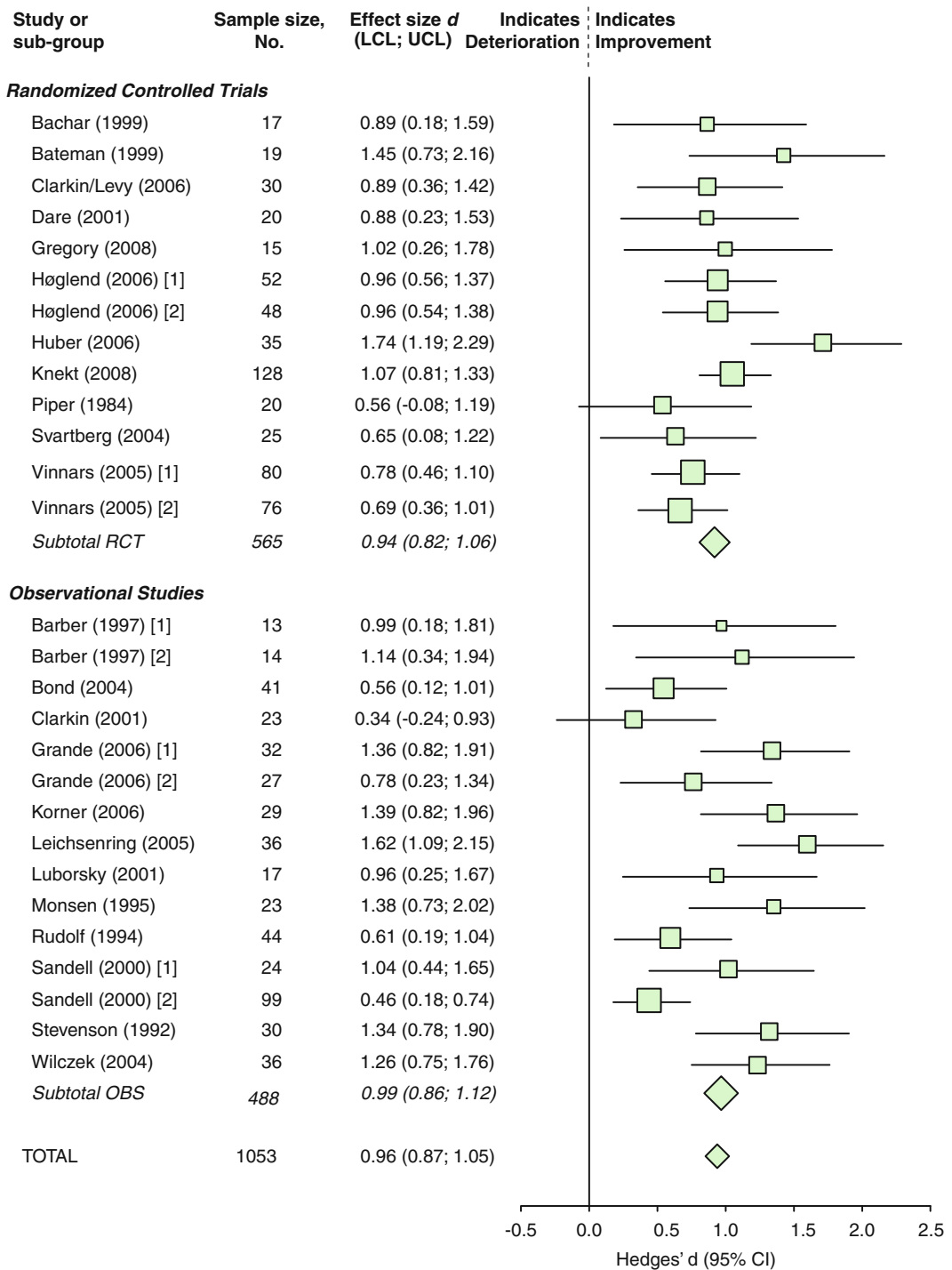


Fig. 3.1 Effects of long-term psychodynamic psychotherapy (LTPP) on overall outcome (Adapted with permission from [23]. Copyright c American Medical Association)

Control for Heterogeneity

The heterogeneity of the effects of LTPP was examined using the Q statistic [39, 46]. In addition, we assessed the degree of heterogeneity with the I^2 index [40]. For some outcome domains, the Q statistic was significant, thus indicating heterogeneity in some cases. This applied, for example, for overall outcome at post-treatment assessment in the total sample of 23 studies ($Q=53.71$, $p=0.002$; $I^2=49\%$). In the controlled studies of LTPP, however, Q was only significant for two follow-up measures based on only two of the eight comparative studies (target problems: $Q=11.92$, $p=0.001$; $I^2=92\%$; social functioning: $Q=4.53$, $p=0.03$; $I^2=78\%$). At the time of post-treatment assessment, here, the I^2 index for overall outcome, target problems, general psychiatric symptoms, personality functioning, and social functioning was 0%, 45%, 46%, 60%, and 51%, respectively, indicating low to medium heterogeneity [74]. For follow-up, the number of studies providing data was too limited to calculate meaningful I^2 statistics. To account for any existing heterogeneity between studies, however, we used the random-effects model throughout all summary analyses.

Control for Publication Bias

In the first instance, we tried to identify unpublished studies via the Internet and by contacting researchers in order to reduce the file-drawer effect. In addition, we tested for asymmetry in funnel plots by calculating Pearson correlations between effect size and sample size across studies. A significant correlation may indicate that larger effect sizes were more likely to be published [75]. Given the small number of studies with follow-up assessments, we confined this procedure to the post-treatment effect sizes. All correlations were insignificant ($p>0.30$). As another test for publication bias, we assessed the fail-safe N for the post-treatment effect sizes [43]. A fail-safe number is the number of nonsignificant, unpublished or missing studies that would need to be added to a meta-analysis in order to change the results of the meta-analysis from significance to nonsignificance. For the 16 studies examining LTPP alone, for example, the fail-safe N s were 921, 535, 623, and 358 for overall outcome, target problems, general symptoms, and social functioning, respectively. Only seven studies of LTPP alone provided data for outcome measures of personality functioning. The respective fail-safe N , here, was 42. Even this number is almost twice the number of studies we included in total. Summing up, we did not find any cogent indication of publication bias.

Control for Quality-Related Bias

The relationship between study quality and outcome of LTPP was analyzed by calculating Pearson correlations between the total score of the Jadad scale and the within-group effect sizes for the different outcome domains. Again, only post-treatment effect sizes could be examined due to the small number of studies providing follow-up data. All correlations were nonsignificant ($p>0.28$).

Control for Influence of Design Factors

To test for possible differences between efficacy studies (RCTs) and effectiveness (observational) studies, we calculated point biserial correlations between type of study design (RCT=1, effectiveness studies=0) and the within-group effect size of LTPP at post-test. All correlations were nonsignificant ($p>0.36$). Observational studies, thus, did not yield effect sizes significantly different from those of RCTs. This was the same for the comparison of controlled (including RCTs and studies using quasi-experimental control groups, cp. Table 3.1) and uncontrolled studies ($p>0.22$).

Table 3.2 Effect sizes (d) of long-term psychodynamic psychotherapy (LTPP) alone across various mental disorders (16 studies)

Outcome domain	Number of LTPP conditions (k) ^a	Within-group effect size d (95% CI)	Significance (two-tailed test)
<i>Pre-therapy to post-therapy changes</i>			
Overall effectiveness	20	1.03 (0.84–1.22)	<0.001
Target problems	14	1.54 (1.20–1.87)	<0.001
Psychiatric symptoms	17	0.91 (0.72–1.11)	<0.001
Personality functioning	7	0.78 (0.30–1.26)	0.005
Social functioning	14	0.81 (0.60–1.03)	<0.001
<i>Pre-therapy to follow-up changes</i>			
Overall effectiveness	8	1.25 (1.00–1.49)	<0.001
Target problems	6	1.98 (1.37–2.59)	<0.001
Psychiatric symptoms	6	1.06 (0.64–1.47)	0.001
Personality functioning	3	1.02 (–0.99–3.03)	^b
Social functioning	7	0.91 (0.49–1.34)	0.003

d : Hedges' d (within-group effect size)

95% CI: 95% confidence interval

^aAs some studies included more than one form of LTPP, the number of treatment conditions in some cases differs from the number of studies

^bNo tests of significance were performed due to the small number of studies providing data

Based on these findings, data from RCTs and observational studies could be combined in the further analyses of effect sizes of LTPP (see total score in Fig. 3.1).

Control for Effects of Concomitant Medication

In seven out of the 23 studies, some patients received concomitant psychotropic medication on an individual basis. To control for possible distortion related to medication, we compared the effect sizes of LTPP alone, i.e., without any concomitant medication (16 studies [48, 49, 53, 54, 56, 59, 62–65, 67–71, 73]), and LTPP combined with psychotropic medication (seven studies [12, 14, 34, 51, 55, 60, 72]) by calculating the point biserial correlation between effect size and treatment condition (LTPP alone vs. LTPP combined with psychotropic medication, 0/1). For target problems, the correlation was significant ($r_p = -0.45$, $p = 0.05$). This means that studies where concomitant psychotropic medication was allowed as needed yielded significantly smaller pre–post effect sizes for LTPP than studies where the LTPP alone was examined. Therefore, to avoid bias in estimates of the effects of LTPP, we decided to include only studies of LTPP alone without concomitant psychotropic medication in the following subgroup analyses.

Effects of LTPP in Patients with Various Mental Disorders

In the first instance, we assessed the outcome of LTPP alone, i.e., without concomitant psychotropic medication, by examining the effect sizes across all mental disorders treated in the 16 studies of LTPP alone [48, 49, 53, 54, 56, 59, 62–65, 67–71, 73]. Four studies included two treatment conditions of LTPP [49, 54, 56, 69]. In all, 20 treatment conditions of LTPP encompassing 641 patients could be evaluated. The within-group effect sizes of LTPP are presented in Table 3.2. The results show that LTPP yielded significant pre–post effects that were stable at follow-up for all outcome areas. Except for the pre–post outcome in personality functioning ($d = 0.78$), all effect sizes both at termination and follow-up exceeded 0.80 indicating large effects. For overall outcome, the comparison of the

Table 3.3 Effect sizes (*d*) of long-term psychodynamic psychotherapy (LTPP) alone in patients with personality disorders (five studies)

Outcome domain	Number of LTPP conditions (<i>k</i>) ^a	Within-group effect size <i>d</i> (95% CI)	Significance (two-tailed test)
<i>Pre-therapy to post-therapy changes</i>			
Overall effectiveness	6	1.16 (0.82–1.50)	<0.001
Target problems	6	1.58 (0.80–2.35)	0.004
Psychiatric symptoms	5	0.89 (0.49–1.29)	0.002
Personality functioning	1	0.95 (–)	^b
Social functioning	5	0.82 (0.39–1.25)	0.007
<i>Pre-therapy to follow-up changes</i>			
Overall effectiveness	2	1.21 (–1.62–4.03)	^b
Target problems	2	1.65 (–5.90–9.19)	^b
Psychiatric symptoms	2	0.92 (–1.81–3.65)	^b
Personality functioning	1	1.04 (–)	^b
Social functioning	1	1.13 (–)	^b

d: Hedges' *d* (within-group effect size)

95% CI: 95% confidence interval

^aAs some studies included more than one form of LTPP, the number of treatment conditions in some cases differs from the number of studies

^bNo tests of significance were performed due to the small number of studies providing data

post-treatment effect sizes with those at follow-up revealed a significant increase until follow-up ($t=3.76$, $p=0.007$, $k=8$).

Effects of LTPP in Patients with Personality Disorders

Patients with personality disorders were included in ten studies [12, 14, 49, 51, 55, 62, 65, 70–72]. Five of these studies examined the effects of LTPP alone [49, 62, 65, 70, 71]. One study included two different groups of personality disorders (avoidant and obsessive–compulsive personality disorder) treated with LTPP [49]. In all, six treatment conditions of LTPP encompassing 134 patients with personality disorders were evaluated. Results showed that LTPP alone yielded significant and large effect sizes ($d>0.80$) for overall outcome, target problems, general psychiatric symptoms, and social functioning at post-treatment assessment (Table 3.3). Large effect sizes were also observed for personality functioning at post-test and for all outcome areas at follow-up. However, as the number of studies was too small ($k<5$), we did not perform tests of significance for these findings. For the same reason, we did not perform any tests of significance for follow-up data in all of the following analyses.

Effects of LTPP in Patients with Chronic Mental Disorders

Patients with chronic mental disorders (defined as lasting at least a year) were treated with LTPP alone in seven studies [48, 53, 54, 59, 63, 68, 69]. Two studies included two different treatment conditions of LTPP [54, 69]. Thus, we could consider the data from nine LTPP treatment conditions encompassing 334 patients suffering from chronic mental disorders in our meta-analysis. According to the results, LTPP alone yielded significant and large effect sizes for overall outcome, general psychiatric symptoms, personality functioning, and social functioning at post-treatment assessment (Table 3.4). Irrespective of statistical significance, all effect sizes both at termination and follow-up were exceeding 0.80 indicating large effects in all outcome areas again.

Table 3.4 Effect sizes (*d*) of long-term psychodynamic psychotherapy (LTPP) alone in patients with chronic mental disorders (seven studies)

Outcome domain	Number of LTPP conditions (<i>k</i>) ^a	Within-group effect size <i>d</i> (95% CI)	Significance (two-tailed test)
<i>Pre-therapy to post-therapy changes</i>			
Overall effectiveness	9	1.05 (0.61–1.48)	<0.001
Target problems	4	1.70 (0.40–3.00)	^b
Psychiatric symptoms	8	1.05 (0.69–1.41)	<0.001
Personality functioning	5	0.87 (0.18–1.56)	0.02
Social functioning	6	0.88 (0.40–1.37)	0.004
<i>Pre-therapy to follow-up changes</i>			
Overall effectiveness	3	1.36 (0.21–2.51)	^b
Target problems	1	2.45 (–)	^b
Psychiatric symptoms	3	1.32 (0.63–2.01)	^b
Personality functioning	1	1.79 (–)	^b
Social functioning	3	1.23 (–0.06–2.52)	^b

d: Hedges' *d* (within-group effect size)

95% CI: 95% confidence interval

^aAs some studies included more than one form of LTPP, the number of treatment conditions in some cases differs from the number of studies

^bNo tests of significance were performed due to the small number of studies providing data

Table 3.5 Effect sizes (*d*) of long-term psychodynamic psychotherapy (LTPP) alone in patients with multiple mental disorders (eight studies)

Outcome domain	Number of LTPP conditions (<i>k</i>) ^a	Within-group effect size <i>d</i> (95% CI)	Significance (two-tailed test)
<i>Pre-therapy to post-therapy changes</i>			
Overall effectiveness	11	1.09 (0.83–1.36)	<0.001
Target problems	8	1.62 (1.07–2.18)	<0.001
Psychiatric symptoms	11	0.98 (0.76–1.21)	<0.001
Personality functioning	3	0.96 (–0.52–2.44)	^b
Social functioning	9	0.94 (0.70–1.17)	<0.001
<i>Pre-therapy to follow-up changes</i>			
Overall effectiveness	7	1.28 (1.01–1.54)	<0.001
Target problems	5	1.84 (1.22–2.45)	0.002
Psychiatric symptoms	5	1.18 (0.81–1.55)	0.001
Personality functioning	2	1.43 (–3.32–6.18)	^b
Social functioning	6	1.01 (0.57–1.45)	0.002

d: Hedges' *d* (within-group effect size)

95% CI: 95% confidence interval

^aAs some studies included more than one form of LTPP, the number of treatment conditions in some cases differs from the number of studies

^bNo tests of significance were performed due to the small number of studies providing data

Effects of LTPP in Patients with Multiple Mental Disorders

The outcome of LTPP alone in patients with multiple mental disorders was evaluated on the basis of those studies in which two or more diagnoses of mental disorders were given to at least 50% of the patient sample. These requirements were met by eight studies [49, 54, 56, 59, 63, 65, 68, 71]. Three of these studies included two different treatment conditions of LTPP [49, 54, 56]. In all, 11 LTPP treatment conditions encompassing 349 patients could be considered in the analysis. Except for personality functioning, LTPP yielded significant pre–post effect sizes for all outcome domains. Again, all effect sizes including those at follow-up were exceeding 0.80 (Table 3.5).

Table 3.6 Effect sizes of long-term psychodynamic psychotherapy (LTPP) versus other methods of psychotherapy across various mental disorders (eight studies)

Outcome domain (pre-therapy to post-therapy changes)	Number of treatment conditions (LTPP/others) ^a	Within-group effect sizes d (95% CI)		Between-group effect size r_p	Significance (two-tailed test)
		LTPP	Others		
Overall effectiveness	8/12	0.95 (0.68–1.22)	0.49 (0.28–0.71)	0.60	0.005
Target problems	7/11	1.11 (0.67–1.52)	0.59 (0.27–0.90)	0.49	0.04
Psychiatric symptoms	6/8	0.74 (0.28–1.21)	0.54 (0.16–0.92)	0.29	0.30
Personality functioning	4/5	0.90 (0.08–1.72)	0.18 (–0.18–0.55)	0.76	0.02
Social functioning	6/7	0.86 (0.38–1.33)	0.43 (–0.15–1.02)	0.39	0.19

d : Hedges' d (within-group effect size)

95% CI: 95% confidence interval

r_p is the point biserial correlation between type of treatment (LTPP vs. other psychotherapies, 1/0) and the within-group effect sizes (d)

^aAs some studies included more than one form of LTPP, the number of treatment conditions in some cases differs from the number of studies

Effects of LTPP in Comparison to Those of Other Methods of Psychotherapy

Eight studies provided data for comparative analyses of LTPP versus other forms of psychotherapy [12, 14, 48, 53, 55, 62, 67, 71]. These studies examined the treatment of personality disorders (five studies), eating disorders (two studies), and heterogeneous disorders (one study; cp. Table 3.1). The psychotherapeutic treatments applied in the comparison groups included cognitive-analytic therapy (CAT; one study), cognitive therapy (CT; two studies), dialectical-behavioral therapy (DBT; one study), dynamic supportive therapy (DST; one study), family therapy (FT; one study), nutritional counseling (one study); short-term psychodynamic therapy (STPP; one study), and psychiatric treatment as usual (TAU; 4 studies, cp. Table 3.1).

In the eight studies included, the mean duration of LTPP was 53.41 weeks ($SD=30.92$, median: 52). The mean number of LTPP sessions was 102.57 ($SD=135.58$, median: 49). In the comparison groups, the mean treatment duration was 39.02 weeks ($SD=22.77$, median: 52) and the mean number of sessions was 32.58 ($SD=27.65$, median: 22). It is of note that it was *on average* that the duration was higher in the LTPP conditions. In the majority of comparative studies, however, treatment duration in the comparison groups was just as long as for LTPP (reflected by the identical median duration in both conditions). To examine the possible additional benefit of LTPP, we compared the within-group effects of LTPP with those of the comparison groups. Due to the small number of studies providing data for follow-up assessments, tests of significance were carried out only for the post-therapy data. As described in the methods section, we calculated point biserial correlations (r_p) between type of treatment (LTPP vs. other psychotherapies, 1/0) and the within-group effect sizes for the different outcome domains across all comparative treatment conditions as the between-group effect measure [36, 38]. According to Cohen, a point biserial correlation of 0.371 indicates a large effect size [36, p. 82].

In the first instance, we calculated the point biserial correlations across all the various mental disorders treated in the eight studies listed previously. This comparison included eight treatment conditions of LTPP (encompassing 175 patients) and 12 treatment conditions of other psychotherapeutic methods (257 patients). The point biserial correlations were significant for overall outcome, target problems, and personality functioning (Table 3.6). This means that LTPP yielded significantly larger pre–post effect sizes in the respective outcome domains than other forms of psychotherapy applied in the comparison groups. The significant between-group effect sizes were clearly above the value of 0.371 and could therefore be considered a large effect [36]. The between-group effect size for social functioning, though being large as well, did not reach significance due to the small number of studies.

Table 3.7 Effect sizes of long-term psychodynamic psychotherapy (LTPP) versus other methods of psychotherapy in complex mental disorders (seven studies)

Outcome domain (pre-therapy to post-therapy changes)	Number of treatment conditions (LTPP/others) ^a	Within-group effect sizes d (95% CI)		Between-group effect size r_p	Significance (two-tailed test)
		LTPP	Others		
Overall effectiveness	7/11	1.00 (0.71–1.30)	0.46 (0.24–0.69)	0.68	0.002
Target problems	6/10	1.05 (0.58–1.51)	0.46 (0.24–0.68)	0.69	0.003
Psychiatric symptoms	5/7	0.84 (0.31–1.36)	0.52 (0.06–0.97)	0.40	0.20
Personality functioning	3/4	1.16 (0.35–1.97)	0.13 (–0.33–0.59)	0.96	<0.0001
Social functioning	5/6	0.97 (0.48–1.46)	0.46 (–0.25–1.17)	0.45	0.17

d : Hedges' d (within-group effect size)

95% CI: 95% confidence interval

r_p is the point biserial correlation between type of treatment (LTPP vs. other psychotherapies, 1/0) and the within-group effect sizes (d)

^aAs some studies included more than one form of LTPP, the number of treatment conditions in some cases differs from the number of studies

In a second step, we repeated the comparative analyses focusing on those studies only that included complex mental disorders (i.e., personality disorders, chronic mental disorders, or multiple mental disorders). For this purpose, one study had to be excluded [67]. In the remaining seven studies, seven treatment conditions of LTPP (encompassing 155 patients) and 11 treatment conditions of other psychotherapeutic methods (236 patients) were included. Again, the point biserial correlation between treatment condition (LTPP vs. other psychotherapies) and within-group effect sizes was significant for overall outcome, target problems, and personality functioning (Table 3.7). For both psychiatric symptoms and social functioning, the between-group effect sizes were large as well, but did not reach significance. To specify the extent of differences in outcome of LTPP versus other psychotherapeutic methods, we transformed the point biserial correlations into between-group effect sizes in the form of a d statistic ([36], p. 22). The between-group effect sizes of $r_p = 0.68, 0.69$, and 0.96 , which we identified for overall outcome, target problems, and personality functioning, are equivalent to $d = 1.8, 1.9$, and 6.9 , respectively. It is of note, however, that our comparison of LTPP versus the other treatments considered treatment groups as the unit of analysis. Thus, our between-group effect sizes are not comparable to between-group effect sizes assessed by calculating the difference in outcome between two treatments for each single study since they refer to different units (i.e., groups of patients vs. individual patients). A between-group effect size of 1.8 , in our case, indicates that in the studies of LTPP, the mean within-group effect size for overall outcome differed from the mean within-group effect size of the control groups by 1.8 standard deviations (referring to the distribution of outcomes across treatment conditions). Since effect sizes can be transformed into percentiles [36, 76], this implies that, on average, LTPP showed higher treatment effects than 96% of the comparison treatments. The respective between-group effect size assessed in the more conventional way will be reported later when discussing the responses to our meta-analysis.

Impact of Treatment Dose and Duration on Outcome of LTPP

In the studies of LTPP alone (i.e., without concomitant psychotropic medication), the number of sessions was significantly correlated with pre–post effect sizes in target problems and general psychiatric symptoms (Spearman $r_s = 0.62, p = 0.03, k = 12$; $r_s = 0.54, p = 0.04, k = 15$, respectively). The correlations with overall outcome, changes in personality, and social functioning were not significant ($r_s = 0.29, p = 0.25, k = 17$; $r_s = 0.43, p = 0.40, k = 6$; $r_s = 0.11, p = 0.73, k = 12$). Regarding

duration of treatment, none of the correlations with outcome of LTPP alone reached significance ($p > 0.07$). Again, no correlations were calculated for follow-up due to the small number of studies providing follow-up data.

Impact of Patient and Therapist Variables on Outcome of LTPP

In supplemental sensitivity analyses, we checked the following variables for a possible impact on post-test outcomes of LTPP: age, sex, diagnoses (personality disorders, chronic or multiple mental disorders, depressive and anxiety disorders), global and specific clinical experience of therapists, use of treatment manuals, and specific training in the treatment model under study. To compensate for type I error inflation related to multiple testing (i.e., calculation of a total of 100 correlations), we adjusted the significance level for these analyses ($p = 0.05/100$ tests). All correlations with the outcome of LTPP were insignificant ($p > 0.04$).

Conclusions

Evidence suggests that many patients suffering from complex mental disorders (e.g., personality disorders) do not sufficiently benefit from short-term psychotherapy [9, 10]. Long-term psychotherapy may be helpful for these groups of patients but is associated with higher direct costs than short-term psychotherapy. Against this background, our meta-analysis aimed at examining the effectiveness of LTPP, both per se and in comparison to other methods of psychotherapy.

According to the results, LTPP yielded large and stable effects both across various mental disorders and in patients with complex mental disorders (defined as personality disorders, multiple mental disorders, and chronic mental disorders). For overall outcome, the effect sizes did even increase significantly after termination of treatment.

The comparison of RCTs versus observational studies revealed no significant differences in outcome, suggesting that the outcome data of the RCTs included in this meta-analysis are representative for clinical practice. On the other hand, the results also show that the data of the observational studies did not systematically over- or underestimate the effects of LTPP.

If compared to other methods of psychotherapy, which were predominantly less intensive or shorter term, LTPP proved to be significantly superior with regard to overall outcome, target problems, and personality functioning.

With regard to potential confounders, in this meta-analysis, the number of LTPP sessions was the only variable that was significantly correlated with improvements in both target problems and general psychiatric symptoms. Neither for the duration of LTPP nor for any other patient, therapist, or treatment variables, significant correlations with outcome could be identified.

The major limitations of this first meta-analysis on the effectiveness of LTPP may be seen in the number and diversity of studies included.

Regarding the limited number of outcome studies on LTPP in general and of efficacy studies in particular, additional studies would be desirable without any doubt. Further studies are particularly required to confirm the results and to allow for more refined analyses addressing the effects of LTPP both in specific disorders and in comparison to specific forms of therapies. To date, however, not enough studies are available. With a relatively small number of studies, it is of particular importance to test for possible sources of bias. In our analysis, we accounted for potential flaws due to heterogeneity of results, publication bias, study quality, design factors, and concomitant medication. In addition, according to the results of sensitivity analyses, the results presented in this meta-analysis showed to be robust across various patient, therapist, or treatment characteristics. In sum, we did not find any cogent indications for bias related to the variety of studies included.

Response to Meta-Analytic Evidence

Publication of the meta-analysis in the *Journal of the American Medical Association (JAMA)* was accompanied by a comprehensive editorial comment [77]. Besides discussing crucial aspects of the meta-analysis in particular and psychotherapy research in general, this editorial concluded that our meta-analysis “provides evidence about the effectiveness of long-term dynamic psychotherapy for patients with complex mental disorders who often do not respond adequately to short-term interventions” ([77], p. 1,589). Media coverage of our findings was predominantly complaisant (e.g. [78]). In the scientific community, however, response to the meta-analytic evidence was controversial. While in the camp of psychodynamic research and practice, the atmosphere was characterized both by enthusiasm and an open debate about the various aspects addressed by the meta-analysis, more critical voices could be heard from representatives of other psychotherapeutic orientations (mainly advocates of CBT). A collection of frequent critical comments has been published in several letters to the editors in the *Journal of the American Medical Association* [79–82].

First of all, some letters criticized our meta-analysis for having addressed an “unconventionally broad research question” ([80], p. 930) by including heterogeneous treatments, patient populations, measures, outcomes, and comparison conditions, but failed to articulate exactly how and why heterogeneity would affect the research results [79–81]. As we reported in the article, results were robust across diagnostic groups, outcome domains, and research design [23]. On the contrary, a broad perspective on meta-analysis may increase the generalizability and usefulness of results: both patients and therapists are better served by a reliable answer on whether there is any convincing evidence that LTTP as a therapeutic principle, or a class of treatments, is effective in general, than by any unreliable assertion that a particular form of LTTP may or may be not effective for a particular disorder if compared to a particular therapy [25].

Furthermore, all letters raised concerns about possible publication or study selection bias [79–82]. However, these concerns were purely speculative and not supported by evidence. We applied several methods to test for publication bias, but did not find any indication. In addition, two letters criticized the exclusion of one particular study [83]. However, this study, amongst others [84, 85], did not meet the inclusion criteria because the majority of patients was still in treatment at the time points when effect sizes were assessed by the authors of the original studies. In the respective study by Giesen-Bloo, for example, 19 of 42 patients (45%) were still in treatment (LTTP) when outcome was assessed, and only two patients had completed LTTP. In the comparison group 27 of 44 patients (61%) were still in treatment, and only six patients had completed the treatment [83]. Data from ongoing treatments, however, do not provide reliable estimates for treatment outcome at termination or follow-up, e.g., if patients received only half of the “dose” of treatment when outcome is assessed. By analogy, if one runner starts for a 100-m race and another one for a 1,000-m race, the time taken after 100 m will not be representative for the short-distance speed of the second runner. The runners will adapt their speed to the short versus long distance they are going to face. This is true for patients in psychotherapy as well [60]. Psychotherapy is not a drug that works equally under different conditions, but a psychosocial process.

Another crucial criticism addressed the methods applied to calculate effect sizes, particularly with regard to comparative analyses [80, 82]. As the number of controlled trials of LTTP was relatively small, we assessed within-group effect sizes as a universal outcome measure, which can be determined for both controlled and uncontrolled trials, throughout all studies. In the controlled studies, we found significantly larger within-group effect sizes in the LTTP conditions than in the control conditions. In order to quantify the extent of this difference, we transformed the point biserial correlations used for tests of significance into between-group effect sizes in form of d [36]. Since these effect sizes consider outcomes of treatment groups as the entity of analysis, they certainly are not identical to between-group effect sizes as they are usually assessed in individual studies based on

outcome of individual patients. Obviously, this specific characteristic of the between-group effect measures we used was ambiguous, something that we did not intend. In order to clarify this issue, we reported the corresponding between-group effect size assessed in the conventional way by calculating the difference between two competing treatments for each study in our reply [86]. For overall outcome, this between-group effect size (Hedges' d) was 0.65 ($p=0.026$). This effect size of 0.65 implies that, on average, patients treated by LTPP were better off than 75% of the patients in the control groups (with the distribution of individual patient outcomes as the reference base). As has correctly been pointed out in one letter, considering treatment groups rather than studies as the unit of analysis can reduce the effect of randomization [80]. This *may* weaken internal validity, but does *not necessarily* imply serious bias. There is considerable evidence that observational studies do not systematically overestimate the effects of psychotherapy [87]. Actually, the conventionally assessed between-group effect size of 0.65 reported previously confirms the superiority of LTPP in the controlled studies.

Some letters criticized the methodological quality of the controlled studies, e.g., missing data on treatment integrity [79]. However, all of the controlled studies of complex mental disorders used treatment manuals and ensured treatment integrity by supervision, video-recordings of sessions, and ratings of adherence and competence. Although we carried out comprehensive tests for sources of quality-related bias, we did not find any indications.

In addition, several allegations have been made concerning attributes of the comparison conditions [79, 81]. While it is not accurate that we did include wait list groups in the control conditions, it is true, however, that the control conditions included several treatment as usual (TAU) conditions, thus reducing the mean effect size of the alternative treatments. It is also true, however, that the control conditions included specific long-term psychotherapy (e.g., DBT) in turn increasing the mean effect of the alternative treatments. As noted earlier, it was on average that the duration of therapy was longer and the dose was more intensive in the LTPP conditions. Thus, we used the alternative treatments as an unspecific (mixed) control group including TAU and different established treatments. Consequently, we did not claim that LTPP is superior to any specific forms of established psychotherapy (e.g., DBT) in complex mental disorders, but to predominantly less intensive or shorter forms of psychotherapeutic interventions in general. We expect this to be true for other higher dose or long-term approaches of formal psychotherapy as well, e.g., of CBT. With regard to the hierarchy of evidence, our comparison of LTPP with a mixed group including TAU and specific psychotherapy is stricter than a comparison with wait list groups, placebo therapy, or TAU, but less strict than a comparison with established treatments [1, 88]. Controlling for the common factors of psychotherapy (e.g., attention, expectation for improvement, empathy), our comparison of LTPP with other treatments is "specific" as defined by Chambless and Hollon, allowing to conclude that the superiority of LTPP is due to specific factors of LTPP [88].

Eventually, apart from some comments that obviously arose from misconceptions of our analyses, one letter listed selective results of individual studies in which the effect sizes of the control groups, at least for some measures, were larger than those of LTPP [79]. The role of meta-analyses, however, is to synthesize results across individual studies to arrive at more general conclusions. This is why meta-analysis was developed, and why it is superior to narrative (nonquantitative) literature reviews where it is also too easy to emphasize cherry picked studies that support one's preferred outcomes and to downplay those that do not. The results of a meta-analysis may differ from that of individual studies.

Although we cannot respond to every single concern addressed in the letters, it can be stated that none identified an issue that would have affected the overall conclusions of the meta-analysis. Certainly, the existing literature on LTPP is incomplete and further research is needed. However, our study answered the questions it was designed to address, and its main conclusion stands: *Based on the scientific evidence available to date*, LTPP is effective and appears superior to less intensive or shorter-term therapies for complex mental disorders.

Résumé

As findings emerged from our meta-analysis on long-term psychodynamic psychotherapy (LTPP), we were aware that not all people would like them. The field of psychotherapy is rife with ideological bias, and it is an unfortunate but common practice to celebrate empirical evidence when it supports one's preferred treatment model and to attack the research methodology when it does not. Methodological criticism is always possible because there is no single correct way to conduct a meta-analysis, each approach has advantages and disadvantages, and not all methods can be applied simultaneously.

Nonetheless, we took all the critics seriously and tried to adapt our methodology wherever reasonable. In a first update of our meta-analysis, we take several points of criticism put forward against our 2008 meta-analysis into account, e.g., regarding the calculation of between-group effect sizes or of ITT analyses, alternative methods to control for possible publication bias, or the inclusion of insufficiently active control conditions [89]. According to the results, the original findings are thoroughly confirmed. Nonetheless, additional studies are required to further validate the results and to allow for more refined analyses.

References

1. Gabbard GO, Gunderson JG, Fonagy P. The place of psychoanalytic treatments within psychiatry. *Arch Gen Psychiatry*. 2002;59:505–10.
2. Kernberg OF. Psychoanalytic contributions to psychiatry. *Arch Gen Psychiatry*. 2002;59:497–8.
3. Fonagy P, Roth A, Higgitt A. Psychodynamic therapies, evidence-based practice and clinical wisdom. *Bull Menninger Clin*. 2005;69:1–58.
4. Leichsenring F. Comparative effects of short-term psychodynamic psychotherapy and cognitive-behavioral therapy in depression: a meta-analytic approach. *Clin Psychol Rev*. 2001;21:401–19.
5. Leichsenring F, Leibing E. The effectiveness of psychodynamic therapy and cognitive behavior therapy in the treatment of personality disorders: a meta-analysis. *Am J Psychiatry*. 2003;160:1223–32.
6. Leichsenring F, Rabung S, Leibing E. The efficacy of short-term psychodynamic psychotherapy in specific psychiatric disorders: a meta-analysis. *Arch Gen Psychiatry*. 2004;61:1208–16.
7. Leichsenring F. Are psychoanalytic and psychodynamic psychotherapies effective? A review of empirical data. *Int J Psychoanal*. 2005;86:1–26.
8. Gunderson J, Gabbard G. Making the case for psychoanalytic therapies in the current psychiatric environment. *J Am Psychoanal Assoc*. 1999;47:679–704.
9. Kopta S, Howard K, Lowry J, Beutler L. Patterns of symptomatic recovery in psychotherapy. *J Consult Clin Psychol*. 1994;62:1009–16.
10. Perry J, Banon E, Floriana I. Effectiveness of psychotherapy for personality disorders. *Am J Psychiatry*. 1999;156:1312–21.
11. Shea MT, Elkin I, Imber SD, et al. Course of depressive symptoms over follow-up. Findings from the National Institute of Mental Health Treatment of Depression Collaborative Research Program. *Arch Gen Psychiatry*. Oct 1992;49:782–7.
12. Bateman A, Fonagy P. The effectiveness of partial hospitalization in the treatment of borderline personality disorder, a randomized controlled trial. *Am J Psychiatry*. 1999;156:1563–9.
13. Bateman A, Fonagy P. Treatment of borderline personality disorder with psychoanalytically oriented partial hospitalization: an 18-month follow-up. *Am J Psychiatry*. 2001;158:36–42.
14. Clarkin JF, Levy KN, Lenzenweger MF, Kernberg OF. Evaluating three treatments for borderline personality disorder: a multiwave study. *Am J Psychiatry*. 2007;164:922–8.
15. Linehan MM, Tutek DA, Heard HL, Armstrong HE. Interpersonal outcome of cognitive behavioral treatment for chronically suicidal borderline patients. *Am J Psychiatry*. 1994;151:1771–6.
16. Linehan MM, Comtois KA, Murray AM, et al. Two-year randomized trial+follow-up of dialectical behavior therapy vs. therapy by experts for suicidal behaviors and borderline personality disorder. *Arch Gen Psychiatry*. 2006;63:757–66.
17. Lenzenweger MF, Lane MC, Loranger AW, Kessler RC. DSM-IV personality disorders in the National Comorbidity Survey Replication. *Biol Psychiatry*. 2007;62:553–4.

18. Kantojärvi L, Veijola J, Laksy K, et al. Co-occurrence of personality disorders with mood, anxiety, and substance abuse disorders in a young adult population. *J Pers Disord.* 2006;20:102–12.
19. Grant BF, Hasin DS, Stinson FS, et al. Prevalence correlates and disability of personality disorders in the United States. Results from the national epidemiologic survey on alcohol and related conditions. *J Clin Psychiatry.* 2004;65:948–58.
20. Olfson M, Fireman B, Weissman MM, et al. Mental disorders and disability among patients in a primary care group practice. *Am J Psychiatry.* 1997;154:1734–40.
21. Ormel J, VonKorff M, Ustun TB, Pini S, Korten A, Oldehinkel T. Common mental disorders and disability across cultures. Results from the WHO collaborative study on psychological problems in general health care. *JAMA.* 1994;272:1741–8.
22. Lamb WK. A meta-analysis of outcome studies in long-term psychodynamic psychotherapy and psychoanalysis. Dissertation. Ann Arbor: ProQuest; 2004.
23. Leichsenring F, Rabung S. The effectiveness of long-term psychodynamic psychotherapy: a meta-analysis. *JAMA.* 2008;300:1551–64.
24. Thombs BD, Bassel M, Jewett LR, et al. Analyzing effectiveness of long-term psychodynamic psychotherapy (letters and reply). *JAMA.* 2009;301:930–3.
25. Gotzsche PC. Why we need a broad perspective on meta-analysis. *Br Med J.* 2000;21:585–6.
26. Moher D, Cook DJ, Eastwood S, Olkin I, Rennie D, Stroup DF. Improving the quality of reports of meta-analyses of randomised controlled trials: the QUOROM statement. *Lancet.* 1999;354:1896–900.
27. Stroup DF, Berlin JA, Morton SC, et al. Meta-analysis of observational studies in epidemiology: a proposal for reporting. *JAMA.* 2000;283:2008–12.
28. Gabbard GO. Long-term psychodynamic psychotherapy: a basic text. Washington, DC: American Psychiatric Publishing, Inc.; 2004.
29. Crits-Christoph P, Barber JP. Long-term psychotherapy. In: Ingram RE, Snyder CR, editors. *Handbook of psychological change: psychotherapy processes & practices for the 21st century.* Hoboken: Wiley; 2000. p. 455–73.
30. Berlin JA. Does blinding of readers affect the results of meta-analyses? *Lancet.* 1997;350:185–6.
31. Battle CC, Imber SD, Hoehn-Saric R, Nash ER, Frank JD. Target complaints as criteria of improvement. *Am J Psychother.* 1966;20:184–92.
32. Derogatis L. The SCL-90 manual I: scoring, administration and procedures for the SCL-90-R. Baltimore: Clinical Psychometric Research; 1977.
33. Bond M, Gardner S, Christian J, Sigal J. Empirical study of self-rated defense styles. *Arch Gen Psychiatry.* 1983;40:333–8.
34. Bond M, Perry JC. Long-term changes in defense styles with psychodynamic psychotherapy for depressive, anxiety, and personality disorders. *Am J Psychiatry.* 2004;161:1665–71.
35. Weissman MM, Bothwell S. Assessment of social adjustment by patient self-report. *Arch Gen Psychiatry.* 1976;33:1111–5.
36. Cohen J. *Statistical power analysis for the behavioral sciences.* Hillsdale: Lawrence Erlbaum; 1988.
37. Hedges LV. Distribution theory for Glass's estimator for effect size and related estimators. *J Educ Stat.* 1981;6:107–28.
38. Rosenthal R. *Meta-analytic procedures for social research: applied social research methods.* Newbury Park: Sage; 1991.
39. Hedges LV, Olkin I. *Statistical methods for meta-analysis.* New York: Academic; 1985.
40. Huedo-Medina TB, Sanchez-Meca J, Botella J, Marin-Martinez F. Assessing heterogeneity in meta-analysis: Q statistic or I^2 index. *Psychol Methods.* 2006;11:193–206.
41. Hedges LV, Vevea JL. Fixed- and random-effects models in meta-analysis. *Psychol Methods.* 1998;3:486–504.
42. Quintana SM, Minami T. Guidelines for meta-analyses of counseling psychology research. *J Couns Psychol.* 2006;34:839–77.
43. Rosenthal R. The “file drawer problem” and tolerance for null results. *Psychol Bull.* 1979;86:638–41.
44. Begg CB, Mazumdar M. Operating characteristics of a rank correlation test for publication bias. *Biometrics.* 1994;50(4):1088–101.
45. SPSS Inc. *SPSS 15.0 command syntax reference.* Chicago: SPSS Inc.; 2006.
46. Rosenberg MS, Adams DC, Gurevitch J. *MetaWin: statistical software for meta-analysis.* Version 2.0. Sunderland: Sinauer Associates; 1999.
47. Jadad AR, Moore RA, Carrol D, et al. Assessing the quality of reports of randomized clinical trials: is blinding necessary? *Control Clin Trials.* 1996;17:1–12.
48. Bachar E, Latzer Y, Kreitler S, Berry EM. Empirical comparison of two psychological therapies. Self psychology and cognitive orientation in the treatment of anorexia and bulimia. *J Psychother Pract Res.* 1999;8:115–28.
49. Barber JP, Morse JQ, Krakauer ID, Chittams J, Crits-Christoph K. Change in obsessive-compulsive and avoidant personality disorders following time-limited supportive–expressive therapy. *Am Psychol.* 1997;34:133–43.
50. Bond M, Perry JC. Psychotropic medication use, personality disorder and improvement in long-term dynamic psychotherapy. *J Nerv Ment Disord.* 2006;194:21–6.

51. Clarkin JF, Foelsch PA, Levy KN, Hull JW, Delaney MSW, Kernberg OF. The development of a psychodynamic treatment for patients with borderline personality disorder: a preliminary study of behavioral change. *J Pers Disord.* 2001;15(6):487–95.
52. Levy KN, Meehan KB, Kelly KM, et al. Change in attachment patterns and reflective function in a randomized control trial of transference-focused psychotherapy for borderline personality disorder. *J Consult Clin Psychol.* 2006;74:1027–40.
53. Dare C, Eisler I, Russell G, Treasure J, Dodge L. Psychological therapies for adults with anorexia nervosa: randomised controlled trial of out-patient treatments. *Br J Psychiatry.* 2001;178:216–21.
54. Grande T, Dilg R, Jakobsen T, et al. Differential effects of two forms of psychoanalytic therapy: results of the Heidelberg–Berlin study. *Psychother Res.* 2006;16(4):470–85.
55. Gregory R, Chlebowski S, Kang D, Remen AL, Soderberg MG, Stepkovitch J, et al. A controlled trial of psychodynamic psychotherapy for co-occurring borderline personality disorder and alcohol use disorder. *Psychother Theor Res Pract Train.* 2008;45:28–41.
56. Høglend P, Amlo S, Marble A, et al. Analysis of the patient–therapist relationship in dynamic psychotherapy: an experimental study of transference interpretations. *Am J Psychiatry.* 2006;163:1739–46.
57. Høglend P, Bogwald KJ, Amlo S, Marble A, Ulberg R, Sjaastad M, et al. Transference interpretations in dynamic psychotherapy: do they really yield sustained effects? *Am J Psychiatry.* 2008;165:763–71.
58. Huber D, Klug G, von Rad M. Die Münchner-Prozess-Outcome-Studie: Ein Vergleich zwischen Psychoanalysen und psychodynamischen Psychotherapien unter besonderer Berücksichtigung therapiespezifischer Ergebnisse (The Munich process-outcome study. A comparison between psychoanalyses and psychotherapy). In: Stühr U, Beutel M, editors. *Langzeit- Psychotherapie. Perspektiven für Therapeuten und Wissenschaftler.* Stuttgart: Kohlhammer; 2001. p. 260–70.
59. Huber D, Klug G. Munich psychotherapy study (mps): the effectiveness of psychoanalytic longterm psychotherapy for depression. In: Society for Psychotherapy Research, editor. *Book of abstracts. From research to practice.* Ulm: Ulmer Textbank; 2006. p. 154.
60. Knekt P, Lindfors O, Harkanen T, et al. Randomized trial on the effectiveness of long-and short-term psychodynamic psychotherapy and solution-focused therapy on psychiatric symptoms during a 3-year follow-up. *Psychol Med.* 2008;38:689–703.
61. Knekt P, Lindfors O, Laaksonen MA, et al. Effectiveness of short-term and long-term psychotherapy on work ability and functional capacity – a randomized clinical trial on depressive and anxiety disorders. *J Affect Disord.* 2008;107:95–106.
62. Korner A, Gerull F, Meares R, Stevenson J. Borderline personality disorder treated with the conversational model: a replication study. *Compr Psychiatry.* 2006;47:406–11.
63. Leichsenring F, Biskup J, Kreische R, Staats H. The effectiveness of psychoanalytic therapy. First results of the Göttingen study of psychoanalytic and psychodynamic therapy. *Int J Psychoanal.* 2005;86:433–55.
64. Luborsky L, Stuart J, Friedman S, et al. The Penn psychoanalytic treatment collection: a set of complete and recorded psychoanalyses as a research resource. *J Am Psychoanal Assoc.* 2001;49:217–33.
65. Monsen J, Odland T, Faugli A, Daae E, Eilertsen DE. Personality disorders and psychosocial changes after intensive psychotherapy: a prospective follow-up study of an outpatient psychotherapy project, 5 years after end of treatment. *Scand J Psychol.* 1995;36:256–68.
66. Monsen J, Odland T, Faugli A, Daae E, Eilertsen D. Personality disorders: changes and stability after intensive psychotherapy focusing on affect consciousness. *Psychother Res.* 1995;5:33–48.
67. Piper WE, Debbane EG, Bienvenu JP, Garant J. A comparative study of four forms of psychotherapy. *J Consult Clin Psychol.* 1984;52(2):268–79.
68. Rudolf G, Manz R, Öri C. Ergebnisse psychoanalytischer Therapien (Outcome of psychoanalytic therapies). *Z Psychosom Med Psychoanal.* 1994;40(11):25–40.
69. Sandell R, Blomberg J, Lazar A, Carlsson J, Broberg J, Schubert J. Varieties of long-term outcome among patients in psychoanalysis and long-term psychotherapy: a review of findings in the Stockholm outcome of psychoanalysis and psychotherapy project (STOPPP). *Int J Psychoanal.* 2000;82:921–42.
70. Stevenson J, Meares R. An outcome study of psychotherapy for patients with borderline personality disorder. *Am J Psychiatry.* 1992;149:358–62.
71. Svartberg M, Stiles T, Seltzer MH. Randomized, controlled trial of the effectiveness of short-term dynamic psychotherapy and cognitive therapy for Cluster C personality disorders. *Am J Psychiatry.* 2004;161:810–7.
72. Vinnars B, Barber JP, Noren K, Gallop R, Weinryb RM. Manualized supportive-expressive psychotherapy versus nonmanualized community-delivered psychodynamic therapy for patients with personality disorders: bridging efficacy and effectiveness. *Am J Psychiatry.* 2005;162:1933–40.
73. Wilczek A, Barber JP, Gustavsson JP, Asberg M, Weinryb RM. Change after long-term psychoanalytic psychotherapy. *J Am Psychoanal Assoc.* 2004;52:1163–84.
74. Higgins JP, Thompson SG, Deeks JJ, Altman DG. Measuring inconsistency in meta-analyses. *Br Med J.* 2003;327:557–60.

75. Begg C. Publication bias. In: Cooper H, Hedges LV, editors. *The handbook of research synthesis*. New York: Russel Sage Foundation; 1995. p. 399–409.
76. Roth A, Fonagy P. *What works for whom: a critical review of psychotherapy research*. 2nd ed. New York: Guilford Press; 2005.
77. Glass RM. Psychodynamic psychotherapy and research evidence. Bambi survives Godzilla? *JAMA*. 2008;300:1587–9.
78. Carey B. Psychoanalytic therapy wins backing. Though endangered as passé, it can be effective, a study finds. *The New York Times*: A18; 2008.
79. Beck AT, Bhar SS. Analyzing effectiveness of long-term psychodynamic psychotherapy (letter to the editor). *JAMA*. 2009;301:931.
80. Kriston L, Hölzel L, Härter M. Analyzing effectiveness of long-term psychodynamic psychotherapy (letter to the editor). *JAMA*. 2009;301:930–1.
81. Roepke S, Renneberg B. Analyzing effectiveness of long-term psychodynamic psychotherapy (letter to the editor). *JAMA*. 2009;301:931–2.
82. Thombs BD, Bassel M, Jewett LR. Analyzing effectiveness of long-term psychodynamic psychotherapy (letter to the editor). *JAMA*. 2009;301:930.
83. Giesen-Bloo J, van Dyck R, Spinhoven P, et al. Outpatient psychotherapy for borderline personality disorder: randomized trial of schema-focused therapy vs transference-focused psychotherapy. *Arch Gen Psychiatry*. 2006;63:649–58.
84. Brockmann J, Schlüter T, Eckert J. Langzeitwirkungen psychoanalytischer und verhaltenstherapeutischer Langzeittherapien (Long-term outcome of long-term psychoanalytic and behavioral long-term therapy). *Psychotherapeutics*. 2006;51:15–25.
85. Puschner B, Kraft S, Kächele H, Kordy H. Course of improvement over 2 years in psychoanalytic and psychodynamic outpatient psychotherapy. *Psychol Psychother Theor Res Pract*. 2007;80:51–68.
86. Leichsenring F, Rabung S. Analyzing effectiveness of long-term psychodynamic psychotherapy (letter in reply). *JAMA*. 2009;301:932–3.
87. Shadish WR, Matt G, Navarro AM, Phillips G. The effects of psychological therapies under clinically representative conditions: a meta-analysis. *J Consult Clin Psychol*. 2000;126:512–29.
88. Chambles DL, Hollon SD. Defining empirically supported therapies. *J Consult Clin Psychol*. 1998;66:7–18.
89. Leichsenring F, Rabung S. Long-term psychodynamic psychotherapy in complex mental disorders: update of a meta-analysis. *Br J Psychiatry*. 2011;199:15–22.

Chapter 4

Must All Have Prizes? The Munich Psychotherapy Study

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Keywords Cognitive-behavior therapy • depression • long-term psychotherapy • one-year follow-up • psychoanalytic therapy • psychodynamic therapy

Increasing empirical evidence [1, 2] indicates that the complex mental disorders that patients present within private practice cannot be influenced sufficiently by the short-term psychotherapies examined so far [3–5]. This finding applies in particular to major depressive disorder with recurrent episodes, of which only 27–38% remained without recurrence after short-term therapies [6]. Consequently, in the last years, research has turned more and more to long-term therapies (for example [7–9]). In a first meta-analysis on psychodynamic long-term therapies, Leichsenring and Rabung [2] found evidence of generally high effectiveness for complex mental disorders. However, studies of the effectiveness of long-term psychotherapies for major depressive disorders as a diagnostically homogeneous group do not exist, so the question regarding the effectiveness of treatments for this disorder remains unanswered so far [10]. The treatment of major depressive disorder with its frequent recurrences [11] could be considered a paradigm for the effectiveness of long-term psychotherapies, as these treatments claim to reduce not only the present symptoms but also the vulnerability for new onsets, relapse, and recurrence. So far, it remains unknown which treatment type attains this preventive effect.

Until now, studies have predominantly used efficacy designs. They have tried to maximize internal validity through the use of experimental controls, the randomized allocation of diagnostically homogeneous groups, and the delivery of manualized therapies supported by tests of

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adherence. However, these methodological guidelines were developed studying short-term psychotherapies and cannot simply be applied to the study of long-term psychotherapies. Furthermore, the pendulum in psychotherapy research has swung back in recent years from the goal of fulfilling criteria of internal validity to that of fulfilling criteria of external validity (e.g. [12]). In order to obtain representative results relevant to health service research, more interest has been directed to “real-world” therapies with “real-world” patients, studied in research designs that are close to the conditions in psychotherapy practices. Research has thus returned to the ideal of effectiveness studies once again.

The Munich Psychotherapy Study (MPS) is a comparative process-outcome study of three therapeutic approaches: psychoanalytic, psychodynamic, and cognitive-behavioral. Using a quasi-experimental design, defined as “a design in which the conditions of true experiments are approximated” [13], this study attempts to find a balance between the demands for internal and external validity while providing an answer to these research questions. The design tries to approximate the demands for external validity by studying non-manualized and representative psychotherapies conducted by experienced psychotherapists under the conditions of day-to-day practice. All patients were diagnosed with a primary depressive disorder, forming a diagnostically homogeneous sample. Patients were randomized to the psychoanalytic and psychodynamic treatment arms, hence fulfilling important criteria for internal validity, and later on patients were allocated preferably to the cognitive-behavioral treatment arm in order to fill up this group. The effectiveness of these three psychotherapeutic approaches will be examined on a symptomatic, an interpersonal, and an intrapsychic level, and the stability of these effects will be examined in particular.

Method

This comparative process-outcome study is based on a prospective, partly randomized quasi-experimental design with a 1-year, 2-year, and 3-year follow-up. Experimental groups are: psychoanalytic therapy, psychodynamic therapy, and cognitive-behavioral therapy. The study was performed at the Department for Psychosomatic Medicine and Psychotherapy, Technische Universitaet Muenchen (Germany), as part of an ongoing project begun in 1995. Patients seeking treatment for unipolar, single, or recurrent, depression and for double depression [14] (ICD-10 F 32/F33 and F 34.1) who fulfilled the inclusion criteria were asked to participate in the study. All subjects were informed extensively about the purpose and course of the study, and they gave their written informed consent to be included in the study. The study protocol was approved by the Ethics Committee of the University Hospital of the Technische Universitaet Muenchen. To control for researcher allegiance to some extent, the study group consisted from the very beginning of two psychoanalytic/psychodynamic therapists and two cognitive-behavioral therapists who all were involved in designing and implementing the study.¹ Inclusion criteria required subjects to be between 20 and 50 years old and to have a primary ICD-10 diagnosis of a moderate or severe episode of major depressive disorder (F 32) or recurrent disorder (F 33) or of a double depression (F 32/F 33 and F 34.1). There could be no contraindication for one of the three treatments, no psychotherapeutic treatment for the last 2 years, and no anti-depressant medication 4 weeks prior to treatment.

Exclusion criteria were: depression in connection with bipolar affective disorder, schizophrenia, severe somatic illness or somatic diseases of the brain, alcohol or substance dependence, acute suicidal tendencies.

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Participants

During recruitment stage, 150 patients who applied to the outpatient clinic for a consultation with depressive symptoms got an intake interview after a brief telephone screening. Thirty-one patients were excluded because they did not fulfill the inclusion criteria, were not motivated enough, or did not get reimbursement from their insurance companies. One hundred and nineteen patients were allocated to the experimental groups. Seven of them did not contact the therapist, and 12 did not enter into a therapy contract, thus 16% of the sample did not start psychotherapy. In this way, 100 patients (35 of the psychoanalytic group, 31 of the psychodynamic group, and 34 of the cognitive-behavioral group) were included in the study. They were followed-up even when they did not terminate treatment. During the course of therapy, no patient of the psychoanalytic group, one patient of the psychodynamic group, and three patients of the cognitive-behavioral group dropped out of the study during therapy, and during follow-up, two patients of the psychoanalytic group, no patient of the psychodynamic group, and no patient of the cognitive-behavioral group dropped out. All in all, 6% dropped-out of the study between beginning of therapy and end of follow-up. This unusually low attrition rate [15] can be explained by the intense contact between the patients and the external investigators of the study center at all measurement points, and the patients' high satisfaction with the treatment.

Assessments and Procedures

See the procedural plan in Table 4.1 for an overview of the sequence of the study. Every patient who was referred to the Department for Psychosomatic Medicine and Psychotherapy for a consultation, who met the inclusion criteria, and who gave informed consent got three clinical intake interviews

Table 4.1 Procedural plan of the study (see text for abbreviations of the instruments)

<i>Pretreatment measurement</i>	<i>External investigator 1 and patient:</i> intake interview, ICD-10/DSM-IV diagnosis, BDI (>16) Board of three experienced therapists: decision on patient's inclusion in the study with randomized allotment <i>External investigator 1 and patient:</i> SPC interview; informed consent <i>Patient:</i> self-report questionnaires: BDI, SCL-90-R, IIP, FKBS, F-SozU, FLZ <i>External investigator 1 and patient:</i> assessment of individual goals (GAS) Referral to therapist <i>Therapist:</i> documentation of diagnosis, psychodynamic hypothesis, level of personality organization, treatment goals, prognosis, HAQ-T
<i>Process measurement</i>	Audio-recording of every session <i>Patient,</i> every 6 months: self-report questionnaires: BDI, SCL-90-R, IIP, GAS, and HAQ-P <i>Therapist:</i> retro-report after every session; Periodical Rating Scale for psychoanalytic treatment and HAQ-T every 6 months
<i>Post-treatment measurement</i>	<i>External investigator 2</i> ("blind" for applied therapy) <i>and patient:</i> post-treatment interview, SPC interview, life-events checklist, ICD-10/DSM-IV diagnosis <i>Patient:</i> self-report questionnaires: BDI, SCL-90-R, IIP, FKBS, F-SozU, FLZ, GAS, HAQ-P, VEV <i>Therapist:</i> Periodical Rating Scale for psychoanalytic treatment and HAQ-T, assessment of termination of treatment
<i>Follow-up measurement (1, 2, 3 years)</i>	<i>External investigator 2 and patient:</i> follow-up interview, SPC interview, life-events checklist, ICD-10/DSM-IV diagnosis <i>Patient:</i> self-report questionnaires: BDI, SCL-90-R, IIP, FKBS, F-SozU, FLZ, GAS, VEV

that were audio-recorded. The material of the first session of the intake interview was the basis for two psychiatrists and experienced psychotherapists to diagnose consensually the type of depressive disorder applying the ICD-10/DSM-IV checklist [16, 17]. In the second session, the external investigator 1, a psychiatrist and experienced psychoanalytic psychotherapist or a clinical psychologist in an advanced state of cognitive-behavioral training interviewed the patient with a semi-structured interview to get the necessary information to score the Scales of Psychological Capacities (SPC [18]). The SPC is an expert-rating measure to assess the dispositions constituting the intrapsychic basis of interpersonal behavior and the psychological resources needed to achieve adaptive functioning and life satisfaction. Taken together, they comprise the degree of adaptive and maladaptive, stable personality integration, and functioning. The assessment is based on a 1-h clinical intake interview together with an one to one-and-a-half hour semi-structured SPC interview; for the rating procedure an extensive manual is available. The application of the SPC requires a rater training to reach high agreement with a calibrated set of judgments of expert judges. Different research groups [19–24] proved independently the psychometric qualities of the instrument. Self-report questionnaires were handed out to the patient, and he/she signed the informed consent. In the third session, the external investigator 1 and the patient formulated and assessed the individual goals the patient wanted to achieve during the therapy (Goal Attainment Scaling GAS [25, 26]). Afterwards, the patient was assigned to one of the experimental groups rendering the external investigator 1 “blind” for the therapeutic modality during pretreatment measurement.

A board of two experienced psychoanalytic and psychodynamic psychotherapists and, after extending the study, an additional experienced cognitive-behavior therapist, all of whom remained the same, decided whether the patient could be assigned randomly to one of the experimental groups according to the criterion: all two (later three) treatments are possible. Due to the limited resources of the outpatient clinic, randomized allocation started with psychoanalytic and psychodynamic therapy, and cognitive-behavioral therapy was added later. Hence, there was a randomized allocation only to two treatment arms.

Outcome Measurement

The data came from three different perspectives of observation (multimodal): self-rating by patients, and assessment by therapists and by researchers (= external investigator 1 and 2). They covered different change dimensions (multidimensional): symptoms, individual treatment goals, interpersonal problems, and intrapsychic structure. A test battery of outcome measures adapted to the core battery suggested by the Society of Psychotherapy Research was applied to be comparable with other studies. The battery comprises standardized questionnaires as well as semi-structured interviews, both meeting commonly agreed upon standards of psychotherapy research (Table 4.1). A main goal of the study was to go beyond the measurement of symptoms; therefore, special instruments were administered to measure changes in interpersonal problems as well as intrapsychic changes, e.g. in structuralization, defense mechanisms, and the capacity to attain individual goals. These are the changes that go “beyond symptoms” to lead to a better capacity to work and to love [27, 28].

Measurement points for the outcome measures were pretreatment, post-treatment, and 1 year after termination of treatment. Two and three years after termination, outcome data were collected by mail; this is a work in progress which will be reported later.

At the pretreatment measurement point, the patient filled out the following self-report questionnaires: Symptom Check-List (SCL-90-R [29, 30]); Inventory of Interpersonal Problems, short version (IIP [31]); scale Turning against Self (TAS) of the Questionnaire for Coping Strategies (FKBS [32]); module “Health” of the Questionnaire of Life Satisfaction (FLZ [33]); Questionnaire of Social Support, short version (F-SozU [34]).

The therapist filled out the following: Helping Alliance Questionnaire HAQ-T, the therapist's form of the German version of the HAQ [35]; Therapeutic Attitude Questionnaire (ThAt [36–38]); Documentation Form including psychodynamic diagnoses, main defenses, level of personality organization, motivation, main psychodynamic hypotheses, treatment goals, and prognosis.

At post-treatment and at 1-year follow-up, the external investigator 2 explored the patient during a 2–3 h interview. The external investigators were postgraduate physicians or psychologists in an advanced state of their psychoanalytic or cognitive-behavioral therapeutic training and already working with patients for several years; there were regular trainings and reliability checks. They examined the patient's depressive and non-depressive symptoms (e.g., anxieties, psychosomatic symptoms, etc.) and his/her life situation (significant object relations, work situation, contact with family members, etc.) following a psychodynamic hypothesis. Based on this information, the external investigator 2 assessed the degree of structural change on a 7-point scale and explored the patient's feelings about being involved in a research study. Applying the ICDL checklist, the external investigator 2 gave an ICD-10/DSM-IV diagnosis, and completed a retrospective life-event checklist. Then the external investigator 2 interviewed the patient with the semi-structured SPC interview to get the necessary information to score the SPC scales. After having finished the interview, he evaluated transference and counter-transference aspects of the interview. The patient filled out the same questionnaires as at pretreatment in addition to the retrospective, self-report Questionnaire of Change in Experiencing and Behavior (VEV [39]). The therapist evaluated initiative and causes for termination of treatment, gave a global assessment of satisfaction with treatment and of the transference/counter-transference situation, and assessed the therapeutic alliance with the HAQ-T. In order to safeguard external investigator's "blindness," there was no inquiring into details of the therapy, and the patients were requested not to give any cues that could reveal the treatment modality.

At 1-year follow-up, external investigator 2 applied the same interview scheme extended by his evaluation of the course of depression in the last year following Frank et al.'s [40] definition of remission, relapse, and recurrence. The patient filled out the same questionnaires as at post-treatment measurement.

A priori, two outcome measures were chosen as primary outcome variables: the BDI on a symptomatic level and the SPC on an intrapsychic level. Secondary outcome measures are: Global Severity Index (GSI) of SCL-90-R; ICD-10/DSM-IV checklist (ICDL); IIP, GAS; TAS A/B of FKBS; FLZ; F-SozU and VEV.

Process Measurement

During the ongoing therapeutic process, neither the patient nor the therapist was contacted personally in order to minimize interference. Process was measured semi-annually by means of the HAQ, filled out by the patient (HAQ-P) and the therapist (HAQ-T), and an adaptation of the Periodical Rating Scale for Psychoanalytic Treatment [41], filled out by the therapist. The latter is comprised of questions about transference, resistance, analytic work, technique, setting, sessions relevant for the patient's change, counter-transference, capacity to deal with current life events and treatment parameters, and main unconscious themes. We were inspired by Greenberg and Pinsof's [42] seminal notion that the process can be described as a series of outcomes during the ongoing treatment, which they called "little o" (in contrast to "big O," the outcome after termination of treatment) and, therefore, we measured the process by means of the BDI, SCL-90-R, IIP, and GAS semi-annually. Additionally, every session was audio-taped and evaluated by a brief therapist's session retro-report consisting of the dominant theme of the session, special events, and an evaluation of the quality of the session on a 5-point scale, and, in the case of psychoanalytic and psychodynamic

therapies, work with the transference, and, in the case of cognitive-behavioral therapies, cognitive re-structuring. Statistical analyses of the process data are planned in the near future, so they cannot be reported here.

Therapists and Treatment

The 21 study therapists were trained at and graduated from approved institutes (no candidates). They were very experienced therapists in private practice; mean duration of psychotherapeutic practice was 15 years (range: 6–29 years); mean age was 47 years (range: 38–56 years); because of their expertise, we refrained from any kind of supervision or competence checks. Fourteen therapists delivered psychoanalytic and psychodynamic therapy and seven therapists delivered cognitive-behavioral therapy only. There was no significant difference in training, expertise, or experience between the three groups. Nobody was asked to apply a therapeutic modality of which he/she was not convinced; therefore, the therapeutic modality, rather than the therapist, was assigned randomly to the patient in order not to interfere with the individual patient–therapist match.

High value was set on external validity. We therefore defined the therapies according to the German Psychotherapeutic Guidelines [43] and the therapies could not be applied in a manualized form. Psychoanalytic therapy (“analytische Psychotherapie” according to the German Psychotherapeutic Guidelines) is a “predominantly verbal, interpretative, insight-oriented approach which aims to modify or re-structure maladaptive relationship representations... that lie at the root of psychological disturbance” [44]. It “involves careful attention to the therapist–patient interaction, with thoughtfully timed interpretation of transference and resistance embedded in a sophisticated appreciation of the therapist’s contribution to the two-person field” [45]. Average duration is between 160 and 240 sessions; session frequency is two to three sessions a week on the couch. Psychodynamic therapy (“tiefenpsychologisch fundierte Psychotherapie” according to the German Psychotherapeutic Guidelines) is based on the same principles of theory and technique but is more limited in the depth of the therapeutic process and in its goals. It focuses on the symptom sustaining here-and-now conflicts without encouraging regression in the therapeutic process. Its mean duration is between 50 and 80 sessions, session frequency is one session per week, sitting in an upright position. Cognitive-behavioral therapy (“kognitive Verhaltenstherapie” according to the German Psychotherapeutic Guidelines) comprises therapeutic modalities developed on the basis of empirical psychology. “Behavior” means observable behavior as well as cognitive, emotional, motivational, and physiological processes. Behavior therapy requires the analyses of the conditions that cause and maintain the disease (analysis of behavior). It develops a corresponding model of the disturbance and a principal treatment strategy that enables the application of specific interventions to reach defined treatment goals. Based on the notion that behavior reflects cognitive processes, treatment focuses on evaluating, challenging, and modifying a patient’s dysfunctional beliefs (cognitive restructuring) [46], and providing new information-processing skills. “The various approaches differ somewhat in the extent to which they emphasize cognitive mechanisms to the exclusion of more behavioral ones, ... these various interventions can be referred to under the general rubric of cognitive-behavior therapy (CBT)” [47]. Average duration is between 45 and 60 sessions; session frequency is one session per week.

In the MPS, as expected, psychoanalytic therapy lasted the longest (39 month, range 3–91 months; 234 sessions, range 17–370), psychodynamic therapy lasted 34 months (range 3–108 months) or 88 sessions (range 12–313), and cognitive-behavioral therapy was the shortest (26 months, range 2–78 months; 44 sessions, range 7–100). Duration and dose of the three therapeutic modalities in months and in number of sessions are shown in Fig. 4.1.

We plan to measure adherence by an expert rating of audio-recorded sessions or by evaluating sessions with the Psychotherapy Process Q-Set (PQS [48]). For the moment, we have developed a

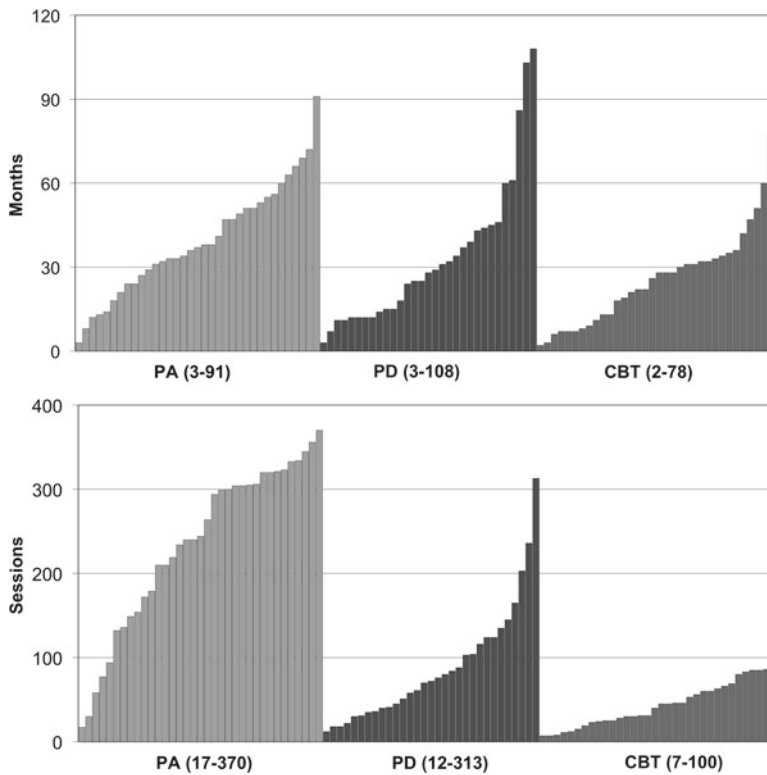


Fig. 4.1 Number of months and number of sessions of the three treatments. *PA* psychoanalytic therapy, *PD* psychodynamic therapy, *CBT* cognitive-behavioral therapy

provisional measure, the *psychoanalytic/psychodynamic differentiation score* to approach treatment fidelity of psychoanalytic and psychodynamic therapies. The measure consists of four variables measured with the Periodical Rating Scale for Psychoanalytic Treatment 1 year after beginning of treatment, when its typical features have presumably developed. The standard commentary on the German psychotherapeutic guidelines [43] was used as a theoretical background to determine a few treatment essentials. Variables capable of differentiating between a prototypical psychoanalytic and psychodynamic treatment were selected as follows: high versus low session frequency, couch versus upright position, insight-oriented versus supportive technique, and strength of transference neurosis. Transference neurosis is characterized, according to Akhtar [49], by the coalescence of the patient's conflicts around the person of the analyst, and by the replacement of fleeting transference reactions by an intense and ongoing transference "relationship." Session frequency of two or more sessions a week, couch position, strong transference and insight-oriented technique got a high score, typical for psychoanalytic therapy; session frequency of one session a week, upright position most of the time, weak transference neurosis most of the time, and supportive technique most of the time got a low score, typical for psychodynamic therapy. Between these extremes, every therapy of both groups was assessed, and a mean score for each group was calculated. If the mean score of each therapy differed significantly (in the theoretically expected direction), then the treatments can be assumed to be either psychoanalytic (high scores) or psychodynamic (low scores).

As to the psychoanalytic/psychodynamic differentiation score, a two-tailed *t*-test revealed a significant difference between the psychoanalytic and the psychodynamic mean score (psychoanalytic: mean=5.06; SD=1.569; psychodynamic: mean=1.58; SD=1.206; $t=9.26$; $df=55$; $p<.001$).

Statistical Analysis

To test for the comparative effectiveness of the experimental groups, a two-factorial analysis of variance was performed, using the general linear model with repeated measurements (3×3 ANOVA) with measurement repetition on the second factor, with the between-subject factor: “Group,” and the within-subject factor: “Time.” The main effect “Time” (pretreatment – post-treatment – follow-up), the main effect “Group” (psychoanalytic therapy – psychodynamic therapy – cognitive-behavioral therapy), and the interaction term “Time $\times$ Group” were calculated. To detect differences between the groups, analyses of covariance (ANCOVA) for post-treatment and follow-up were calculated with pretreatment values as covariates. ANCOVAs, too, were used as pair-wise post hoc tests to test for significant group differences. Effect sizes (ES) were calculated according to Cohen’s formula [50] by dividing pre-/post-treatment or pre-/follow-up differences through pooled standard deviation pretreatment; we followed Cohen’s classification of high, medium, and low ES. A two-tailed alpha level of $p = .05$ was used to determine statistical significance; clinical significance (CS) was calculated additionally for primary outcome variables [51]. Data imputation in case of missing data was performed by the last observation carried forward procedure, using the pretreatment scores at post-treatment and the post-treatment scores at 1-year follow-up [52]. Bonferroni correction (alpha-adjustment) was administered for primary outcome measures.

Results

The mean age was 33 years with a range from 23 to 49 years; 71% were women. There was a significant gender difference between the psychodynamic and the cognitive-behavioral group: 15% of the patients in the cognitive-behavioral group, 31% of the psychoanalytic, and 42% of the psychodynamic group were male. Sixty-nine percent of the total sample was unmarried, 42% were single, 28% were separated from their partner, and only 30% were living with a partner. Educational level and vocational status was quite high: 96% of the patients have either passed junior high school exam or have high-school diploma; only 5% have no completed vocational training. In summary, the patients were well-educated and members of the middle class.

52% of the patients suffered from the first episode of major depressive disorder, 48% from a recurrent depressive disorder, 66% of the patients fulfilled the diagnostic criteria of a moderate episode, and 34% of a severe episode. Fifty-five percent suffered from double depression. Thirty-four percent of the patients suffered from a comorbid personality disorder.

Except for gender differences, there were no significant differences between the groups, neither in sociodemographic, nor in clinical characteristics.

Results of the symptomatic measures, BDI and the GSI of the SCL-90-R, are presented in Table 4.2a, b. Both measures showed large ESs and CSs and significant main effects of time indicating substantial improvements. There are no significant effects in the ANCOVAs at 1-year follow-up and hence no significant differences between psychoanalytic, psychodynamic, and cognitive-behavioral therapy.

Results of the FLZ-G, VEV, and GAS combined as measures between symptoms and interpersonal problems, measuring beyond symptoms, are provided in Table 4.2c–e. As the VEV is a direct measure of change, there are only values for post-treatment and follow-up, and in GAS, the pretreatment score is defined as zero; therefore, they were not 3×3 - but 3×2 -repeated measurement ANOVAs and no significant interaction effect could be expected. For post-treatment and follow-up, because of missing pretreatment scores, ANOVAs were calculated instead of ANCOVAs. Nearly all measures show large

Table 4.2 Outcome measure scores at pretreatment (pre), post-treatment (post), and 1-year follow-up (fup) for the three treatment groups psychoanalytic (PA), psychodynamic (PD), and cognitive-behavioral therapy (CBT). *N* sample size, *M* mean, *StD* standard deviation, *ES* effect size (**d**), *CS* (%) clinical significance, *ANOVA* analysis of variance, *ANCOVA* analyses of covariance.

Table 4.2a Beck Depression Inventory (BDI)

Group	N	pre		post		fup		ES		CS %	
		M	StD	M	StD	M	StD	post	fup	post	fup
PA	35	25.5	7.3	6.6	6.0	7.1	6.1	2.4	2.3	85.7	85.7
PD	31	25.1	8.7	8.3	9.9	9.2	8.4	2.1	2.0	77.4	77.4
CBT	34	25.2	7.7	11.1	9.7	11.4	10.8	1.8	1.8	64.7	58.8

ANOVA				ANCOVA				post		fup	
Effect	F	df	p	Effect	F	df	p	F	df	p	
group	1.61	2; 97	0.204	group	2.69	2; 96	0.073	2.65	2; 96	0.076	
time	233.5	2; 194	<0.001	PA vs PD	---	---	---	---	---	---	
group x time	1.70	4; 194	0.152	PA vs CBT	---	---	---	---	---	---	
				PD vs CBT	---	---	---	---	---	---	

Table 4.2b Global Severity Index (GSI) of SCL-90-R

Group	N	pre		post		fup		ES	
		M	StD	M	StD	M	StD	post	fup
PA	35	1.27	0.52	0.44	0.32	0.48	0.45	1.5	1.4
PD	31	1.17	0.53	0.49	0.52	0.62	0.61	1.2	1.0
CBT	34	1.15	0.60	0.73	0.61	0.72	0.73	0.8	0.8

ANOVA				ANCOVA				post		fup	
Effect	F	df	p	Effect	F	df	p	F	df	p	
group	0.83	2; 97	0.439	group	5.45	2; 96	0.006	2.78	2; 96	0.067	
time	93.6	2; 194	<0.001	PA vs PD	0.81	1; 63	0.371	---	---	---	
group x time	3.42	4; 194	0.010	PA vs CBT	10.0	1; 66	0.002	---	---	---	
				PD vs CBT	4.27	1; 62	0.043	---	---	---	

Table 4.2c Questions on Life Satisfaction (FLZ)–Module “Health”

Group	N	pre		post		fup		ES	
		M	StD	M	StD	M	StD	post	fup
PA	33	16.9	35.8	56.3	37.7	64.9	36.2	1.2	1.5
PD	30	23.0	32.1	51.5	37.7	45.8	42.3	0.9	0.7
CBT	33	21.4	31.1	46.0	37.7	45.2	41.9	0.7	0.7

ANOVA				ANCOVA				post		fup	
Effect	F	df	p	Effect	F	df	p	F	df	p	
group	0.68	2; 93	0.508	group	1.09	2; 92	0.341	3.78	2; 92	0.027	
time	45.9	2; 186	<0.001	PA vs PD	---	---	---	5.97	1; 60	0.018	
group x time	2.53	4; 186	0.042	PA vs CBT	---	---	---	4.98	1; 63	0.029	
				PD vs CBT	---	---	---	0.00	1; 60	0.954	

Table 4.2d Questionnaire of Change in Experiencing and Behavior (VEV)

Group	N	pre		post		fup		ES	
		M	StD	M	StD	M	StD	post	fup
PA	35	---	---	222.5	41.6	223.1	37.1	1.5	1.5
PD	28	---	---	225.1	32.8	207.9	45.7	1.6	1.1
CBT	28	---	---	207.1	33.5	195.6	47.3	1.1	0.8

ANOVA				ANOVA				post		fup	
Effect	F	df	p	Effect	F	df	p	F	df	p	
group	2.83	2; 88	0.064	group	2.01	2; 88	0.140	3.20	2; 88	0.045	
time	6.48	1; 88	0.013	PA vs PD	---	---	---	2.13	1; 61	0.149	
group x time	2.15	2; 88	0.122	PA vs CBT	---	---	---	6.68	1; 61	0.012	
				PD vs CBT	---	---	---	0.97	1; 54	0.329	

Table 4.2e Goal Attainment Scaling (GAS)

Group	N	pre		post		fup		ES		CS %	
		M	StD	M	StD	M	StD	post	fup	post	fup
PA	35	---	---	2.00	0.72	2.11	0.67	2.3	2.4	---	---
PD	31	---	---	1.84	0.90	1.75	0.90	2.1	2.0	---	---
CBT	34	---	---	1.31	0.96	1.38	0.99	1.5	1.6	---	---

ANOVA				ANOVA				post		fup	
Effect	F	df	p	Effect	F	df	p	F	df	p	
group	6.60	2; 97	0.002	group	5.93	2; 97	0.004	6.11	2; 97	0.003	
time	0.24	1; 97	0.628	PA vs PD	0.69	1; 64	0.410	3.46	1; 64	0.067	
group x time	1.11	2; 97	0.333	PA vs CBT	11.4	1; 67	0.001	12.8	1; 67	0.001	
				PD vs CBT	5.13	1; 63	0.027	2.39	1; 63	0.127	

Table 4.2f Inventory of Interpersonal Problems (IIP)

Group	N	pre		post		fup		ES	
		M	StD	M	StD	M	StD	post	fup
PA	35	14.4	3.4	9.6	4.6	9.3	4.7	1.4	1.5
PD	31	14.8	2.5	10.5	4.1	11.6	4.0	1.3	1.0
CBT	34	13.4	3.8	11.9	4.8	12.0	5.0	0.5	0.4

ANOVA				ANCOVA				post		fup	
Effect	F	df	p	Effect	F	df	p	F	df	p	
group	1.93	2; 97	0.253	group	6.40	2; 96	0.002	7.64	2; 96	0.001	
time	60.9	2; 194	<0.001	PA vs PD	0.33	1; 63	0.570	4.44	1; 63	0.039	
group x time	6.52	4; 194	<0.001	PA vs CBT	11.8	1; 66	0.001	16.3	1; 66	<0.001	
				PD vs CBT	8.24	1; 62	0.006	2.82	1; 62	0.098	

Table 4.2g Questionnaire of Social Support (F-SozU)

Group	N	pre		post		fup		ES	
		M	StD	M	StD	M	StD	post	fup
PA	33	3.75	0.65	4.15	0.73	4.25	0.53	0.5	0.7
PD	30	3.74	0.78	4.00	0.78	3.96	0.72	0.4	0.3
CBT	33	3.62	0.77	3.88	0.83	3.88	0.73	0.4	0.4

ANOVA				ANCOVA				post		fup	
Effect	F	df	p	Effect	F	df	p	F	df	p	
group	1.32	2; 93	0.273	group	0.80	2; 92	0.453	3.21	2; 92	0.045	
time	18.1	2; 186	<0.001	PA vs PD	---	---	---	4.84	1; 60	0.032	
group x time	1.03	4; 186	0.392	PA vs CBT	---	---	---	5.25	1; 63	0.025	
				PD vs CBT	---	---	---	0.00	1; 60	0.960	

Table 4.2h Scales of Psychological Capacities (SPC)

Group	N	pre		post		fup		ES		CS %	
		M	StD	M	StD	M	StD	post	fup	post	fup
PA	35	1.05	0.21	0.60	0.25	0.54	0.23	1.8	2.0	57.1	68.6
PD	31	1.07	0.26	0.77	0.31	0.71	0.31	1.2	1.4	32.3	38.7
CBT	34	1.03	0.28	0.86	0.31	0.76	0.38	0.7	1.1	17.6	35.3

ANOVA				ANCOVA				post		fup	
Effect	F	df	p	Effect	F	df	p	F	df	p	
group	4.26	2; 97	0.017	group	8.27	2; 96	<0,001	5.85	2; 96	0.004	
time	97.7	2; 194	<0.001	PA vs PD	5.75	1; 63	0.020	6.81	1; 63	0.011	
group x time	4.86	4; 194	0.001	PA vs CBT	17.3	1; 66	<0,001	10.7	1; 66	0.002	
				PD vs CBT	2.37	1; 62	0.129	0.87	1; 62	0.355	

Table 4.2i Turning Against Self – internal reaction (TAS-A) of FKBS

Group	N	pre		post		fup		ES	
		M	StD	M	StD	M	StD	post	fup
PA	35	18.7	6.0	14.0	6.6	13.6	6.6	0.9	1.0
PD	31	19.2	4.6	14.5	6.1	15.7	5.0	0.9	0.7
CBT	34	18.7	4.8	16.9	5.2	16.6	5.2	0.4	0.4

ANOVA				ANCOVA				post		fup	
Effect	F	df	p	Effect	F	df	p	F	df	p	
group	1.32	2; 97	0.273	group	3.95	2; 96	0.023	3.74	2; 96	0.027	
time	42.5	2; 194	<0.001	PA vs PD	0.01	1; 63	0.910	2.16	1; 63	0.146	
group x time	3.02	4; 194	0.019	PA vs CBT	7.95	1; 66	0.006	6.96	1; 66	0.010	
				PD vs CBT	5.64	1; 62	0.021	1.43	1; 62	0.237	

Table 4.2j Turning Against Self – behavioral reaction (TAS-B) of FKBS

Table 12.1. Pairwise Comparison Between Characteristic Reaction (PA vs PD) vs PA vs CBT									
Group	N	pre		post		fup		ES	
		M	StD	M	StD	M	StD	post	fup
PA	35	16.0	5.3	12.3	5.8	12.2	5.7	0.7	0.8
PD	31	16.6	4.7	13.2	6.7	13.8	5.2	0.7	0.6
CBT	34	16.4	4.7	14.2	5.2	14.6	5.6	0.4	0.4

ANOVA				ANCOVA							
Effect	F	df	p	Effect	F	df	p	post	F	df	p
group	0.96	2; 97	0.385	group	0.99	2; 96	0.374		1.86	2; 96	0.162
time	25.0	2; 194	<0.001	PA vs PD	---	---	---		---	---	---
group x time	0.87	4; 194	0.481	PA vs CBT	---	---	---		---	---	---
				PD vs CBT	---	---	---		---	---	---

ESs and CSs. In all three measures, there are significant group differences at follow-up: psychoanalytic therapy is significantly superior to cognitive-behavioral therapy in all three measures.

Results of the interpersonal dimension, IIP and F-SozU, are reported in Table 4.2f, g. Both measures show small ESs for the cognitive-behavioral group, large ESs (IIP) and moderate ESs (F-SozU) for the psychoanalytic group, and large ESs (IIP) and small ESs (F-SozU) for the psychodynamic group. In both measures, there are significant effects in the ANCOVAs; pair-wise comparisons indicate significantly more improvement in the psychoanalytic than in the psychodynamic and the cognitive-behavioral group (for the IIP).

Tables 4.2h–j present the results of the intrapsychic measures, SPC, and TAS-A/B (internal reaction=A and behavioral reaction=B) of the FKBS. According to tendency, psychoanalytic therapy has large ESs, and cognitive-behavioral has small ESs in most measures, and psychodynamic therapy is in between. Effects of group in ANCOVA are significant in the SPC and in the TAS A of the FKBS. Comparisons of pairs show that psychoanalytic therapy is significantly superior to both other treatments in the SPC and to the cognitive-behavioral condition in the TAS A of the FKBS.

According to ICD-10/DSM-IV checklist, “no depressive episode” at post-treatment was diagnosed for significantly more patients in the psychoanalytic group (91%) than patients in the cognitive-behavioral group (53%); patients of the psychodynamic group (81%) were in between. At follow-up, 91% of the psychoanalytic, 76% of the psychodynamic, and 42% of the cognitive-behavioral patients no longer met the criteria for a depressive episode. These differences were significant (chi-square test) between psychoanalytic and cognitive-behavioral therapy, between psychoanalytic and psychodynamic therapy, and between psychodynamic and cognitive-behavioral therapy.

Discussion

Discussion of Design

The discussion of the design focuses on internal and external validity orienting by Kazdin’s review [13], and the method paper of the Wissenschaftlichen Beirat Psychotherapie (Research Council Psychotherapy), version 2.7 [53].

Crits-Christoph and Barber [54] conclude their review article on long-term psychotherapies stating that the mental health field has abandoned their research endeavors too quickly and that they remain optimistic that it is possible to investigate this therapeutic modality with scientific rigor, randomized clinical trials included. This optimism turned out to be true, as DeMaat et al.'s review [1] and Leichsenring and Rabung's meta-analysis [2] demonstrated. Psychoanalysts in particular resisted the empirical investigation of their long-term psychotherapies because they considered empirical research methodology inadequate to grasp the process and outcome; for a critical and balanced discussion of the topic, see Thomae and Kaechele [55]. We shared Crits-Christoph and Barber's [54] optimism and tried to investigate empirically long-term psychotherapies.

As the study was enrolled at the outpatient clinic of a university department, well-known for diagnosing and referring of depressed patients, it was possible to recruit a diagnostically homogeneous group of patients with a primary diagnosis of unipolar depression. The intuitive experts' diagnosis at intake was corroborated by a diagnostic checklist, that of the ICD-10/DSM-IV. Comorbid personality disorder was assessed consensually by experts' evaluations, using all measures (self-report and observer ratings) available at intake. Nevertheless, a structured clinical interview, like the SCID, would have rendered more reliable and valid diagnoses, and this is certainly a threat to the internal validity of the study. The central claim to empirical comparative psychotherapy research methodology is the randomized allocation to therapy or control conditions to maximize the likelihood to draw correct causal inferences on the effect of the independent variable on the dependent variable. The allocation to the three treatment branches could not be done simultaneously. Although all patients fulfilled the same randomization criteria, this is a threat to internal validity. However, from the perspective of external validity, randomized controlled designs have been criticized for not taking into account patients' preference for one specific type of treatment on conceptual (e.g. [56]) and on empirical ground [57], and thus diminishing expectancy as an unspecific curative factor or, at worst, pushing the patient into a conscious or unconscious protest against the unwanted treatment. In a meta-analysis, Swift and Callahan [58] demonstrated that patients' treatment preferences seem to have a small effect on treatment outcome. Fortunately, our study was enrolled at an outpatient clinic of a university hospital where patients were referred to by primary-care mental health practices to "get psychotherapy." These patients had no preferences for one type of psychotherapy or another but preferred to let the "specialists" decide the best treatment for their disorder. Patients' preference for the type of therapist, however, was very much taken into consideration because the individual patient-therapist matching is one of the essentials of a successful psychotherapy. No patient or therapist was pushed to work with any other. In order not to interfere with the delicate patient-therapist match, only the type of treatment – and not the type of therapist – was assigned at random. This procedure requires good cooperation between the study center and study therapists, safeguarding that patients were re-referred to the study center if a therapy could not be realized. This good cooperation between the study center and study therapists, in the service of internal validity, was absolutely necessary in order to perform correctly the many process measurements, the audio-taping of every session, the completion of retro-reports after every session, the half-yearly process rating scales, and the very intimate questionnaire about therapeutic socialization, therapeutic style, beliefs in therapeutic process, and curative factors and one's strengths and weaknesses (Therapeutic Attitude Questionnaire, ThAt [38]). Researchers have to strike a balance between maintaining good relations with the therapists in order to minimize missing data on the one hand and becoming too involved in the therapies on the other hand and thus making them less generalizable [59]. In order to avoid the latter problem as a threat to external validity, we refrained from personal contact with patients and therapists during the ongoing therapy, as well as from feedback and from supervision by the study center.

We decided to investigate, in a quasi-experimental design, "real-world" therapies conducted by "real-world" therapists, and thus purposefully refrained from developing a treatment manual, as is often employed to reduce within-group variance attributable to sources other than standardized techniques, clearly in favor of external validity. This decision was very much facilitated by the fact that there is, to

our knowledge, no treatment manual for long-term psychotherapy of depression, and, furthermore, our experienced study therapists with their individual style and attitude would have never agreed to the constraints of a manual. On the other hand, and in favor of internal validity, the therapies investigated are daily routine for therapists, and there are long detailed descriptions in the earlier mentioned German Psychotherapeutic Guidelines serving as a basis for education and training of institute candidates. In addition to “real-world” therapies and therapists, we also investigated the “real-world” patients of our mental health system. All patients were referred from primary-care or medical specialist’s practices and were diagnosed on an ICD-10/DSM-IV axis I level. Nearly one third of them had an ICD-10/DSM-IV axis II comorbidity, and the scores of self-report and observer rated measures at intake were clearly beyond the cut-off points in the pathological range.

Outcome measures were adapted to the core battery suggested by the Society for Psychotherapy Research to be as comparable as possible with other international studies in the field, and they were multidimensional and multimodal according to standards in psychotherapy research [59]. We have set great value on measuring mode-specific effects to control for measurement bias as much as possible. In order to measure the construct of interest of each therapeutic modality – the so-called mode-specific effects – we applied the SPC to grasp structural changes specific to psychoanalytic and psychodynamic therapy, the BDI to grasp specific changes of cognitive-behavioral therapy. All external investigators at all measurement points were blind for the treatment modality; therefore, the external investigator at pretreatment was not the same as at post-treatment and at 1-year follow-up. To keep the external investigator at post-treatment and at follow-up blinded, the patient was informed not to give any clues (e.g., session frequency, position) revealing the therapeutic modality applied. In order to take into due account the recurrent natural course of the disorder, we chose a 3-year follow-up period, thus considering external validity, while the increasing rate of uncontrollable intervening variables and of drop-outs is a threat to internal validity, of course. Lambert and Ogles [60], discussing the preference of one treatment to another, noted investigator’s allegiance as one of the most common artifacts leading to the conclusion that one treatment is superior to another. Researcher’s own therapy allegiance [61, 62] is ubiquitous, because “who else but a partisan would take the time and energy to do a comparative treatment study?” as Luborsky et al. [62] laconically stated, and so it is a distortion of the results in comparative psychotherapy research. We tried to minimize this inevitable distortion and to neutralize researcher’s allegiance by including into the study center two psychoanalytic therapists and two cognitive-behavioral therapists, all involved in designing the study and collection, management, and processing of the data.

Discussion of Outcome

General preliminary remark: We considered 1-year follow-up results superior to post-treatment results because of the recurrent nature of the depressive disorder. The central finding of the study was that psychoanalytic, psychodynamic, and cognitive-behavioral therapies were very effective in the treatment of unipolar, single, or recurrent depression, as well as double depression.

The effect sizes of the *symptomatic* measures were large for all treatments according to Cohen’s benchmarks [50]. In Leichsenring and Rabung’s meta-analysis [2], as well as in DeMaat et al.’s review [1] of long-term psychotherapies, lower effect sizes were reported for psychoanalytic and psychodynamic therapy for symptomatic measures. Comparing the three treatments in pairs, as a whole, neither psychoanalytic nor psychodynamic nor cognitive-behavioral therapy was significantly superior when emphasizing the follow-up results.

In terms of ESs and CSs, psychoanalytic and psychodynamic therapies are more effective than cognitive-behavioral therapy. Scrutinizing the total scores of the BDI and the GSI of the SCL-90-R at post-treatment and at 1-year follow-up reveals, however, that the patients in the cognitive-behavioral

condition continue to have a mild depressive disorder [63–65]. These residual symptoms have long been neglected as insignificant, minor fluctuations during the course of the illness, but recent research suggests that they predispose for relapse and recurrence (e.g. [66, 67]). The observer-rated ICD-10/DSM-IV checklist at 1-year follow-up corroborates this hypothesis, showing that 58% of the patients in the cognitive-behavioral group still or again have the diagnosis of a depressive episode, significantly more than in the psychoanalytic or the psychodynamic groups. These findings can be interpreted in the context of more recent calculations of a dose–effect relationship, which demonstrate that for psychotherapy of eclectic orientation, more than 50 sessions are necessary for 75% of patients to improve clinically significantly on a symptomatic level [60]. In our study, only 13 of 34 patients in the cognitive-behavioral group received more than 50 sessions (compared to 33 of 35 patients in the psychoanalytic and 20 of 31 patients in the psychodynamic group), evidently not enough to protect sufficiently against symptom persistence or relapse. Recent research in cognitive-behavioral therapy supports this argument, suggesting an increase in treatment dose and the introduction of new intervention modules [68] because residual symptoms are common after the treatment of the acute symptomatology [69] and they predispose patients to relapse and recurrence, as already mentioned. In an outpatient study of long-term psychotherapy, psychoanalytic therapy needed 17 months (approximately 170 sessions), and psychodynamic therapy 18 months (approximately 60 sessions) for the patients to leave the severely impaired range of the GSI of the SCL-90-R [70].

We combined the results of the FLZ-G, the VEV, and the GAS (in which patients formulated at least one of their individual goals on an interpersonal level), because they can be conceived of as a set of similar measures to gauge an outcome domain between symptomatic and interpersonal measures. In this domain, only psychoanalytic therapy produced stable ESs and significant differences to cognitive-behavioral therapy, whereas ESs of psychodynamic and cognitive-behavioral therapy were lower and tended to decrease at 1-year follow-up. This is a first indication that psychoanalytic therapy becomes significantly superior to the other treatments when domains beyond symptom relief are the focus of measurement.

The earlier-mentioned trend becomes even more evident on the *interpersonal* level tapped by the IIP and the F-SozU. In both measures, psychoanalytic therapy is superior to cognitive-behavioral therapy at both measurement points and is superior to psychodynamic therapy at follow-up. At post-treatment, there is a tendency towards psychodynamic therapy being superior to cognitive-behavioral therapy, but the results are unstable because the ESs and CSs of psychodynamic therapy decrease markedly during the follow-up period. An explanation may come from the dose–effect model again, because as Howard et al. [71] have already demonstrated, improvement in the interpersonal domain lags behind symptomatic recovery and requires more sessions. Our results suggest that the dose (in terms of sessions) of cognitive-behavioral therapy is not high enough to improve significantly in ESs and CSs, nor is the dose of psychodynamic therapy high enough to produce long-lasting effects.

FKBS, our measure for the defense mechanism “Turning against Self,” and SPC, based on the concept of structural change, are outcome measures on an *intrapsychic* level, measuring beyond symptoms. Differences between the FKBS and the SPC may be attributed to the different sources of observation [72]. In the SPC, our primary intrapsychic outcome variable, all treatments are effective in ESs and CSs, but psychoanalytic and psychodynamic therapies show distinctly larger ESs than cognitive-behavioral therapy. Comparisons in pairs reveal that psychoanalytic therapy is significantly superior to cognitive-behavioral therapy and to psychodynamic therapy in the SPC. In psychoanalytic theory, structural change is regarded as a quantitative shift in intrapsychic conflicts, that “their poignancy is reduced; they are not only reduced in intensity, but are lifted into more conscious awareness so that, as conflict-instigating situations arise, the individual is more immediately alerted and can take more appropriate coping steps in reality” [73]. Relapses and symptom persistency are an adequate, clinical operationalization of underlying structural change, and our data support this finding, because psychoanalytic therapy shows significantly less ICD-10/DSM-IV diagnoses at follow-up compared to both psychodynamic and cognitive-behavioral therapy. Cognitive-behavioral

therapy explains relapses in connection with the role of the impaired personality functioning (social maladjustments and dysfunctional attitudes and attributions) in predisposition (for an overview see [67]). Vittengl et al. [74] reported no significant change in pre- to post-treatment in the trait constructs of the IIP and only a small overall reduction of psychosocial dysfunction [67] after cognitive-behavioral therapy. They concluded that it may be necessary to increase frequency of sessions, change the focus of cognitive-behavioral therapy, or increase treatment duration [69]. One can assume that psychoanalytic therapy with its higher dose allows treatment to address these vulnerabilities effectively, whereas cognitive-behavioral therapy, with its more limited time frame does not, while psychodynamic psychotherapy does, but not enough. Seen from the perspective of internal validity, the extremely differing dose and duration of the treatments is just a confound, but the dose–effect relationship may be misleading here because it assumes different treatments to have the same curative ingredients given in different doses, an assumption Kiesler [75] called a uniformity myth, subsumed under the “therapist uniformity assumption” rubric. Seen from the perspective of external validity, the tacit “more is better” assumption is an abuse of the drug metaphor in psychotherapy [76]. Therapy sessions are not like pills, consisting of the same curative ingredients given in different doses during a treatment. Each treatment has a different underlying working model that needs a specified time frame with a stipulated number of sessions and specific interventions to initiate a specific process. Therefore, even extended fourfold, a cognitive-behavior therapy is qualitatively different and cannot be compared to a psychoanalytic therapy. Moreover, in the quasi-experimental design of the study, no therapist was obliged to terminate any treatment at a fixed time point, but was free to take as much time as he/she considered appropriate for the treatment modality applied.

The results of the study can be summarized as follows: psychoanalytic, psychodynamic, and cognitive-behavioral therapies are very effective in the treatment of unipolar depression and double depression. Comparisons of pairs reveal that psychoanalytic therapy is superior to psychodynamic therapy and to cognitive-behavioral therapy at follow-up, not in self-rated symptomatic relief but in most other measures. These results support empirically the proposition [54] that patients with recurrent or chronic Axis I disorders like recurrent depressive disorder should be treated with long-term psychotherapy in order to effect change beyond symptoms and to be effective in preventing relapses and chronicity. Taking into consideration the natural course of the disease, these results need corroboration by a more extended follow-up period that allows a more precise assessment of their stability. Last but not least, an important result of this study is that researchers and practitioners (who even initiated the study) can work together in such a delicate research endeavor, thus proving impressively that the notorious gap between science and practice can be bridged.

References

1. DeMaat S, de Jonghe F, Schoevers R, Dekker J. The effectiveness of long-term psychoanalytic therapy: a systematic review of empirical studies. *Harv Rev Psychiatry*. 2009;17:1–23.
2. Leichsenring F, Rabung S. Effectiveness of long-term psychodynamic psychotherapy: a meta-analysis. *JAMA*. 2008;300:1551–65.
3. Abbass AA, Hancock JT, Kisely S. Short-term psychodynamic psychotherapies for common disorders (Review). *The Cochrane Collaboration* 2007; 1–47.
4. Leichsenring F, Rabung S, Leibling E. The efficacy of short-term psychodynamic psychotherapy in specific psychiatric disorders. *Arch Gen Psychiatry*. 2004;61:1208–16.
5. De Maat S, Dekker J, Schoevers R, de Jonghe F. Relative efficacy of psychotherapy in the treatment of depression: a meta-analysis. *Psychother Res*. 2006;16:562–72.
6. Westen D, Morrison K. A multidimensional meta-analysis of treatments for empirically supported therapies. *J Consult Clin Psychol*. 2001;69:875–99.
7. Leichsenring F, Winkelbach C, Leibling E. Psychoanalytically oriented focal therapy of generalized anxiety disorder. *Psychotherapeutics*. 2005;50:258–64.

8. Grande T, Dilg R, Jakobsen T, Keller W, Krawietz B, Langer M, Oberbracht C, Stehle S, Stennes M, Rudolf G. Differential effects of two forms of psychoanalytic therapy: results of the Heidelberg–Berlin study. *Psychother Res.* 2006;16:470–85.
9. Knekt P, Lindfors O, Laaksonen MA, Raitasalo R, Haaramo P, Järvikoski A, The Helsinki Study Group. Randomized trial on the effectiveness of long-term and short-term psychodynamic psychotherapy and solution-focused therapy on psychiatric symptoms during a 3-year follow-up. *Psychol Med.* 2008;38:689–703.
10. Connolly Gibbons MB, Crits-Christoph P, Hearon B. The empirical status of psychodynamic therapies. *Annu Rev Clin Psychol.* 2008;4:93–108.
11. Judd LL. The clinical course of unipolar major depressive disorder. *Arch Gen Psychiatry.* 1997;54:989–91.
12. Fonagy P. Foreword. In: Richardson P, Kaechele H, Renlund C, editors. *Research on psychoanalytic psychotherapy with adults.* London: Karnac; 2004. p. XIX–XXVII.
13. Kazdin AE. *Research design in clinical psychology.* 3rd ed. Boston: Allyn & Bacon; 1998. p. 80.
14. Keller MB, Hirschfeld RMA, Hanks D. Double depression: a distinctive subtype of unipolar depression. *J Affect Disord.* 1997;45:65–73.
15. Mason MJ. A review of procedural and statistical methods for handling attrition and missing data. *Meas Eval Couns Dev.* 1999;32:111–18.
16. American Psychiatric Association. *Diagnostic and statistical manual of mental disorders.* 4th ed. Washington, DC: American Psychiatric Association; 1994.
17. Hiller W, Zaudig M, Mombour W. IDCL - Internationale Diagnosen Checklisten für ICD-10 und DSM- IV (Manual und 32 Checklisten nach ICD-10 als Bestandteil des Gesamtpaketes der ICD-10-Checklisten der WHO) International Diagnostic Checklists for ICD-10 and DSM-IV (Manual and 32 checklists as part of the WHO ICD-10-Checklists package). Bern, 1995.
18. Huber D, Klug G, Wallerstein RS. Skalen psychischer Kompetenzen (SPK). Ein Messinstrument für therapeutische Veränderung in der psychischen Struktur. Incl. Manual und Interviewleitfaden (The Scales of Psychological Capacities (SPC) A measure for therapeutic change in psychic structure. Manual and interview guideline). Stuttgart: Kohlhammer, 2006
19. DeWitt KN, Hartley D, Rosenberg SE, Zilberg NJ, Wallerstein RS. Scales of psychological capacities: development of an assessment approach. *Psychoanal Contemp Thought.* 1991;14:334–43.
20. Zilberg NJ, Wallerstein RS, DeWitt KN, Hartley D, Rosenberg SE. A conceptual analysis and strategy for assessing structural change. *Psychoanal Contemp Thought.* 1991;14:317–42.
21. Sundin M, Armelius BA, Nilsson T. Reliability studies of scales of psychological capacities: a new method to assess psychological change. *Psychoanal Contemp Thought.* 1994;17:591–615.
22. DeWitt KN, Milbrath C, Wallerstein RS. Scales of psychological capacities: support for a measure of structural change. *Psychoanal Contemp Thought.* 1999;22:453–80.
23. Huber D, Brandl T, Klug G. The Scales of Psychological Capacities (SPC): measuring beyond symptoms. *Psychother Res.* 2004;14:89–106.
24. Huber D, Henrich G, Klug G. The scales of psychological capacities: measuring change in psychic structure. *Psychother Res.* 2005;15:445–56.
25. Kiresuk TJ, Sherman RE. GAS: a general method for evaluating comprehensive community mental health programs. *Community Ment Health J.* 1968;4:443–53.
26. Kiresuk TJ, Smith A, Cardillo JE. *Goal attainment scaling: applications, theory, and measurement.* Hillsdale: Lawrence Erlbaum Associates; 1994.
27. Galatzer-Levy RM, Bachrach H, Skolnikoff A, Waldron S. *Does psychoanalysis work?* New Haven: Yale University Press; 2000. p. 138–40.
28. Levy KN. Psychotherapies and lasting change. *Am J Psychiatry.* 2008;165:556–9.
29. Derogatis LR, Lipman RS, Covi L. SCL 90. An outpatient psychiatric rating scale. *Psychopharmacol Bull.* 1975;9:13–28. German version: Franke G, Die Symptom-Checkliste von Derogatis. Deutsche Version. Manual. Goettingen: Beltz; 1995.
30. Beck AT, Ward CH, Mendelsohn M, Mock J, Erbaugh J. An inventory for measuring depression. *Arch Gen Psychiatry.* 1961;4:561–71. German version: Hautzinger M, Bailer M, Worall H, Keller F. Das Beck-Depressions-Inventar (BDI). Goettingen: Hogrefe; 1995.
31. Horowitz LM, Alden LE, Wiggins JS, Pincus AL. *Inventory of interpersonal problems manual.* San Antonio: Psychological Corporation; 2000.
32. Hentschel U. Fragebogen zu Konfliktbewältigungsstrategien. Goettingen: Hogrefe; 1998.
33. Huber D, Henrich G, Herschbach P. Measuring the quality of life: a comparison between physically and mentally chronically ill patients and healthy persons. *Pharmacopsychiatry.* 1988;21:453–6.
34. Sommer G, Fydrich T. Entwicklung und Überprüfung eines Fragebogens zur sozialen Unterstützung (F-SozU). *Diagnostica.* 1991;37:160–78.
35. Alexander LB, Luborsky L. The penn helping alliance scales. In: Greenberg LS, Pinsof W, editors. *The psychotherapeutic process: a research handbook.* New York: Guilford Press; 1986. p. 325–66. German version: Bassler

- M, Potratz B, Krauthauser H. Der Helping Alliance Questionnaire (HAQ) von Luborsky. *Psychotherapeutics* 1995;40:23–32.
36. Sandell R, Carlsson J, Schubert J, Broberg J, Lazar A, Grant J. Therapist attitudes and patient outcome: I. Development and validation of the Therapeutic Attitudes Scales (TASC-2). *Psychother Res.* 2004;14:469–84.
 37. Sandell R, Lazar A, Grant J, Carlsson J, Schubert J, Broberg J. Therapist attitudes and patient outcomes: II. Therapist attitudes influence change during treatment. *Psychother Res.* 2007;17:196–204.
 38. Klug G, Henrich G, Kaechele H, Sandell R, Huber D. Die Therapeutenvariable. Immer noch ein dunkler Kontinent? *Psychotherapeutics.* 2008;53:83–91.
 39. Zielke M, Kopf-Mehnert C. Veränderungsfragebogen des Erlebens und Verhaltens, VEV. Beltz: Weinheim; 1978.
 40. Frank E, Prien RF, Jarrett RB, Keller MB, Kupfer DJ, Lavori PW, Rush AJ, Weissman MM. Conceptualization and rationale for consensus definitions of terms in major depressive disorder. *Arch Gen Psychiatry.* 1991;48:851–5.
 41. Beenen F, Stoker J. Periodical rating scale for psychoanalytic treatment. Amsterdam: Netherlands Psychoanalytic Institute; 1996.
 42. Greenberg LS, Pinsof WM. Process research: current trend and future perspective. In: Greenberg LS, Pinsof WM, editors. *The psychotherapeutic process: a research handbook*. New York: The Guilford Press; 1968. p. 3–20.
 43. Rueger U, Dahm A, Kallinke D. The Faber-Haastick Commentary on psychotherapy guidelines. Muenchen/Jena: Urban and Fischer; 2003.
 44. Fonagy P, Kaechele H. Psychoanalysis and other long-term dynamic psychotherapies. In: Gelder MG, Lopez-Ibor JJ, Andreasen N, editors. *New Oxford textbook of psychiatry*, vol. 2. 2nd ed. Oxford: Oxford University Press; 2009. p. 1337–49.
 45. Gabbard GO. Long-term psychodynamic psychotherapy. Washington, DC: American Psychiatric Publishing; 2004. p. 2.
 46. Cuijpers P, van Straten A, Andersson G, van Oppen P. Psychotherapy for depression in adults: a meta-analysis of comparative outcome studies. *J Consult Clin Psychol.* 2008;76:909–22.
 47. Hollon SD, Beck AT. Cognitive and cognitive behavioral therapies. In: Lambert MJ, editor. *Handbook of psychotherapy research und behavior change*. 5th ed. New York: Wiley; 2004. p. 447–92.
 48. Jones EE. Therapeutic action. Northvale: Jason Aronson; 2000.
 49. Akhtar S. *Comprehensive dictionary of psychoanalysis*. London: Karnac; 2009.
 50. Cohen J. *Statistical power analysis for behavioral sciences*. Hillsdale: Lawrence Erlbaum Associates; 1988.
 51. Jacobson NS, Truax P. Clinical significance: a statistical approach to defining meaningful change in psychotherapy research. *J Consult Clin Psychol.* 1991;59:12–19.
 52. Kendall PC, Holmbeck G, Verduin T. Methodology, design, and evaluation in psychotherapy research. In: Lambert MJ, editor. *Handbook of psychotherapy research und behavior change*. 5th ed. Chicago: Wiley; 2004. p. 28–9.
 53. Methodenpapier des Wissenschaftliche Beirat Psychotherapie nach § 11 PsychThG; 2009. www.wbpsychotherapie.de.
 54. Crits-Christoph P, Barber JP. Long-term psychotherapy. In: Snyder CR, Ingram RE, editors. *Handbook of psychological change*. New York/Chichester/Weinheim/Brisbane/Singapore/Toronto: Wiley; 2000. p. 455–73.
 55. Thomae H, Kaechele H. Wissenschaftstheoretische und methodologische Probleme der klinisch-psychoanalytischen Forschung (1973) – wiedergelesen und ergänzt 30 Jahre später. In: Thomä H, Kaechele H, editors. *Psychoanalytische Therapie. Forschung*. Heidelberg: Springer; 2006.
 56. Sandell R. Langzeitwirkung von Psychotherapie und Psychoanalyse. In: Leuzinger-Bohleber M, Stuhr U, editors. *Psychoanalysen im Rueckblick*. Giessen: Psychosozial Verlag; 1997. p. 349.
 57. Kocsis JH, Leon AC, Markowitz JC, Manber R, Arnow B, Klein DN, Thase ME. Patient preference as a moderator of outcome for chronic forms of major depressive disorder treated with Nefazodone, Cognitive Behavioral Analysis System of Psychotherapy, or their combination. *J Clin Psychiatry.* 2009;70:354–61.
 58. Swift JK, Callahan JL. The impact of client treatment preferences on outcome: a meta-analysis. *J Clin Psychol.* 2009;65:368–81.
 59. Hill CE, Lambert MJ. Methodological issues in studying psychotherapy processes and outcomes. In: Lambert MJ, editor. *Handbook of psychotherapy research und behavior change*. 5th ed. New York: Wiley; 2004. p. 84–135.
 60. Lambert MJ, Ogles BM. The efficacy and effectiveness of psychotherapy. In: Lambert MJ, editor. *Handbook of psychotherapy research und behavior change*. 5th ed. New York: Wiley; 2004. p. 139–93.
 61. Luborsky L, Singer J, Luborsky L. Comparative studies of psychotherapy. *Arch Gen Psychiatry.* 1975;32:995–1008.
 62. Luborsky L, Diguer L, Seligman DA, Rosenthal R, Krause ED, Johnson S, Halperin G, Bishop M, Berman JS, Schweizer E. The researcher's own therapy allegiance: a "wild card" in comparisons of treatment efficacy. *Clin Psychol Sci Pract.* 1999;6:95–106.
 63. Williams JW, Noel PH, Cordes JA, Ramirez G, Pignone M. Is this patient clinically depressed? *JAMA.* 2002;287:1160–70.

64. Schauenburg H, Strack M. Measuring psychotherapeutic change with the Symptom Checklist SCL-90-R. *Psychother Psychosom.* 1999;68:199–206.
65. Geiser F, Imbierowicz K, Schilling G, Conrad R, Liedtke R. Differences in 2 diagnostic groups of psychosomatic patients on the Symptom Checklist 90-R (SCL-90-R). Consequences for using SCL-90-R in follow-up research. *Psychother Psychosom Med Psychol.* 2000;50:447–53.
66. Fava GA, Ruini C, Belaise C. The concept of recovery in major depression. *Psychol Med.* 2007;37:307–17.
67. Vittengl JR, Clark LA, Jarrett RB. Deterioration in psychosocial functioning predicts relapse/recurrence after cognitive therapy for depression. *J Affect Disord.* 2009;112:135–43.
68. Jarrett RB, Kraft D, Doyle J, Foster BM, Eaves GG, Silver PC. Preventing recurrent depression using cognitive therapy with and without a continuation phase: a randomized clinical trial. *Arch Gen Psychiatry.* 2001;58:381–8.
69. Taylor DJ, Walters HM, Vittengl JR, Krebaum S, Jarrett RB. Which depressive symptoms remain after response to cognitive therapy of depression and predict relapse and recurrence? *J Affect Disord.* 2010;123:181–7.
70. Puschner B, Kraft S, Kaechele H, Kordy H. Course of improvement over 2 years in psychoanalytic and psychodynamic outpatient psychotherapy. *Psychol Psychother Theory Res Pract.* 2007;80:51–68.
71. Howard KI, Lueger RJ, Maling MS, Martinovich Z. A phase model of psychotherapy outcome: causal mediation of change. *J Consult Clin Psychol.* 1993;61:678–85.
72. Pilkonis PA, Imber SD, Lewis P, Rubinsky P. A comparative outcome study of individual, group, and conjoint psychotherapy. *Arch Gen Psychiatry.* 1984;41:431–7.
73. Wallerstein RS. Forty-two lives in treatment. A study of psychoanalysis and psychotherapy. New York: Guilford Press; 1986. p. 703.
74. Vittengl JR, Clark LA, Jarrett RB. Interpersonal problems, personality pathology, and social adjustment after cognitive therapy for depression. *Psychol Assess.* 2003;15:29–40.
75. Kiesler DJ. Some myths of psychotherapy research and the search for a paradigm. *Psychol Bull.* 1966;65:110–36.
76. Stiles WB, Shapiro DA. Abuse of the drug metaphor in psychotherapy process-outcome research. *Clin Psychol Rev.* 1989;9:521–43.

Chapter 5

The Helsinki Psychotherapy Study: Effectiveness, Sufficiency, and Suitability of Short- and Long-Term Psychotherapy

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• Psychoanalysis • Randomized trial • Repeated measurements • Short-term psychotherapy

Introduction

Both short- and long-term psychotherapies have been shown to be effective for the treatment of patients suffering from mood or anxiety disorders [1–4]. Therapies of the same length have, on average, been found to be equally effective [5]. Short-term therapies, on which most of the studies have concentrated, have generally been found as effective as psychiatric medication and more effective than being on a waiting-list, thus proving that improvement in treatment is not just due to the placebo effect or regression to the mean [6, 7]. Long-term therapies, mostly psychodynamic, although widely used in clinical practice, have been studied to a lesser extent, and, in particular, comparative research on the effectiveness of long-term and short-term therapies is scarce [2, 3, 8]. Furthermore, only a few studies have explored the effectiveness or cost effectiveness of therapies during a long follow-up and with regard to outcomes other than symptoms, such as work ability or social functioning.

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Due to their considerably longer duration and more frequent therapy sessions, long-term therapies may lead to substantially higher costs than shorter therapies. Short-term therapies, on the other hand, may result in greater need for and implementation of further treatments. However, little is known about the incidence and the determinants of auxiliary psychiatric treatments following the start of short- or long-term psychotherapy. Accordingly, the sufficiency of therapies in the long run needs to be more thoroughly studied from multiple perspectives.

One possible reason for insufficient response to treatment, reflected by only minor changes in the patient's state or by the need for and implementation of further treatment, may be a non-optimal treatment choice. Since research on which therapy is the most effective for whom is still scarce and since there is no generally accepted or scientifically proven model of the mechanisms or curative factors underlying psychotherapeutic change [9], factors related to the patient, therapist, and therapy process suggested to affect psychotherapy outcome [10] need to be comprehensively studied. Of the patient-related factors, demographic factors [11, 12], the severity, course, and treatment history of the disorder [12–14], childhood adversities [15], and other psychosocial factors [12, 16] have been considered essential for gauging suitability for psychotherapy and prediction of its outcome. Of the therapist-related factors, demographic as well as professional and personal factors have been thought to affect therapy outcome [17]. Of the factors related to the therapy process, the form and length of therapy [2, 3, 6] and the patient–therapist alliance [18] have been considered particularly important when predicting psychotherapy outcome. However, the knowledge of the mutual importance of the factors related to the patient, therapist, and therapy process is still fragmentary [10].

Due to the increasing demand for psychotherapy, healthcare resources need to be allocated more efficiently based on the patient's needs. To reduce inadequate response to treatment and unnecessary costs, research-based information is needed on the potentially relevant selection criteria for treatment choice, as well as on the effectiveness of different treatments and stability of the improvements, including sustained remission and lack of need for auxiliary treatments. This review of the ongoing Helsinki Psychotherapy Study presents selected results on (1) the effectiveness and proxy efficacy of two short-term and two long-term therapies, (2) the sufficiency of these therapies, and (3) the suitability of the patient and therapist for short-term vs. long-term therapy.

Patients and Methods

Patients

A total of 506 eligible outpatients were recruited to the Helsinki Psychotherapy Study (HPS) from psychiatric services in the Helsinki region from June 1994 to June 2000 [19]. Eligible patients were 20–45 years of age and had a long-standing disorder causing work dysfunction. They had to meet DSM-IV criteria [20] for anxiety or mood disorders. Patients with psychotic disorder, severe personality disorder (DSM-IV cluster – a personality disorder and/or lower level borderline personality organization), adjustment disorder, substance abuse, or organic disorder were excluded, as were individuals who had undergone psychotherapy within the previous 2 years, psychiatric health employees, and persons known to the research team.

Of the 506 patients referred to the HPS, 139 refused to participate (Fig. 5.1). Of the remaining 367 patients, 97 were randomly assigned to solution-focused therapy (SFT), 101 to short-term psychodynamic psychotherapy (STPP), 128 to long-term psychodynamic psychotherapy (LTPP), and 41 were self-selected to psychoanalysis (PA). Thus, to ensure a sufficient number of patients in the long-term therapy group, the patients were randomized in a 1:1:1.3 ratio. After assignment to a treatment group, participation was refused by seven patients assigned to the brief therapies, 26 assigned to LTPP, and one assigned to PA. Of the 333 patients starting the assigned therapy, a total of

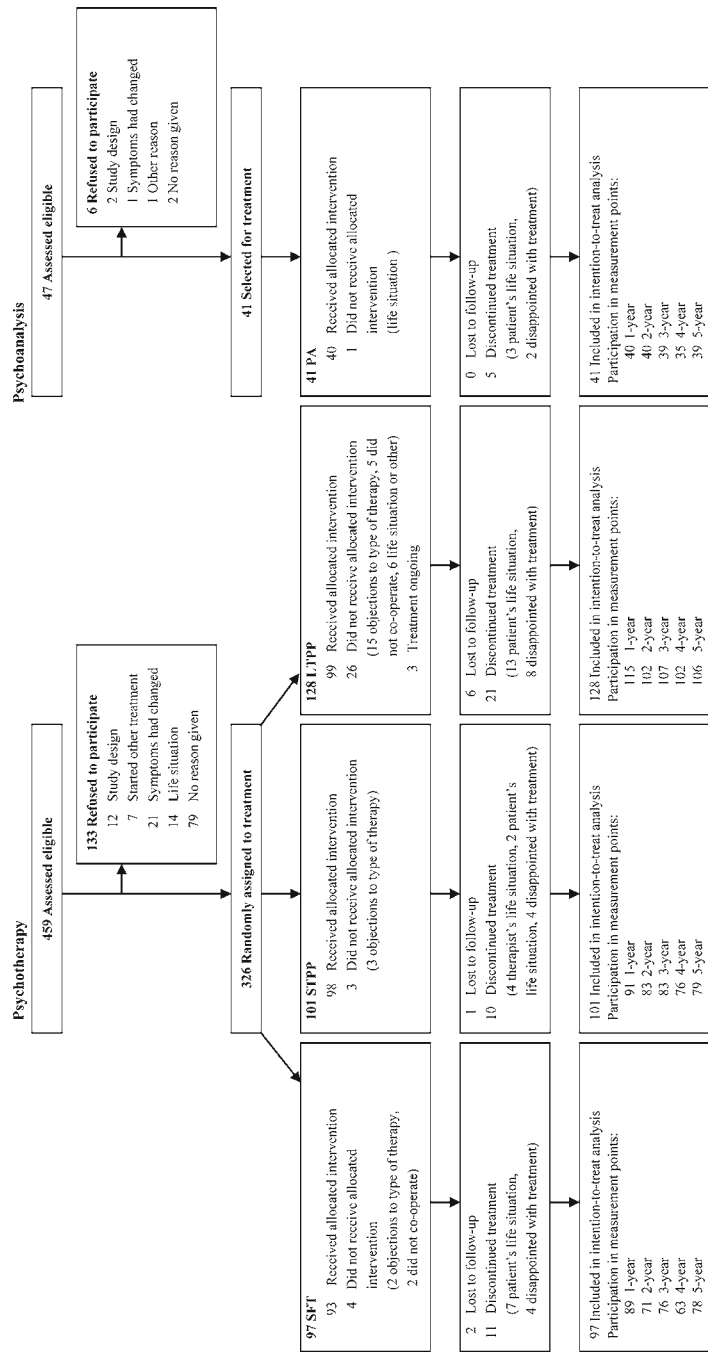


Fig. 5.1 Number of eligible patients who were assigned to study group and completed the protocol

47 patients discontinued the treatment prematurely. The mean length of therapy was 7.5 (SD=3.0), 5.7 (SD=1.3), 31.3 (SD=11.9), and 56.3 (SD=21.3) months in the four treatment groups, respectively. The patients are to be monitored for 10 years following the start of the treatment.

Written informed consent was obtained from the patients after giving them a complete description of the study. The study protocol was approved by the ethics council of the Helsinki University Central Hospital.

Study Designs

The study of effectiveness of the three therapy groups and their sufficiency was carried out as a randomized clinical trial and the comparison of the effectiveness of these groups with the self-selected PA as a quasi-experimental study. The suitability applications, used to predict the effect of patient-, therapist-, and therapy-related factors, were observational cohort studies.

Therapies and Therapists

Therapies

SFT is a brief, resource-oriented, goal-focused therapeutic approach which helps clients change by constructing solutions [21]. The orientation was based on an approach developed by de Shazer et al. [22]. The frequency of sessions in SFT was flexible, usually one session every 2 or 3 weeks, up to a maximum of 12 sessions, over no more than 8 months. STPP is a brief, focal, transference-based therapeutic approach which helps patients by exploring and working through specific intrapsychic and interpersonal conflicts. The orientation was based on approaches described by Malan [23] and Sifneos [24]. STPP was scheduled for 20 treatment sessions, with one session per week. LTPP is an open-ended, intensive, transference-based therapeutic approach which helps patients by exploring and working through a broad range of intrapsychic and interpersonal conflicts. Therapy includes both expressive and supportive elements, depending on the patient's needs. The orientation followed the clinical principles of LTPP [25]. The frequency of sessions in LTPP was two to three times a week for approximately 3 years and 240 sessions, on average. PA is an open-ended, highly intensive, transference-based psychodynamic therapeutic approach, which helps patients by analyzing and working through a broad area of intrapsychic and interpersonal conflicts. The therapeutic setting and technique are characterized by facilitating maximum development of transference by the use of a couch and free association for exploring unconscious conflicts, developmental deficits, and distortions of intrapsychic structures [26]. The frequency of sessions in PA was four times a week for approximately 5 years, and the expected number of sessions on average 800.

Therapists

Psychotherapeutic societies, representing the treatments of interest, were informed of the HPS, leading to a total of 112 eligible therapists volunteering for the study. Eligible therapists were required to have at least 2 years of experience in relevant therapy after completion of their training. The final therapist population comprised 71 therapists, as 41 therapists did not have room for new patients or for some other reason could not attend to clients at the beginning of the study. Altogether, six therapists provided SFT, 12 STPP, 41 LTPP, and 30 PA.

All the therapists who provided SFT had been trained for the method and had received a qualification in solution-focused therapy provided by a local institute. All the therapists providing psychodynamic psychotherapy had received standard training in psychoanalytically orientated psychotherapy that was approved by some of the psychoanalytic or psychodynamic training institutes in Finland. Likewise, psychoanalysts had received standard training at a psychoanalytic training institute. During their training, the psychodynamic therapists received a minimum of 3 years' training in psychodynamic psychotherapy and analysts a minimum of 4 years' training in psychoanalytic treatment. Those giving short-term therapy received 1–2 additional years of specific short-term focal psychodynamic therapy training. The mean number of years of experience in the respective therapies was 9 (range 3–15) for SFT, 9 (range 2–20) for STPP, 18 (range 6–30) for LTPP, and 15 (range 6–30) for PA. None of the psychodynamic therapists had any experience of SFT or vice versa. SFT was manualized, and adherence monitoring was performed. Psychodynamic psychotherapies and PA were conducted in accordance with clinical practice, where the therapists might modify their interventions according to the patient's needs within the respective framework. Accordingly, no manuals were used and no adherence monitoring was organized.

Measurement Methods

Assessment Methods

The assessments were based on interviews and self-report questionnaires conducted at baseline and 14 times (3, 7, 9, 12, 18, 24, 36, 48, 60, 72, 84, 96, 108, and 120 months after baseline) during the 10-year follow-up [19] (Table 5.1). Here, we report results up to a 5-year follow-up. The interviews were conducted by experienced clinical raters. Approved methods were used for assessment of the patients' psychiatric symptoms and diagnosis, the need for post-therapeutic treatment, work ability, personality functions, social functioning, and lifestyle, as well as for assessment of the therapist, the alliance and the therapy process, and cost effectiveness. Thus, a multitude of measures were included to enable a comprehensive evaluation of relevant factors possibly affecting and reflecting different aspects of outcome. Primary outcome measures related to the different domains of outcome were all standardized and validated measures. Depressive symptoms were measured using Beck Depression Inventory (BDI) and Hamilton Depression Rating Scale (HDRS), anxiety symptoms using Symptom Check List, Anxiety Scale (SCL-90-ANX), and Hamilton Anxiety Rating Scale (HARS), and a global assessment of symptoms was performed using Symptom Check List, Global Severity Index (SCL-90-GSI). Three primary working ability measures were used, Work Ability Index (WA), SAS-work, and Perceived Psychological Functioning Scale (Table 5.1).

The Serum Sample Bank

Blood samples were drawn at baseline and at the 36- and 60-month follow-up points. A standard package of laboratory tests was determined. Blood samples from 343 patients were stored at -70°C for potential use in subsequent psychotherapy research.

Qualitative Study

The research interviews at baseline and at the 7, 12, 36, 60, and 84-months measurement points were recorded. Altogether, 1,815 interviews conducted with the 367 patients were recorded. Qualitative

research based on these recordings is carried out to deepen the understanding of the findings of the quantitative research and to further explore the mechanisms of therapeutic change in different patient groups. The research covers evaluation of the effectiveness, sufficiency, and suitability, as well as explorative process and case studies. Multiple qualitative research methodologies are used to discover regularities and to study characteristics of language: content analysis [61], conversation analysis [62, 63], discourse analysis [64], narrative analysis [65], applied psychoanalytic case study [66], and research applying paradigmatic pluralism through combination of qualitative and quantitative methodologies.

Quality Control

The quality of the interview data was continuously controlled and evaluated in several separate designs [19]. The two primary foci of the quality-control designs were the evaluation of consistency of the assessments and methodological research, i.e., the evaluation of applicability, comparability, reliability, and validity of the methods used and of the new measures developed in HPS. Agreement between raters and long-term stability of the ratings were evaluated in a sample of 39 video-recorded interviews, rated independently by five psychologists and two psychiatrists at two time points (baseline and 3-year follow-up). Methodological quality-control research comprised several substudies and focused on determining agreement between self-reported and interview-assessed psychiatric symptoms, comparing diagnoses based on semistructured diagnostic interviews [19] and Structured Clinical Interviews for DSM-IV axis I and axis II disorders (SCID) [67, 68], comparing different methods for computing overall indices of symptoms and functional capacity, assessing quality of proxy outcome assessments (PSQ, Table 5.1), evaluating reliability between self-rated and register-based information for the use of psychotropic medication, and assessing symptomatic improvement during waiting time for therapy [69].

Statistical Methods

The effectiveness of the four therapies was compared in the “intention-to-treat” (ITT) sample giving the clinical effect of the treatment policy. The data contained repeated measurements of the outcome variables. The primary analyses were based on the assumption of ignorable dropouts. In secondary analyses, missing values were replaced by multiple imputation [70]. In the case of continuous outcome variables, the statistical analyses were based on linear mixed models [71], and in the case of binary outcomes on logistic regression models and generalized estimating equations (GEE [72]). Model-adjusted statistics using predictive margins were calculated for different design points [73, 74]. For continuous outcomes, absolute means and their differences, and for binary outcomes, prevalences and relative risks/odds ratios were estimated. The delta method was applied to calculate confidence intervals [75]. Statistical significance was tested with the Wald test. In the quasi-experimental and cohort studies, confounding factors were included in the models.

Results

Description of the Study Population

The patients were relatively young and predominantly female (Table 5.2). About half of them were living alone, and about one quarter had an academic education. Over 80% were either employed or students. A total of 85.6% of the patients suffered from mood disorder (82.3% depressive disorder and 66.7% major depressive disorder), 43.1% from anxiety disorder, and 18.3% from personality

Table 5.2 Mean (SD) levels of baseline characteristics of the patients intended to treat

Characteristic	Psychotherapy (N=326)	Psychoanalysis (N=41)	P-value for difference
<i>Socioeconomic variables</i>			
Age (years)	32.3 (6.9)	30.4 (5.6)	0.09
Males (%)	23.9	31.7	0.28
Living alone (%)	51.2	61.0	0.24
Academic education (%)	25.8	46.3	0.006
Employed or student (%)	80.7	87.8	0.27
<i>Psychiatric diagnosis</i>			
Depressive disorder (%)	81.6	87.8	0.33
Anxiety disorder (%)	43.6	39.0	0.58
Personality disorder (%)	18.1	19.5	0.83
Psychiatric comorbidity (%)	42.9	48.8	0.48
<i>Psychiatric symptoms</i>			
Beck Depression Inventory (BDI)	18.3 (7.9)	19.0 (8.0)	0.58
Symptom Check List, Global Severity Index (SCL-90-GSI)	1.28 (0.53)	1.34 (0.52)	0.46
Symptom Check List, Anxiety Scale (SCL-90-Anx)	1.24 (0.69)	1.30 (0.68)	0.56
Hamilton Depression Rating Scale (HDRS)	15.7 (4.8)	15.8 (4.9)	0.87
Hamilton Anxiety Scale (HARS)	14.9 (5.2)	16.5 (5.7)	0.08
Global Assessment Functioning scale (GAF)	55.2 (7.5)	55.8 (7.3)	0.68
<i>Psychiatric history and previous psychiatric treatment</i>			
First symptoms at age <22 years (%)	61.0	53.7	0.36
Psychotherapy (%)	19.3	26.8	0.26
Psychotropic medication (%)	22.0	7.7	0.04
Hospitalization (%)	1.8	0.0	0.38
<i>Personality, social, and work functioning</i>			
Quality of Object Relations Rating Scale (QORS)	5.13 (0.60)	4.98 (0.66)	0.12
Level of Personality Organization (LPO)	4.19 (0.65)	4.14 (0.67)	0.67
Defense Style Questionnaire (DSQ), Immature style	3.93 (0.73)	3.88 (0.85)	0.70
Structural Analysis of Social Behavior (SASB), introject, weighted affiliation score	5.91 (59.9)	-11.2 (67.0)	0.09
Inventory of Interpersonal Problems (IIP-64)	86.4 (30.9)	90.0 (33.4)	0.50
Sense of Coherence scale (SOC-27)	113 (20.7)	107 (20.6)	0.07
Work Ability index (WA)	33.7 (6.9)	32.3 (6.3)	0.21
<i>Suitability for psychotherapy (SPS)</i>			
Modulation of affects (good %)	0.68	0.68	0.98
Flexibility of interactions (good %)	0.89	0.95	0.22
Self-concept in relation to ego ideal (good %)	0.83	0.71	0.07
Reflective ability (good %)	0.82	0.93	0.08
Trial interpretation (good %)	0.67	0.88	0.01
Motivation (good %)	0.39	0.68	<0.001

disorder. Only a few statistically significant differences between the randomized and the PA group with respect to potential confounding factors were found. The proportion of patients with an academic education was higher in the psychoanalysis group. The use of psychotropic medication was much more common in the randomized psychotherapy groups, whereas in the psychoanalysis group, the patients had suggestively a poorer sense of coherence (indicating problems in experiencing life as comprehensible, manageable, and meaningful) and more anxiety symptoms. There was a strong indication of differences in suitability factors between the patients in the psychoanalysis group and those randomized. The patients receiving psychoanalysis more often had worse self-concept in relation to ego ideal (i.e., the self they would desire to have), but they had better reflective ability, reaction to trial interpretation, and motivation than the other patients.

Effectiveness

Symptoms and Work Ability in the Randomized Trial

Here, the effectiveness of the two short-term psychotherapies and the long-term psychotherapy on psychiatric symptoms (BDI, HDRS, SCL-90-ANX, HARS, and SCL-90-GSI, Table 5.1) and work ability (WA, SAS-work, and PPF, Table 5.1) during a 3-year follow-up from the start of the therapies is presented [2, 3].

During the first year of follow-up, patients treated with STPP recovered faster from their psychiatric symptoms, and patients treated with SFT recovered faster from depressive symptoms than patients receiving LTPP in the total study population ([2], pp. 696–697, Table 3). However, after 3 years of follow-up, the situation was reversed; a stronger treatment effect in the LTPP both for patients with depressive and anxiety symptoms was found. The differences in effectiveness between short- and long-term therapies were moderate but consistent over all five symptom measures considered. The results were generally similar for patients with diagnosed mood disorder at baseline (Table 5.3). However, for patients suffering from anxiety disorder, statistically significantly faster recovery in the short-term therapy groups was found only for BDI (Table 5.4). Furthermore, a stronger treatment effect in the long-term therapy group after 3 years of follow-up was found only in comparison with STPP and for the symptom measures assessed by questionnaires (i.e., BDI, SCL-90-ANX, and SCL-90-GSI).

The values of WA and PPF improved more in the short-term therapies than in the long-term psychodynamic psychotherapy during the first 7 months of follow-up in the total study population ([3], pp. 102–103, Table 2). In accordance with the symptoms observed at the end of the 3-year follow-up, the long-term psychodynamic psychotherapy was slightly more effective than the short-term therapies for all three measures of work ability. The results in the subgroups of patients suffering from mood or anxiety disorder were similar with the exception that LTPP and SFT did not differ statistically significantly from each other for any work ability measure at any time point in the anxiety disorder subgroup (Tables 5.5 and 5.6).

No statistically significant differences were found between the two short-term therapies at any of the measurement points during the first 3 years of follow-up for any of the symptom or work ability scores in the total study population [2, 3] or in the subgroups of patients suffering at the baseline from mood disorder (Tables 5.3 and 5.5) or anxiety disorder (Tables 5.4 and 5.6).

Cost Effectiveness in the Randomized Trial

Here, economic evaluation of STPP in comparison with SFT during the first year of follow-up is presented. The effectiveness measures used in this evaluation were BDI, HDRS, SCL-90-ANX, and HARS. The primary cost variable used was the direct costs due to the treatment of mental health problems, but also the indirect costs due to mental health problems as well as the direct and indirect costs due to somatic disorders were estimated. At no point during the 1-year follow-up were there statistically significant differences between the therapy groups for any of the effectiveness measures ([2], pp. 696–697, Table 3), and accordingly, there were no differences in the AUCs. The mean direct costs (expressed at the price level of 2006) due to mental-health problems during the 1-year follow-up period were EUR 1,791 in the STPP group and EUR 2,137 in the SFT group, but this difference was not statistically significant. On the other hand, the mean indirect costs due to mental health problems were nonsignificantly higher in the STPP group than in the SFT group (EUR 3,276 vs. EUR 1,985). The direct and the indirect costs accruing from somatic disorders were smaller than those for mental health problems in both groups, and the differences between STPP and SFT were

Table 5.3 Mean score levels (*s.e.*) of psychiatric symptoms in treatment groups for patients suffering from mood disorder and mean score differences (95% confidence interval) between the treatment groups

Outcome variable	Time (month)	Mean scores ^a (<i>s.e.</i>)		Mean score difference ^b (95% confidence interval)			
		SFT (<i>N</i> =84)	STPP (<i>N</i> =79)	LTTP (<i>N</i> =113)	SFT vs. LTTP	STPP vs. LTTP	STPP vs. SFT
BDI	0	18.8 (0.8)	19.0 (0.9)	19.8 (0.7)	0	0	0
	7	11.0* (1.0)	11.0* (1.0)	15.0* (0.9)	-3.7 (-6.1, -1.3)	-3.7 (-6.1, -1.2)	+0.0 (-2.5, +2.6)
	12	11.3 (1.1)	9.8 (1.1)	13.3* (0.9)	-1.8 (-4.5, +0.9)	-3.1 (-5.7, -0.5)	-1.3 (-4.2, +1.6)
	24	10.9 (1.3)	9.5 (1.2)	10.3* (1.0)	+0.8 (-2.3, +3.9)	-0.4 (-3.3, +2.5)	-1.2 (-4.5, +2.1)
<i>P</i> -value (time) ^{a,c}	36	10.5 (1.1)	10.9 (1.1)	7.5* (0.9)	+3.2 (+0.4, +6.1)	+3.9 (+1.2, +6.5)	+0.6 (-2.4, +3.6)
				<.0001			
				0.0002			
HDRS	0	16.3 (0.5)	16.4 (0.5)	16.2 (0.4)	0	0	0
	7	11.6* (0.7)	11.1* (0.7)	12.8* (0.6)	-1.2 (-2.9, +0.5)	-1.7 (-3.5, -0.0)	-0.5 (-2.3, +1.3)
	12	11.6 (0.8)	11.1 (0.7)	12.8 (0.7)	-1.2 (-3.1, +0.7)	-1.7 (-3.6, +0.1)	-0.5 (-2.5, +1.5)
	36	11.1 (0.7)	11.4 (0.7)	9.2* (0.6)	+1.8 (-0.0, +3.6)	+2.1 (+0.3, +3.9)	+0.3 (-1.6, +2.2)
<i>P</i> -value (time) ^{a,c}				<.0001			
				0.003			
SCL-90-Anx	0	1.27 (0.08)	1.23 (0.08)	1.20 (0.07)	0	0	0
	7	0.99* (0.09)	0.86* (0.09)	1.04* (0.08)	-0.10 (-0.30, +0.10)	-0.21 (-0.41, -0.01)	-0.11 (-0.32, +0.10)
	12	0.94 (0.09)	0.83 (0.09)	0.98* (0.07)	-0.04 (-0.23, +0.14)	-0.14 (-0.32, +0.05)	-0.09 (-0.29, +0.11)
	24	1.00 (0.09)	0.80 (0.09)	0.78* (0.08)	+0.17 (-0.04, +0.37)	-0.00 (-0.20, +0.19)	-0.17 (-0.39, +0.05)
<i>P</i> -value (time) ^{a,c}	36	0.87 (0.08)	0.80 (0.08)	0.59* (0.07)	+0.24 (+0.03, +0.45)	+0.19 (-0.01, +0.39)	-0.05 (-0.27, +0.17)
				<.0001			
				0.09			
HARS	0	15.1 (0.6)	15.1 (0.6)	15.0 (0.5)	0	0	0
	7	10.9* (0.6)	10.4* (0.6)	11.8* (0.6)	-1.0 (-2.5, +0.6)	-1.4 (-3.0, +0.2)	-0.4 (-2.1, +1.2)
	12	11.0 (0.7)	10.0 (0.7)	11.4 (0.6)	-0.5 (-2.1, +1.2)	-1.4 (-3.1, +0.2)	-1.0 (-2.7, +0.8)
	36	10.5 (0.6)	9.8 (0.6)	8.4* (0.5)	+2.1 (+0.5, +3.7)	+1.4 (-0.2, +3.0)	-0.7 (-2.4, +1.0)
<i>P</i> -value (time) ^{a,c}				<.0001			
				0.01			
SCL-90-GSI	0	1.34 (0.06)	1.30 (0.06)	1.29 (0.05)	0	0	0
	7	0.96* (0.07)	0.91* (0.07)	1.09* (0.06)	-0.15 (-0.31, +0.01)	-0.18 (-0.33, -0.02)	-0.03 (-0.19, +0.14)
	12	0.93 (0.07)	0.81* (0.07)	0.98* (0.06)	-0.09 (-0.24, +0.06)	-0.18 (-0.33, -0.03)	-0.09 (-0.25, +0.08)
	24	1.00 (0.08)	0.84 (0.08)	0.85* (0.07)	+0.11 (-0.07, +0.29)	-0.02 (-0.19, +0.16)	-0.12 (-0.32, +0.07)
<i>P</i> -value (time) ^{a,c}	36	0.89 (0.07)	0.84 (0.07)	0.69* (0.06)	+0.17 (-0.00, +0.35)	+0.15 (-0.02, +0.31)	-0.03 (-0.21, +0.16)
				<.0001			
				0.01			

*A statistically significant change occurred in comparison with the value at the previous time point. Italicized entries have *p*-values <0.05^aBasic model: adjusted for time, treatment group, the difference between theoretical and realized date of measurement, and first-order interaction of time and treatment group^bBasic model adjusted for the baseline level of the outcome measure considered^c*P*-value for time difference for the treatment groups combined^d*P*-value for group difference over time

Table 5.4 Mean score levels (*s.e.*) of psychiatric symptoms in treatment groups for patients suffering from anxiety disorder and mean score differences (95% confidence interval) between the treatment groups

Outcome variable	Time (month)	SFT (N=45)			STPP (N=50)			LTPP (N=47)			SFT vs. LTPP			STPP vs. LTPP			STPP vs. SFT		
BDI	0	17.6	(1.2)		17.1	(1.2)		18.3	(1.2)		0			0			0		
	7	8.7*	(1.2)		9.5*	(1.2)		13.3*	(1.3)		-4.8	(-7.9, -1.6)	-3.5	(-6.5, -0.5)			+1.2	(-1.7, +4.2)	
	12	10.1	(1.5)		9.0	(1.3)		11.1*	(1.5)		-1.4	(-5.0, +2.2)	-1.9	(-5.3, +1.6)			-0.5	(-3.9, +3.0)	
	24	8.9	(1.7)		10.0	(1.4)		9.6	(1.6)		-0.9	(-5.2, +3.5)	+0.9	(-3.1, +4.8)			+1.8	(-2.4, +5.9)	
	36	7.8	(1.4)		8.8	(1.2)		5.0*	(1.3)		+2.5	(-1.1, +6.1)	+4.7	(+1.3, +8.1)			+2.1	(-1.3, +5.6)	
<i>P</i> -value (time) ^{a,c}		<.0001																	
<i>P</i> -value (group) ^{b,d}		0.04																	
HDRS	0	16.0	(0.8)		14.5	(0.7)		16.5	(0.7)		0			0			0		
	7	10.9*	(0.9)		10.2*	(0.9)		12.8*	(0.9)		-2.0	(-4.5, +0.5)	-2.3	(-4.7, +0.2)			-0.3	(-2.6, +2.1)	
	12	11.5	(0.9)		9.5	(0.9)		11.4	(1.0)		+0.2	(-2.4, +2.8)	-1.5	(-4.1, +1.0)			-1.7	(-4.2, +0.8)	
	36	9.6*	(0.9)		8.9	(0.8)		8.8*	(0.9)		+1.0	(-1.6, +3.5)	+0.5	(-1.9, +3.0)			-0.5	(-2.9, +2.0)	
	<i>P</i> -value (time) ^{a,c}		<.0001																
<i>P</i> -value (group) ^{b,d}		0.23																	
SCL-90-Anx	0	1.60	(0.10)		1.47	(0.10)		1.41	(0.10)		0			0			0		
	7	0.99*	(0.11)		1.05*	(0.11)		1.10*	(0.11)		-0.24	(-0.52, +0.04)	-0.10	(-0.37, +0.17)			+0.14	(-0.13, +0.41)	
	12	0.98	(0.12)		0.93	(0.11)		0.98	(0.11)		-0.12	(-0.40, +0.15)	-0.09	(-0.35, +0.17)			+0.03	(-0.23, +0.29)	
	24	0.97	(0.14)		1.01	(0.12)		0.97	(0.13)		-0.12	(-0.47, +0.23)	-0.00	(-0.32, +0.31)			+0.12	(-0.22, +0.45)	
	36	0.77*	(0.10)		0.86	(0.09)		0.58*	(0.10)		+0.11	(-0.16, +0.39)	+0.27	(+0.01, +0.53)			+0.15	(-0.11, +0.42)	
<i>P</i> -value (time) ^{a,c}		<.0001																	
<i>P</i> -value (group) ^{b,d}		0.44																	
HARS	0	17.0	(0.8)		16.1	(0.7)		17.0	(0.8)		0			0			0		
	7	11.1*	(0.9)		10.9*	(0.8)		13.0*	(0.9)		-2.0	(-4.4, +0.4)	-1.8	(-4.1, +0.5)			+0.2	(-2.1, +2.4)	
	12	11.1	(0.9)		9.8	(0.8)		11.1*	(0.9)		-0.0	(-2.5, +2.4)	-1.0	(-3.3, +1.4)			-0.9	(-3.3, +1.4)	
	36	9.8	(0.9)		9.0	(0.8)		8.2*	(0.9)		+1.6	(-0.8, +4.0)	+1.0	(-1.2, +3.3)			-0.6	(-2.8, +1.7)	
<i>P</i> -value (time) ^{a,c}		<.0001																	
<i>P</i> -value (group) ^{b,d}		0.24																	
SCL-90-GSI	0	1.41	(0.08)		1.33	(0.08)		1.43	(0.08)		0			0			0		
	7	0.88*	(0.09)		0.98*	(0.08)		1.08*	(0.09)		-0.20	(-0.41, +0.02)	-0.05	(-0.26, +0.16)			+0.15	(-0.06, +0.35)	
	12	0.91	(0.09)		0.83*	(0.09)		0.98	(0.09)		-0.07	(-0.29, +0.15)	-0.10	(-0.31, +0.11)			-0.03	(-0.24, +0.17)	
	24	0.92	(0.11)		0.96*	(0.10)		0.92	(0.11)		-0.03	(-0.29, +0.23)	+0.08	(-0.16, +0.32)			+0.11	(-0.14, +0.36)	
	36	0.79	(0.09)		0.84	(0.08)		0.64*	(0.09)		+0.20	(-0.05, +0.45)	+0.28	(+0.05, +0.52)			+0.09	(-0.15, +0.32)	
<i>P</i> -value (time) ^{a,c}		<.0001																	
<i>P</i> -value (group) ^{b,d}		0.19																	

* A statistically significant change occurred in comparison with the value at the previous time point. Italicized entries have *p*-values <0.05^a Basic model: adjusted for time, treatment group, the difference between theoretical and realized date of measurement, and first-order interaction of time and treatment group^b Basic model adjusted for the baseline level of the outcome measure considered^c *P*-value for time difference for the treatment groups combined^d *P*-value for group difference over time

Table 5.5 Mean score levels (*s.e.*) of functional capacity in treatment groups for patients suffering from mood disorder and mean score differences (95% confidence interval) between the treatment groups

Outcome variable	Time (year)	Mean scores ^a (<i>s.e.</i>)		Mean score difference ^b (95% confidence interval)			
		SFT (<i>N</i> =84)	STTP (<i>N</i> =79)	LTPP (<i>N</i> =113)	SFT vs. LTPP	STTP vs. LTPP	STTP vs. SFT
Work Ability index (WA)	0	33.2 (0.75)	33.6 (0.76)	32.7 (0.64)	0	0	0
	7	37.2* (0.81)	37.9* (0.82)	35.6* (0.72)	+1.5 (-0.4, +3.4)	+1.9 (+0.0, +3.8)	+0.4 (-1.6, +2.4)
	12	37.0 (0.87)	37.5 (0.85)	36.8 (0.76)	+0.1 (-2.0, +2.2)	+0.3 (-1.8, +2.3)	+0.1 (-2.1, +2.3)
	24	36.7 (0.93)	38.6 (0.87)	39.2* (0.75)	-2.8 (-5.0, -0.6)	-1.1 (-3.2, +1.1)	+1.7 (-0.6, +4.1)
	36	37.1 (0.97)	37.5 (0.92)	39.6 (0.83)	-2.7 (-5.1, -0.3)	-2.6 (-4.9, -0.3)	+0.1 (-2.4, +2.6)
<i>P</i> -value (time) ^{ac}				<.0001			
<i>P</i> -value (group) ^{b,d}				0.002			
SAS-Work	0	2.25 (0.06)	2.21 (0.06)	2.27 (0.05)	0	0	0
	7	2.04* (0.06)	1.99* (0.07)	2.16 (0.06)	-0.14 (-0.30, +0.02)	-0.15 (-0.31, +0.01)	-0.01 (-0.18, +0.16)
	12	2.01 (0.07)	1.94 (0.07)	2.03 (0.06)	-0.04 (-0.21, +0.12)	-0.07 (-0.23, +0.09)	-0.03 (-0.20, +0.14)
	24	2.00 (0.07)	1.87 (0.07)	1.86* (0.06)	+0.13 (-0.06, +0.31)	+0.03 (-0.14, +0.20)	-0.10 (-0.29, +0.10)
	36	1.92 (0.07)	1.92 (0.07)	1.74* (0.06)	+0.17 (-0.01, +0.35)	+0.22 (+0.04, +0.39)	+0.04 (-0.15, +0.23)
<i>P</i> -value (time) ^{ac}				<.0001			
<i>P</i> -value (group) ^{b,d}				0.05			
Perceived Psychological Functioning scale (PPF)	0	26.0 (0.59)	25.5 (0.60)	25.9 (0.51)	0	0	0
	7	21.7* (0.72)	20.7* (0.73)	23.3* (0.64)	-1.9 (-3.7, -0.1)	-2.6 (-4.4, -0.8)	-0.7 (-2.6, +1.1)
	12	21.3 (0.72)	20.9 (0.70)	22.1* (0.63)	-1.1 (-2.9, +0.7)	-1.1 (-2.9, +0.6)	-0.0 (-1.9, +1.9)
	24	22.3 (0.83)	20.7 (0.76)	20.1* (0.65)	+2.1 (+0.1, +4.1)	+0.8 (-1.1, +2.8)	-1.2 (-3.4, +0.9)
	36	21.1 (0.67)	20.9 (0.63)	19.1 (0.57)	+1.8 (+0.0, +3.5)	+2.0 (+0.4, +3.7)	+0.3 (-1.5, +2.1)
<i>P</i> -value (time) ^{ac}				<.0001			
<i>P</i> -value (group) ^{b,d}				0.0005			

* A statistically significant change occurred in comparison with the value at the previous time point. Italicized entries have *p*-values <0.05^aBasic model: adjusted for time, treatment group, the difference between theoretical and realized date of measurement, and first-order interaction of time and treatment group^bBasic model adjusted for the baseline level of the outcome measure considered^c*P*-value for time difference for the treatment groups combined^d*P*-value for group difference over time

Table 5.6 Mean score levels (s.e.) of functional capacity in treatment groups for patients suffering from anxiety disorder and mean score differences (95% confidence interval) between the treatment groups

Outcome variable	Time (year)	Mean scores ^a (s.e.)				Mean score difference ^b (95% confidence interval)					
		SFT (N=45)	STTP (N=50)	LTTP (N=47)	SFT vs. LTTP	STTP vs. LTTP	STTP vs. SFT				
Work Ability index (WA)	0	33.7	(1.03)	33.9	(0.97)	34.5	(1.01)	0	0	0	
	7	38.4*	(1.00)	38.0*	(0.94)	37.5*	(1.02)	+1.9	(-0.6, +4.3)	+1.1	(-1.3, +3.4)
	12	38.7	(1.04)	38.1	(0.94)	37.9	(1.05)	+1.2	(-1.5, +4.0)	+0.3	(-2.3, +2.9)
	24	39.9	(1.17)	38.1	(0.99)	40.6*	(1.09)	-0.3	(-3.4, +2.7)	-2.3	(-5.1, +0.4)
	36	39.2	(1.04)	38.5	(0.94)	41.7	(1.06)	-2.3	(-5.2, +0.6)	-3.3	(-6.0, -0.6)
<i>P</i> -value (time) ^{a,c}											
<i>P</i> -value (group) ^{b,d}											
SAS-Work	0	2.14	(0.08)	2.05	(0.08)	2.18	(0.08)	0	0	0	0
	7	1.86*	(0.09)	1.93	(0.08)	1.98*	(0.09)	-0.16	(-0.37, +0.05)	-0.01	(-0.22, +0.20)
	12	1.82	(0.08)	1.85	(0.08)	1.92	(0.09)	-0.10	(-0.32, +0.12)	-0.01	(-0.22, +0.20)
	24	1.82	(0.10)	1.86	(0.08)	1.85	(0.09)	-0.04	(-0.31, +0.23)	+0.06	(-0.18, +0.30)
	36	1.79	(0.09)	1.76	(0.08)	1.60*	(0.09)	+0.20	(-0.04, +0.43)	+0.23	(+0.00, +0.45)
<i>P</i> -value (time) ^{a,c}											
<i>P</i> -value (group) ^{b,d}											
Perceived Psychological Functioning Scale (PPF)	0	25.6	(0.74)	24.7	(0.70)	25.0	(0.73)	0	0	0	0
	7	20.3*	(0.89)	20.0*	(0.84)	21.8*	(0.91)	-2.3	(-4.6, +0.1)	-2.0	(-4.3, +0.2)
	12	20.5	(0.83)	20.3	(0.75)	20.7	(0.84)	-0.7	(-2.9, +1.5)	-0.5	(-2.5, +1.6)
	24	20.4	(1.05)	21.0	(0.87)	19.8	(0.97)	+0.2	(-2.4, +2.9)	+1.3	(-1.1, +3.7)
	36	19.7	(0.80)	20.2	(0.72)	18.0*	(0.81)	+1.4	(-0.8, +3.6)	+2.4	(+0.4, +4.5)
<i>P</i> -value (time) ^{a,c}											
<i>P</i> -value (group) ^{b,d}											

*A statistically significant change occurred in comparison with the value at the previous time point. Italicized entries have *p*-values <0.05

^aBasic model: adjusted for time, treatment group, the difference between theoretical and realized date of measurement, and first-order interaction of time and treatment group

^bBasic model adjusted for the baseline level of the outcome measure considered

^c*P*-value for time difference for the treatment groups combined

^d*P*-value for group difference over time

relatively small. Although no statistically significant differences in respect of effectiveness or costs could be found during the short 1-year follow-up, no firm conclusions can be drawn on whether there is a difference in the cost effectiveness of these two short-term therapies in the long run.

Symptoms and Work Ability in the Quasi-Randomized Study

Including the Psychoanalysis Group

Here, the prediction of psychoanalysis on symptoms and work ability in comparison with that of the three therapies during a 5-year follow-up period is illustrated. The selection of patients for psychoanalysis on the basis of their suitability made the comparison of this group with the three randomized therapy groups potentially prone to confounding. Patients satisfying the four indication criteria (A1–A4), with absence of the five contraindication criteria (B1–B5) presented in Table 5.7, were considered suitable for psychoanalysis [76]. In the present study, both the first indication (criterion A1), and the contraindications for psychoanalysis (criteria B) were acknowledged in all four treatment groups in the selection of patients. The remaining three indication criteria (A2–A4) were covered by the symptom, diagnostic, personality, and functional capacity variables measured at baseline. These criteria variables were included in the statistical models in case they satisfied the criteria for confounding factors in order to adjust the estimates of effectiveness and thus to allow comparison of the psychoanalysis group to the three randomized therapies.

The remission from depressive symptoms and work disability based on analyses including all four therapy groups is presented for the psychodynamic therapies in Figs. 5.2 and 5.3. The ITT analyses showed a higher remission rate in the STPP group after 1 year of follow-up and in the LTPP group after 3 years of follow-up than in the PA group (Fig. 5.2a). At the 5-year follow-up point, STPP was statistically significantly less effective than PA. However, exclusion of the patients using auxiliary treatment during follow-up in the AT analysis changed the results considerably. Neither STPP nor LTPP outperformed PA at the beginning of the follow-up, whereas STPP was less effective during the last 2 years and LTPP was less effective at the 5-year follow-up point than PA (Fig. 5.2b).

Remission from work disability was stronger in the two therapy groups than in the PA group during the first year of follow-up (Fig. 5.3a). However, LTPP was most effective after 3 years of follow-up, and PA after 5 years. After exclusion of auxiliary treatment, STPP was less effective than the longer treatments during the last 2 years of follow-up (Fig. 5.3b). No statistically significant differences between LTPP and PA were seen at any point during follow-up.

Sufficiency

During the 5-year follow-up, the mood-disorder diagnosis was eliminated for about 50% and the anxiety-disorder diagnosis for about 70% of the patients suffering from respective disease at baseline. This recovery may be partly due to auxiliary treatment. As an indicator of sufficiency of the treatments given, we assessed auxiliary psychiatric treatments during and after the study treatments. Auxiliary treatment, defined as regular use of medication (antidepressants, anxiolytics, neuroleptic, or psychiatric combination), the number of therapy sessions (short or long individual, group, couple, or family) or the number of hospital days (psychiatric hospital or other when due to suicide attempt or mental disorder) was measured by questionnaires, interviews, and using nationwide health registers.

Because of the inclusion criteria, none of the patients used therapy or was hospitalized at baseline, whereas a total of 22% of the patients used psychotropic medication. About 60% of the patients used auxiliary treatment during the 5-year follow-up. Auxiliary treatment was most common in the

Table 5.7 Criteria (indications and contraindications) for suitability for psychoanalysis

Criteria	Measurement method ^a
<i>A. Indications for psychoanalysis</i>	
1. Response to other psychiatric treatment likely to be inadequate	Assessment interview
2. Chronic symptoms reflecting intrapsychic conflict and developmental arrest	QORS, DSQ, LPO, SASB, IIP, SOC
3. Sufficient amount of subjective suffering	DSM-IV, BDI, SCL-90, GAF, WA
4. Growth potential (necessary for analyzability)	
4.1. Ego strength and object relations	
Sufficient ego strength	SPS, LPO, QORS
Lack of pathological narcissism	SPS
Capacity for modulation of affects and frustration tolerance	SPS, LPO
Core conflicts mainly oedipal (neurotic)	LPO
Capacity to tolerate therapeutic regression	SPS, LPO
Capacity for impulse control	SPS, LPO
Adequate integrity of superego	LPO
Sufficient level of defense mechanisms	DSQ
Flexibility of interaction	SPS
Developmental level of object relations	QORS
4.2. Psychological mindedness	
Good reflective ability	SPS
Ability to work with trial interpretation	SPS
Motivation for self-exploration	SPS
<i>B. Contraindications for psychoanalysis ^b</i>	
1. Psychiatric diagnosis	DSM-IV
Psychotic disorders	
Severe personality disorders	
2. Ego strength and object relations	
Chronic ego defects	SPS, LPO, QORS
Pathological narcissism	SPS
Very poor ability for modulation of affects and frustration tolerance	SPS, LPO
Lack of potential to work analytically	Assessment interview
Seriously impaired object relations	QORS
3. Psychological mindedness	
Very poor reflective ability	SPS
Very poor verbalizing ability	Assessment interviews
Severe cognitive dysfunctioning	Assessment interviews
4. Developmental factors	
Very severe early trauma and deprivations	Assessment interview
5. Life situation	
Severe life crisis	Assessment interviews

^aAbbreviations: see Table 5.1

^bContraindications are usually seen as relative rather than absolute, indicating severely guarded prognosis [76]. Patients with such contraindications for psychoanalysis were excluded from the study on the basis of pretreatment assessment interviews and diagnostic evaluations

brief therapy groups (69% in SFT and 74% in STPP) and less common in the LTPP (56%) and PA groups (40%). Auxiliary therapy was more common in the brief therapy groups (47%) than in the LTPP (28%) or PA (25%) groups. This was seen in the individual therapies whereas no notable differences in the occurrence of other types of therapy were found between the therapy groups.

The current average number of therapy sessions (four therapies are still ongoing) given by HPS among patients starting the therapy is 9.8 (range = 1–15, SD = 3.3) in the SFT group, 18.5 (range = 4–23, SD = 3.4) in the STPP group, 232 (range = 8–417, SD = 105) in the LTPP group, and 646

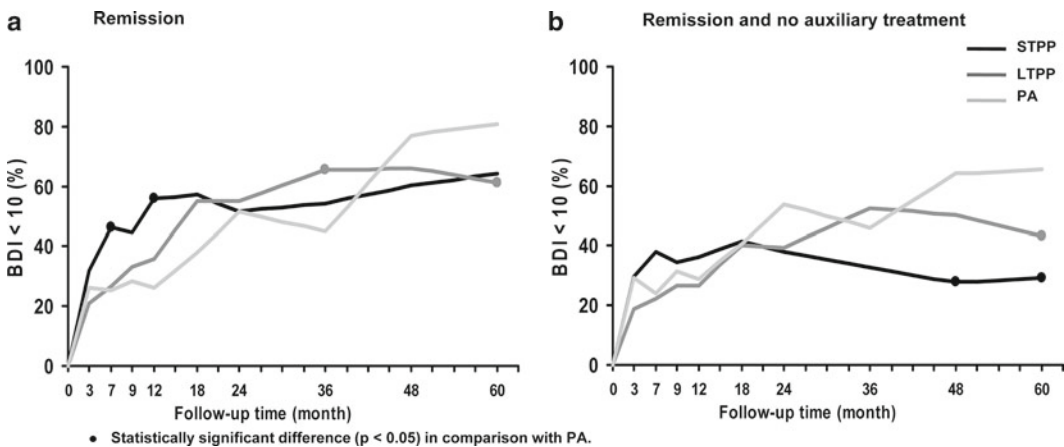


Fig. 5.2 Remission from depressive symptoms (BDI) among patients with $BDI \geq 10$ at baseline ($N=312$). (a) Remission. (b) Remission and no auxiliary treatment

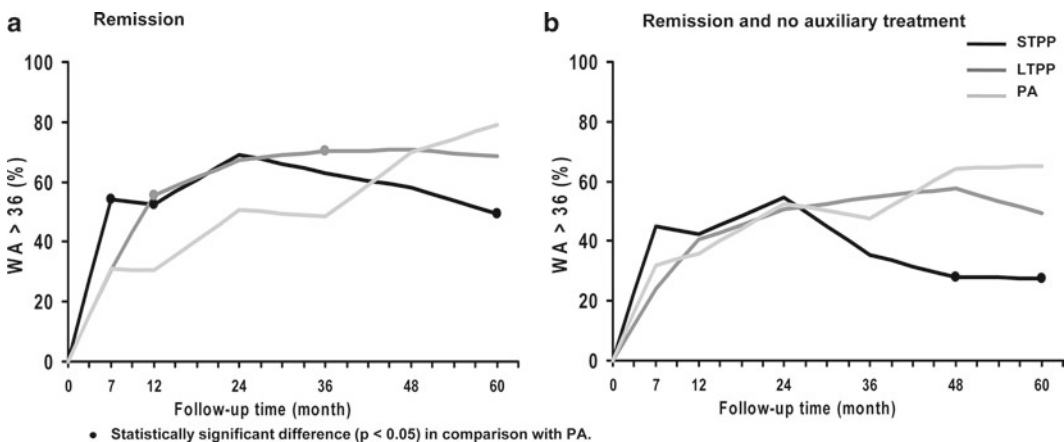


Fig. 5.3 Remission from work disability (WA) among patients with $WA \leq 36$ at baseline ($N=235$). (a) Remission. (b) Remission and no auxiliary treatment

(range=74–1113, $SD=245$) in the PA group. After addition of the auxiliary therapies, the average total number of therapy sessions is 60 (range=3–416), 70 (range=7–512), 240 (range=8–447), and 670 (range=115–1113) in SFT, STPP, LTPP, and PA, respectively. Use of psychotropic medication was most common in the STPP group (61%) and least common in the PA group (33%). Hospitalization due to psychiatric reasons was much more common in both psychodynamic therapy groups (7%) than in the SFT group (1%).

In conclusion, differences in the use of auxiliary psychiatric treatments may suggest specific effects of therapy form and duration. Short-term therapies were more often insufficient than LTPP and PA in assuring sustained improvement, when assessed by the need for additional treatment. Low use of psychotropic medication in the PA group is in accordance with the therapeutic rationale and may reflect adequate holding provided by the intensive therapeutic relationship while high level of

medication in the STPP group might be related to insufficiency of the therapy form and length in providing tools to cope with post-therapeutic distresses. Further research is needed to assess therapy- and patient-related determinants of treatment use.

Suitability

One potential reason for the low sufficiency may be the randomization of patients to the three therapy groups, which possibly leads to a treatment choice that is not optimal for all patients. For this reason, the prediction of patient-, therapist-, and therapy-related factors on the outcome of short- and long-term psychotherapy was assessed to identify the possible optimal circumstances for the treatment. Of the therapy-related factors, information on the form and length of therapy as well as the patient–therapist alliance, among other things, is available in the HPS, and results on prediction of the form and length of therapy have already been presented. Of the patient-related factors, patient’s demographic factors, psychiatric symptoms and diagnosis, psychiatric history and previous treatment, childhood family atmosphere, social factors, and psychological factors, and of the therapist-related factors, demographic factors, education and experience, and professional and personal characteristics have been measured and can be studied in the HPS. Here, the results on the prediction of the psychological patient factors and the therapist’s professional and personal characteristics measured at baseline on patients’ symptom development in short- vs. long-term therapy in a 3-year follow-up are presented.

Psychological Patient Factors

In the HPS, a new seven-item Suitability for Psychotherapy Scale (SPS) was constructed. Each of the seven suitability measures (modulation of affects, flexibility of interaction, self-concept in relation to ego ideal, reflective ability, trial interpretation, motivation, and focus) was assessed at a baseline interview on a 7-point scale where low and intermediate values indicated good suitability and high values poor suitability. A cumulative Suitability for Psychotherapy Scale (SPS) score was formed by summing up the seven single dichotomous suitability variables (good suitability=0 and poor suitability=1) so that the score varied from 0 to 7. The reliability and validity of the SPS assessments made by seven individual raters were evaluated. The reliability, evaluated through both the agreement between and repeatability of the interviewers’ assessments, was found to be fair or good [50]. An association of the SPS with personality functions but not with psychiatric symptoms supported criterion and discriminating validity. The SPS also significantly predicted changes in symptoms (SCL-90-GSI) during follow-up irrespective of baseline symptom level [77]. Three patient groups with different outcome prognosis were found when the SPS score was used to predict symptom development in a 3-year follow-up: patients with more good than poor values (score values 0–3) gained sufficiently from short-term therapy, patients with mostly poor values (score values 4–6) needed long-term therapy to recover, and patients for whom all seven values were poor (score value 7) failed to benefit from either short- or long-term therapy (Fig. 5.4). The SPS can be reliably applied before start of treatment to predict the amount of therapy needed to recover and can thus be used as an aid in the selection of patients for short- and long-term therapy.

Therapist’s Professional and Personal Characteristics

Therapist characteristics were assessed, prior to the start of treatments, with the 392-item self-administered Development of Psychotherapists Common Core Questionnaire (DPCCQ) [59, 78]. The questionnaire covers professional and personal characteristics of the therapist. The HPS therapists were found to have similar qualities to the therapists in the large international sample [78, 79],

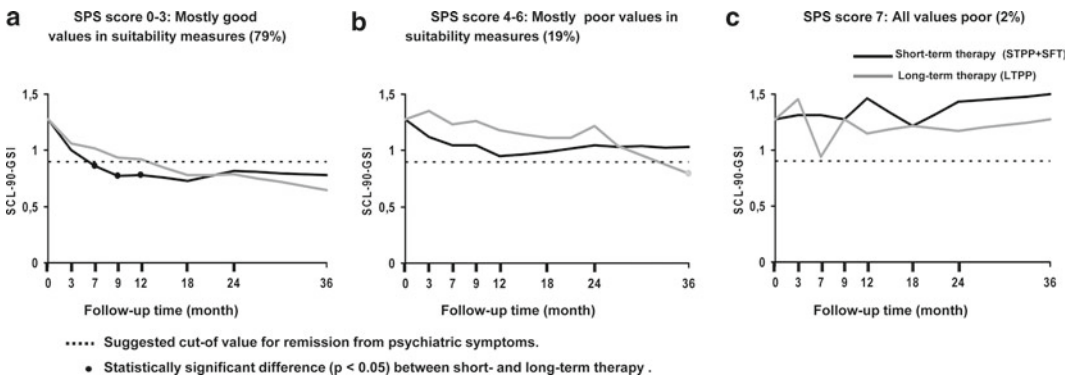


Fig. 5.4 Changes in psychiatric symptoms (SCL-90-GSI) according to the SPS score. (a) SPS score 0–3: mostly good values in suitability measures (79%). (b) SPS score 4–6: mostly poor values in suitability measures (19%). (c) SPS score 7: all values poor (2%)

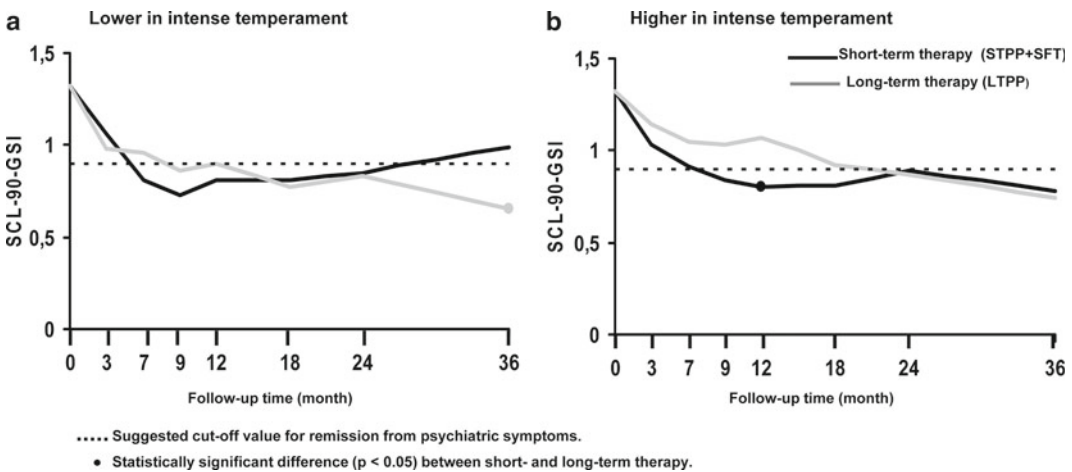


Fig. 5.5 Changes in psychiatric symptoms (SCL-90-GSI) according to the therapist's temperament. (a) Lower in intense temperament. (b) Higher in intense temperament

showing professional skillfulness and efficacy, constructive coping, affirmativeness with patients, investment and flow in therapy work, and personal qualities of regarding themselves as highly or moderately genial and forceful, and not at all, or only moderately reclusive. Three groups of these therapist characteristics predicted development of symptoms in a similar fashion and seemed to form conceptually meaningful clusters of therapist qualities. First, therapist characteristics indicating a strong, active, and efficacious commitment to involving patients in the therapy process, as well as an interpersonally engaged and extroverted personality, predicted faster symptom decrease in short-term therapy than in long-term therapy. Second, patients of therapists with more considerate and less intrusive qualities experienced significantly less symptoms in long-term therapy than in short-term therapy at the 3-year follow-up (Fig. 5.5). Third, therapists' lower confidence and enjoyment in their therapeutic work predicted poorer outcomes in short-term therapy than in long-term at the 3-year follow-up. Several professional and personal characteristics which

predicted similar outcomes thus seemed to share commonalities (e.g., an invested, affirmative professional manner mirrored by an intense, nonreclusive manner in personal life). This supported the suggestion that the professional skills of effective therapists may in fact be intertwined with their personal qualities.

Discussion

Background

The evidence on the relative effectiveness of psychodynamic psychotherapies of different lengths in the treatment of mood and anxiety disorder, the most common problems of psychotherapy patients, is relatively scarce [8]. The HPS is the first study to compare three different psychodynamic psychotherapies – short-term psychodynamic psychotherapy, long-term psychodynamic psychotherapy, and psychoanalysis. Definite advantages of this study are the fact that it includes a comprehensive set of outcome measures, repeated several times during a long follow-up, and allows generalization of the findings since the study population was relatively large and the therapies were performed as in normal clinical practice. As evaluation of adherence and therapy process were based on relatively few measures, without recording therapy sessions, the relative effect of therapy length and specifics of the therapy process on outcomes cannot, however, be defined in detail. It is evident that the criteria for evidence-based therapy [80, 81] cannot be satisfied in studies including long-term therapies or long follow-up times. In fact, such an approach neglects the majority of all valuable data collected. For this reason, we chose an epidemiological approach [82] and based our conclusions on the more versatile Hill's criteria. We also used advanced statistical methods to approximate efficacy.

Summary of Findings

In the present study, patients suffering from mood or anxiety disorders and receiving short-term therapy, either psychodynamic or solution-focused, recovered faster from both symptoms and work disability, but in the long run, long-term psychodynamic psychotherapy gave greater benefits. Furthermore, at the end of the 5-year follow-up, the symptom level in the psychoanalysis group was lower than in the long-term psychotherapy group. These findings thus indicate that the length of therapy is important when predicting the outcome of the therapy. Both the effectiveness and cost effectiveness of the two short-term therapies were similar, thus further strengthening the finding that different therapies of the same length produce equal benefits, and also, at least in the short run, lead to relatively equal direct and indirect costs.

The four therapies considered were not sufficient for all patients. About 50% of the depressive patients and 70% of the anxiety patients recovered during a 5-year follow-up. During that time period, over half of the patients used auxiliary treatment, psychotropic medication, psychotherapy, or hospitalization. The patients receiving short-term therapy needed more auxiliary treatment than those receiving long-term psychotherapy or psychoanalysis. When the auxiliary therapy sessions were added to the study therapy sessions received, the patients in the short-term groups had, on average, received a therapy of moderate length. These findings on specific insufficiencies of different psychotherapies are essential in opening up a new perspective for more clinically relevant outcome research by evaluating effectiveness more comprehensively and during a long-term follow-up. This implies a need for paradigmatic change in effectiveness research towards acknowledging the utility

of lengthier follow-up, complemented by prediction studies which provide evidence of therapy-specific determinants of their sufficiency and suitability – and lesser clinical utility of “pure” efficacy studies.

The amount of therapy needed to recover could be predicted by assessing patients’ pretreatment suitability based on their personality and interpersonal predispositions before the start of therapy. Patients with better predispositions (i.e., good values in the suitability index, e.g., more reflective ability) seemed to gain sufficiently from short-term therapy, whereas patients with worse predispositions seemed to need long-term therapy or some other treatment to recover. It was also demonstrated that therapists equipped with certain professional and personal characteristics were more effective in short-term therapies and others in long-term therapies.

Practical Considerations

The HPS is based on an exceptionally long follow-up of patients who were randomized to short- or long-term therapies or self-selected for psychoanalysis. Initially, it was not considered practically, nor ethically, possible to randomize patients to all four therapy forms, due to different indications for psychoanalysis. Instead, similar diagnostic inclusion criteria were applied in all therapy groups and a multitude of patient and therapist characteristics were measured at baseline to ensure applicability of a high-quality quasi-experimental design in which PA was compared with the randomized therapies and differences in these characteristics were adjusted for in the statistical analyses. The fact that the randomization procedure resulted in dropout for 20% of those allocated to LTPP further underlined the possibility of an effect of patients’ preferences on treatment choice, and needs to be considered in the interpretation of the results. In order to provide a comprehensive data base, the HPS study protocol was designed to include both quantitative and qualitative data, a serum sample bank, quality-control procedures, development of new methodology, and monitoring of all patients, including dropouts and use of auxiliary treatments, during a 10-year long follow-up period and 15 measurement occasions. An extensive group of researchers representing different disciplines and expertise, clinicians, and organizational resources have been involved in the study.

Future Perspectives and Conclusions

The HPS is an ongoing study with many research aims, and thus the results presented only give a preliminary, fragmentary picture of the effectiveness of psychodynamic psychotherapies in the treatment of individuals suffering from mood or anxiety disorders. Future perspectives are to continue the follow-up to 10 years from start of treatment, to analyze a comprehensive set of outcome measures, to evaluate the mutual importance of different patient and therapist suitability factors and the alliance, to study the possible modifying effect of genetic factors, to determine reasons for auxiliary treatment, and to evaluate and produce new statistical methods for deepening the understanding of findings from quantitative research and for combining findings from quantitative and qualitative approaches.

In conclusion, psychodynamic psychotherapies of different length are effective in the light of HPS, although not sufficient for all patients. However, factors affecting sufficiency of and suitability for treatments of different length can apparently be identified. The findings presented here should, however, be replicated in other large-scale randomized trials and cohort studies, and further comprehensive meta-analyses should be carried out.

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References

1. Leichsenring F, Hiller W, Weissberg M, Leibing E. Cognitive-behavioral therapy and psychodynamic psychotherapy: techniques, efficacy, and indications. *Am J Psychother*. 2006;60:233–59.
2. Knekt P, Lindfors O, Härkänen T, Välikoski M, Virtala E, Laaksonen MA, Marttunen M, et al. Randomized trial on the effectiveness of long-and short-term psychodynamic psychotherapy and solution-focused therapy on psychiatric symptoms during a 3-year follow-up. *Psychol Med*. 2008;38:689–703.
3. Knekt P, Lindfors O, Laaksonen MA, Raitasalo R, Haaramo P, Järviskoski A. Effectiveness of short-term and long-term psychotherapy on work ability and functional capacity – a randomized clinical trial on depressive and anxiety disorders. *J Affect Disord*. 2008;107:95–106.
4. de Maat S, de Jonghe F, Schoevers R, Dekker J. The effectiveness of long-term psychoanalytic therapy: a systematic review of empirical studies. *Harv Rev Psychiatry*. 2009;17:1–23.
5. Cuijpers P, van Straten A, Andersson G, van Oppen P. Psychotherapy for depression in adults: a meta-analysis of comparative outcome studies. *J Consult Clin Psychol*. 2008;76:909–22.
6. Churchill R, Hunot V, Corney R, Knapp M, McGuire H, Tylee A, Wessely S. A systematic review of controlled trials of the effectiveness and cost-effectiveness of brief psychological treatments for depression. *Health Technol Assess*. 2001;5(35):1–173.
7. de Maat S, De Jonghe F, Schoevers R, Dekker J. Relative efficacy of psychotherapy and pharmacotherapy in the treatment of depression: a meta-analysis. *Psychother Res*. 2006;16:566–78.
8. Fonagy P. Evidence-based psychodynamic psychotherapies. In: PDM Task Force. *Psychodynamic diagnostic manual*. Silver Spring: Alliance of Psychoanalytic Organizations; 2006.
9. Kazdin AE. Understanding how and why psychotherapy leads to change. *Psychother Res*. 2009;19:418–28.
10. Lambert MJ, Barley DE. Research summary on the therapeutic relationship and psychotherapy outcome. In: Norcross JC, editor. *Psychotherapy relationships that work. Therapist contributions and responsiveness to patients*. New York: Oxford University Press; 2002.
11. Ogronczuk JS, Piper WE, Joyce AS, McCallum M. Effect of patient gender on outcome in two forms of short-term individual psychotherapy. *J Psychother Pract Res*. 2001;10:69–78.
12. Marttunen M, Välikoski M, Laaksonen MA, Lindfors O, Knekt P. Pretreatment clinical and psychosocial predictors of remission from depression after short-term psychodynamic psychotherapy and solution-focused therapy – a 1-year follow-up study. *Psychother Res*. 2008;18:191–9.
13. Shapiro DA, Barkham M, Rees A, Hardy GE, Reynolds S, Startup M. Effects of treatment duration and severity of depression on the effectiveness of cognitive-behavioral and psychodynamic-interpersonal psychotherapy. *J Consult Clin Psychol*. 1994;62:522–34.
14. Cooper SE, Rowland DL, Esper JA. The relevance of family-of-origin and sexual assault experience to therapeutic outcomes with college students. *Psychother Theory Res Pract Train*. 2002;39:324–43.
15. Kurki M. Childhood family atmosphere as a predictor of psychotherapy outcome – comparison of short- and long-term therapy. Helsinki: Licentiate thesis, University of Helsinki; 2009.
16. Valbak K. Suitability for psychoanalytic psychotherapy: a review. *Acta Psychiatr Scand*. 2004;109:164–78.
17. Beutler LE, Malik M, Alimohamed S, Harwood TM, Talebi H, Noble S, Wong E. Therapist variables. In: Lambert MJ, editor. *Handbook of psychotherapy and behavior change*. New York: Wiley; 2004.
18. Horvath AO, Symonds BD. Relation between working alliance and outcome in psychotherapy: a meta-analysis. *J Counsel Psychol*. 1991;38:139–49.
19. Knekt P, Lindfors O, editors. A randomized trial of the effect of four forms of psychotherapy on depressive and anxiety disorders. Design, methods, and results on the effectiveness of short-term psychodynamic psychotherapy and solution-focused therapy during a one-year follow-up. Helsinki: The Social Insurance Institution, Studies in social security and health 77; 2004. (<http://www.ktl.fi/tto/hps/pdf/effectiveness.pdf>). Accessed 13 June 2008.
20. American Psychiatric Association. *Diagnostic and statistical manual of mental disorders*. 4th ed. Washington, DC: American Psychiatric Association; 1994.
21. Johnson LD, Miller SD. Modification of depression risk factors: a solution-focused approach. *Psychother Theory Res Pract Train*. 1994;31:244–53.
22. de Shazer S, Berg IK, Lipchik E, Nunnally E, Molnar A, Gingerich W, Weiner-Davis M. Brief therapy: focused solution development. *Fam Process*. 1986;25:207–21.
23. Malan DH. The frontier of brief psychotherapy: an example of the convergence of research and clinical practice. New York: Plenum Medical Book; 1976.
24. Sifneos PE. Short-term anxiety provoking psychotherapy. In: Davanloo H, editor. *Short-term dynamic psychotherapy*. New York: Spectrum; 1978.
25. Gabbard GO. *Long-term psychodynamic psychotherapy. A basic text*. Washington, DC: American Psychiatric Publishing; 2004.
26. Greenson RR. *The technique and practice of psychoanalysis*. London: The Hogarth Press and the Institute of Psycho-Analysis; 1985.

27. Beck AT, Ward CH, Mendelson M, Mock J, Erbaugh J. An inventory for measuring depression. *Arch Gen Psychiatry*. 1961;4:561–71.
28. Beck AT. Depression. Causes and treatment. Philadelphia: University of Pennsylvania Press; 1970.
29. Derogatis LR, Lipman RS, Covi L. SCL-90: an outpatient psychiatric rating scale – preliminary report. *Psychopharmacol Bull*. 1973;9:13–28.
30. Hamilton M. A rating scale for depression. *J Neurol Neurosurg Psychiatry*. 1960;23:56–61.
31. Williams JB. A structured interview guide for the Hamilton Depression Rating Scale. *Arch Gen Psychiatry*. 1988;45:742–7.
32. Hamilton M. The assessment of anxiety states by rating. *Br J Med Psychol*. 1959;32:50–5.
33. Bruss GS, Gruenberg AM, Goldstein RD, Barber JP. Hamilton Anxiety Rating Scale Interview guide: joint interview and test-retest methods for interrater reliability. *Psychiatry Res*. 1994;53:191–202.
34. Battle CC, Imber SD, Hoehn-Saric R, Nash ER, Frank JD. Target complaints as criteria of improvement. *Am J Psychother*. 1966;20:184–92.
35. Tuomi K, Ilmarinen J, Martikainen R, Aalto L, Klockars M. Aging, work, life-style and work ability among Finnish municipal workers in 1981–1992. *Scand J Work Environ Health*. 1997;23(Suppl 1):58–65.
36. Tuomi K, Ilmarinen J, Jahkola A, Katajarinne L, Tulkki A. Work ability index. 2nd ed. Helsinki: Publications of The Finnish Institute of Occupational Health; 1998.
37. Ilmarinen J, Tuomi K, Klockars M. Changes in the work ability of active employees over an 11-year period. *Scand J Work Environ Health*. 1997;23(Suppl 1):49–57.
38. Weissman MM, Bothwell S. Assessment of social adjustment by patient self-report. *Arch Gen Psychiatry*. 1976;33:1111–15.
39. Lehtinen V, Joukamaa M, Jyrkinen T, Lahtela K, Raitasalo R, Maatela J, Aromaa A. Mental health and mental disorders in the Finnish adult population. Turku and Helsinki: Publications of the Social Insurance Institution of Finland, AL:33; 1991 [In Finnish, English summary].
40. Hannula J, Lahtela K, Järvikoski A, Salminen JK, Mäkelä P. Occupational Functioning Scale (OFS) – an instrument for assessment of work ability in psychiatric disorders. *Nord J Psychiatry*. 2006;60:3773–87.
41. Azim HF, Piper WE, Segal PM, Nixon GW, Duncan SC. The Quality of Object Relations Scale. *Bull Menninger Clin*. 1991;55:323–43.
42. Kernberg OF. Severe personality disorders: psychotherapeutic strategies. New Haven: Yale University Press; 1984.
43. Kernberg OF. A psychoanalytic theory of personality disorders. In: Clarkin JF, Lenzenweger MF, editors. Major theories of personality disorder. New York: The Guilford Press; 1996.
44. Pykkönen N. The validity and reliability of the Level of Personality Organization Assessment Scale (LPO). Licentiate thesis. Helsinki: University of Helsinki; 2008.
45. Andrews G, Pollock C, Stewart G. The determination of defense style by questionnaire. *Arch Gen Psychiatry*. 1989;46:455–60.
46. Benjamin LS. A clinician-friendly version of the interpersonal circumplex: structural analysis of social behavior (SASB). *J Pers Assess*. 1996;66:248–66.
47. Horowitz LM, Alden LE, Wiggins JS, Pincus AL. Inventory of the interpersonal problems. Manual. San Antonio: The Psychological Corporation; 2000.
48. Urist J. The Rorschach test and the assessment of object relations. *J Pers Assess*. 1977;41:3–9.
49. Exner JE. The Rorschach: a comprehensive system. Volume 1: basic foundations. 3rd ed. New York: Wiley; 1993.
50. Laaksonen MA, Knekt P, Lindfors O, Aalberg V. Suitability for Psychotherapy Scale (SPS) and its reliability, validity and prediction, submitted for publication.
51. Wechsler D. Wechsler Adult Intelligence Scale (WAIS-R). New York: The Psychological Corporation; 1981.
52. Wallston KA. Perceived competence measure. Nashville: Vanderbilt University; 1990.
53. Smith CA, Dobbins CJ, Wallston KA. The mediational role of perceived competence in psychological adjustment to rheumatoid arthritis. *J Appl Soc Psychol*. 1991;21:1218–47.
54. Härkäpää K. Optimism, competence and coping mechanisms: concepts and practice from the point of view of rehabilitation. Helsinki: Rehabilitation Foundation, Work reports 11; 1995.
55. Scheier MF, Carver CS. Optimism, coping, and health: assessment and implications of generalized outcome expectancies. *Health Psychol*. 1985;4:219–47.
56. Antonovsky A. The structure and properties of the sense of coherence scale. *Soc Sci Med*. 1993;36:725–33.
57. Chubon RA. Development of a quality-of-life rating scale for use in health-care evaluation. *Eval Health Prof*. 1987;10:186–200.
58. Aromaa A, Heliövaara M, Impivaara O, Knekt P, Maatela J. Aims, methods and study population. Part 1. In: Aromaa A, Heliövaara M, Impivaara O, Knekt P, Maatela J, editors. The execution of the Mini-Finland Health Survey. Helsinki and Turku: Publications of the Social Insurance Institution of Finland, ML:88; 1989 [In Finnish, English summary].
59. Orlinsky D, Ambühl H, Ronnestad MH, Davis J, Gerin P, Davis M, Willutzki U, et al. Development of psychotherapists: concepts, questions, and methods of a collaborative international study. *Psychother Res*. 1999;9:127–53.

60. Horvath AO, Greenberg LS. Development and validation of the Working Alliance Inventory. *J Counsel Psychol.* 1989;36:223–33.
61. Tontti J. Causal attributions of depression. Doctoral thesis. Helsinki: University of Helsinki, Department of Social Psychology, Social Psychological Studies 3; 2000 [In Finnish].
62. Ehrling L. Assessment process of psychotherapy effectiveness. A Conversation Analytic Study. Doctoral thesis. Helsinki: University of Helsinki, Department of Social Psychology, Social Psychological Studies 13; 2006 [In Finnish].
63. Vehviläinen S, Ehrling L, Peräkylä A, Lindfors O, The Helsinki Psychotherapy Study Group. Diagnostic follow-up interview as a form of interaction. *Psykologia.* 2007;42:332–49 [In Finnish].
64. Holm N. Discourse analytic study on constructing agency by remitted patients in psychotherapy follow-up interviews. Master's thesis. Helsinki: University of Helsinki, Department of Social Psychology; 2009 [In Finnish].
65. Valkonen J. Psychotherapy, depression and inner narrative. Doctoral thesis. Helsinki: Rehabilitation Foundation, Research Reports 77; 2007 [In Finnish, English summary].
66. Juntumaa R. Psychoanalysis as a learning process. Doctoral thesis. Helsinki: University of Helsinki, Department of Education, Research Reports 217; 2008 [In Finnish, English summary].
67. First MB, Gibbon M, Spitzer RL, Williams JBW, Benjamin LS. Structured Clinical Interview for DSM-IV axis II personality disorders (SCID-II). User's guide. Washington, DC: American Psychiatric Press; 1997.
68. First MB, Spitzer RL, Gibbon M, Williams JBW. Structured Clinical Interview for DSM-IV axis I disorders (SCID). New York: New York State Psychiatry Institute, Biometrics Research; 1995.
69. Holi M, Knekt P, Marttunen M, Rissanen H, Kaipainen M, Lindfors O. Queuing for psychotherapy and self-reported psychiatric symptoms. In: Holi M, editor. Assessment of psychiatric symptoms using the SCL-90. Helsinki: Helsinki University Printing House; 2003.
70. Rubin DB. Multiple imputation for nonresponse in surveys. New York: Wiley; 1987.
71. Verbeke G, Molenberghs G. Linear mixed models in practice: an SAS-oriented approach. New York: Springer; 1997.
72. Liang K-Y, Zeger SL. Longitudinal data analysis using generalized linear models. *Biometrika.* 1986;73:13–22.
73. Lee J. Covariance adjustment of rates based on the multiple logistic regression model. *J Chronic Dis.* 1981;34:415–26.
74. Graubard BI, Korn EL. Predictive margins with survey data. *Biometrics.* 1999;55:652–9.
75. Migon HdS, Gamerman D. Statistical inference: an integrated approach. London: Arnold; 1999.
76. American Psychiatric Association. Manual of psychiatric peer review. 3rd ed. Washington, DC: American Psychiatric Association; 1985.
77. Laaksonen MA, Knekt P, Lindfors O. Psychological predictors of the recovery from depression or anxiety disorder in short-term and long-term psychotherapy during a 3-year follow-up, submitted for publication.
78. Orlinsky DE, Ronnestad MH. How psychotherapists develop: a study of therapeutic work and professional growth. Washington, DC: American Psychological Association; 2005.
79. Orlinsky DE, Ronnestad MH. The psychotherapist's self-experience. 2006, unpublished manuscript.
80. American Psychological Association. Task force promotion disseminating psychological procedures, Division of Clinical Psychology. Training in and dissemination of empirically-validated psychological treatments: report and recommendations. *Clin Psychol.* 1995;48:3–23.
81. Chambless DL, Hollon SD. Defining empirically supported therapies. *J Consult Clin Psychol.* 1998;66:7–18.
82. Rothman KJ, Greenland S, Lash TL. Modern epidemiology. 3rd ed. Philadelphia: Lippincott Williams & Wilkins; 2008.

Chapter 6

Psychoanalytic and Psychodynamic Therapies for Depression: The Evidence Base*

David Taylor

Keywords Common mental disorders • Depression and depressive disorders • Placebo effect • Psychoanalytic • Psychodynamic • Publication bias • Researcher allegiance • Short-term and long-term therapy outcomes

Introduction

In 1825, the great English essayist William Hazlitt published *The Spirit of the Age* [1]. His accounts of twenty five of the leading figures of his time and of some of their debates succeeded in capturing the defining features of his epoch. Among them, the great poets Wordsworth and Coleridge had been responsible for introducing the ideas of German literature and philosophy into the Anglophone world (see [2]). These insights were based upon the way the human imagination continually projects on to, continually colors, the natural world we observe around us. In terms of the history of ideas, these were amongst the antecedents of psychoanalysis. However, personal loss and disappointment with the turn taken by the French Revolution had led one of them, Wordsworth, famously to lose his early hope in revolutionary progress. For him, “Bliss was it in that dawn to be alive but to be young was very heaven” had given way to membership of the Establishment. Hazlitt, a contentious man, fiercely rebuked another of his subjects, Malthus, for his scientific and logical argument that a geometric growth leading to population “surplus” would outpace food supplies, which could only increase arithmetically. Famine, pestilence, or one of the other Apocalyptic horsemen would then cull that excess. In opposition to progressive or humane opinion, social conservatives used this Malthusian prediction to welcome war and to legitimize the withholding of food, warmth, and shelter from the poor and ill-fed.

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Do we live in totally different times today? Radical discontinuities separate then and now, but dimly we discern regularities. An adequate treatment of the possibility of cyclical epochal variations is beyond my competence, and in any case, a history of ideas is not the subject of this chapter. In spite of this, the idea contained in Hazlitt's ringing title is of value to us: the deep-seated and diffusely disseminated attitudes, preferences, and prejudices which go to make up the Spirit of an Age exert powerful and long-lasting effects upon choices and methods in science and social policy, as indeed they do upon all the activities of a human culture.

Thus, when we come to look at the much more restricted and local matter of evidence-based medicine, it is clearly correct to attribute its growing importance to the increasing potency of medicines and other interventions. Their potency means that treatment decisions must be based on explicit appraisals of the evidence. Otherwise, the likelihood of doing serious harm will outweigh that of doing good. It also seems right to adopt the Malthusian-sounding argument that the accelerating cost of medical innovation means that governments and other funders of healthcare such as social or private healthcare insurers across the developed world must turn to evidence-based medicine as a necessary and sensible instrument to ration an otherwise limitless demand.

But is there also a sense in which both of these statements are platitudes? Among many other things, they do not explain why, for instance, there has been such a strong trend toward managed care. Or for that matter, why the UK's National Institute for Health and Clinical Excellence (NIHCE or NICE) has, as have equivalent bodies in other countries, required its mental health guideline development groups to use a medical-model approach to the evidence pertaining to the various psychological treatments used in specified common mental disorders, when there are so many reasons to think that there are better methods of doing that.

To make use of a traditional, conservative medical model in this area seems to mean associated assumptions about short-term treatments and about the existence of single disease entities—assumptions which the evidence plainly does not support. Most patients with common mental disorders do not suffer from dysfunctions restricted to those of a single diagnosis. Instead, they meet the criteria for several different symptom-based diagnoses, and they also have to cope with many long-term, suboptimal functions of the personality which are not captured by the nosology [3, 4]. Patients also complain of doubt of love, of past and present difficulties in terms of personal achievement and work, as well as of existential and intimate problems of being and identity which are unmeasured and may in fact be unmeasurable. Certain other experimental conditions, usually equally unmet, are necessary if the view that RCT methodology sets the “gold standard” is to be sustained in relation to psychological therapy outcomes. For example, the most significant of depressive disorders are relapsing, recurrent, and chronic, but, for both theoretical and practical reasons, most RCTs of psychological therapy are short term and test brief treatments. The methodology of these studies succeeds in sidestepping many of the most important features of many depressive disorders, whereas mental health workers should not and patients cannot do so.

Of course, the factors which go to determine these methodological choices are exceedingly complex, but they include the Spirit of the Age; and for better or worse, this is something which happens to be relatively resistant to discrepant findings or arguments. Merely to inveigh is insufficient. To an extent, we have to live with it as we find that, with something of the mass of a tectonic plate, the Zeitgeist has shifted toward positivism and instrumentalism. To the serious detriment of its subject, we find that psychology cravenly cleaves to the physical sciences as a model [5]. We also find that a conveniently narrow horizon upon “what works” offers a defense against the real and disturbing nature of mental disorder: we tend to be deeply uncomfortable with those states of human disorder which have to be recognized and understood before they can be modified.

What underlies the mental disorders' capacity to disturb has long been the preoccupation of psychoanalysis and depth psychology. As in Hazlitt's time, when disillusionment and mistrust had set in after the failure of revolutionary hopes and ideals, we encounter the alleged irrelevance of psychoanalysis. Of course, as with every other field of scientific enquiry, new techniques and new

explanations have become possible. Notwithstanding the undoubted significance of these advances, psychoanalysis and psychoanalytic therapies continue to be an active factory and storehouse of experience and understanding, with a rich potential for new hypotheses, and for the common good as well as for the good of the individual.

If in this light, we turn to consider the effectiveness of psychoanalytic and psychodynamic therapies in the treatment of depressive disorders, we find that the restrictive definition of evidence-based medicine in the mental health field which I have just touched on leads to an overly negative view of the empirical evidence available to support their use. When determined by the constriction of Salkovskis' [6] "hour-glass model," namely the availability of sufficient numbers of high quality double-blind random allocation controlled trials and meta-analyses, it may be possible to conclude that the evidence base for the most used treatments for depression is weak across all modalities. However, such a nugatory posture strangulates the growth of knowledge and the development of practice. It is, moreover, misleading because, as I hope to show, the approach to evidence from which this type of verdict derives ineluctably leads to findings possessed of a banal quality, when the clinical issues to which they relate most certainly are not.

First amongst all the confounds is a linguistic or logical fallacy that a statement about a "strong" or a "weak" evidence base actually says something about a treatment rather than about the research method used in respect of that treatment. As we will see, the natural course of depression is often prolonged, relapsing, or recurrent, and, although there always may be exceptions, the difficulties operating in most depressed patients are not of a kind which conceivably could resolve with brief interventions of whatever variety. While patients may be significantly helped by any well-informed and responsive professional intervention, including really good clinical management, the resistant core of any significant psychopathology is a fact of life.

As every serious clinician well knows, a mental health service for patients with a serious predisposition to depression requires a longer-term perspective, with care and support, and specific interventions available when needed, and some of them in long-term packages. The situation is not so different from that which obtains in long-term conditions like juvenile-onset diabetes. The RCT dominated research agenda has so far been unable sufficiently to take these features into account. To compensate, weak research or flawed guidelines have been endowed with a status they do not merit.

Part of the position underlying this situation seems to be that different theoretical approaches such as the cognitive, the pharmacological, the psychiatric, or the psychoanalytic, the clinical, or the scientific have very different ideas about the principles which should underpin the methodology of outcome research and of evidence-based guidelines. These are serious disagreements about what counts as quality in evidence and fact, and about the place of clinical knowledge in the discourse. These different positions translate into the way questions about efficacy and effectiveness are asked and the way in which they are answered. They also give rise to serious problems of incommensurability. When we ask questions about complex issues, we must of necessity choose one amongst several approaches to frame our questions, and to provide the concepts and terminologies which we think are best suited to define, collect, observe, and interpret what we count as empirical data. Empirical data are, in truth, only empirical up to a point. Beyond that point, it is highly method dependent. We simply cannot properly examine the facts obtained by one method with the concepts belonging to another.

To continue its line of argument, this chapter is organized in three sections. The first is a set of preliminaries necessary to provide a frame of reference for a review of evidence which is based on principles which differ from those conventionally used by the trialists. The trialist's evidence base is revealed to consist largely of an inconclusive and usually contradictory set of findings derived from treatment outcome studies with only a narrow perspective on depression. Often, it seems to more resemble an evidence quagmire than a firm base. Naturally, my account will then focus upon the evidence pertaining to psychoanalytic/psychodynamic approaches. I hope that it will be possible to

see how, when judged by standards other than those subscribing to the primacy of a particular method, the evidence supporting psychodynamic approaches to the treatment of depression is significant and continues to accumulate. There is also an extensive web of supporting evidence drawn from so many different domains that it would be a major task to review it comprehensively. The final section will discuss this evaluation and some of its implications.

A Frame of Reference for a Developmental/Psychoanalytic View of Depressive Disorders

The paragraphs which follow provide the main facts about what is known about the prevalence, course, and nature of depression. It has been found that over the course of a year, about 6% of the adult population will suffer a major depressive disorder and 6% will experience dysthymia, with the lifetime prevalence of the disorder being about 17% [7]. In the community, between 20% and 30% of untreated depressed individuals will still be depressed a year later [8]. Put the other way round, 70% of people with untreated depression will recover without intervention in the course of a year. Generally, the risk of further episodes over the 10–15 years after an index episode is more than 85% [9]. Thirty percent of those who initially respond to medication will relapse within a year, rising to as many as 75% after 5 years [10]. Each patient with major depressive disorder will suffer on average four episodes with each episode lasting an average of 20 weeks. They will also suffer ongoing symptoms and disability during the periods of remission [11, 12]. As these figures suggest, depression can be a circumscribed, self-limiting condition for some people, but for a significant proportion, the condition is characterized by a pattern of remission and relapse and shows a tendency for a deteriorating outlook as time goes by [13]. Yet, as has already been noted, the majority of RCTs of psychological therapy and pharmacotherapy involve short-term treatments of acute phase depression, with follow-ups which are nonexistent or very brief. These studies therefore cannot provide reliable information about efficacy over the medium and longer term, especially in relation to those who suffer from more chronic or severe forms of depression.

To summarize, we have seen how the natural course of depression follows a varying path: for about 50% of people who develop a major depressive disorder in the community, the duration of illness is likely to be in the order of 3 months; thereafter, the probability of full remission diminishes rapidly; 60% of those treated with antidepressant medication after 1 year and 20% after 2 years will still meet the criteria for MDD; up to 90% of all patients will develop new episodes after recovery, and only 20% of patients with depression who are serious enough to be hospitalized depressives remain well over a follow-up period of 15 years (see [14–17]).

If we interrogate the kind of data quoted previously more closely, we find that the data were arrived at using diagnostic schemes based on the idea that depression, generalized anxiety disorder, panic disorder, and obsessive-compulsive disorder are distinct entities. If truly they were, they would be expected to occur independently of each other, to have their own particular etiology, and each would respond to its own specific treatment acting upon pathological processes specific to the disorder. What we find does not match these predictions.

In fact, single disorder research and treatment guidelines for common mental disorders based upon research of this kind cannot deal with a whole range of key disconfirmations. First, the precise rates provided for its diagnoses are artifacts which endow the conventional taxonomy with an air of objectivity and exactitude which is deceptive. The figures vary according to which diagnostic scheme is used while, at the same time, no one of these schemes is more valid than another [18]. It has repeatedly been found that only a minority of patients meet the criteria of only one diagnosis. Patients satisfying the criteria for MDD are nine times more likely to meet the criteria for other conditions than chance would predict [19, 20]. There is $\geq 57\%$ “comorbidity” between depression and anxiety [21, 22].

Between 50% and 90% patients with Axis I conditions will be “comorbid” with other Axis I or Axis II disorders [3]. Index presentations commonly change over time with the features of depression, anxiety, phobic, or obsessive-compulsive disorders now uppermost, now unobtrusive [23]. Furthermore, the measures of symptoms upon which categorical diagnoses depend only capture a small, selected portion of the problems patients experience. These include significant problems of interpersonal and intrapsychic functioning and of the life the patient experiences.

The case for a composite group of anxiety/depression and common mental disorder is strengthened by the finding that the temperamental factors found amongst the various common mental disorders (neuroticism or negative affect) cannot be distinguished between diagnoses. There are marked similarities in terms of developmental and environmental antecedents, as well as in natural course and response to treatment. Finally, the genes for generalized anxiety and major depressive disorder are the same, and there is substantial overlap with those of fear disorders.

Findings like these are prompting a major unification of the classification of this group of common emotional disorders in the revision of DSM-IV [24, 25]. It is hard to escape the conclusion that most of the meta-analyses and reviews of evidence of recent decades have rested upon scoping criteria which have employed a research diagnostic framework of distinctly questionable validity [26, 27].

The data described earlier indicate a little of how in the field of depression research supposedly empirical observations bear the unmistakable imprint of the presuppositions at work when making them. Basically, claims that a given group of observations or facts are neutral or theory-free are false. Rather than pretending like an ostrich that a theory in the background is a theory that does not exist, spelling out the theory being used allows its assumptions to be tested and the order it is capable of bringing to otherwise unconnected or unexplained findings to be appraised. That a theory can give an account of known facts is also valuable because of the way it points to what is going to be required of treatments and mental health service provisions if they are to be effective.

Scientific explanation as a whole proceeds on the basis of general laws or theories deduced on the basis of the findings gathered by observation and experiment. The explanatory theories which result serve not only to predict but also as a model necessary to guide the direction of future enquiries. It is openly acknowledged that observation and theory are not independent of each other and that this complicates enormously the way that scientific knowledge develops (see [28]).

It is by reason of these considerations that I give an outline of a developmental/psychoanalytic theory of depressive and allied disorders. In this way, we can evaluate what the data look like through this particular lens. My account of a psychoanalytic/developmental model is not the only one possible. For instance, other models, with slightly different emphases, have been put forward by Bleichmar [29] and by Blatt [30].

According to psychoanalytic theory, mourning and depression are seen as two different types of biopsychological reactions to loss. Any loss, or even a threat of loss, is considered to stimulate fear, anxiety, and anger. The emotional systems connected with fight/flight and with nurturance are immediately activated and disturbed. All the efforts of the organism may be mobilized to find ways of managing these potentially powerful emotional reactions. It was Freud [31] who compared the mental processes of mourning with those of depression. The fact that these two major states of mind share a common origin in loss explains why they coexist and interact with each other in significant ways. In relation to the psychological importance of loss, an important distinction is to be drawn between those losses which are accidental, such as the premature death of a love object, and those which are inbuilt. For example, the loss of infantile omnipotence arising from a child's experience of oedipal defeat as a result of observing his or her parents operating together as a couple is inevitable, and both the experience and its acceptance are necessary for normative development to proceed.

Fundamentally, the ability to mourn is an adaptive capacity involving relinquishment. Its psychological processes are seen as crucial to mental growth and lead to the return of a capacity to feel love, but at a new level. Mourning a lost love object or a lost state is one of the ways it is possible to

recover from depression. This is what is happening over the course of the self-limiting depressions which so commonly occur at the turning points of life. In those who are susceptible to less productive forms of depression—dysthymia, long-term “subthreshold” symptoms, recurrent, chronic, or “treatment-resistant” depression—the psychoanalytic model posits the existence of long-term difficulties with tolerating and adapting to the fundamental separateness of love objects.

The diathesis underlying depressive is seen as having been established over the course of infantile, childhood, and adolescent development. This has involved complex interactions between both genetic and suboptimal environmental influences, mainly mediated through early relationships. As a result, such individuals are unable to cope with the conflicting affects of love and of hate which necessarily arise in connection with absence and loss, while at the same time continuing to feel secure to some degree. Acceptance of loss and relinquishment are much more difficult in these circumstances. There is a desperate effort to spare the loved object from aggression which lends intense painfulness to the internal struggles of the depressed person. This “sparing” is a *sine qua non* of depression and is its ethical dimension.

Whereas in mourning, the person remains consciously preoccupied with whom or with what has been lost, the deeply depressed person often no longer knows why he is depressed. In the mourner, it is the world that is felt to have lost something or someone essential to its meaning. In depression, it is more noticeably the self that is experienced as diminished or bad. The self undergoes this alteration through its becoming identified with the lost object. Identification is seen as a largely unconscious mechanism which involves “becoming the same as.” In depression, identification occurs on the basis of sympathy with the object, sometimes out of guilt or sometimes as a way of keeping the relationship with the lost person present—within rather than absent—without. Because aggression cannot simply be wished out of existence, the attempt to spare the object inevitably means that the hostility must be turned inward. This turning inward of dissatisfied or critical feelings is how depressed people come to believe that they are bad, disliked, hated, or hateful. Many of the somatic and vegetative symptoms of depression arise from feelings of arousal, hostility, and fear which have been partially inhibited psychologically but which continue to operate at the somatic level as well as within the more familiar symbolic and representational levels of feeling and thought.

This turning of aggression and anxiety against the self is mediated by an internalized structure, the critical agency, known as the super-ego. Because of the dual character of this critical agency, the person shows both a persecutory fear of criticisms or reproaches and a sympathy for the object. In the course of a depressive illness, the severity of the super-ego increases, sometimes reaching delusional levels. The super-ego is colored by the individual’s own much increased hostile and envious feelings so that, other things being equal, the more an individual controls his or her aggression toward others who are felt to be absent or frustrating, the more severe his or her superego becomes. Losing the love and approval of the super-ego represents the greatest of dangers to the self. Without that feeling of internal regard, there is much less reason to want to stay alive, as well as a reduced capacity to do so.

To summarize, the basis of the psychoanalytic/developmental theory of depression is the idea that those who are susceptible experience excessive neediness, dependence, and ambivalence in their love relationships and that these features have their origins in infancy and childhood. They predispose to depression after object loss and give rise to a vulnerability which is lifelong. The surface manifestations of this vulnerability might be a tendency to low mood, to excessive anxiety, and to various difficulties in stable love relationships. Also, the early feeding and affective bond experiences most centrally involved in the development of this vulnerability have an important role in the optimal development of both nurturance and fight/flight systems. The suboptimal functioning of these is also of importance in the later vulnerability to depressive disorders in adult life. The earlier developmental difficulties with object loss are continuously re-evoked in the course of all later relationships of work and love. This means that just as “every finding of an object is a re-finding” [31],

every losing revives an earlier losing [32]. A mixture of genetic and environmental factors influences the various levels of severity, chronicity, and refractoriness at which depression exists. Some of these factors are mediated through the development of an excessively severe or envious super-ego. Environmental (including inter-generational) and constitutional (genetic) factors continue to interact throughout life.

Reasons of space preclude my giving an account of the considerable amount of hard empirical evidence from developmental, attachment, genetic, neuroscientific, and psychoanalytic studies which can be marshaled in support of this model. For reviews of this, the reader is referred to Goldberg [33], Hill [34], Murray [35], Taylor [36], Fonagy [37], and a number of chapters in this volume.

The Outcome Evidence for Psychoanalytic/Psychodynamic Approaches in the Treatment of Depression

The observations made above lend support to the view of many researchers and clinicians that the current way of classifying and analyzing data dismembers otherwise instructive relationships that exist between the different types of symptoms found in patients suffering from a broader category of “common mental disorder.” However, the idea of distinct, homogeneous mental “diseases” has dominated research and guideline development (including those of NIHCE) in the last 25 years. It has exerted great influence upon the type of study done and the kind of results available. What follows therefore goes against this template by looking more carefully at the results of some meta-analyses and trials that have used the concept of common mental disorders as a way of describing their study populations, and in which measures of depressive symptoms have often been employed.

Short-Term Psychodynamic Psychotherapy (STPP)

In line with general usage, the various shorter-term formats, whether structured or nondirective, will be referred to collectively as short-term psychodynamic psychotherapy (STPP). Most of the RCTs examining the efficacy of psychoanalytic or psychodynamic approaches have studied forms of STPP. Usually, this means no more than 20 sessions. These adaptations of psychodynamic or psychoanalytic psychotherapy usually involve a focus or some relatively structured way of construing the way patients present. Briefer therapies tend to employ psychoanalytic understandings of transference and the nature of the preconscious and unconscious conflicts in depression but not at all to the same depth as the practice in longer-term psychoanalytic treatments (LTPP). In LTPP, the patient is followed wherever the natural flow of their material proceeds. Evidence concerning these longer treatments is considered later in this chapter.

The Generic Efficacy of Psychological Therapy in the Treatment of Generic Disorders

In the mother of all meta-analyses, a meta-analysis of 45 meta-analyses of the results of a wide variety of brief psychological, educational, and behavioral treatment trials, in an equally wide range of nonpsychotic disorders, Lipsey and Wilson [38] came up with an estimate of the efficacy of psychological

interventions as a “generic” type. They found an effect size of +0.76 for all forms of psychological therapy when compared to waiting list or minimal treatment controls. This indicates that the post-treatment condition of those who receive any form of brief psychological therapy will be in the order of three-quarters of the standard deviation (of a very heterogeneous composite data-set) better off than those who do not receive them. This probably represents a worthwhile benefit, but, with the restricted capabilities of brief therapy research, it has been hard to demonstrate a clear order of difference between this size of effect and that associated with placebo or so-called “treatment as usual,” especially should the treatment be of a good standard.

The reader will come to see how, in spite of numerous efforts to prove otherwise, a persistent thread of nonspecificity runs through the findings of psychological therapy research trials. This is the so-called “equivalence paradox.” It refers to how difficult it has proved for this kind of short-term outcome research to demonstrate specific differences, whether according to degree of effect, condition, or type of psychological therapy. For this reason, experienced psychotherapy researchers such as Lambert [39] summarizes the previous decades of psychotherapy research with conclusions such as this: “...the generic efficacy of psychotherapy compared to no-treatment has been established for a long time..... from mildly disturbed persons with specific limited symptoms as well as from severely impaired patients.....study after study, meta-analysis after meta-analysis, have empirically validated psychotherapy as a treatment” (p. 97). Yet, the same findings caused Luborsky [40] to coin the phrase the “Dodo bird effect,” to describe the way every research camp in psychological therapy would present data which prove that its favorite is the best, while its rival is perfidious. This phrase refers to Lewis Carroll’s *Alice in Wonderland*, where to deal with the bitter squabbles at the end of the race, the Dodo announced, “everybody has won and all must have prizes.” However, the Dodo verdict may provide false consolation. It is not the intention of managed care that all should have prizes. There are winners and losers.

The Efficacy of “Generic” Psychological Therapies in the Treatment of Depression

Robinson et al. [41] in their admirably lucid review of 58 controlled studies of the use of psychotherapy with patients with a formal diagnosis of depression found post-treatment (0.73) and follow-up effect sizes (0.68). These are of the same order as those quoted previously for a much wider group of disorders. Their figures indicated that collectively, these different types of psychological therapy offer a “moderate benefit” in the treatment of depression compared with no-treatment. While the authors’ initial analysis found the effect sizes of cognitive, behavioral, and cognitive behavioral therapy to be approximately twice those of “general verbal therapies” (a category which included STPP), they found that this was a difference that disappeared when the treatment allegiance of the researcher and the quality of the trial were taken into account. Their ultimate finding was that there was “no reliable difference” between the efficacies of different forms of therapy in the treatment of depression. Each form was making roughly equal contributions to the final overall effect.

Cuijpers et al. [42, 43] have examined more closely the extent of the relationship between the quality of outcome studies and meta-analyses of psychological therapy for adult depression and the effect sizes they report. They found that only 11 of the 115 RCTs in their sample met all the quality criteria. The effect size reported by high-quality studies ($d=0.22$) was significantly smaller than in the other studies ($d=0.74$, $p<0.001$). Another way of putting this is in terms of number needed to treat (NNT) when these effect sizes translate to 8 in high-quality studies and 2 in lower-quality studies. This means that the findings of high quality studies suggest that eight individuals need to be treated in order to get one recovery more than found in the comparison group. These findings strongly

suggest that the effectiveness of all forms of psychological therapy for adult depression has been overestimated by virtue of the low methodological quality of many RCTs, and that the effects of brief treatments of all kinds are considerably less than often stated.

The Efficacy of STPP Specifically, Compared to “No or Minimal Treatment” Controls in Patients with the Specific Diagnosis of Depression

The Cochrane review of Abbass et al. [44] found only two RCTs of sufficient quality giving data on the more exact question of the efficacy of STPP vs. “no treatment” or TAU in patients with a formal diagnosis of depression. This was out of a total of 23 RCTs examining STPP in the treatment of common mental disorders. In an earlier review, Leichsenring et al. [45] had found a third study. These three studies were:

1. In the treatment of adults with mild to moderate major depressive disorder (75% having an illness of less than 2 years duration), de Jonghe et al. [46] compared a form of STPP alone (max 16 sessions) with STTP and antidepressant medication. Although there were marked differences in their acceptability to patients, the efficacy of both formats in terms of effect size, imputed on the basis of the difference between baseline measures and measures at 24 weeks in the two groups, was large (i.e. ≥ 0.8), and more or less equivalent. Note how similar this is to the figure of Lipsey et al. [38]. This study is considered further later in this chapter.
2. In the treatment of major depressive disorder in the elderly, Thompson et al. [47] compared 16–20 sessions of STPP with an equivalent number of CBT and behavior therapy sessions and a waiting list control group. By the end of 6 weeks, patients in the treatment conditions showed improvement of the familiar order, whereas controls did not. The results of this study also bear upon the comparative efficacy of the different forms of psychotherapy that are considered further later on in this chapter.
3. In the treatment of postnatal depression, Cooper et al. [48] investigated the efficacy of three forms of brief interventions, one of which was ten sessions of psychodynamic therapy, compared to routine primary care in postpartum women meeting the criteria for major depressive disorder. At 4½ months, 70% of the psychodynamic cohort was judged to be recovered compared with 40% of the control condition (R.R 1.89). By the 9-month follow-up, however, this difference between treatment and usual care was no longer evident. Moreover, the three forms of therapy did not reduce the incidence of further episodes of postnatal depression. Psychodynamic psychotherapy did, however, seem to accelerate a recovery which would have occurred eventually in the majority of cases but more slowly. This study had a long 5-year follow-up, unlike most RCTs. It, and the benefit it found, is of particular importance because of the role of postnatal maternal depression in the intergenerational transmission of depression [35].
4. Subsequently, a fourth RCT study, not included in the Abbass review, has compared STPP with a waiting list condition and with a brief supportive therapy in patients with primary DSM-IV dysthymic disorder, depressive disorder not otherwise specified, or adjustment disorder with depressed mood [49].

The Efficacy of STPP Compared with No or Minimal Treatment Controls in the Treatment of Common Mental Disorders

According to the psychoanalytic theory described previously, depression, anxiety, obsessional features, personality problems, and a variety of more subtle manifestations are all thought to be interconnected in a dynamic way. Like an increasing number of psychiatrists, psychoanalytically informed clinicians and researchers have long had serious reservations about the validity of using the single

diagnosis concept of depression in outcome trials. Many have argued that it makes much more sense to study the effects of treatment in patient samples which include mixed or combined disorders. As noted, the search criteria used in single disorder guidelines like those of NIHCE have excluded these sorts of studies:

1. Leichsenring et al. [45] found seven RCTs of sufficient quality which had examined STPP as against “no treatment” or TAU in a mixture of common mental disorders. STPP was found to be “significantly superior” to these “placebo” conditions with effect sizes ranging from 0.59 to 1.17, depending upon the domain measured (target problem, general psychiatric symptoms, and social functioning) and the measure used. “No treatment” conditions were found to have “before” and “after” effect sizes which ranged from 0.12 to 0.27, while TAU was found to be capable of more substantial benefits ranging from 0.22 to 0.95, depending presumably upon the intensity, adequacy, and quality of the TAU provided.
2. The review of Abbass et al. [44] of 23 RC trials examined the efficacy of STPP relative to no-treatment or TAU in the category of common mental disorders. They pooled patient samples which had originally been selected on the basis of several specific common disorder diagnoses. These included somatoform disorders (irritable bowel syndrome, chronic pain, etc.), anxiety and personality disorders, general psychiatric outpatients, as well as depression. Some of the studies were of chronic, difficult-to-treat patient populations with comorbid features. Only eight overlapped with Leichsenring’s et al. [45] review. Combined, the 23 trials amounted to 1,431 patients. Results indicated that STPP (mean number of sessions =15) produced modest to moderate gains across a wide range of symptom categories for a wide variety of patients. Furthermore, these gains were often sustained or had increased at longer-term follow-up.
3. In respect of mixed disorders, the meta-analyses of Svartberg and Stiles [50], Crits-Christoph [51], and Anderson [52] all found STPP to be superior to no treatment or minimal treatment controls at both short- and longer-term follow-ups.

The Efficacy of STPP Compared to No or Minimal Treatment in Relation to the Depressive Symptoms of Patients Suffering from Common Mental Disorders

The composite, common mental disorder group assembled in the reviews of Leichsenring [45] and Abbass [44] included many patients with significant depressive symptomatology across the diagnostic categories. Fourteen of Abbass’s 23 studies had employed measures of depression. Relative to controls in terms of relief from depressive symptoms, these showed over the short-term SMD 0.59 (≤ 3 months, 11 studies), the medium-term SMD 0.41 (3–9 months, five studies), and the “long”-term SMD 0.98 (≥ 9 months, six studies). These amount to moderate treatment effects, and, in line with this trend, the longer-term follow-up finding is more substantial.

The Efficacy of STPP Compared with Other Forms of Psychological Therapy

The meta-analyses of Crits-Christoph [51] and Anderson [52] similarly found STPP to be equal in efficacy to other forms of psychological therapy, as did the Leichsenring [45] study. Only one meta-analysis, that of Svartberg and Stiles [50], found STPP to be less effective than other short-term treatments such as CBT. Again, when controls for quality were introduced, this putative superiority was found to be much reduced.

The Efficacy of STPP Compared Specifically with Cognitive-Behavioral Therapy and Behavior Therapy in the Treatment of Depression

Churchill's et al. [53] systematic review of controlled trials of brief psychological treatments for depression, part of the UK's NHS Health Technology Assessment program, found six studies (five RCTs and one CCT) comparing STPP with CBT in formats of less than 20 sessions. Pooling dichotomous recovery/nonrecovery data suggested that the odds of recovery for patients receiving CBT were at least *twice* that for those receiving STPP by the end of the treatment.

The reviewers noted the possibility of a bias toward the CBT condition in these trials. Considerably more than half the studies were conducted by researchers with a CBT preference; these trials had used psychodynamic therapy only as a secondary comparison condition. When ratings for the quality of the trial and the quality of treatment delivery were taken into account, the reviewers found that the marked difference between CBT and STPP disappeared. Also, those trials where follow-up data were reported found there to be no difference between CBT and brief psychodynamic treatments. In two of these studies, follow-up was at 3 months, and in the third at 1 year. The rest provided no follow-up data.

Leichsenring [54] came to similar conclusions. He confirmed that STPP was associated with statistically significant reductions in depressive symptoms before and after treatment. Out of a total of 60 possible comparisons between STPP and CBT, he found no difference in 58, while two showed a small effect in favor of CBT. He calculated the mean before and after success rates of STPP and CBT as 46% and 54%, respectively—equivalent to a small effect size in favor of CBT. Wampold et al. [55] came to similar conclusions.

The allegiance of the researcher has consistently been shown to have a marked influence upon the size and direction of the effect reported (the researcher effect!). Cuijpers et al. [42, 43] examined the effect sizes reported in trials comparing psychological treatments with a control condition, including other forms of psychological therapy and medication, in the treatment of depression. In their sample of 117 randomized trials, the reported overall mean effect size was 0.67. However, asymmetry in the funnel plots suggested there were 26 missing studies presumably not reported, and imputing the results of these pointed to a true effect size of 0.49. Eighty nine of 175 comparisons were concerned with the efficacy of CBT, and they showed this same highly significant evidence indicating bias and overestimation of the efficacy of CBT. However, the same indications of bias were also found for other forms of psychotherapy (including STPP). Research on psychotherapy for women with postpartum depression (most importantly the study of Cooper et al. [48], quoted previously) and on interpersonal psychotherapy were honorable exceptions. Neither showed any evidence of publication bias, although the numbers of such studies were small.

The Efficacy of Psychotherapy Compared with Antidepressants

According to Roth and Fonagy [56], when psychotherapy and medication are offered alone, they seem to be of roughly equivalent efficacy. Most, but not all, of this comparison data concern IPT and CBT studies. The earlier review of Robinson et al. [41] found 15 studies examining this question, including a few looking at the effect of combining psychological therapy with antidepressants. Eight of these 15 studies were of CBT, three were of behavioral therapy, while four tested what the authors describe as “general verbal” therapy which includes dynamic approaches. The studies yielded a small effect size in favor of psychological therapy, but this may be artifactual.

In general, the interpretation of these and other similar findings is not straightforward. Most comparative trials do not include drug placebo controls. Obviously, in the case of psychological therapy,

effective concealment or blind conditions are extremely difficult if not impossible to contrive. Also, the more that allegiance effects are taken into account, the more difficult it becomes to demonstrate the existence of reliable, stable patterns of differences between psychological therapy and pharmacotherapy. Furthermore, meta-analyses re-examining the results of trials of antidepressant medication have also provided strong indications of publication bias—the preferential reporting of those trials which show a positive effect—an effect known colloquially as the “file-drawer effect” (see [57, 58]). The file-drawer effect has certainly led to an inflation of the efficacy of antidepressants. However, as was discussed in the preceding section, similar evidence of publication bias and selective reporting has now been found to be operating in respect of psychological therapy trials.

Salminen [59] compared the efficacy of STPP (16 weekly sessions) and fluoxetine in major depressive disorder of mild or moderate severity in a primary care setting. Both treatments were found to be highly effective in reducing the HDRS ($p < 0.0001$) and BDI ($p < 0.0001$) scores, as well as in improving functional ability ($p < 0.0001$). There were no statistically significant differences between the two treatments (SMD 0.03; 95% CI $-0.52, 0.58$). Forty of the 51 patients completed a 4-month follow-up when it was found that 57% of the STPP group and 68% of those in the fluoxetine group showed remission ($=\text{HDRS} \leq 7$). While the results of this trial indicate that both STPP and fluoxetine are effective in reducing symptoms and in improving functional ability of patients with mild or moderate depression, the interpretation of the findings is, as is so often the case, limited by the absence of a placebo condition, the short and incomplete follow-up, and the wide confidence intervals.

To estimate head-to-head the efficacy of antidepressants in comparison to a 16-session short psychodynamic supportive psychotherapy (SPSP) in a somewhat larger sample, de Maat et al. [60] combined the data sets of three earlier RCTs [46, 61]. These studies, which are examined in more detail later in this chapter, had examined the efficacy of this SPSP combined with antidepressants vs. antidepressants alone in patients with mild to moderate major depressive disorder [61], with combined antidepressants and SPSP vs. SPSP alone [46], and finally comparing two intensities of combined therapy (medication plus eight or 16 sessions of SPSP). Hamilton ratings showed no difference between this short psychodynamic supportive psychotherapy (SPSP) and pharmacotherapy, but patients and therapists seemed to rate the psychotherapy better than medication in regard to symptom reduction, but paradoxically not in improving quality of life.

There is some evidence [62] that antidepressants are more efficacious with more severely depressed patients than in those with mild to moderate severity, or in those where complex psychosocial factors of history and personality are significant parts of the presentation.

The Efficacy of Combined Treatments

Augmenting STPP with Antidepressants (Versus STPP Alone)

The cited previously study of de Jonghe et al. [46] examined whether the addition of antidepressants to 16 sessions of STPP would improve on the outcome of major depressive of mild to moderate severity treated with STPP alone. A sample of approximately 200 psychiatric outpatients with major depressive disorder was treated and followed up over a 6-month period.

Both packages produced broadly equivalent positive effects. The success rate in the STPP alone arm was 73% as against 81% in the combined, with pre–post HRSD effect sizes of 1.22 and 1.53, respectively. By 24 weeks, Hamilton ratings had fallen from an initial average of 18 to one of 10. The comparison findings indicated a small benefit in favor of combining antidepressants with STPP, but these only reached significance in respect of the patient’s self-report measure (with a medium effect size of 0.49). Because there was no drug placebo control in the trial, this effect cannot with certainty be attributed to the pharmacological agent.

Other important findings concerned the strength of patients' attitudes to the two kinds of treatment. Although 25% of psychotherapy patients broke off their treatment, psychotherapy still seemed overall to be more acceptable than drugs. More patients refused to enter the pharmacotherapy arm in the first place, and by 6 months, a further 35% had withdrawn from it.

Augmenting Antidepressants with STPP (Versus Antidepressants Alone)

As already indicated, de Jonghe et al. [61] investigated the question of combined therapy the other way around: augmenting antidepressant medication with short psychodynamic supportive psychotherapy (SPSP) and comparing the combination with antidepressants alone in patients with mild to moderate major depressive disorder. SPSP plus drugs was found to be more effective than medication alone in terms of both symptom reduction and quality of life.

Burnand et al. [63] investigated the effect of augmenting antidepressant medication time with a brief ten session form of STPP, administered in this case by well-trained nurses, to enhance the outcomes of patients in an acute phase major depressive episode. The patients had been referred to an outpatient psychiatric service and were suffering from moderate to severe degrees of depression; half had suffered previous episodes; half had some form of personality disorder. They were as a whole slightly more ill than the de Jonghe sample. The final sample analyzed consisted of 74 patients randomized to the two conditions—antidepressants (clomipramine, mainly) combined with supportive time with a designated key worker vs. antidepressants plus ten sessions of STPP with a trained nurse therapist.

After the 10-week treatment period, the mean Hamilton scores in both groups had reduced from ≈ 24 to ≈ 9 ($p > 0.001$) but with little difference between the comparison conditions on this measure. However, the combination of STPP and antidepressants was better than antidepressants alone on several other important indices: patients who received STPP were significantly less likely to still meet the criteria for MDD after 10 weeks (9%) than those who did not (28%). The combination group needed significantly fewer days off work (46 vs. 57), and they had both a lower rate and fewer days of hospitalization. Cost benefit comparisons showed that the combined STPP/antidepressants had resulted in savings of \$2,311 over the 10-week period. For those patients in full employment before they became ill, savings were greater (\$3,394).

The Evidence Concerning the Treatment of Complex, Chronic, or “Treatment-Refractory” Depression

Many of the patients in the samples of the studies cited previously were selected to exclude comorbidity [64]. Since it is now understood that comorbidity is better regarded as an intrinsic characteristic, particularly of those disorders which tend to be more chronic, long term, difficult to treat and recurrent, it cannot be assumed that the evidence of effectiveness presented so far applies to many of the patients actually encountered in clinical practice.

Addressing this complexity factor, Kool [65] investigated the possibility of differential effectiveness in using antidepressants with or without STPP (16 sessions) in an RCT sample of 128 depressed outpatients with and without personality disorders. Findings indicated that STPP had more effect in those with both PD and depression than in those without (SMD -1.15 vs. SMD 1.50). At follow-up (40 weeks), patients receiving the combined treatment showed a significant reduction in “comorbid” personality disorder, both in those who had recovered from their depression and in those who had not. In the medication-alone condition, only those who had recovered from their depression showed a reduction in their personality disorder. As might be expected, the finding was most striking for Cluster C psychopathology (anxious inhibited) whereas those with cluster B pathology (dramatic) changed less.

Additionally, and importantly, the reader will recollect that it is well-established that at least 10% of depressed patients (depending upon the reference sample) go on to suffer from a serious long-term relapsing condition. This is sometimes placed under the heading of “treatment-resistant” or “treatment refractory depression.” These patients show only partial recovery between episodes, limited response to treatments of whatever kind, and in some cases active treatment may seem to cause them to deteriorate. While there is general agreement that the term is simply a descriptive one and that it denotes a heterogeneous group, the lives of patients with these disorders may be seriously disabled. Most treatments seem to have only limited benefits for them.

Stimpson et al. [66] examined various pharmacological approaches to the treatment of patients with unipolar depression who had not responded to a minimum of 4-week antidepressant treatment and found 17 RCTs. They concluded that there was little in the way of evidence to guide the management of patients who had not responded to a first course of antidepressants. Within their criteria, they found no satisfactory trials of psychological therapy with chronic or treatment resistant depression. By using more inclusive criteria, McPherson et al. [67] did find a few studies of psychological treatments, including single case studies. These mainly employed CBT. Although they mostly showed reduction in symptoms, they all had short follow-ups and very small numbers. Interestingly, and presumably in response to the severity of the psychopathology, the CBT treatments involved seemed to be showing a marked tendency to become longer than the short 10 or 20 sessions which has been a principle selling point of the method. In one study, this reached a total of 39 sessions over 8 months—something like a medium-length psychodynamic treatment!

Abbass [68] reported on a pilot study of a small series of patients [10] diagnosed with “treatment resistant depression” (TRD) treated with Davanloo’s [69] intensive short-term dynamic psychotherapy mostly over a 20-week period. In this study, TRD was defined as an inadequate response to adequate durations and dosages of at least two different classes of antidepressants. Eight patients remitted (Hamilton-D $>22 \rightarrow <8$). Concomitantly, there were beneficial changes in the patient’s ratings on interpersonal problems, medication usage, occupational status, and costs of healthcare and social support. The scores of the other two patients moved from $31 \rightarrow 12$ and $27 \rightarrow 14$, respectively. In all except these two patients (who both had had short courses of therapy—six and eight sessions), changes were maintained over a 6-month follow-up.

Two RCT trials are currently under-way with chronic or TRD patient groups. The Tavistock Adult Depression Study (Publication ID M0001169680 at <http://www.nihr.ac.uk>) is examining the efficacy of a “medium-term”¹ treatment—60 sessions of weekly psychoanalytic psychotherapy vs. TAU in a patient sample of 127 suffering from treatment-resistant depression—defined as at least two failed treatments, as well as meeting the criteria for MDD. The usual duration of illness in the sample is 10–15 years, and most patients have been found to meet the criteria for at least one DSM axis II disorder. The trial is due to report in 2012/2013. A similar multicenter German RCT combined with a naturalistic arm, and with a CBT comparison group, began in 2007. Die Langzeittherapie bei chronischen Depressionen (LAC) Studie, led by Professor M. Leuzinger-Bohleber of Frankfurt-am-Main’s Sigmund Freud Clinic, is examining a longer psychoanalytic psychotherapy treatment. It has an intended sample of 240. (See <http://www.sfi-frankfurt.de/forschung/forschungsfeld-2/depressionsstudie.html>).

¹ Mercifully, there is no generally accepted convention about the terminology to be employed for treatment length or intensity. Abbass et al. [44] categorize all treatments of less than 40 weeks as short term (STPP), whereas others reserve this term for treatments of less than 20 sessions. Likewise, there are different usages concerning the actual length of treatments to which the designations “medium” and “long” term should apply and also what is meant by “intensive.”

Longer-Term Psychoanalytic Treatments (LTPP)

In Chap. 3, Rabung and Leichsenring examine longer-term psychoanalytic treatments in detail. There have been two important recent reviews of the effectiveness of LTPP in a range of pathologies ([70, 71], and Chap. 3 in this volume). Here, therefore, I will only consider those issues which have some direct bearing upon the value of longer-term psychoanalytic therapies in the treatment of depression and in relation to depressive symptoms. However, in the context of the dull, uniform impression of general equivalence between all forms of treatment given by the outcomes measured in predominantly short-term RCT depression research, it should be noted that the investigation of longer-term treatments does offer at least some possibility of findings about the possibility of more fundamental and deep-seated changes in an individual's susceptibility to depression, and into the nature of the kind of changes which might be capable of an effect which reduces vulnerability. Such changes may or may not be causally specific to a psychoanalytic approach to the treatment of depressive disorder.

However, as might be predicted, there are few completed studies of longer-term psychotherapy or psychoanalysis with patient samples selected on the basis of a single diagnosis, such as major depressive disorder. As already noted, the psychoanalytic concept of mental disorder is fundamentally different from the nosology associated with research diagnostic criteria. Equally, there are very few completed studies using random allocation controlled trial designs which evaluate medium- or longer-term therapies. These are therapies which require the patients' personal choice, mental work, and their deep engagement. Especially over the medium and longer term, these requirements of human relatedness do not sit at all easily with the choiceless quality basic to the principle of randomization. Except in respect of very unusual conditions and circumstances, practically, ethically, and in terms of acceptability, it is not at all feasible to use random allocation for longer-term psychological treatments. In most clinical contexts, more naturalistic, case-controlled cohort studies offer a better prospect of findings that are both solid and knowledge advancing. Vandenbroucke [72] has examined the necessary conditions in which observational studies become substantially more credible than those of randomized trials. At the same time, there will have to be scrupulous attention to detail if such studies are ever to have the capacity to meet the challenges posed by skeptical and critical scrutiny.

The Efficacy of Long-Term Versus Short-Term Psychodynamic/ Psychoanalytic Treatments in Depression

The Helsinki Psychotherapy RCT ([73, 74] and Chap. 3 in this volume), however, did compare the effectiveness of two forms of short-term therapy with a long-term psychodynamic psychotherapy therapy (LTPP). So far, follow-up data over 3 years have been reported. The study also has an arm for full psychoanalysis with further follow-up data. The two short-term treatments were a problem-solving solution (SFT) (≈ 10 sessions, including family work over 8 months, Lambert [75]) and a form of STPP based upon the Malan [76] model (20 sessions over 6 months). The long-term treatment was a 2–3 sessions weekly psychodynamic therapy over 3 years (average number of sessions=232). The large sample of 326 patients were a mild to moderately disturbed group aged 20–45 years, referred and treated as outpatients with a DSM IV mood or anxiety disorder for at least 1 year. Sixty-eight percent met the criteria for MDD, 44% met those for generalized anxiety disorder, 18% met those for personality disorder, and $\approx 9\%$ had made a suicide attempt.

All three interventions were associated with significant reductions in all symptom measures (depression, anxiety, and general). Over the 3-year period, the average reduction of the BDI was 51% (with effect sizes ranging from 0.87 to 1.52). At entry, the mean BDI was 18; in those getting

the two short treatments, this had come down to ≈ 10 , in those getting the long term to ≈ 7 . These benefits are comparable to those found in studies involving CBT. Patients receiving the short-term treatments typically showed an early response which reached an upper limit by 12 months. These gains proved lasting over the entire 3-year follow-up.

In contrast, the group receiving LTPP initially lagged behind, showing significantly less improvement over the first year. However, the gains in this group showed a pattern of gradual increase so that by the 3-year point, their symptoms were less than those of the short-term treatments on all measures; with respect to anxiety, they were four times more likely to be recovered; with respect to the depression measures, the difference was not of the same degree. About 20% of those who had met personality disorder criteria no longer did so at 7 months. In the STPP group, this proportion had risen to 46% by 12 months. This improvement did not occur in the SFT group.

The Effectiveness of Longer-Term Psychoanalytic Psychotherapy/ Psychoanalysis (LTPP) in the Treatment of Depression

In their review, Leichsenring and Rabung [71] found five studies of LTPP where a majority of the patients could be ascertained to have been suffering from complex, often comorbid depressive disorders. The studies were Høglend et al. [77], Huber et al. [78], Grande et al. [79], Leichsenring et al. [80], and Rudolf et al. [81]. The condition was chronic in 71% of the total of 274 patients involved in these five studies.

Looking at the sample of Leichsenring et al. [80] ($N=36$), an indication of the severity and clinical representativeness of the patients involved can be seen from the fact that almost nine-tenths of those with a diagnosis of depressive disorder were also suffering from comorbid disorders such as somatoform, anxiety, or obsessive-compulsive states. In terms of overall outcome, general psychiatric symptoms, and social functioning, LTPP was found to have yielded significant and large effect sizes (all > 0.80). In terms of depressive symptoms, at 1 year, the effect size was 1.38. As in other research in this area, it was found that symptoms are the first to remit (with changes in personality functioning emerging with a slower gradient).

Evidence from Retrospective Cohort Studies of Effectiveness

A carefully designed naturalistic long-term follow-up in Germany of 402 patients (of whom 128 had affective disturbances) who had received psychoanalysis and long-term psychoanalytic psychotherapy [82] showed that a clinically representative group of patients with significant depressive symptomatology had moved into the normal range of scores. At long-term follow-up, the changes in this group of patients were such that they were doing better in terms of days off work than the population norm. Importantly, the study included in-depth qualitative interviews that made it possible to discern distinct and differing patterns of change in the way that various personality types managed their thoughts and feelings. These patterns included the emergence of reflective functioning [83].

Several studies have confirmed the clinical impression that improvement continues after psychodynamic or psychoanalytic psychotherapy ends (the “sleeper effect”). Sandell et al. [84] and Blomberg et al. [85] demonstrated that patients in the psychoanalysis cohort seemed to continue to gain in strength and capacity after treatment had ended. This pattern was also found in the study of Kopta et al. [86].

Blatt and Shahar [87] have addressed the question of the unique nature and effectiveness of psychoanalysis. According to their results, psychoanalysis contributed significantly to the development of adaptive interpersonal capacities and to the reduction of maladaptive interpersonal behavior, especially with more self-reflective patients. Supportive–expressive therapy, by contrast, only yielded a reduction of maladaptive interpersonal behavior and only with dependent, unreflective patients.

Discussion and Conclusions

Do Short-Term Treatments Cure Depression?

So far in this chapter, as in the literature of psychological therapy outcome in general, estimates of efficacy have mostly been reported in terms of effect sizes. An effect size is the ratio of the difference between the mean of one group and that of another, to the standard deviation of the chosen measure in the initial sample. Generally, an effect size of 0.3 is regarded as small, one of 0.5 as medium, and one of ≥ 0.8 as large. However, as Jacobson et al. [88] have pointed out, what these statistical values mean in terms of change for an individual patient is entirely opaque. To deal with this, a variety of more rigorous tests have been developed to indicate whether a given change has moved someone from outside the dysfunctional range or to within a functional one [89]. Unfortunately, in this field, the data needed to calculate these statistical measures of clinical significance are often unavailable. In addition, we are still depending upon the assumption that the measures employed actually capture the true nature and extent of the patient's disability or disorder.

Robinson et al. [41] looked at this sort of issue by asking whether the clinical effects of short-term psychological and pharmacological treatments amounted to a cure of depression. In their sample of studies, the mean pretreatment BDI was 21.8 (when 0–13 is considered minimal, 14–19 mild, 20–28 moderate, and 29–63 severe). Post-treatment, the score had fallen by 10 points to 11.8. The corresponding figures for untreated controls were 20.7 and 18.1. The mean BDI score of unselected samples of the general population is 7.0. Amongst that fraction of the general population that is contented, this comes down to 4.9. These treatment effects therefore move patients who are moderately outside the normal range to within one standard deviation of the general population mean, and to within 1.5 SDs of the contented group amongst us. These are not trivial effects but, even by the restricted sensitivity of the BDI, they suggest that on a good day, the previously moderately ill but average responder to short-term treatments is still more depressed than most of us on a bad day, and is still further off from the ideal of normative functioning. The consistency of these estimates points again toward there being a ceiling to what can be achieved with short-term treatments. Additionally, there are more variables in depressive disorders than are measured by the BDI.

Does This Evidence Base Need to Remain an Industry of Small Differences?

It is still possible to sum up the current state of evidence with the following blanket conclusion: anti-depressant medication and the different varieties of short-term psychological therapies are capable of generating an improvement of about 12–13 points on the BDI over the short term, but there is not much to choose between them, and there is little evidence about the sustainability of these changes. Also, as clearly indicated by the findings of the NIMH study, the “placebo” effect in trials of treatments for depression can be consistently large, amounting to an average of ten points improvement.

Viewed like this, it is understandable that many clinicians throw up their hands at a research base which often seems more like a heap of dust. It does seem that in respect of treatment research into depression (and other common mental disorders), the dodo bird's judgment, at least, lives on. It lives on in an evolutionary backwater maintained by three factors: the stubborn conviction that short-term RCT trials are guardians of truth, the continued use of instruments that are insensitive to the many aspects of patients' dysfunctionality which lie outside symptom frames of reference, and a wish that short psychological treatments can be highly potent that verges on homeopathy. If these human factors stay as they are, the difficulty of demonstrating informative differences between therapies will continue until one side has overwhelmed the other, probably through sheer weight of numbers.

Within the remit of this chapter, it has only been possible to present the evidence from outcome trials, and that in a summarized, incomplete way. However, when we questioned the inclusion and exclusion criteria of guidelines and the effect of continuing to use specific psychiatric diagnoses as an organizing principle, we found that relevant evidence had been omitted. Moreover, when we allow clinical experience a little more authority over short-term outcome research trials, other points come into view. If we proceed to admit evidence from naturalistic studies, from other kinds of science, a yet more interesting range of conclusions becomes possible. Epidemiology, observations of natural course, developmental psychopathology, studies of psychosocial factors, life events, experimental studies, and psychoanalytic findings themselves show that we know a great deal about the nature and origins of depression. En passant, these different disciplines provide supporting evidence for psychoanalytic theories about depression.

While this more sophisticated conception of the evidence base cannot tell us directly which treatments will prove effective, it does enable us to know the parameters of the disorder and the limits on the plasticity of persons. These are essential guides to the potential of different treatments. They are scales against which to measure some of the wilder claims. Psychiatry could go further and reintroduce other ideas such as "profound" vs. "banal" to counter the narrowness of the sometimes pseudo-statistical significance/nonsignificance formula.

Conclusions

This wider view of evidence is consistent with:

1. STPP effect sizes approximately similar to other therapies and, like them, superior to minimal treatment controls.
2. Perhaps a tendency for the CBT effect to come into play more quickly than that of STPP but with longer follow-ups this latency effect disappears.
3. Longer-term psychodynamic and psychoanalytic therapies, by addressing the dysfunctions of persons, may have the potential to go above an efficacy ceiling which operates in short-term treatments. There are clear indications that patients in longer-term psychoanalytic approaches begin to manifest qualitatively different types of change which can move them further into the normal range.
4. While studies of combined drug/psychological therapy may be mixed, there is some evidence of "added value" from adding STPP to medication. Also, adding medication to STPP, especially where vegetative symptoms are pronounced, seems sensible. There seem to be no trials addressing benefits from sequences of CBT → STPP or STPP → CBT.
5. The reasons patients have for preferring one treatment over another, including one form of psychological therapy rather than another, have been neglected.
6. The value of qualitative in-depth studies of single or small numbers of cases and of more naturalistic designs has been underestimated.

7. A lot more should be thought about the placebo effect and about the disputes over valuable but limited gains. Like positive transference, the psychological mechanisms involved in the placebo response in depression have a role in normal emotional life. The belief in good medicines dispensed by good people who can provide succor is one of those features of normal mental life which fails in depression. It is possible that the restoration of this belief-function may be important for recovery in depression.

All of these considerations are pointers toward optimal or enhanced services for patients suffering from the complex range of disorders that goes under the general rubric of depression.

Declaration of interest: The author is the clinical lead of the Tavistock Adult Depression Study, an RCT evaluating 18 months of weekly psychoanalytic psychotherapy in the treatment of chronic, “treatment-resistant” depression.

References

1. Hazlitt W. The spirit of the age: or contemporary portraits – various publishers/editions; 1825. <http://www.gutenberg.org/ebooks/11068>.
2. Ashton R. The German idea. Cambridge: Cambridge University Press; 1980.
3. Westen D, Novotny CM, Thompson-Brenner H. The empirical status of empirically supported psychotherapies: assumptions, findings, and reporting in controlled clinical trials. *Psychol Bull.* 2004;130:631–63.
4. Luyten P, Blatt SJ, Van Houdenhove B, Corvelyn J. Depression research and treatment: are we skating to where the puck is going to be? *Clin Psychol Rev.* 2006;26:985–99.
5. Bruner J. Actual minds, possible worlds. Cambridge, MA: Harvard University Press; 1986.
6. Salkovskis PM. Demonstrating specific effects in cognitive and behavioural therapy. In: Aveline M, Shapiro DA, editors. Research foundations for psychotherapy research. Chichester: Wiley; 1995.
7. Robins LN, Regier DA. Psychiatric disorders in America: the epidemiologic catchment area study. New York: The Free Press; 1991.
8. Sargeant JK, Bruce ML, Florio LP, et al. Factors associated with 1-year outcome of major depression in the community. *Arch Gen Psychiatry.* 1990;47:519–26.
9. Mueller TI, Leon AC, Keller MB, Solomon DA, Endicott J, Coryell W, Warshaw M, Maser JD. Recurrence after recovery from major depressive disorder during 15 years of observational follow-up. *Am J Psychiatry.* 1999;156(7):1000–6.
10. Hirschfeld RM. Depressive illness: diagnostic issues. *Bull Menninger Clin.* 1991;55:144–55.
11. Judd LL. The clinical course of unipolar major depressive disorders. *Arch Gen Psychiatry.* 1997;54:989–91.
12. Judd LL, Akiskal HS, Paulus MP. The role and clinical significance of subsyndromal depressive symptoms (SSD) in unipolar major depressive disorder. *J Affect Disord.* 1997;45:5–17.
13. Paykel ES. Historical overview of outcome of depression. *Br J Psychiatry.* 1994;165(suppl. 26):6–8.
14. Spijker J, de Graaf R, Bijl RV, et al. Duration of major depressive episodes in the general population: results from The Netherlands Mental Health Survey and Incidence Study (NEMESIS). *Br J Psychiatry.* 2002;181:208–13.
15. Goldberg D, Privett M, Ustun B, et al. The effects of detection and treatment on the outcome of major depression in primary care: a naturalistic study in 15 cities. *Br J Gen Pract.* 1998;48:1840–4.
16. Coryell W, Akiskal H, Leon AC, et al. The time course of untreated major depression: uniformity across episodes and samples. *Am J Psychiatry.* 1994;51:405–10.
17. Lee AS, Murray RM. The long-term outcome of Maudsley depressives. *Br J Psychiatry.* 1988;153:741–51.
18. Goldberg D, Goodyer I. The origins and course of common mental disorders. London: Routledge; 2005.
19. Angst J, Dobler-Mikola A. The Zurich study II. The continuum from depressive to pathological mood swings. *Eur Arch Psychiatr Neurol Sci.* 1984;234:21–9.
20. Angst J, Dobler-Mikola A. The Zurich study VI. A continuum from depression to anxiety disorders? *Eur Arch Psychiatr Neurol Sci.* 1985;235:179–86.
21. Kessler RC, Berglund P, Demler O, Jin R, Koretz D, Merikangas K, Rush J, Walters E, Wang P. The epidemiology of major depressive disorder: results from the national comorbidity survey replication. *JAMA.* 2003;289:3095–105.
22. Kessler R, Chiu WT, Demler O, Walters EF. Prevalence, severity and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. *Arch Gen Psychiatry.* 2005;62:617–27.

23. Vollebergh WAM, Iedema J, Bijl RV, de Graaf R, Smit F, Ormel J. The structure and stability of common mental disorders: the NEMESIS study. *Arch Gen Psychiatry*. 2008;58:597–603.
24. Andrews G, Anderson TM, Slade T, Sunderland M. Classification of anxiety and depressive disorders: problems and solutions. *Depress Anxiety*. 2008;25:274–81.
25. Goldberg DG. Should our major classifications of mental disorders be revised? *Br J Psychiatry*. 2010;196:255–6. doi:10.1192/bjp.bp.109.072405.
26. Blatt SJ, Zuroff DC. Empirical evaluation of the assumptions in identifying evidence based treatments in mental health. *Clin Psychol Rev*. 2005;25:459–86.
27. Luyten P, Blatt SJ. Looking back towards the future: is it time to change the DSM approach to psychiatric disorders? The case of depression. *Psychiatry*. 2007;70:85–99.
28. Braithwaite RB. *Scientific explanation*. Cambridge: Cambridge University Press; 1955.
29. Bleichmar H. Some subtypes of depression and their implications for psychoanalytic treatment. *IJPA*. 1996;77:935–62.
30. Blatt SJ. *Experiences of depression: theoretical, clinical and research perspectives*. Washington, DC: American Psychological Association; 2004.
31. Freud S. Mourning and melancholia. Reprinted (1953–1974) in the standard edition of the complete psychological works of Sigmund Freud. London: Hogarth Press; 1917. 14, p. 237.
32. Klein M. Mourning and its relation to manic-depressive states. Reprinted (1975). In: *The writings of Melanie Klein*. Vol. 1: Love, guilt and reparation and other works 1921–1945. London: Hogarth Press; 1940.
33. Goldberg D. The interplay between biological and psychological factors in determining vulnerability to mental disorders. *Psychoanal Psychother*. 2009;23(3):236–47.
34. Hill J. Developmental perspectives on adult depression. *Psychoanal Psychother*. 2009;23(3):200–12.
35. Murray L. The development of children of postnatally depressed mothers: evidence from the Cambridge longitudinal study. *Psychoanal Psychother*. 2009;23(3):185–99.
36. Taylor D. Consenting to be robbed so as not to be murdered. *Psychoanal Psychother*. 2009;23(3):263–75.
37. Fonagy P. Postscript. *Psychoanal Psychother*. 2009;23(3):276–80. doi:10.1080/02668730903227305.
38. Lipsey MW, Wilson DB. The efficacy of psychological, education, and behavioral treatment: confirmation from meta-analysis. *Am Psychol*. 1993;48:1181–209.
39. Lambert MJ. Psychotherapy outcome research: implications for integrative and eclectic theories. In: Norcross JC, Goldfried MR, editors. *Handbook of psychotherapy integration*. New York: Basic Books; 1992.
40. Luborsky L, Singer B, Luborsky L. Comparative studies of psychotherapies. Is it true that “everybody has won and all must have prizes”? *Arch Gen Psychiatry*. 1972;32:995–1008.
41. Robinson LA, Berma JS, Neimeyer RA. Psychotherapy for the treatment of depression: a comprehensive review of controlled outcome research. *Psychol Bull*. 1990;108:30–49.
42. Cuijpers P, Smit F, Bohlmeijer E, Hollon SD, Andersson G. Efficacy of cognitive-behavioural therapy and other psychological treatments for adult depression: meta-analytic study of publication bias. *Brit J Psychiat*. 2010;196:173–8.
43. Cuijpers P, van Straten A, Bohlmeijer E, Hollon SD, Andersson G. The contribution of active medication to combined treatments of psychotherapy and pharmacotherapy for adult depression: A meta-analysis. *Psychological Medicine: A Journal of Research in Psychiatry and the Allied Sciences*. 2010;40(2):211–23.
44. Abbass AA, Hancock JT, Henderson J, et al. Short-term psychodynamic psychotherapies for common mental disorders. *Cochrane Database of Syst Rev*. 2006; issue 4, CD004687.
45. Leichsenring F, Rabung S, Leibing E. The efficacy of short-term psychodynamic psychotherapy in specific psychiatric disorders. A meta-analysis. *Arch Gen Psychiatry*. 2004;61:1208–16.
46. de Jonghe F, Hendriksen M, van Aalst G, et al. Psychotherapy alone and combined with pharmacotherapy in the treatment of depression. *Br J Psychiatry*. 2004;185:37–45.
47. Thompson LW, Gallagher D, Breckenridge JS. Comparative effectiveness of psychotherapies for depressed elders. *J Consult Clin Psychol*. 1987;55:385–90.
48. Cooper PJ, Murray L, Wilson A, et al. Controlled trial of the short- and long-term effect of psychological treatment of post-partum depression. 1: Impact on maternal mood. *Br J Psychiatry*. 2003;182:412–9.
49. Maina G, Forner F, Bogetto F. Randomized controlled trial comparing brief dynamic and supportive therapy with waiting list condition in minor depressive disorders. *Psychother Psychosom*. 2005;74(1):43–50.
50. Svartberg M, Stiles TC. Comparative effects of short-term psychodynamic psychotherapy: a meta-analysis. *J Consult Clin Psychol*. 1991;59:704–14.
51. Crits-Christoph P. The efficacy of brief dynamic psychotherapy: a meta-analysis. *Am J Psychiatry*. 1992;159:325–33.
52. Anderson EM, Lambert MJ. Short-term dynamically oriented psychotherapy: a review and meta-analysis. *Clin Psychol Rev*. 1995;15:503–14.
53. Churchill R, Hunot V, Corney R, et al. A systematic review of controlled trials of the effectiveness and cost-effectiveness of brief psychological treatments for depression. *Health Technol Assess*. 2001;5:1–173.

54. Leichsenring F. Comparative effects of short-term psychodynamic psychotherapy and cognitive-behavioural therapy in depression: a meta-analytic approach. *Clin Psychol Rev.* 2001;21:401–19.
55. Wampold BE, Minami T, Baskin TW, et al. A meta-(re)analysis of the effects of cognitive therapy versus 'other therapies' for depression. *J Affect Disord.* 2002;68:159–65.
56. Roth A, Fonagy P. What works for whom? A critical review of psychotherapy research. 2nd ed. New York: Guilford; 2004.
57. Turner EH, Matthews AA, Lindardatos E, Tell RA, Rosenthal R. Selective publication of antidepressant trials and its influence upon apparent efficacy. *N Engl J Med.* 2008;358:252–60.
58. Kirsch I, Deacon BJ, Huendo-Medina TB, Scobaria A, Moore TJ, Johnson BT. Initial severity and antidepressant benefits: a metaanalysis of data submitted to the food and drug administration. *PLoS Med.* 2008;5:e45. doi:10.1371/journal.pmed.0050045.
59. Salminen JK, Karlsson H, Hietala J, Kajander J, Aalto S, Markkula J, Rasi-Hakala H, Toikka T. Short-term psychodynamic psychotherapy and fluoxetine in major depressive disorder: a randomized comparative study. *Psychother Psychosom.* 2008;77(6):351–7. doi:10.1159/000151388.
60. de Maat S, Dekker J, Schoevers R, van Aalst G, Gijsbers-van Wijk G, Hendriksen M, Kool SJ, Peen J, Van R, de Jonghe F. Short psychodynamic supportive psychotherapy, antidepressants, and their combination in the treatment of major depression: a mega-analysis based on three randomized clinical trials. *Depress Anxiety.* 2008;25:565–74.
61. de Jonghe F, Kool S, Aalst G, Dekker J, Peen J. Combining psychotherapy and antidepressants in the treatment of depression. *J Affect Disord.* 2001;64:217–29.
62. Thase ME, Greenhouse JB, Frank E, et al. Treatment of major depression with psychotherapy or psychotherapy–pharmacotherapy combinations. *Arch Gen Psychiatry.* 1997;54:1009–15.
63. Burnand Y, Andreoli A, Kolatte E, et al. Psychodynamic psychotherapy and clomipramine in the treatment of major depression. *Psychiatr Serv.* 2002;53:585–90.
64. Barkham M, Mellor-Clark J. Rigour and relevance: the role of practice-based evidence in the psychological therapies. In: *Evidence-based counselling and psychological therapies: research and applications.* New York: Routledge; 2000. p. 127–44.
65. Kool S, Dekker J, Duijsens I, de Jonghe F, Puite B. Changes in personality pathology after pharmacotherapy and combined therapy for depressed patients. *J Pers Disord.* 2003;17(1):60–72.
66. Stimpson N, Agrawal N, Lewis G. Randomised controlled trials investigating pharmacological and psychological interventions for treatment-refractory depression: systematic review. *Br J Psychiatry.* 2002;181:284–94.
67. McPherson S, Cairns P, Carlyle J, et al. The effectiveness of psychological treatments for treatment resistant depression: a systematic review. *Acta Psychiatr Scand.* 2005;111:331–40.
68. Abbass AA. Intensive short-term dynamic psychotherapy of treatment resistant depression: a pilot study. *Depress Anxiety.* 2006;23:449–52.
69. Davanloo H, editor. *Basic principles and techniques in short-term dynamic psychotherapy.* New York: Spectrum; 1980.
70. de Maat S, de Jongh F, Schoevers R, Dekker J. The effectiveness of long-term psychoanalytic therapy: a systematic review of empirical studies. *Harv Rev Psychiatry.* 2009;17:1–23.
71. Leichsenring F, Rabung S. The effectiveness of long-term psychodynamic psychotherapy: a meta-analysis. *J Am Med Assoc (JAMA).* 2008;300:1551–64.
72. Vandenbroucke JP. When are observational studies as credible as randomised trials? *Lancet.* 2004;363(9422):1728–31. doi:10.1016/S0140-6736(04) 16261–2.
73. Knekt P, Lindfors O, Harkanaen T, et al. Randomized trial on the effectiveness of long-and short-term psychodynamic psychotherapy and solution-focused therapy on psychiatric symptoms during a 3-year follow-up. *Psychol Med.* 2008;38:689–703.
74. Knekt P, Lindfors O, Laaksonen M, Raitasalo R, Haaramo P, Järviöskö A. Effectiveness of short-term and long-term psychotherapy on work ability and functional capacity: a randomized clinical trial on depressive and anxiety disorders. *J Affect Disord.* 2008;107(1–3):95–106.
75. Lambert MJ, Okiishi JC, Finch AR, et al. Outcome assessment: from conceptualization to implementation. *Prof Psychol Res Pr.* 1998;29:63–70.
76. Malan DH. *Toward the validation of dynamic psychotherapy.* New York: Plenum Press; 1976.
77. Høglend P, Amlø S, Marble A, et al. Analysis of the patient-therapist relationship in dynamic psychotherapy: an experimental study of transference interpretations. *Am J Psychiatry.* 2006;163(10):1739–46.
78. Huber D, Klug G, von Rad M. Die Münchner- Prozess-Outcome Studie, 2001: Ein Vergleich zwischen Psychoanalysen und psychodynamischen Psychotherapien unter besonderer Berücksichtigung therapiespezifischer Ergebnisse [The Munich processoutcome study: a comparison between psychoanalyses and psychotherapy]. In: Stühr BM, editor. *Langzeit- Psychotherapie. Perspektiven für Therapeuten und Wissenschaftler.* Stuttgart: Kohlhammer; 2001. p. 260–70.
79. Grande T, Dilg R, Jakobsen T, et al. Differential effects of two forms of psychoanalytic therapy: results of the Heidelberg–Berlin study. *Psychother Res.* 2006;16(4):470–85.

80. Leichsenring F, Biskup J, Kreische R, Staats H. The effectiveness of psychoanalytic therapy: first results of the Göttingen study of psychoanalytic and psychodynamic therapy. *Int J Psychoanal.* 2005;86(pt 2):433–55.
81. Rudolf G, Manz R, Öri C. Ergebnisse psychoanalytischer therapien [Outcome of psychoanalytic therapies]. *Z Psychosom Med Psychoanal.* 1994;40(1):25–40.
82. Leuzinger-Bohleber M, Target M, editors. The outcomes of psychoanalytic treatment. London: Whurr; 2002.
83. Beutel M, Rasting M. Long-term treatments from the perspectives of the former patients. In: Leuzinger-Bohleber M, Target M, editors. The outcomes of psychoanalytic treatment. London: Whurr; 2002.
84. Sandell R, Blomberg J, Lazar A, et al. Varieties of long-term outcome among patients in psychoanalysis and long-term psychotherapy: a review of findings in the Stockholm outcome of psychoanalysis project (STOPP). *Int J Psychoanal.* 2000;81:921–43.
85. Blomberg J, Lazar A, Sandell R. Outcome of patients in long-term psychoanalytical treatments. First findings of the Stockholm outcome of psychotherapy and psychoanalysis (STOPP) study. *Psychother Res.* 2001;11:361–82.
86. Kopta S, Howard K, Lowry J, et al. Patterns of symptomatic recovery in psychotherapy. *J Consult Clin Psychol.* 1994;62:1009–16.
87. Blatt S, Shahar G. Psychoanalysis—with whom, for what, and how? Comparisons with psychotherapy. *J Am Psychoanal Assoc.* 2004;52:393–447.
88. Jacobson N, Follette WC, Revenstorf D, Baucom DH, Hahlweg K, Margolin G. Psychotherapy outcome research: methods for reporting variability and evaluating clinical significance. *Behav Ther.* 1984;17:308–11.
89. Jacobson N, Truax P. Clinical significance: a statistical approach to defining meaningful change in psychotherapy research. *J Consul Clin Psychol.* 1991;59:12–9.

Chapter 7

Evidence-Based Psychodynamic Treatments for Anxiety Disorders: A Review

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Keywords Anxiety disorders • Effect size • GAD • Panic • Psychodynamic psychotherapy • PTSD

Prevalence, Course, and Comorbidity of Anxiety Disorders

Anxiety disorders are the most prevalent mental disorders in the United States, are the most frequently encountered disorders in primary mental health services, and are hypothesized to be the most common presenting problems in psychodynamic therapeutic practices [1]. In fact, when combining both national and international data, the best estimate for lifetime prevalence of anxiety disorders is 16.6% [2]. These disorders include generalized anxiety disorder (GAD), panic disorder (PD), post-traumatic stress disorder (PTSD), obsessive–compulsive disorder (OCD), social phobia, agoraphobia, and specific phobias [2].

Importantly, however, there is a high percentage of comorbidity among these disorders. In a large-scale survey of mental health, Andrews et al. [3] found that panic disorder, social phobia, GAD, and PTSD all had significant odds ratios (ORs) of occurrence with one another. Anxiety disorders have also been found to be highly comorbid with other disorders. For example, Andrews et al. [3] reported that 27.8% of patients with an anxiety disorder also had a comorbid personality disorder and 8.7% had a comorbid substance disorder. Moreover, in a prospective longitudinal cohort study, Moffitt et al. [4] found that of lifetime anxiety cases, 72% had lifetime major depressive disorder. This high rate of comorbidity is an important issue given that ample research has shown that comorbidity is associated with higher levels of severity, greater service utilization, and a poorer prognosis [3–6].

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The Need for Empirical Research on Treatments for Anxiety Disorders

Anxiety disorders are associated with severe impairments in functioning and have significant emotional and financial costs both on personal and societal levels [7–9]. For example, patients with panic disorder have higher rates of morbidity and health care utilization than patients both with and without other psychiatric disorders [10] leading them to account for 20% of all emergency room visits [11]. Similarly, when compared with people suffering from 25 other mental disorders or common physical conditions, people with a diagnosis of GAD report missing the most work [7]. Thus, given the high prevalence, impairment, and cost of anxiety disorders, it is essential to continue to develop and test treatments for anxiety.

Although pharmacological and CBT treatments are widely used to treat anxiety [12] and there is evidence that both are effective (e.g. [13, 14]), there are limitations with both. Concerns associated with pharmacological treatments include: frequent relapse when medication is discontinued (e.g. [14]), unwanted side-effects (e.g. [15, 16]), and potential dependency of some drugs [14, 17]. In addition, some patients fail to respond to CBT, continue to experience symptoms, terminate early, or relapse after treatment (e.g. [18, 19]). Further, a few studies suggest that, at times, CBT may actually worsen the anxiety of some patients [20]. Thus, while pharmacological and CBT interventions have been successful in treating anxiety disorders, like all forms of treatment, they are limited, have problems, and are not helpful for all patients. Thus, it is important to test other types of treatment. Given that psychodynamic therapy is widely used to treat anxiety [12], its efficacy and effectiveness is important to test. Although there is not as extensive a research base for psychodynamic treatments for anxiety as there is for pharmacological interventions and CBT, the work done thus far is promising (e.g. [21]). This empirical literature will be reviewed later in the chapter after a brief review of psychodynamic theory of anxiety.

A Brief Account of the Psychodynamic Understanding of Anxiety

All of the major psychodynamic schools (e.g., Freudian, object relations, self-psychology) have written about anxiety with writers from Freud through Klein, Fairbairn, Sullivan, and Kohut, and all have made important contributions [22]. Clearly, a short summary for this chapter cannot capture the many essential differences that exist among psychodynamic theorists. However, a review of some of the most significant contributions made by psychodynamic theory in the understanding of anxiety is important as these concepts have implications for treatment. These contributions include: the underlying meaning of symptoms, unconscious conflict, defense, and the impact of object and interpersonal relationships.

The meaning of symptoms, including both unconscious conflict and defense, originated with Freud and continues to be at the heart of most psychodynamic theories. Freud's [23] signal theory suggested that anxiety, which has arisen from a perceived psychological danger, signals an anticipated threat to the ego. As a result, defenses are activated so that a dangerous intrapsychic situation does not become traumatic. If the signal anxiety and/or defenses fail to work properly, an anxiety attack may ensue leaving the individual vulnerable [24]. Freud suggested that treatment should bring the threat into consciousness so that the patient can understand that the danger is not as great as originally perceived. Some of the threats he discussed were apprehension about object loss, castration anxiety, and superego anxiety [22]. For Freud, object loss anxiety is the fear of, or reaction to, separation from a need-gratifying other such as the mother. Castration anxiety is also the fear of being separated from a highly valued object. However, it is specific to concern over bodily injury (typi-

cally the male genitalia) and loss of control and power. Finally, superego anxiety or moral anxiety is a fear of negative self-evaluation from the conscience or society [23].

Following Freud, several dynamic writers have suggested treatments for anxiety that focus on the role of the unconscious and the use of defense. For example, in discussing panic disorder from a psychodynamic perspective, it has been suggested that panic symptoms carry a specific emotional significance and are related to intense unconscious conflicts and their defenses [25, 26]. Also, like Freud, these authors suggest that typical areas of conflict for panic patients include anger, sexual desires, and separation [25, 26]. Similarly, contemporary psychodynamic work on GAD suggests that worry about current events functions as a defensive avoidance against thinking about more difficult issues [27]. This emphasis on interpersonal and object relationships leads to the next figural contribution of psychodynamic theory.

Object and interpersonal relationships are at the center of several dynamic theories of anxiety. In fact, although Sullivan, Fromm-Reichmann, Klein, Fairbairn, and Bowlby explain different aspects, functions, and types of anxiety, internalized object relations and interpersonal relationships are paramount in each writer's theory. For example, whereas Sullivan [28] proposed that anxiety originates in the anticipation of disapproval from a primary caregiver early in life, Fairbairn [29] suggested that anxiety centers around separation conflict. Similarly, Fromm-Reichmann [30] emphasized the role of distorted relational views in both the etiology and perpetuation of anxiety whereas Klein [31, 32] focused on an infant's fear of death when he/she is unable to evoke the primary caregiver on demand. In yet a different vein, Bowlby [33] focused on the relationship between attachment style and anxiety.

As highlighted in the discussion of Sullivan, Fromm-Reichmann, Klein, Fairbairn, and Bowlby, dynamic theorists often link anxiety with object relations and/or interpersonal relationships. Importantly, this connection has also been supported by empirical research. For example, studies have shown that worry is often related to interpersonal problems, especially when the worrier is overly nurturing toward others [34] and that worry content among GAD patients is more frequently about relational issues than any other topic [35]. In addition, insecure attachment patterns have been clinically reported for many patients with anxiety disorders [33, 36]. Further, patients suffering from panic disorder frequently describe controlling or critical parents (e.g. [37]). These findings support psychodynamic theorists' suggestion that there is a link between anxiety and object relations or interpersonal relationships. The implications of this connection can be seen in prominent psychodynamic treatment such as Luborsky's [38] Core Conflictual Relationship Theme (CCRT) which focuses on patients' cyclical relational patterns. In sum, psychodynamic theories provide an explanation for the etiology and pathogenesis of anxiety that often includes an emphasis on the underlying meaning of symptoms, unconscious conflict, defense, and both object relations and interpersonal relationships. In order to illustrate how this type of understanding impacts treatment, a clinical example will now be provided.

Clinical Example

Sara, a 29-year-old homemaker, presented at the emergency room complaining of panic attacks with prominent symptoms of dizziness, sweating, shortness of breath, and tachycardia. She reported that the first panic attack occurred the previous week when her husband left for work and that the attacks had reoccurred every morning since. The panic attacks always began with a fear that something terrible was going to happen to either her husband or son and that one of them would die. In order to begin to understand the meaning of Sara's symptoms, her therapist began by exploring the context in which her symptoms occurred.

- Therapist: These panic attacks sound very frightening. My hope is that we can begin to understand them together. Can you tell me about the first morning that it happened?
- Patient: I was making breakfast for my 2-year-old son. It was a normal morning.
- Therapist: Can you recall what you were thinking about as you were making breakfast?
- Patient: When my husband left that morning, he told me to “eat for two” since I am pregnant again. So, I was thinking about that.
- Therapist: When did you learn of your pregnancy?
- Patient: Two weeks ago.
- Therapist: When people learn they are pregnant, they often experience a wide range of emotions. How are you experiencing the news?
- Patient: It is only something wonderful. Well, I was originally upset about not being able to go back to work, but now realize that I could not be happier to stay home with our children.

Sara’s response suggests that she may be conflicted about the birth of the new child and her continued role as a homemaker. On the one hand, she seems to want to be a “good” mother and to take care of her children. Yet, on the other hand, she appears to be feeling a loss of autonomy about not returning to work. Thus, her physical symptoms are likely a manifestation of the anger and loss she feels when her husband leaves her alone with her son during the day and the subsequent guilt that this anger induces. It seems that Sara is attempting to defend against these feelings by using reaction formation (when an affect is disguised as its opposite) as seen by her statements that the pregnancy is “only something wonderful.” When this fails and her resentment surfaces, she uses the defense of undoing (performing an action which retracts and disavows a previously expressed affect) as evidenced by her statement that at first she was upset about the news, but now “could not be happier.” It seems that when both of these defenses fail, however, panic attacks ensue. In the following interchange, the therapist attempts to help Sara gain awareness into this conflict and become more in touch with her emotions.

- Therapist: I can hear how seriously you take being a good mother and it is very clear to me how much you love your family. It would be understandable, however, if there was also a part of you that feels frustrated about not being able to return to work.
- Patient: Oh I don’t know, maybe a little frustrated, but not really.
- Therapist: Can you tell me about the “little” bit of frustration that is there?
- Patient: I’m not sure.
- Therapist: What would be the scariest part if you were frustrated?
- Patient: My mom never left me alone even for a second as a child. She gave up everything for me. That is how I knew she loved me. What would my children think if I were to go back to work and what would my husband and mother think of me as well?

Sara’s object and interpersonal relationships are important in a psychodynamic therapy. Thus, her therapist spent time exploring Sara’s enmeshed relationship with her mother as well as her relationships with her husband and son. In addition, they examined Sara’s feelings and fantasies about her unborn child. Through this work together, Sara and her therapist identified a Core Conflictual Relationship Theme (CCRT [38]) focusing on what Sara wants from relationships (the wish; W), the response she expects from others (response from other; RO), and her subsequent response both affectively and behaviorally (response of self; RS). The specific CCRT was that Sara wants to be loving and giving to others while at the same time she wants to retain a sense of independence and autonomy. However, she is afraid that others will take advantage of her, abandon her, or view her as being selfish. As a result, she ignores her own needs and is left feeling trapped and angry.

Sara’s CCRT was examined in the context of outside relationships as well as in the therapeutic relationship. The therapeutic relationship was also used to provide Sara with a different relational experience in which support and open communication were fostered. It was inside of this relationship that Sara and her therapist were able to make meaning of her physical symptoms, to bring her conflicts into awareness, and to develop new, healthier ways of relating to herself and others. Although Sara’s

case is encouraging, it is important to examine whether psychodynamic therapy is efficacious and effective across many cases. Thus, this review will now turn to the empirical findings of psychodynamic therapy in the treatment of anxiety disorders.

The Outcome Evidence for Psychodynamic Treatments of Anxiety Disorders

Efficacy of Psychodynamic Therapy Compared with No or Minimal Treatment for Anxiety

Table 7.1 summarizes the two studies that have compared psychodynamic therapy to a control group in the treatment of anxiety disorders [39, 40]. The purpose of this table, and all the other tables in the empirical sections, is to highlight the magnitude of treatment effects for the primary patient and clinically rated anxiety measures from each study. When measures of anxiety were not used, general symptoms or overall improvement will be reported instead. The tables are not meant to constitute meta-analyses or represent a complete reporting of all outcome effects for every variable examined in the studies reported. Rather, they are provided to organize the magnitude of effects for the primary anxiety variables (patient self-report and independent clinical ratings) in a clear manner.

As presented in Table 7.1, Brom et al. [39] examined whether brief psychodynamic therapy, focusing on solving intrapsychic conflict resulting from trauma, was more efficacious in the treatment of PTSD than a wait-list control [39]. They found that on the primary outcome measure of patient reported total symptoms, psychodynamic therapy was substantially more effective at termination ($p < 0.05$, $d = 0.88$).¹

The second study was a pilot study in which GAD patients receiving brief supportive-expressive (SE) psychodynamic therapy were compared to GAD patients receiving brief supportive nondirective therapy [40].² The supportive nondirective therapy was conducted using Borkovec and Mathews'

Table 7.1 Psychodynamic treatments versus controls for anxiety disorders

Citation	N, disorder, and type of dynamic treatment	N, disorder, and type of comparison treatment	Post Tx ES	Follow-up Tx Es
Brom et al. [39]	29 PTSD Brief (mean = 18.8 sessions) psychodynamic treatment focused on solving intrapsychic conflict resulting from trauma	23 PTSD Wait-list	Pt Rated Gen Symp $d = 0.88$	N/A (no follow-up data for wait-list group)
Crits-Christoph et al. [40]	14 GAD Supportive-expressive brief psychodynamic treatment (16 sessions)	13 GAD BAI 14 GAD HAM-A Supportive, nondirective therapy (16 sessions)	BAI $d = -0.49$ HAM-A $d = 0.26$	N/A

Gen Symp total general symptoms (patient rated), *BAI* Beck Anxiety Inventory (patient rated), *HAM-A* Hamilton Anxiety Inventory (independent rater)

¹ Brom et al. [39] will be discussed in more detail in the *Psychodynamic Therapy versus CBT Treatments for Anxiety* section due to its further comparison of psychodynamic treatment to trauma desensitization.

² The pilot study was published as a subsection of a larger report on the effects of SE in the treatment of GAD and will be discussed in full in the *Pre-post within group effectiveness of psychodynamic therapy in the treatment of anxiety* Section.

[41] treatment manual and focused on directing patients' attention toward their feelings while creating an accepting, nonjudgmental, and empathic environment. Supportive therapists were prohibited from providing direct suggestion or coping techniques, and they were not instructed to focus on interpersonal relationships. In contrast, SE focused directly on anxiety in the context of problematic relational patterns.

Both groups showed large within-group improvements, and no significant differences were found between SE and supportive therapy on the BAI ($d = -0.49$), or the HAM-A ($d = 0.26$) [42]. However, when only patients who achieved symptomatic remission (defined as a termination score on the HAM-A of <7) were examined, a statistically significant difference ($p < 0.05$) was found such that 46% of the SE group versus 12.5% of the supportive group achieved remission. Importantly, the outcome scores were much more variable in the SE group than in the supportive group (SD more than 50% greater in SE group). The authors state that these findings suggest SE therapy may work exceptionally well for a subset of GAD patients, but not for other GAD patients. In contrast, supportive treatment may lead to reliable gains for the majority of patients. This suggests that future research (with more power than a pilot study) should examine whether there are patient characteristics that moderate when psychodynamic therapy is more and less effective. It should also examine what the specific active techniques in psychodynamic therapy are that cause it to lead to greater remission than supportive therapy. Further, because no follow-up data were provided, it remains uncertain whether the remitters in the SE group maintained their improvement.

Abbass et al. [43] begin addressing the issues of power and long-term maintenance in their large meta-analysis evaluating the efficacy of short-term psychodynamic therapy (STPP) as compared to controls (treatment as usual, medical management, psychotherapeutic support, minimal psychological interventions, and wait-list). Their meta-analysis is not included in Table 7.1 because their review summarizes data from studies on a variety of mental disorders and does not focus specifically on anxiety disorders. However, their findings are important as they examine STPP's efficacy in reducing anxiety symptoms. Among the 23 studies used in this review, 12 used anxiety measures. Using these 12 studies in a random effects model, Abbass et al. found that anxiety ratings showed significant ($p < 0.05$) and large treatment effects relative to controls at 3- to 9-month follow-up ($d = 0.96$), but did not show significant effects when follow-up was less than 3 months ($d = 0.72$) or greater than 9 months ($d = 0.85$). However, when one of the studies used in the review [44] was excluded from analyses, the difference was significant in both the short ($d = 0.96$, $p < 0.05$) and long term ($d = 1.35$, $p = 0.05$). Examining the results with the exclusion of Sjodin et al. [44] is important as this study diverged markedly from the results of the other studies in the review. This is not surprising given that it was a study conducted on peptic ulcer patients before triple therapy for the eradication of *helicobacter pylori* was introduced. When this study is taken out, the finding across the other 11 studies is that psychodynamic treatment is more effective than controls in reducing anxiety symptoms. Although this is important, it is even more important to determine how psychodynamic treatment compares to other active treatments. To address this question, the chapter will now review the literature on psychodynamic versus pharmacological treatments on anxiety.

Efficacy of Psychodynamic Treatments Combined or Alone in Relation to Pharmacological Treatments for Anxiety Disorders

Table 7.2 summarizes the primary patient and clinical anxiety ratings for the randomized control trial (RCT; [46]) and naturalistic study [45] that have examined the efficacy of psychodynamic therapy alone or in combination with medications as compared with pharmacological interventions only in the treatment of anxiety. These studies vary in the types of patients used, the type of psycho-

Table 7.2 Psychodynamic treatments versus pharmacological treatments for anxiety disorders

Citation	<i>N</i> , disorder, and type of dynamic treatment	<i>N</i> , disorder, and type of comparison treatment	Post Tx ES	Follow-up Tx Es
Ferrero et al. [45]	34 GAD post and 3 month	33 GAD post and 3 month	HAM-A	HAM-A
	33 GAD 9 month	25 GAD 9 month	$d=-0.29$	3 month $d=0.21$
	Brief Adlerian psychotherapy (10–15 sessions)	Medication (SSRI or SNRI/NaSSA)		9 month $d=0.13$
Ferrero et al. [45]	34 GAD post and 3 month	20 GAD post and 3 month	HAM-A	HAM-A
	33 GAD 9 month	18 GAD 9 month	$d=0.21$	3 month $d=0.46$
	Brief Adlerian psychotherapy (10–15 sessions)	Brief Adlerian psychotherapy (10–15 sessions) PLUS Medication		9 month $d=0.19$
Wiborg and Dahl [46]	20 Panic manualized psychodynamic treatment based on Davanloo, Malan, Strupp and Binder (15 sessions) PLUS clomipramine	20 Panic clomipramine alone for 9 months	PAAS $d=0.55$	9 months after treatment ended
			HAM-A $d=1.38$	PAAS $d=0.76$ HAM-A $d=0.86$

HAM-A Hamilton Anxiety Inventory (independent rater), *PAAS* panic attack and anxiety scale (patient rated)

dynamic therapy provided, and the types of comparisons made. However, they are similar in that both provide encouraging results for psychodynamic therapy in the treatment of anxiety.

As presented in Table 7.2, Wiborg and Dahl [46] conducted an RCT in which adult outpatients diagnosed with panic disorder were treated with 9 months of clomipramine or a combination of clomipramine and 15 sessions of manualized psychodynamic psychotherapy based upon the concepts and techniques of Davanloo (1978), Malan (1976; 1979), and Strupp and Binder (1984) [46]. Results showed that, at the end of treatment, all patients who had received therapy and medication were panic free. In addition, the combined group had significantly less anxiety at the end of treatment than the medication alone group as measured by the patient-rated Panic Attack and Anxiety Scale (PAAS; $p=0.02$, $d=0.55$) and the external rated Hamilton Anxiety Inventory (HAM-A; $p=0.001$, $d=1.38$). This superiority of combined treatment remained 9 months after treatment ended on both the PAAS ($p=0.02$, $d=0.76$) and HAM-A ($p=0.03$, $d=0.86$). These findings suggest that psychodynamic therapy enhances the effects of pharmacological treatments. However, they do not attend to the effectiveness of psychodynamic therapy in the absence of medication.

In order to fill in this gap, Ferrero et al. [45] compared the effects of GAD outpatients treated with medication, brief Adlerian psychodynamic psychotherapy (B-APP), or combined therapy and medication. B-APP focused on exploring patients' deep-seated needs, self-esteem, self-image, and relational patterns. Patients were assigned at intake to their treatment group by a psychiatrist considering severity and mental ability in treatment placement. Nonetheless, there were no significant differences between the groups for age, comorbidity of Axis I or II disorders, or ratings on the Hamilton Rating Scale for Depression (HAM-D), Hamilton Rating Scale for Anxiety (HAM-A), Social and Occupational Functioning Scale (SOFAS), or Clinical Global Impression (CGI) scores at the beginning of treatment.³

No significant differences were found between the groups on level of improvement evaluated across intake, termination, and 3 months after treatment ended on the CGI ($p=0.21$), HAM-A ($p=0.31$), HAM-D ($p=0.24$), and SOFAS ($p=0.12$) nor on rate of remission for HAM-A ($p<0.42$)

³It should be noted, however, that there was a nonsignificant indication that the therapy alone group had less severity as indicated by the CGI at the onset of treatment ($p<.07$).

or HAM-D ($p < 0.36$). In addition, when effect sizes were examined for the primary anxiety measure, the HAM-A, only small differences were found at termination of therapy. This lack of robust differences between the groups is related to the fact that all treatment groups showed progressive improvement on all measures at 3 months post-treatment and they all showed long-term conservation of many of these clinical benefits at 9 months post-treatment.

In fact, the only finding that significantly differentiated the groups was that patients with a comorbid personality disorder made significantly more improvement in the dynamic therapy group than patients treated with medication alone at 3 months after treatment ended ($p = 0.04$). This suggests that dynamic therapy is as successful as medication on improvement and remission of many symptom variables and that it is even more successful than medication in helping GAD patients with a comorbid PD improve their social and occupational functioning. Thus, although any conclusions drawn are tentative due to the small number of studies in this area, these findings combined with Wiborg and Dahl [46] provide support for the efficacy and effectiveness of psychodynamic treatment for anxiety disorders when compared with pharmacological approaches. In order to further explore the efficacy and effectiveness of psychodynamic therapy, this chapter will now turn to empirical research that has compared psychodynamic therapy to cognitive and behavioral therapy for anxiety disorders.

Efficacy of Psychodynamic Therapy Compared with Cognitive, Behavioral, or CBT for Anxiety

Table 7.3 summarizes results from the primary patient and clinical ratings for anxiety or overall symptoms in studies that have compared psychodynamic therapy to cognitive [47, 48, 52], behavioral [39, 49, 51, 53], and cognitive-behavioral [50] therapies in the treatment of anxiety. These studies vary in the types of patients used, the kind of psychodynamic therapy provided, and the measures used to assess change. Thus, it is not surprising that the results vary with methodology. Overall, they provide mixed results for psychodynamic therapy in the treatment of anxiety [8, 39, 49, 51], with a few studies raising some questions about the efficacy or fidelity of the psychodynamic treatments delivered [47, 48].

Durham et al. [47, 48] is an example of a study that raises concerns about the efficacy of psychodynamic treatment for anxiety as compared to cognitive therapy. These investigators compared the effects of cognitive therapy, psychoanalytic therapy, and anxiety management training in an RCT with GAD adult outpatients. All treatments were delivered at 1 or 2 week intervals during a 6-month period and were further divided into two groups, one termed the high contact condition (16–20 hours of treatment) and the other termed the low contact condition (8–10 hours of treatment). They found that psychoanalytic therapy led to significant improvements on several different measures in both the high and low contact groups, but that cognitive therapy led to greater improvements. Similarly, low contact analytic therapy was significantly worse than anxiety management training in lowering patients' symptoms on the STAI-T at termination ($d = -0.80$) and 6 ($d = -0.90$) and 12-month follow-up ($d = -1.12$).

It is important to note, however, that there were several methodological problems in Durham et al.'s [47, 48] work. First, there were manuals in the cognitive therapy, but not in the analytic therapy. Second, there were no checks of adherence to the treatment methods so fidelity to stated specific treatments cannot be evaluated. Third, there was no assessment of therapist competence. Finally, as Leichsenring et al. [54] note, there were significant differences in therapist experience for each group. The psychologists delivering cognitive therapy had between 2 and 10 years of specific training in the cognitive therapy they were providing. In contrast, the psychiatrists conducting

Table 7.3 Psychodynamic treatments versus cognitive, behavioral, or CBT for anxiety disorders

Citation	N, disorder, and type of dynamic treatment	N, disorder, and type of comparison treatment	Post Tx ES	Follow-up Tx ES
Brom et al. [39]	29 PTSD Manualized Brief (mean = 18.8 sessions) psychodynamic therapy focused on solving intrapsychic conflict resulting from trauma	31 PTSD Trauma desensitization (mean = 15 sessions)	Gen Symp $d = -0.26$	Gen Symp 3 month $d = 0.23$
Durham et al. [47, 48]	11 GAD post 12 GAD 6 month 10 GAD 12 month AP (Analytic-based therapy; exploration of symptoms, relationships, development, transference, and resistance) High contact: 16–20 sessions	15 GAD post and 6 months 13 GAD 12 months CT (cognitive therapy based on Beck and Emery) High contact: 16–20 sessions	STAI-T $d = -0.84$	STAI-T 6 month $d = -0.71$ 12 month $d = -1.33$
Durham et al. [47, 48]	13 GAD post 14 GAD 6 months 12 GAD 12 months AP Low contact: 8–10 sessions 13 GAD post 14 GAD 6 months 12 GAD 12 months AP Low contact: 8–10 sessions 18 Phobic ^a Supportive dynamic (26 weekly sessions) PLUS imipramine	18 GAD post 14 GAD 6 and 12 months CT Low contact: 8–10 sessions 14 GAD post and 6 months 12 GAD 12 months Anxiety Management (8–10 sessions) 48 Phobic ^b Behavior therapy (26 weekly sessions) PLUS imipramine	STAI-T $d = -0.87$	STAI-T 6 month $d = -1.38$ 12 month $d = -1.38$ STAI-T 6 month $d = -0.90$ 12 month $d = -1.12$
Klein et al. [49]	28 GAD Manualized STDP based on Luborsky and Crits-Christoph (up to 30 sessions)	29 GAD Manualized CBT focused on changing and controlling worry (up to 30 sessions)	Pt-ODI $d = 0.04$ IR-ODI $d = -0.31$	6 months STAI-T $d = -0.93$ HAM-A $d = -0.65$
Leichsenring et al. [50]	26 Panic Panic-focused psychodynamic psychotherapy (twice weekly for 12 weeks)	23 Panic Relaxation Training (twice weekly for 12 weeks)	STAI-T $d = -0.82$ HAM-A $d = -0.48$ PDSS $d = 0.95$	6 months STAI-T $d = -0.93$ HAM-A $d = -0.65$
Milrod et al. [8]	Nine Elevated scores on TMAS Short-term psychodynamic treatment influenced by Malan (20 sessions)	13 Elevated scores on TMAS Systematic desensitization (20 sessions)	STAI-S $d = -0.37$ TMAS $d = -0.49$	STAI-S 3 months STAI-S $d = 0.33$ TMAS $d = -0.03$

Gen Symp total general symptoms (patient rated), STAI-S/T State-Trait Anxiety Inventory State (S)/Trait (T) (patient rated), HAM-A Hamilton Anxiety Inventory (independent rater), Pt-ODI patient rating of overall degree of improvement, IR-ODI independent rating of overall degree of improvement, PDSS panic disorder severity scale (independent rater), TMAS Taylor manifest anxiety scale

^aOnly 17 of the phobic patients in the ST Group were used in the IR-ODI calculation

^bOnly 44 of the phobic patients in the BT group were used in the IR-ODI calculation

the analytic treatment were training in psychoanalysis and were not reported to have had any special training in brief therapeutic interventions even though the trial was limited to 6 months of treatment.

Perhaps even more important than these methodological concerns is Durham, Chambers, MacDonald, Power, and Major's [55] later finding that cognitive therapy's initial superiority over analytic therapy in the 1994 and 1999 studies disappeared by 8-year follow-up. Specifically, they found that 36% of participants in the cognitive group had recovered and 42% of participants in a combined control group of participants who had received either analytic therapy or anxiety management had recovered. Unfortunately, because Durham and colleagues [55] combined the analytic therapy and anxiety management participants in the comparison at 8-year follow-up, it is impossible to conclude how cognitive therapy directly compared to analytic therapy at follow-up.⁴

A direct comparison between short-term psychodynamic treatment and behavior therapy was reported by Klein et al. [49]. In this study, phobic patients were randomly assigned to imipramine plus 26 weekly sessions of behavior therapy (BT), placebo pill plus 26 weekly sessions of BT, or imipramine plus 26 weekly sessions of supportive dynamic therapy (ST). BT consisted primarily of systematic desensitization and relaxation training whereas ST focused on expression of feelings and discussion of interpersonal relationships, anxieties, and conflicts. Results showed that both ST plus imipramine and BT plus imipramine led to robust improvements. Eighty-five percent of patients in the BT plus imipramine group and 89% of patients in the ST plus imipramine group reported having made moderate to marked improvement. Similarly, ratings by an external rater show that 82% of patients in the BT plus imipramine group and 76% of patients in the ST plus imipramine group made moderate to marked improvement at termination. Neither of these differences were significant ($p > 0.10$). This suggests that behavioral therapy and short-term psychodynamic therapy are equally effective in the treatment of phobias when combined with imipramine and that both are highly effective in combination with imipramine. However, it remains unclear as to whether either behavioral or psychodynamic therapy would be effective without imipramine and whether comparing the two treatments without the inclusion of pharmacological treatment would lead to differential efficacy.

Pierloot and Vinck [51] also compared psychodynamic and behavioral therapies in the treatment of anxiety. Like Klein et al. [49], they found both to lead to some positive change, however, their results were more varied. On two measures, there was a trend, although not significant ($p > 0.05$), in which systematic desensitization led to more positive change at the end of treatment, but not at 3-month follow-up. Specifically, at termination, patients in the systematic desensitization group tended to show greater positive change on the Taylor Manifest Anxiety Scale (TMAS) ($d = -0.49$) and on the State-Trait Anxiety Index, Form State (STAI-S) ($d = -0.37$), than patients in the psychodynamic therapy group. Yet, at 3-month follow-up, the difference had disappeared for the TMAS ($d = -0.03$) and had trended toward a reversal for the STAI-S ($d = 0.33$), with the psychodynamic therapy group now reporting greater change. Moreover, the positive changes made between termination and follow-up were significantly greater in the dynamic therapy group than they were in the systematic desensitization group ($p < 0.05$). These findings combined with Durham and colleagues' [55] results suggest that cognitive and behavioral treatments may lead to more immediate symptom reduction. However, psychodynamic treatment may lead to continued improvement after termination and the difference between the two treatments may diminish.

⁴Because there was no direct comparison, Durham et al. [55] is not included in the table.

Further support for this argument comes from Brom and colleagues' [39] RCT which contrasted wait-list control, psychodynamic therapy, hypnotherapy, and trauma desensitization in the treatment of patients with PTSD. Similar to Pierloot and Vinck's findings, they found that psychodynamic treatment had slightly weaker effects than trauma desensitization on combined scores of intrusion and avoidance at post treatment ($d=-0.26$). However, the therapeutic gains continued in the psychodynamic treatment group, and at 3-month follow-up, the psychodynamic patients appeared to have slightly stronger positive effects as compared to trauma desensitization ($d=0.23$).

When within-group effect sizes from pretest to follow-up were examined, psychodynamic treatment had large effects on both the Intrusion ($d=1.12$) and the Avoidance ($d=0.94$) subscales. Trauma desensitization also fared well when comparing within-group effect sizes from pretest to follow-up. However, the differences between the two scales for trauma desensitization were greater on the Intrusion subscale ($d=1.07$) than on the Avoidance subscale ($d=0.69$). Thus, Brom and colleagues [39] conclude that both psychodynamic therapy and trauma desensitization are more effective in treating PTSD than control comparisons, but that the treatments may lead to differential results depending on the timing of assessments (i.e., at termination or follow-up) as well as the specific measures utilized (i.e., what types of changes are being assessed). Specifically, trauma desensitization may lead to more improvements in the short term whereas psychodynamic treatment may lead to greater gains in the long term. Moreover, psychodynamic therapy and trauma desensitization may be equally effective in reducing intrusion, but psychodynamic therapy may lead to greater gains in the area of avoidance.

Leichsenring et al. [50] also found that the relative success of CBT and short-term psychodynamic therapy (STDP) in the treatment of GAD depended on the measures used for assessment. To avoid some of the methodological flaws mentioned earlier in previous studies, Leichsenring and colleagues used experienced therapists well trained in their respective approaches, manuals in both treatments, and adherence and competency checks to ensure that the therapies were being delivered properly. They found significant positive effects for all outcome measures, indicating that both CBT and STDP led to improvements (effect sizes ranged from $d=0.41$ – $d=2.67$). This was also true for all outcome measures at 6-month follow-up, indicating that the improvements were retained. In fact, when the within-group effect sizes for all measures used in this study are averaged, STDP shows a large effect at termination ($d=1.16$) and 6-month follow-up ($d=1.10$). Average CBT within-group effect sizes also show a large effect at termination ($d=1.73$) and 6-month follow-up ($d=1.71$).

When the two groups were compared at termination, no significant differences ($p>0.05$) were found for the Hamilton Anxiety Rating Scale (HAM-A; $d=-0.48$), Beck Anxiety Inventory (BAI; $d=-0.33$), Hospital Anxiety Scale (HAS; $d=-0.57$), or the Inventory of Interpersonal Problems (IIP; $d=-0.08$) despite the tendency for CBT to have larger effect sizes. Similarly, at 6-month follow-up, CBT continued to have larger effect sizes, but no significant differences ($p>0.05$) were found for the HAM-A ($d=-0.65$), BAI ($d=-0.37$), HAS ($d=-0.63$), or IIP ($d=-0.07$). However, CBT was significantly ($p<0.01$) superior at termination in reducing symptoms as measured by the Penn State Worry Questionnaire ($d=-0.98$), State-Trait Anxiety Inventory ($d=-0.82$), and Beck Depression Inventory ($d=-0.76$). At 6-month follow-up, this significant ($p<0.05$) superiority remained on all three measures (respective effect sizes: $d=-1.04$, $d=-0.93$, $d=-0.59$). If the between-group effect sizes of all measures used in this study are averaged, medium effect sizes are found such that CBT is superior to psychodynamic therapy at both termination ($d=-0.57$) and 6-month follow-up ($d=-0.61$).

Thus, both treatments were associated with significant improvements in anxiety, depression, and interpersonal functioning, and no significant differences were found between the two therapies on the majority of measures. However, CBT was significantly superior in measures of trait anxiety, worrying, and depression. In discussing these findings, Leichsenring et al. [50] note that the reduction of worry is a core element of the CBT treatment used in this trial but not of the applied STDP. Thus, they suggest that this specific difference may account for the superiority of CBT on the Penn

State Worry Questionnaire and in part, on the State-Trait Anxiety Inventory. (This measure also contains several items about worry). One way to look at this would be to accept that the two treatments focus differentially on symptoms. Thus, some types of outcome measures will favor one treatment while others will present the inverse pattern.

Although no outcome measures were associated with more positive change for psychodynamic therapy in this study, other studies have suggested that psychodynamic therapy may be more effective in some domains [39, 56]. For example, Gibbons and colleagues used a pooled study database of five trials utilizing similar methods with varied study populations in order to examine the unique and common mechanisms of change across psychodynamic and cognitive psychotherapies. They found that psychodynamic therapy led to significantly ($p < 0.05$) greater gains in self-understanding of interpersonal patterns than cognitive therapy between intake and termination ($d = 0.47$). Importantly, improvements made during treatment in self-understanding were significantly predictive ($p < 0.05$) of improvement in symptoms of anxiety on the BAI from termination to follow-up, controlling for change on the BAI from intake to termination. This suggests that changes in self-understanding preceded symptom change in anxiety. Thus, it seems that psychodynamic therapy's focus on self-understanding of interpersonal patterns may be an important mechanism of change in the treatment of anxiety symptoms.

Other promising results for psychodynamic therapy in the reduction of anxiety come from Milrod, Leon, Busch and colleagues' [53] RCT comparing panic focused psychodynamic psychotherapy (PFPP) and relaxation training in the treatment of 49 patients with panic disorder. Results found that, at termination, PFPP had been significantly more effective than relaxation training in reducing the severity of a broad range of symptoms on the Panic Disorder Severity Scale ($p < 0.01$, $d = 0.95$). At termination, PFPP had also been more successful in lowering functional impairment as measured by the Sheehan Disability Scale ($p = 0.01$, $d = 0.74$), and it trended toward being more effective in the reduction of depressive symptoms on the Hamilton Depression Scale ($p = 0.07$, $d = 0.53$). Finally, relaxation training had a significantly higher attrition rate than PFPP: 7% of patients in the PFPP group versus 34% of patients in the relaxation training group dropped out of treatment ($p = 0.03$).

Follow-up analyses for this RCT were reported by Milrod, Leon, Barber, Markowitz, and Graf [8] in order to determine whether Axis II comorbidity moderated the treatment effects found for PFPP and relaxation training. Results showed that on the Panic Disorder Severity Scale (PDSS), PFPP was superior to relaxation therapy both for patients with ($d = 1.19$) and without ($d = 0.55$) an Axis II disorder and that the effect size was even larger for the personality disorder patients. In addition, when only Cluster C was considered, PFPP outperformed relaxation therapy for patients with ($d = 1.35$) and without ($d = 0.69$) a Cluster C personality disorder and again the effect size was even larger for the Cluster C group. Because only five subjects with an Axis II diagnosis did not have a Cluster C personality disorder, the effects of other Axis II disorders could not be separated from the effects of Cluster C. Thus, the conclusion which can be drawn is that Cluster C comorbidity increased the efficacy of PFPP while it decreased the efficacy of relaxation therapy. These results are consistent with the APA Practice Guidelines for Panic Disorder [16], which recommend psychodynamic psychotherapy for PD patients with comorbid personality disorders.

The research presented thus far has compared psychodynamic treatments to cognitive and behavioral treatments as well as to controls and pharmacological interventions. Results have generally suggested that psychodynamic therapy demonstrates efficacy in relation to controls and that it is generally as efficacious as medication. However, the conclusions with regards to pharmacological interventions are preliminary due to the small number of studies in this area. Finally, the efficacy of psychodynamic therapy in relation to cognitive, behavioral, and CBT is more mixed. While psychodynamic therapy produces large treatment effects, there is a general trend for CBT to demonstrate small to moderate effects over psychodynamic treatments for anxiety disorders.

Another way to examine the effects of psychodynamic treatment of anxiety disorders is to evaluate pre-post within-group treatment changes. This allows an evaluation of the amount of improvements patients make in psychodynamic therapy between intake and termination and between intake and follow-up. This allows a direct evaluation of the amount of change patients make during psychodynamic therapy. Thus, this chapter will now move to discussing the effectiveness of psychodynamic therapy in leading to change.

Pre-Post Within-Group Effectiveness of Psychodynamic Therapy in the Treatment of Anxiety

Table 7.4 summarizes the within-group (pre-post change) effect sizes for the primary patient- and clinician-rated outcome measures of anxiety (overall symptoms or improvement when a measure of anxiety was not provided). This table only includes published studies that use psychodynamic therapy in the treatment of anxiety disorders. When the pre-post treatment effect sizes of these studies are averaged (random effect, weighted for sample size), psychodynamic psychotherapy has a large mean effect for patient ($d=1.05$; range $d=0.26$ – 3.23) and clinician ($d=1.62$; range $d=0.57$ – 2.29) ratings on the primary outcome scales for the studies ($N=269$). These summary scores are not meant to constitute a meta-analysis or represent a complete reporting of all outcome effects for every variable examined in the studies reported. Rather, they are provided to organize the magnitude of effects for the primary anxiety variables in a clear manner. However, whereas this summary score is not a meta-analysis, it is important to note that the summary effect sizes are comparable to Stewart and Chambless's [58] meta-analytic finding that effect sizes for CBT range from 0.83 to 2.59 depending on the specific anxiety disorder being targeted. For example, they found that across 11 effectiveness studies of CBT for GAD, the mean pre-post effect size was 0.92 for generalized anxiety. Across 17 effectiveness studies of CBT for panic disorder, the mean pre-post effect size for panic attacks was 1.01. And, across 11 effectiveness studies of social anxiety disorder, the mean pre-post effect size for social anxiety symptoms was 1.04.⁵

In addition to examining the summary of within-group effect sizes across numerous studies, it is also useful to look directly at effectiveness studies of psychodynamic psychotherapy for anxiety disorders in naturalistic settings. Reviewing both RCT's and effectiveness research in naturalistic settings is important as they provide different types of information. Efficacy studies tend to have high internal validity, enabling them to provide information about which treatment leads to the best results under controlled conditions. In contrast, effectiveness research has higher external validity and helps to identify if a treatment is feasible and effective in real-world settings [61]. In order to examine whether psychodynamic treatments of anxiety are likely to be effective as well as efficacious, this chapter will now turn to research examining the effectiveness of psychodynamic treatments for anxiety in naturalistic settings.

Three studies have examined the effectiveness of psychodynamic psychotherapy for anxiety disorders in naturalistic settings [21, 27, 57]. Crits-Christoph et al.'s [27] study was an open trial of brief supportive-expressive (SE) psychotherapy in the treatment of GAD; Milrod et al.'s [21] study was an open trial of panic-focused psychodynamic psychotherapy (PFPP) in the treatment of panic disorder; and Slavin-Mulford et al.'s [57] study was an open trial of short-term psychodynamic psychotherapy in the treatment of anxiety spectrum disorders. All three studies suggest that psychodynamic therapy is effective in treating anxiety.

⁵ The measure of effect size in this study was Hedge's g [59] rather than Cohen's d [60] which is more commonly reported in meta-analyses. The two measures are based on slightly different computational formulas, but with large samples, the choice of formula leads to limited or no change in transforming g to d .

Table 7.4 Psychodynamic treatments for anxiety disorders pre–post follow-up

Citation	<i>N</i> , disorder, and type of dynamic treatment	Pre–Post ES	Pre-follow-up ES
Ferrero et al. [45]	34 GAD post and 3 month 33 GAD 9 month Brief Adlerian psychotherapy (10–15 sessions)	HAM-A $d=0.57$	HAM-A 3 month $d=1.58$ 9 month $d=1.53$
Wiborg and Dahl [46]	20 panic Manualized psychodynamic treatment based on Davanloo, Malan, Strupp and Binder (15 sessions) PLUS clomipramine	PAAS $d=3.23$ HAM-A $d=2.29$	9 month PAAS $d=2.54$ HAM-A $d=1.88$
Brom et al. [39]	29 PTSD Manualized brief (mean = 18.8 sessions) psychodynamic focused on solving intrapsychic conflict resulting from trauma	Gen Symp $d=0.92$	Gen Symp 3 month $d=1.28$
Durham et al. [48]	11 GAD post 12 GAD 6 month 10 GAD 12 month AP (analytic-based therapy w/exploration of symptoms, current relationships, development, transference, and resistance-no support used) High contact condition: 16–20 sessions	STAI-T $d=0.26$	STAI-T 6 month $d=0.39$ 12 month $d=0.23$
Durham et al. [48]	13 GAD post 14 GAD 6 month 12 GAD 12 month AP: Low contact: 8–10 sessions	STAI-T $d=0.49$	STAI-T 6 month $d=0.12$ 12 month $d=0.13$
Klein et al. [49] ^a	18 Phobic PTODI 17 Phobic ERODI Supportive dynamic (26 weekly sessions) PLUS imipramine	89% Pt-ODI 76% IR-ODI	
Leichsenring et al. [50]	28 GAD Manualized STDP based on Luborsky and Crits-Christoph (up to 30 sessions)	STAI-T $d=1.02$ HAM-A $d=2.14$	6 month STAI-T $d=0.94$ HAM-A $d=2.02$
Milrod et al. [8]	26 Panic Panic-focused psychodynamic psychotherapy (twice weekly for 12 weeks)	PDSS $d=2.07$	
Pierloot and Vinck [51]	9 Elevated scores on Taylor Manifest Anxiety Scale Short-term psychodynamic tx influenced by Malan (20 sessions)	STAI-T $d=0.52$	STAI-T 3 months $d=0.54$
Crits-Christoph et al. [40]	61 GAD Brief supportive-expressive psychotherapy (16 weekly sessions + 3 monthly booster sessions)	BAI $d=1.25$ HAM-A $d=1.18$	
Milrod et al. [21]	21 Panic 16 weeks 17 panic 6 month PFPP (2× weekly 24 sessions)	ASI $d=1.19$ PDSS $d=2.08$	6 month ASI $d=1.66$ PDSS $d=1.81$
Slavin-Mulford et al. [57]	12 GAD, 1 Panic, 4 PTSD, and 4 Anxiety Disorder NOS STPP (duration varied; mean sessions = 29)	BSI Anx $d=0.89$ GAF $d=1.44$	

HAM-A Hamilton Anxiety Inventory (independent rater), *PAAS* Panic Attack and Anxiety Scale (patient rated), *Gen Symp* total general symptoms (patient rated), *STAI-T* State-Trait Anxiety Inventory (patient rated), *Pt-ODI* patient rating of overall degree of improvement, *IR-ODI* independent rating of overall degree of improvement, *PDSS* Panic Disorder Severity Scale (independent rater), *BAI* Beck Anxiety Inventory (patient rated), *ASI* Anxiety Sensitivity Inventory (patient rated), *STPP* short-term psychodynamic psychotherapy, *BSI Anx* Brief Symptom Inventory anxiety subscale (patient rated), *GAF* Global Assessment of Functioning Scale (independent rater)

^aKlein et al. [49] did not provide information for calculating within-group effect sizes. However, the percentage of patient improvement as reported by the patients and independent raters was provided

Crits-Christoph et al.'s [27] study included 26 adult outpatients with GAD. Exclusionary criteria included acute medical disorders, any current or past history of schizophrenic disorders, bipolar disorder, Cluster A Axis II disorders, and anyone who met criteria within the past year for substance

dependence or abuse, OCD, eating disorder, major depression, or borderline personality disorder. These patients received manualized SE from therapists who had more than 10 years post doctoral experience and special training in SE for GAD. Treatment consisted of 16 weekly sessions and 3 monthly booster sessions. It was conducted using Luborsky's [38] general SE manual in conjunction with Crits-Christoph et al.'s [62] GAD specific SE manual. This approach focuses on understanding anxiety in the context of interpersonal/intrapsychic conflicts using the Core Conflictual Relational Theme which focuses on patients' cyclical relational patterns.

Results showed that, at the end of 16 weeks, 79% of patients no longer qualified for GAD. This considerable reduction in diagnosis occurred alongside a significant and large decrease in anxiety symptoms as measured by the HAM-A ($p < 0.01$, $d = 1.41$) and BAI ($p < 0.01$, $d = 1.99$). Moreover, significant improvements were found for worry as measured by the Penn State Worry Questionnaire ($p < 0.01$, $d = 0.95$), interpersonal functioning as measured by the Inventory of Interpersonal Problems ($p < 0.05$, $d = 0.25$), and depression as measured by the Hamilton Depression Rating Scale ($p < 0.01$, $d = 1.15$) and Beck Depression Inventory ($p < 0.01$, $d = 1.09$).

In a later study [62], additional SE patients were added to the 1996 sample, and it is this larger sample that is reported in Table 7.4. These additional SE patients were obtained from the following: 13 patients originally excluded due to comorbid MDD, seven patients originally excluded because they met all the criteria of DSM-IV GAD except that their worry was only in one sphere, and 15 patients who had been randomized to SE in a pilot study comparing SE and supportive, nondirect therapy. With this combined sample, Crits-Christoph et al. [62] found that SE therapy led to statistically and clinically meaningful change on the HAM-A ($p < 0.01$, $d = 1.18$), BAI ($p < 0.01$, $d = 1.25$) and Inventory of Interpersonal Problems (IIP; $p < 0.01$, $d = 1.07$). These numbers are somewhat lower than were reported in the 1996 paper. Because the 2005 paper did not examine these differences, it is unclear as to what caused the drop. One possibility is that the comorbid MDD patients responded less favorably than the noncomorbid patients to SE. However, this possibility remains the work of future research.

At this time, the most important point is that with this larger sample, SE remained highly effective. In fact, these effect sizes are similar in magnitude to those found for CBT treatments. Specifically, this investigation demonstrated effect sizes of 1.18 and 1.25 for reducing anxiety symptoms which is comparable to the Stewart and Chambless [58] finding that across 11 effectiveness studies of CBT for GAD, the mean pre-post effect size was 0.92 for generalized anxiety.⁶ These findings suggest that psychodynamic therapy is effective in treating anxiety disorders in the short term. However, because no follow-up data was collected, it is unclear as to whether these gains are maintained.

Milrod et al.'s [21, 26] study helps to begin addressing the issues of how well changes are maintained after treatment. Because their 2001 work is an expanded report of their 2000 study and provides additional assessment measures and increased sample, only the results presented in the 2001 report will be discussed. In this study, 21 patients with panic disorder were recruited, 81% of whom had at least one comorbid Axis I diagnosis. Unlike Crits-Christoph et al.'s [27] study, major depression was not used as an exclusionary category and 24% of patients had comorbid major depression. Other Axis I comorbidities included: dysthymia (24%), GAD (24%), specific phobia (24%), and social phobia (14%).

Patients were treated with 24 sessions at twice-weekly intervals of Panic-Focused Psychodynamic Psychotherapy (PFPP). PFPP is a manualized treatment that focuses on the underlying emotional meanings of panic symptoms and on current social and emotional functioning through utilization of free association, exploration of fantasies, interpretation of defenses, and the therapeutic relationship. Results showed significant and substantial improvements at termination on the Panic Disorder Severity Scale ($d = 2.08$, $p < 0.001$), Hamilton Anxiety Scale ($d = 1.72$, $p < 0.001$), Hamilton

⁶ The measure of effect size in this study was Hedge's g [59] rather than Cohen's d [60] which is more commonly reported in meta-analyses. The two measures are based on slightly different computational formulas, but with large samples, the choice of formula leads to limited or no change in transforming g to d .

Depression Scale ($d=0.89, p<0.002$), and Sheehan Disability Scale ($d=1.55, p<0.001$). In addition, significant and substantial improvements were found at termination on the Body Sensations Questionnaire ($d=1.30, p<0.001$), Agoraphobic Cognitions Questionnaire ($d=1.27, p=0.001$), Marks and Mathews Fear Questionnaire 1 ($d=1.12, p=0.002$), Marks and Mathews Fear Questionnaire 2 ($d=1.39, p<0.001$), and Anxiety Severity Index ($d=1.19, p<0.001$). Moreover, these gains were maintained on all measures at 6-month-follow-up. In fact, when termination scores were compared to follow-up scores, there was a trend on the Anxiety Sensitivity Index ($d=0.31, p=0.08$) and on the Marks and Mathews Fear Questionnaire 1 ($d=0.42, p=0.10$) for the gains to increase. Thus, it seems that at follow-up, additional small effect size gains were made even over the treatment termination scores, although these levels of chance did not reach traditional levels of significance.

When Milrod et al.'s [21] within-group effect sizes are compared to the within-group effect sizes obtained in CBT for panic disorder, PFPP seems to do as well if not better than CBT. Specifically, the effect sizes found on the Panic Disorder Severity Scale at termination in Milrod et al.'s [21] study was 2.08. Comparatively, Stewart and Chambless [58] report a mean pre-post effect size of 1.02 for general anxiety symptoms, 1.01 for panic attacks, and 0.83 for avoidance in their meta-analytic review of 17 effectiveness studies that used cognitive, behavioral, or a combination of cognitive and behavioral interventions in the treatment of panic disorder.⁷ Thus, like Crits-Christoph et al.'s [27] results, this suggests that psychodynamic therapy is highly effective in the treatment of anxiety disorders and that these large within-group changes are consistent with the within-group changes found in CBT.

Although Crits-Christoph et al. [27] and Milrod et al. [21] provide important information about the outcome of psychodynamic therapy, they do not explore how the process of therapy (e.g., techniques) is related to change. Slavin-Mulford et al.'s [57] study helps to begin addressing this gap by examining which therapeutic techniques were most related to outcome in an open trial of short-term psychodynamic therapy for anxiety disorders. In this naturalistic study, 21 patients with a diagnosed anxiety disorder (12 GAD, one Panic, four PTSD, and four Anxiety Disorder NOS) were accepted into treatment regardless of comorbidity. The majority of patients had at least one comorbid Axis I diagnosis (57% mood disorder; 10% eating disorder; 5% adjustment disorder) as well as a comorbid personality disorder (67%).

These patients received once or twice weekly 50–60-minute sessions of short-term psychodynamic psychotherapy (STPP). The decision about frequency of sessions was decided collaboratively between patient and therapist through a consideration of the patient's needs.⁸ Treatment was organized, aided, and informed (but not prescribed) by the technical guidelines delineated in four treatment manuals [38, 63–65]. Additional technical material specific to the STPP treatment of anxiety [62] was actively integrated into the treatment of these patients. Key features of the STPP model include [66]: [1] Focus on affect and the expression of emotion; [2] The identification of patterns in actions, thoughts, feelings, experiences, and relationships with these patterns being explored/formulated using the Core Conflictual Relationship Theme (CCRT) format [67]; [3] Emphasis on past experiences; [4] Focus on interpersonal experiences; [5] Emphasis on the therapeutic relationship/alliance; [6] Exploration of wishes, dreams, or fantasies; and [7] Exploration of attempts to avoid topics or engage in activities that may hinder the progress of therapy.

Results showed statistically significant changes at the end of treatment on anxiety symptoms, global distress, interpersonal distress, and social/occupational functioning.

⁷ The measure of effect size in this study was Hedge's g [59] rather than Cohen's d [60] which is more commonly reported in meta-analyses. The two measures are based on slightly different computational formulas, but with large samples, the choice of formula leads to limited or no change in transforming g to d .

⁸ The mean number of sessions attended by these twenty-one patients was 29 (SD=15), and the median was 24. The maximum number of sessions attended by a patient was 64.

Specifically, there was a significant and large decrease in anxiety symptoms as assessed by patient self-report on the Brief Symptom Inventory Anxiety Scale ($p < 0.01$, $d = 0.89$). Likewise, global symptomatic distress as measured by the clinician-rated Global Assessment of Functioning scale (GAF, $d = 1.44$) and patient-rated Global Severity Index (GSI, $d = 0.92$) were both shown to significantly decrease over the course of treatment ($p < 0.01$) with large effects. In addition, significant ($p < 0.05$) improvement in interpersonal functioning was also found with changes ranging from small (patient-rated Interpersonal Sensitivity subscale of the Brief Symptom Inventory, $d = 0.33$) to large (externally rated Global Assessment of Relational Functioning, $d = 1.23$). Moreover, the patient-rated Social Adjustment Scale ($d = 0.53$) and clinician-rated Social and Occupational Functioning Assessment Scale ($d = 0.84$) also showed significant changes ($p < 0.05$) with medium to large effects. Finally, at termination, most patients (76%) reported that their anxiety symptoms were within two standard deviations of the normative mean. This is similar to or even more encouraging than over psychodynamic (e.g. [40, 45, 48]) and CBT [18, 68, 69] studies on anxiety disorder patients.

Importantly, Slavin-Mulford and colleagues' [57] study also examined the relationship between the use of specific therapeutic techniques and subsequent change. A significant direct process-outcome link between psychodynamic-interpersonal therapist techniques and changes in anxiety symptoms was observed ($r = 0.46$, $p = 0.04$). Further, results showed that several individual PI techniques were meaningfully related to outcome. These included: [1] focusing on wishes, fantasies, dreams, and early memories; [2] linking current feelings or perceptions to the past; [3] highlighting patients' typical patterns; and [4] helping patients to understand their experiences in new ways. This compilation of techniques fits well with psychodynamic theories for anxiety as well as the empirically supported treatments derived from them [21, 27]. Thus, Slavin-Mulford and colleagues' [57] work along with the other research presented previously suggests that psychodynamic treatments and techniques are likely helpful in the treatment of anxiety disorders. This being said, many questions remain such as which patient (e.g., Axis I and II comorbidity, alliance) and therapist (e.g., experience, adherence, competence, alliance) variables moderate the outcome of psychodynamic therapy in the treatment of anxiety disorders. Thus, it will be the job of future research to begin filling in these gaps. This chapter will now summarize the research presented so far and offer a road map for the research still needed.

Summary and Future Directions

Psychodynamic therapy is widely used to treat anxiety [12], and many studies have begun examining its efficacy and effectiveness with promising results. The few effectiveness studies which have been conducted in naturalistic settings indicate that psychodynamic treatments for anxiety demonstrate large effects [21, 27, 57]. Patients in these studies treated with psychodynamic therapy evidenced considerable reduction in diagnosis, anxiety symptoms, depression, and global distress (i.e., large effects). In addition, randomized control trials suggest that psychodynamic treatment for anxiety symptoms tends to be more efficacious than controls [43]. Moreover, the few studies which have compared psychodynamic therapy to medication, suggest that psychodynamic therapy is as efficacious as pharmacological interventions (e.g. [45, 46]). Finally, the efficacy of psychodynamic therapy in relation to cognitive, behavioral, and CBT is more mixed, although there is a general trend for CBT to demonstrate small to moderate effects over psychodynamic treatments for anxiety disorders (e.g. [49, 50]). Importantly, however, many of the studies comparing CBT to psychodynamic therapy found large effects for both treatments (e.g. [50]).

Despite these encouraging findings, much work remains. For example, there are no diagnosis-specific controlled trials of psychodynamic therapy for social phobias or specific phobias [1] and there has only been one randomized control trial which has included a psychodynamic treatment for PTSD [39]. The need for more psychodynamic research on GAD [62] and panic disorder [21]

has also been called for in recent research. Moreover, given that anxiety disorders are frequently comorbid with one another [3], more studies examining the anxiety spectrum as a whole would help to represent the types of patients who actually present for treatment in clinical practice. Finally, it will be important for future research to examine the moderating effects of Axis I and Axis II comorbidity, as well as therapeutic alliance and aspects of technique.

Concerns with regards to the moderating effects of Axis I comorbidity were raised by Crits-Christoph et al.'s [27, 40] finding that the pre-post effect sizes declined when patients with comorbid MDD were included. However, other types of patients were added at this time making it unclear as to whether the comorbid MDD was involved in this decrease in effect size. Unfortunately, other research has generally failed to clarify the effects of comorbidity as many studies have utilized stringent exclusionary criteria such as eliminating patients with comorbid major depression (e.g. [50]).

The potential moderating effects of Axis II comorbidity have also been raised by a few studies which suggest that psychodynamic therapy for anxiety disorders may be even more effective than CBT or pharmacological approaches when patients have a comorbid personality disorder [8, 45]. Specifically, Ferrero et al. [45] found that psychodynamic therapy was as successful as medication among GAD patients when Axis II comorbidity was controlled, but that it was even more successful than medication in helping GAD patients with a comorbid PD improve their social and occupational functioning at 6-month follow-up. In addition, Milrod et al. [8] found that Cluster C comorbidity increased the efficacy of PFPP whereas it decreased the efficacy of relaxation therapy. These findings suggest that future research should examine which Axis I and II disorders moderate different anxiety disorders and the direction of these effects.

Future research should also continue to examine how the process of psychodynamic therapy for anxiety disorders is related to outcome. Slavin-Mulford et al.'s [57] work has begun this process by suggesting that specific psychodynamic/interpersonal techniques are related to reduction in anxiety in short-term psychodynamic psychotherapy. However, much work in this area remains. For example, it will be important to examine which intervention strategies work best with which types of anxiety disorder patients (i.e., comparison between patients with and without a personality disorder as well as comparisons between different disorders such as GAD versus panic). If similar process research was also conducted for CBT and other treatments of anxiety disorders, it may be possible to determine which process variables are critical for sustained change in patients with different anxiety disorders. This type of process and outcome research could also help to explain which treatment factors in psychodynamic therapy lead it to have more gradual but also longer-term progress than other forms of treatment with some patients (e.g. [39, 51]). In addition, process and outcome research could provide important information about which specific factors in psychodynamic therapy and CBT lead them to help patients differentially, depending on the symptoms being targeted [39, 50]. Thus, while research generally suggests that psychodynamic therapy is useful in the treatment of anxiety disorders, there is still much work to be done.

References

1. Fonagy P, Roth A, Higgitt A. Psychodynamic psychotherapies: evidence-based practice and clinical wisdom. *Bull Menninger Clin.* 2005;69(1):1–58.
2. Somers JM, Goldner EM, Waraich P, Hsu L. Prevalence and incidence studies of anxiety disorders: a systematic review of the literature. *Can J Psychiatry.* 2006;51(2):100–13.
3. Andrews G, Slade T, Issakidis C. Deconstructing current comorbidity: data from the Australian national survey of mental health and well-being. *Br J Psychiatry.* 2002;181:306–14.
4. Moffitt TE, Harrington HL, Caspi A, Kim-Cohen J, Goldberg D, Gregory AM, et al. Depression and generalized anxiety disorder: cumulative and sequential comorbidity in a birth cohort followed prospectively to age 32 years. *Arch Gen Psychiatry.* 2007;64:651–60.

5. Bruce SE, Yonkers KA, Otto MW, Eisen JL, Weisberg RB, Pagano M, et al. Influence of psychiatric comorbidity on recovery and recurrence in generalized anxiety disorder, social phobia, and panic disorder: a 12-year prospective study. *Am J Psychiatry*. 2005;162:1179–87.
6. Joormann J, Kosfelder J, Schulte D. The impact of comorbidity on the course of anxiety treatments. *Cognitive Ther Res*. 2005;29(5):569–91.
7. Kessler RC, Mickelson KD, Barber C, Wang P. The association between chronic medical conditions and work impairment. In: Rossi AS, editor. *Caring and doing for others: social responsibility in the domain of the family, work, and community*. Chicago: University of Chicago Press; 2001. p. 403–26.
8. Milrod B, Leon AC, Barber JP, Markowitz JC, Graf E. Do comorbid personality disorders moderate panic-focused psychotherapy? An exploratory examination of the American Psychiatric Association practice guideline. *J Clin Psychiatry*. 2007;68:885–91.
9. Siev J, Chambless DL. Specificity of treatment effects: cognitive therapy and relaxation for generalized anxiety and panic disorders. *J Consult Clin Psychol*. 2007;75(4):513–22.
10. Klerman GL, Weissman MM, Ouellette R, Johnson J, Greenwald S. Panic attacks in the community social morbidity and health care utilization. *J Am Med Assoc*. 1991;265:742–6.
11. Swinson RP, Cox B, Woszczyzna CB. Use of medical services and treatment for panic disorder with agoraphobia for social phobia. *Can Med Assoc J*. 1991;147:878–83.
12. Goisman RM, Warshaw MG, Keller MB. Psychosocial treatment prescriptions for generalized anxiety disorder, panic disorder, and social phobia, 1991–1996. *Am J Psychiatry*. 1999;156(11):1819–21.
13. Borkovec TD, Ruscio AM. Psychotherapy for generalized anxiety disorder. *J Clin Psychiatry*. 2001;62:37–42.
14. Starcevic V. Issues in the pharmacological treatment of anxiety disorders. *Australas Psychiatry*. 2005;13(4):371–4.
15. Woods JH, Katz JL, Winger G. Benzodiazepines: use, abuse, and consequences. *Pharmacol Rev*. 1992;44:151–347.
16. American Psychiatric Association (APA). Practice guideline for the treatment of patients with panic disorder. 2nd ed. Washington, DC: American Psychiatric Association; 2009.
17. Mitte K. Meta-analysis of cognitive-behavioral treatments for generalized anxiety disorder: a comparison with pharmacotherapy. *Psychol Bull*. 2005;131(5):785–95.
18. Barlow DH, Gorman JM, Shear MK, Woods SW. Cognitive-behavioral therapy, imipramine, or their combination for panic disorder. *J Am Med Assoc*. 2000;283:2529–36.
19. Knijnik DZ, Kapczinski F, Chachamovich E, Margis R, Eizirik CL. Psychodynamic group treatment for generalized social phobia. *Rev Bras Psiquiatr*. 2004;26(2):77–81.
20. Schottenbauer MA, Glass CR, Arnkoff DB, Tendick V, Gray SH. Nonresponse and dropout rates in outcome studies on PTSD: review and methodological considerations. *Psychiatry: Interpers Biol Process*. 2008;71(2):134–68.
21. Milrod B, Busch F, Leon AC, Aronson A, Roiphe J, Rudden M, et al. A pilot trial of brief psychodynamic psychotherapy for panic disorder. *J Psychother Pract Res*. 2001;10:239–45.
22. Zerbe K. Through the storm: psychoanalytic theory in the psychotherapy of the anxiety disorders. *Bull Menninger Clin*. 1990;54(2):171–83.
23. Freud S. Inhibitions, symptoms, and anxiety. The Standard Edition of the Complete Psychological Works of Sigmund Freud. 1926;75–176.
24. Compton A. A study of the psychoanalytic theory of anxiety: I. The development of Freud's theory of anxiety. *J Am Psychoanal Assoc*. 1972;20:3–44.
25. Busch F, Milrod BL, Singer MB. Theory and technique in psychodynamic treatment of panic disorder. *J Psychother Pract Res*. 1999;8(3):234–42.
26. Milrod B, Busch F, Leon AC, Shapiro T, Aronson A, Roiphe J, et al. Open trial of psychodynamic psychotherapy for panic disorder: a pilot study. *Am J Psychiatry*. 2000;157(11):1878–80.
27. Crits-Christoph P, Connolly MB, Azarian K, Crits-Christoph K, Shappell S. An open trial of brief supportive-expressive psychotherapy in the treatment of generalized anxiety disorder. *Psychother: Theor Res Pract Training*. 1996;33(3):418–30.
28. Sullivan HS. The interpersonal theory of psychiatry. New York: Norton; 1953.
29. Fairbairn WD. An object-relations theory of personality. New York: Basic Books; 1952.
30. Fromm-Reichmann F. Psychiatric aspects of anxiety. In: Thompson CM, Mazer M, Witenberg E, editors. *An outline of psychoanalysis*. New York: Modern Library; 1955. p. 113–33.
31. Klein M. Envy and gratitude and other works 1946–1963. New York: Delacorte P/Seymour Lawrence; 1975.
32. Klein M. Love, guilt, and reparation and other works 1921–1945. New York: Delacorte P/Seymour Lawrence; 1975.
33. Bowlby J. A secure base: clinical applications of attachment theory. London: Routledge; 1988.
34. Borkovec TD, Ray WJ, Stober J. Worry: a cognitive phenomenon intimately linked to affective, physiological, and interpersonal behavioral processes. *Cognitive Ther Res*. 1998;22:561–78.
35. Breitholtz E, Johansson B, Ost LG. Cognitions in generalized anxiety disorder and panic disorder patients: a prospective approach. *Behavior Res Ther*. 1995;37:533–44.

36. Vertue FM. From adaptive emotion to dysfunction: pathways to social anxiety disorder. *Rev Pers Soc Psychol*. 2003;7(2):170–91.
37. Silove D. Perceived parental characteristics and reports of early parental deprivation in agoraphobic patients. *Aust N Z J Psychiatry*. 1986;20:365–9.
38. Luborsky L. Principles of psychoanalytic psychotherapy: a manual for supportive–expressive treatment. New York: Basic Books; 1984.
39. Brom D, Kleber RJ, Defares PB. Brief psychotherapy for posttraumatic stress disorders. *J Consult Clin Psychol*. 1989;57(5):607–12.
40. Crits-Christoph P, Connolly Gibbons MB, Narducci J, Schamberger M, Gallop R. Interpersonal problems and the outcome of interpersonally oriented psychodynamic treatment of GAD. *Psychother: Theor Res Pract Training*. 2005;42:211–24.
41. Borkovec TD, Mathews AM. Treatment of non-phobic anxiety disorders: a comparison of nondirective, cognitive, and coping desensitization therapy. *J Consult Clin Psychol*. 1998;56:877–84.
42. Crits-Christoph P. Personal Communication. August 11, 2009.
43. Abbass AA, Hancock JT, Henderson J, Kisely S. Short-term psychodynamic psychotherapies for common mental disorders. *Cochrane Database of Systematic Reviews*(4). doi:10.1002/14651858.CD004687.pub3 Art. No.: CD004687; 2006.
44. Sjodin I, Svedlund J, Ottosson JO, Dotevall G. Controlled study of psychotherapy in chronic peptic ulcer disease. *Psychosomatics*. 1986;27(3):187–200.
45. Ferrero A, Piero A, Fassina S, Massola T, Lanteri A, Abbate Daga G, et al. A 12-month comparison of brief psychodynamic psychotherapy and pharmacotherapy treatment in subjects with generalized anxiety disorders in a community setting. *Eur Psychiatry*. 2007;22:530–9.
46. Wiborg IM, Dahl AA. Does brief dynamic psychotherapy reduce the relapse rate of panic disorder. *Arch Gen Psychiatry*. 1996;53:689–94.
47. Durham RC, Murphy T, Allan T, Richard K, Treliving LR, Fenton GW. Cognitive therapy, analytic psychotherapy, and anxiety management training for generalized anxiety disorder. *Br J Psychiatry*. 1994;165:315–23.
48. Durham RC, Fisher PL, Treliving LR, Hau CM, Richard K, Steward JB. Psychotherapy and anxiety management training for generalized anxiety disorder: symptom change, medication usage and attitudes to treatment. *Behav Cogn Psychother*. 1999;27(1):19–35.
49. Klein DF, Zitrin CM, Woerner MG, Ross DC. Treatment of phobias. II. Behavior therapy and supportive psychotherapy: are there any specific ingredients. *Arch Gen Psychiatry*. 1983;40:139–45.
50. Leichsenring F, Salzer S, Jaeger U, Kachele H, Kreische R, Leweke F, et al. Short-term psychodynamic psychotherapy and cognitive-behavioral therapy in generalized anxiety disorder: a randomized, controlled trial. *Am J Psychiatry*. 2009;166:875–81.
51. Pierloot R, Vinck J. Differential outcome of short-term dynamic psychotherapy and systematic desensitization in the treatment of anxious out-patients a preliminary report. *Psychol Belg*. 1978;18(1):87–98.
52. Svartberg M, Stiles TC, Seltzer MH. Randomized, control trial of the effectiveness of short-term dynamic psychotherapy and cognitive therapy for cluster c personality disorders. *Am J Psychiatry*. 2004;161(5):810–7.
53. Milrod B, Leon AC, Busch F, Rudden M, Schwalberg M, Clarkin J, et al. A randomized controlled clinical trial of psychoanalytic psychotherapy for panic disorder. *Am J Psychiatry*. 2007;164(2):265–72.
54. Leichsenring F, Rabung S, Leibing E. The efficacy of short-term psychodynamic psychotherapy in specific psychiatric disorders. *Arch Gen Psychiatry*. 2004;61:1208–16.
55. Durham RC, Chambers JA, MacDonald RR, Power KG, Major K. Does cognitive-behavioral therapy influence the long-term outcome of generalized anxiety disorder? An 8–14 year follow-up of two clinical trials. *Psychol Med*. 2003;33:499–509.
56. Gibbons MBC, Crits-Christoph P, Barber J, Wiltsey Stirman S, Gallop R, Goldstein L, et al. Unique and common mechanisms of change across cognitive and dynamic psychotherapies. *J Consult Clin Psychol*. 2009;77:801–13.
57. Slavin-Mulford J, Hilsenroth M, Weinberger J, Gold J. Therapeutic interventions related to outcome in psychodynamic psychotherapy for anxiety disorder patients. *Journal of Nervous and Mental Disease*. 2011;199:214–21.
58. Stewart RE, Chambless DL. Cognitive-behavioral therapy for adult anxiety disorders in clinical practice: a meta-analysis of effectiveness studies. *J Consult Clin Psychol*. 2009;77:595–606.
59. Hedges LV. Estimation of effect size from a series of independent experiments. *Psychol Bull*. 1982;92:490–9.
60. Cohen J. Statistical power analysis for the behavioral sciences. 2nd ed. Hillsdale: Erlbaum; 1988.
61. Westen D, Novotny CM, Thompson-Brenner H. The empirical status of empirically supported psychotherapies: assumptions, findings, and reporting in controlled clinical trials. *Psychol Bull*. 2004;130:631–63.
62. Crits-Christoph P, Crits-Christoph K, Wolf-Palacio D, Fichter M, Rudick D. Brief supportive-expressive psychodynamic therapy for generalized anxiety disorder. In: Barber JP, Crits-Christoph P, editors. *Dynamic therapies for psychiatric disorders*. New York: Basic Books; 1995. p. 43–83.
63. Book H. How to practice brief psychodynamic psychotherapy: the core conflictual relationship theme method. Washington, DC: American Psychological Association; 1988.

64. Strupp H, Binder J. *Psychotherapy in a new key*. New York: Basic Books; 1984.
65. Wachtel P. *Therapeutic communication: principles and effective practice*. New York: Guilford; 1983.
66. Blagys MD, Hilsenroth MJ. Distinctive features of short-term psychodynamic-interpersonal psychotherapy: a review of the comparative psychotherapy process literature. *Clin Psychol Sci Prac*. 2000;7:167–88.
67. Luborsky L, Crits-Christoph P. *Understanding transference: the core conflictual relational theme method*. 2nd ed. Washington, DC: APA; 1997.
68. Borkovec TD, Costello E. Efficacy of applied relaxation and cognitive-behavioral therapy in the treatment of generalized anxiety disorder. *J Consult Clin Psychol*. 1993;61:611–9.
69. Borkovec TD, Newman MG, Pincus AL, Lytle R. A component analysis of cognitive-behavioral therapy for generalized anxiety disorder and the role of interpersonal problems. *J Consult Clin Psychol*. 2002;70:288–98.

Chapter 8

An Update and Overview of the Empirical Evidence for Transference-Focused Psychotherapy and Other Psychotherapies for Borderline Personality Disorder

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Keywords Borderline personality disorder • Dialectical behavior therapy • Empirically supported treatment • Evidence-based treatment • Personality disorder • Psychoanalysis • Psychodynamic psychotherapy • Psychotherapy outcome • Psychotherapy research • Schema-focused psychotherapy • Transference-focused psychotherapy • Mentalization-Based Treatment

Psychodynamic Psychotherapy for Borderline Personality Disorder

It is generally believed that psychoanalytically or dynamically oriented clinicians are not interested in research for a host of reasons ranging from the challenges of designing a randomized controlled trial that would demonstrate the efficacy of a psychoanalytic approach to epistemological and philosophical disagreements about the nature of science (see [1–3] debates for an illustration). Although many in the psychoanalytic community have in the past been cautious regarding the value of research, some of the earliest psychotherapy research was performed by psychoanalysts [4–12]. Additionally, psychoanalyst and psychodynamic clinicians are increasingly becoming interested in testing psychodynamic hypotheses and establishing a stronger evidence base for treatments based on psychodynamic ideas [2, 3, 13–20]. This increased interest in psychotherapy outcome research has been particularly fruitful with regard to the study of borderline personality disorder. Severe personality disorders such as borderline personality disorder are increasingly seen as the mainstay of psychoanalytic clinical work.

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A number of these psychodynamic treatments may be quite effective in treating patients with borderline personality disorder; however, for the purpose of this chapter, we focus primarily on Otto Kernberg's [21, 22] Transference-Focused Psychotherapy (TFP) but consider other evidence-based treatments. Before examining the empirical evidence for the efficacy and effectiveness of TFP, we will discuss the three other major treatments for BPD that have shown their efficacy in randomized controlled trials (RCT): Dialectical Behavior Therapy [23], Mentalization-Based Therapy [24], and Schema-Focused Therapy [25]. We will then consider the empirical support in light of the recommendation by the American Psychological Association Division 12, which has concluded that "TFP is designated as having controversial research support because of mixed findings. TFP performed favorably in one randomized controlled trial [26], but did not perform well in another [27]. Thus, more research is needed before TFP can be considered to have modest or strong research support." We will discuss recent findings from an RCT of TFP by Doering et al. [28] that directly address this need for greater empirical support for TFP and further establish it as an efficacious treatment. We will then use a clinical case vignette to illustrate key principles of working clinically from a TFP perspective and contrast this to how a therapist might approach the same clinical issues from the perspective of Mentalization-Based Therapy. We will finish with a summary of conclusions that can be drawn from the literature.

What Constitutes Empirical Evidence?

Although randomized controlled trials (RCTs) are generally considered the gold standard and have important methodological strengths [29], they also suffer from a number of important limitations [19, 29–34]. The focus on RCTs has had the unintended consequence of overlooking other evidence that is relevant for assessing the empirical support of treatments. The numerous limitations of efficacy studies have led many investigators to recommend searching for empirically supported principles (ESPs) of treatment, or evidence-based explanations of treatment, rather than credentialed, trademarked, brand-name, or evidence-based treatment packages [30, 35–37].

Gabbard et al. [34, 38–40] have discussed a stage model, or hierarchy, of treatment evidence as a function of considering both internal and external validity. They have suggested that evidence from multiple sources within this model is necessary in order to build an empirically grounded framework for specific forms of psychotherapy. In ascending levels of internal validity and descending levels of external validity, the hierarchy of treatment evidence starts with the provision of an argument or the articulation of clinical innovation and proceeds through clinical case studies, clinical case series, pre–post designs without comparison groups, quasi-experimental designs that include comparisons but without randomization, and then RCTs. Within the RCT category there is a hierarchy with regard to the control group employed ranging from the use of wait-list controls through treatment as usual groups, placebos, and finally comparison with established, well-delivered alternative treatments. Levy and Scott [34] suggested that this hierarchy, in combination with the examination of evidence for specific techniques and mechanisms of action [41, 42], provides better breadth of evidence and better validity than focusing on RCTs alone. Others have noted that naturalistic studies may be necessary to help bridge the gap between practice and research [43, 44]. Limiting research, practice, and training exclusively to treatments that have been validated in RCTs could impede reasonable avenues of study in the treatment of BPD and obstruct access to treatments that might be better suited to specific patient subgroups (Table 8.1).

Additionally, the numerous limitations of efficacy studies have led many investigators to recommend that the field would be better served if research were directed at examining the mechanisms or processes that lead to sustained change [30, 31, 36, 37, 41, 42, 45, 46]. Likewise, Borkovec and

Table 8.1 Hierarchy or stage model of treatment evidence (as a function of controls and generalizability)

- Randomized controlled trials
 - Well-established, well-delivered, alternative treatment
 - Placebo
 - Treatment as usual
 - Wait-list
- Quasi-experimental designs
- Pre–post designs
- Case series
- Clinical case study

 Provision of argument and/or the articulation of clinical innovation

 Based on data from Gabbard et al. [38] and Clarke and Oxman [39]

Castonguay [29] and Connor-Smith and Weisz [47] recommend conducting well-controlled therapy trials in more naturalistic settings. Such hybrids of efficacy and effectiveness research may help to bridge the gap between science and practice [48]. At the same time, however, there seem to be considerable data already in existence at multiple levels of scientific evidence that could be combined to form increasingly well-rounded inferences about the treatment of BPD. Thus, a broader definition of evidence may be necessary when evaluating the effects of psychotherapy for this complex disorder.

The Rise of Dialectical Behavior Therapy: Benefits and Risks

Psychotherapy research on long-term treatments is difficult to perform, and in the past, many in the field believed that such research was so difficult as to render it unfeasible. As a result, many psychological treatments were developed to conform to a short-term model employed in medication trials. However, in 1991, Linehan [49] published the results of her year-long RCT for BPD in which she examined an integrative CBT treatment called Dialectical Behavior Therapy (DBT) as compared to treatment as usual (TAU). This seminal study has been highly influential on current training and treatment trends. However, one of the most important aspects of this study was that it showed that randomized controlled trials of a long-term treatment could be accomplished and thus stimulated a revival in the rigorous study of long-term psychodynamic treatments for BPD; we say revival because psychodynamic investigators had a history of engaging in long-term psychotherapy research such as the Menninger Foundation Psychotherapy Research Project initiated in the 1950s [50, 51].

In that seminal study, Linehan et al. [49] found that patients treated in DBT as compared to treatment as usual dropped out of treatment less often and had significant reductions in the number and severity of suicide attempts and length of inpatient admissions. Linehan et al. [52] also found that DBT for drug-dependent women with BPD, as compared to treatment as usual, were found to have significantly greater reductions in drug abuse. Despite these impressive outcomes, there was a significant limitation to these and other studies of DBT [52–54] – comparisons were made against control groups in which the patients received less treatment than the patients in DBT. For example, in Linehan’s initial study, half the control patients were not receiving treatment at any given time. In Verheul’s study, 73% of the patients drop out of the TAU group. Westen et al. [55, 56] have raised objections to the meaningfulness of data demonstrating the efficacy of a treatment when compared to what they call “intent-to-fail” conditions. Given the lack of treatment provided by TAU groups, Levy et al. [34, 57] suggest that TAU groups could be better conceptualized as non-treatment as usual groups. Additionally, these TAU groups not only fail to control for attention, but also fail to control for credibility (an often neglected aspect of a comparison group; see [58, 59]).

Despite the limitations of Linehan's initial studies and the small number of participants treated (41 patients in three studies), by the year 2000, DBT had quickly gained popular acceptance. A number of managed care companies defined special benefits for DBT. Several state departments of mental health (Illinois, Connecticut, Massachusetts, New Hampshire, North Carolina, and Maine) enthusiastically endorsed and subsidized DBT as the treatment of choice for BPD and had mandated DBT training for state employees working with seriously disturbed patients. In Western Massachusetts, former DBT patients are able to be reimbursed for coaching current DBT patients. Hundreds of marketing initiatives, seminars, and training programs in DBT are provided for inpatient and outpatient clinics, correctional institutes, and community treatment centers – the majority offered by Behavioral Tech, the corporate entity that teaches DBT. Certainly, Linehan's efforts to develop, examine, and given the seriousness of BPD, to disseminate DBT are laudable. In the United Kingdom, the NICE guidelines mention only DBT by name and as the treatment of choice for parasuicidal women with BPD. However, concerns have been raised that the dissemination of DBT has exceeded the evidence base particularly with regard to state legislation and insurance reimbursements [46, 60–63].

In an effort to test DBT against a more stringent control, Linehan et al. [64] compared patients treated in DBT to Treatment by Experts in the Community (CTBE). In this study, 101 participants were randomized to either DBT or CTBE. The CTBE therapists were nominated by heads of mental health providing agencies as “expert” in working with “difficult clients.” Out of the hundreds of therapist nominated, 94 were selected of which only 25 agreed to participate. These therapists were of diverse theoretical orientations although about half were identified as psychodynamic. Both groups were offered supervision; 100% of the DBT therapists attended supervision while only 50% of the CTBE therapists attended supervision. The supervision was designed to be carried out at prestigious institutions: for DBT, at the department of psychology at the University of Washington, and for the CTBE, at a psychoanalytic institute in Seattle. While 75% of the DBT therapists had a Ph.D. or M.D., <50% of the CTBE had that level of training. This study has been heralded in the DBT community and highlighted on the National Institute of Mental Health's website. The main findings that were publicized was that DBT had significantly less drop-out (19.2% in DBT vs. 46.9% in CTBE) and that in the intent-to-treat analyses (ITT), DBT demonstrated better outcomes than CTBE in terms of reductions in the severity of parasuicidal behaviors. Also, highly publicized was that the percentage of individuals who attempted suicide was significantly lower in the DBT group when the treatment year data were combined with the follow-up year data. However, not generally known is that there were no differences in the percent of patients using the emergency room, who were hospitalized, who were on medication, in global functioning, social adjustment, or who engaged in parasuicidal or suicidal behaviors in the ITT analyses. Additionally, completer analyses showed no significant differences between groups on any of these variables [65]. At 1-year follow-up, there were also no differences between the DBT and CTBE groups on any of the variables. In addition, although patients in DBT were less likely to make a suicide attempt as patients in the CTBE group, if the treatment year and follow-up period are combined, this difference disappeared when examining either the treatment year or the follow-up period alone [46]. Taken together, this suggests few differences between treatment groups despite the relative advantages in the DBT group (experienced and well-supervised therapists executing a treatment manual with a particular and relevant patient population) and the relative disadvantages in the CTBE group (less credentialed and less supervised therapists who were less likely to have training in a specific BPD treatment or with BPD patients in general, and of which only half the patients were in treatment). Further, differences between groups disappear when controlling for attention or dose, and differences disappear after a 1-year follow-up.

Other findings have called into question the durability of the initial gains made in DBT. For example, Linehan [66] found no between-group differences in the number of days hospitalized at a 6-month follow-up or in self-destructive acts at the end of a 1-year follow-up (despite the fact that the patients in the DBT group were still receiving DBT therapy, whereas about half the TAU group were not in any therapy). Additionally, a 6-month follow-up from the Verheul et al. [54] study found

no differences between DBT and the TAU control on impulsive behavior, parasuicidity, or alcohol and both soft and hard drug use [67, 68]. Thus, while the overall results of Linehan's studies of DBT are suggestive of its value, naturalistic follow-up of patients in DBT show variable maintenance of treatment effects, and ongoing impairment in functioning persists in patients who initially experienced symptom relief.

Most relevant to thinking about the relationship between DBT and psychodynamic psychotherapy is a recent RCT by McMain et al. [69], which found that General Psychiatric Management based on the American Psychiatric Treatment Guidelines which combined a psychodynamic individual psychotherapy (based on Gunderson's [70] model of treatment) with pharmacotherapy, and case management performed equally well to DBT. Patients with BPD evidenced no between-condition differences in rates of change across 1 year of treatment in terms of suicidality, self-injury, psychiatric service use, BPD symptoms, depression, anger, and social functioning.

Since Linehan's [49] seminal study, many different treatments have shown efficacy in comparison to TAU or a more stringent control, and while DBT has garnered the most evidence to date, the data are far from conclusive. Studies that have compared DBT to well-delivered bona fide treatments generally find few differences between these treatments, and there is not one study in which DBT is compared with an active treatment that it shows clear superiority. Clearly, DBT is an efficacious treatment when compared with TAU. However, given the heterogeneity of BPD, it is unlikely that any one treatment will be useful for all patients [71]. Future research will be needed to examine more fully the interaction between treatment and patient characteristics in order to determine "what treatment, by whom, is most effective with this individual, with that specific problem, under which set of circumstances?"

Mentalization-Based Therapy

Bateman and Fonagy [72] developed Mentalization-Based Therapy (MBT) based on the developmental theory of mentalization, which integrates philosophy (theory of mind), ego psychology, Kleinian theory, and attachment theory. Fonagy and Bateman [73] posit that the mechanism of change in all effective treatments for BPD involves the capacity for mentalization – the capacity to think about mental states in oneself and in others in terms of wishes, desires, and intentions. This involves inviting patients become curious about their thoughts, beliefs, and especially an awareness of manifest affects about themselves and others; a capacity that is challenged by the activation of the attachment system in affectively charged interpersonal situations. The concept of mentalization has been operationalized in the reflective function (RF) scale [74].

In a randomized clinical trial, Bateman and Fonagy [75] compared the effectiveness of 18 months of a psychoanalytically oriented day hospitalization program compared to routine general psychiatric care for patients with BPD. Patients randomly assigned to the psychoanalytic day hospital program, now called Mentalization-Based Therapy (MBT; [24]), showed statistically significant improvement in depressive symptoms and better social and interpersonal functioning, as well as significant decreases in suicidal and parasuicidal behavior and number of days in inpatient treatment.

Patients were re-assessed every 3 months for up to 18-month post-discharge [76]. Follow-up results indicate that patients who completed the MBT not only maintained their substantial gains, but also showed continued steady and statistically significant improvement on most measures, suggesting that BPD patients can continue to demonstrate gains in functioning long after treatment has ended. At 18-month post-discharge follow-up, 59.1% of patients treated with MBT were below the BPD diagnostic threshold, compared to only 12.5% of those treated in routine general psychiatric care.

An 8-year follow-up post randomization of MBT has recently been completed, and the results show an impressive long-term maintenance of treatment gains [77]. At follow-up, 87% of patients

treated with MBT no longer met criteria for BPD, compared to only 13% of those treated in routine general psychiatric care. Further, patients treated with MBT continued to show maintenance of gains in terms of decreased suicidality, psychiatric service use, medication use, and improved vocational functioning, though social functioning remained impaired. These findings showing the long-term maintenance of treatment gains for BPD patients are particularly important because whereas for MBT not only is there continued improvement, but there seems to be a sleeper effect with increased improvement over time. However, given that this long-term follow-up data are based on comparison to a treatment as usual cohort, more research will be needed to more fully evaluate the long-term efficacy of MBT.

While MBT has demonstrated its efficacy as a part-time hospitalization program, a recent RCT by Bateman and Fonagy [78] compared the effectiveness of 18 months of outpatient MBT to Structured Clinical Management (SCM) for patients with BPD. This study is important for understanding the benefits of MBT because SCM is a more stringent control. SCM controlled for attention in that it was a structured treatment, consisting of similar dose in terms of time in treatment and in which therapists received comparable level of supervision and had comparable levels of experience to those therapists in MBT. In fact, one outstanding aspect of this study is that therapists were randomly assigned to treatment condition most likely controlling for any therapist effects. Findings suggested that while patients benefited from both treatments, larger effect sizes were reported in MBT than in SCM in terms of reduced suicidal and self-harm behavior, number and length of inpatient hospitalizations, as well as statistically significant improvement in depressive symptoms and better social and interpersonal functioning. One of the strengths of this study was that both MBT and SCM were delivered by nonspecialist mental health practitioners, suggesting that MBT can be delivered with minimal training and supervision and does not require advanced psychoanalytic training.

Taken together, these studies indicate that MBT is an efficacious treatment when compared with treatment as usual or a more stringent control. As previously discussed, in order to build an empirically grounded framework for this psychotherapy, the next step in the hierarchy of treatment evidence would be to compare MBT to a well-established, well-delivered alternative treatment (such as DBT, TFP, or SFT), but the evidence for the efficacy of MBT is impressive thus far. However, it is important to understand that the aims of MBT are admittedly more modest in that it is not “aiming to achieve structural or personality change or alter cognitions and schemas; its aim is to enhance embryonic capacities of mentalization so that the individual is more able to solve problems and to manage emotional states particularly with interpersonal relationships or at least feels more confident in their ability to do so” ([79], p. 200).

Further, as previously discussed, treatment efficacy should be evaluated in combination with the examination of evidence for specific techniques and mechanisms of action [34, 41, 42]. To date, MBT has yet to demonstrate that change operates through its putative mechanism of action, reflective function (RF). While it is the case that many treatments have not shown specific effects on theory-driven mechanisms of change, it is nonetheless important for MBT to demonstrate that it works in theoretically predicted ways.

Schema-Focused Therapy

Schema-Focused Therapy (SFT [25]) is an integrative approach that “draws on insights and techniques from the cognitive-behavioral, attachment, psychodynamic, and emotion-focused traditions...” [80]. This approach draws roughly on concepts from object relations theory in that the schemas at its center are internal representations of self in relation to other, but it does not include a sense of the dynamic unconscious. Its approach to the internal schemas is rather that patients can be helped to learn them without a focus on the motivations of their being out of the patient’s awareness.

The four core mechanisms used in SFT are (1) “limited reparenting,” (2) experiential imagery and dialog work, (3) cognitive restructuring and education, and (4) behavioral pattern breaking. Limited reparenting has been described as the heart of SFT. It is based on the assumption that BPD patients’ core emotional needs were not met by their parents and that the therapist should provide the experience of having these needs met. Limited reparenting welcomes and encourages dependency on the therapist and ranges from providing warmth and nurturance, which could include hugging the patient, to self-disclosure to firmness and limit setting. From a psychodynamic point of view, this technique – which encourages patients to emphasize their parents’ mistreatment of them – might be seen as helping the patient stabilize the externalization of negative characteristics and the identification with a victimized self at the expense of achieving an integrated sense of positive and negative aspects of the self.

In a study in the Netherlands, Giesen-Bloo et al. [27] compared SFT to Transference-Focused Psychotherapy (TFP). Their study is unique in that it examined two active treatments over 3 years. Patients benefited from both treatments, but larger effect sizes were reported in SFT than in TFP after 3 years in terms of reduced BPD symptoms, improved quality of life, and gains on measures of general psychopathology and personality factors. Further, the TFP group revealed a significantly higher drop-out rate (51.2% vs. 26.7%) over the 3 years of treatment.

Though at first glance, these findings seem to suggest that SFT is more efficacious than TFP, a number of serious limitations argue against this conclusion. First, despite randomization, the TFP condition included twice as many recently suicidal patients (76% vs. 38%; there was also a trend ($p=.09$) for the TFP condition having more patients with recent self-injury behavior). Previous research has demonstrated that suicidality significantly influences treatment outcome [81].

Second, the differences between the two groups were only apparent in the intent-to-treat analyses but not in the completer analyses. A major factor in this difference appears to have been that patients in the TFP condition were significantly more likely to prematurely drop out of their treatment. Whereas intent-to-treat analyses speak to the external validity (e.g., generalizability), completer analyses speak to the issue of sufficient dose and thus the internal validity or integrity of the study. Differences in outcome between completer analyses and ITT suggest loss of validity due to nonrandom drop-out. This can negate the control provided by randomization [33]. Completer analyses did not show any statistically significant advantage for SFT [80, 82].

Third, the findings suggest inadequate implementation of TFP as indicated by lack of adherence by the TFP therapists. The authors report that the median adherence level for TFP was 65.6. Given that a score of 60 is considered adherent, about 50% of TFP therapists were nonadherent. In contrast, the SFT group had a median score of 85.6 (again with 60 considered adherent), suggesting that 50% of the SFT were not just adherent but exceptionally so. Not only were adherence ratings relatively poor for TFP, but they also appear to be significantly lower than for SFT. Suffice it to say, the authors are reporting a study that compared an exceptionally well-delivered treatment with an inadequately delivered one. There should be no surprise that the exceptionally delivered treatment outperformed the poorly delivered treatment, but it is not a fair test, and this fact alone may explain the differential outcome between the two treatments. One of the most potent methodological choices that result in allegiance effects is the selection of therapists who differ in skillfulness that favor the allegiance of the researcher [83].

Fourth, treatment integrity includes having experienced treatment cell leaders, choosing experienced and adherent therapists with a proven track record, providing expert supervision, ongoing monitoring of adherence, and having plans for dealing with nonadherence [84]. Each of these issues was problematic in the current study. Supervision was carried out in the form of peer supervision, known as intervision [85]. Intervision may work well when carried out by exceptionally adherent therapists as was the case for the SFPT. However, such a model would not work well with nonadherent therapists and would be more akin to “the blind leading the blind.” The authors indicate that treatment integrity was monitored by means of supervision; however, who was doing that monitoring?

Yeomans [85] reports the clinical observation that half the therapists were nonadherent, which is consistent with the authors' own independently rated adherence scores. Most disturbing, however, is that Yeomans [85] reports that he informed the study PIs of the nonadherence problem on numerous occasions, including by email and fax, and that no action was taken to deal with this problem.

Fifth, therapists and assessors were not blind to ongoing outcome. Partial results were presented prior to study completion [25, 82, 86, 87], creating another possible confound, which could have caused therapist demoralization in the TFP therapists or enhanced motivation SFT therapists [88]. Given these concerns, it would be premature and irresponsible to conclude that TFP is not as efficacious as SFT.

Despite concerns about the adequacy of training and supervision in the TFP group as well as the randomization process, SFT has evidenced impressive results regarding retention of patients, with only 7% of patients dropping out in the first year of treatment. Future research should examine the mechanism of treatment retention and its potential generalizability to other forms of treatment.

Transference-Focused Psychotherapy

Since the early 1980s, the Borderline Psychotherapy Research Project at New York Presbyterian Hospital-Weill Cornell Medical Center, headed by Drs. John Clarkin and Otto Kernberg, has been systematizing and investigating an object relations treatment of patients with BPD. This group has generated treatment manuals (e.g. [21, 22, 89]) that describe key strategies and techniques of a highly structured modified dynamic treatment of patients with borderline personality organization called Transference-Focused Psychotherapy (TFP).

Central to TFP are mental representations derived through the internalization of attachment relationships with caregivers. The degree of differentiation and integration of these representations of self and other, along with their affective valence, constitutes personality organization [90]. According to Kernberg, borderline personality can be thought of as a severely disturbed level of personality organization, characterized by unintegrated and undifferentiated representations of self and other (what Kernberg calls identity diffusion and is manifested in an inconsistent view of self and others), the use of immature defenses (e.g., splitting, projective identification, omnipotent control), and variable reality testing (e.g., poor conception of one's own social stimulus value). (See Chap. 29 for a lengthier description of these clinical manifestations of BPD.)

The major goals of TFP are to reduce suicidality and self-injurious behaviors and to facilitate better behavioral control, increased affect regulation, more gratifying relationships, and the ability to pursue life goals. This is believed to be accomplished through the development of integrated representations of self and others, the modification of primitive defensive operations, and the resolution of identity diffusion that perpetuate the fragmentation of the patient's internal representational world. In this treatment, the analysis of the transference is the primary vehicle for the transformation of primitive (e.g., split, polarized) to advanced (e.g., complex, differentiated and integrated) object relations. Thus, in contrast to therapies that focus on the short-term treatment of symptoms, TFP has the ambitious goal of not just changing symptoms, but changing the personality organization, which is the context of the symptoms. In contrast to most manuals for CBT or short-term treatments, the TFP manual could be described as principle based rather than sequentially based, which requires the clinician to be flexible and use clinical judgment. Using video-taped sessions and supervisor ratings, Kernberg and his colleagues have been able to train both senior clinicians and junior trainees at multiple sites to adherence and competence in applying the principles of TFP.

TFP begins with explicit contract setting that clarifies the conditions of therapy, the method of treatment, and the respective roles of patient and therapist. The primary focus of TFP is on the dominant affect-laden themes that emerge in the relationship between borderline patients and their therapists in the here-and-now of the transference. This is supplemented by ongoing monitoring of the patient's life

outside of sessions. During the first year of treatment, TFP focuses on a hierarchy of goals: containing suicidal and self-destructive behaviors, addressing ways the patient might undermine the treatment since it challenges the patient's fragile and dysfunctional homeostasis, and identifying and recapitulating dominant object relational patterns, as they are experienced and expressed in the here-and-now of the transference relationship.

Within psychoanalysis, TFP is closest to the Kleinian school [91], which also emphasizes a focus on the analysis of the transference. However, TFP can be distinguished from Kleinian psychoanalysis in that TFP is practiced twice per week and that TFP includes a more highly structured treatment frame by emphasizing the treatment contract and a pre-established set of priorities to focus (e.g., suicidality, treatment-interfering behaviors). The role of the treatment contract and the treatment priorities both go beyond that found in more typical psychoanalytic psychotherapy or psychoanalysis, including Kleinian psychoanalysis. In addition, transference interpretations are consistently linked with both extra-transference material and, importantly, long-term treatment goals (e.g., better behavioral control). In contrast to Kleinian approaches, the TFP approach is a highly engaged, more talkative, and an interactive one. Additionally, technical neutrality is modified to the extent required to maintain structure. TFP also differs from other expressive psychodynamic approaches with a persistent focus on the here-and-now and an empathy with the total internal experience of the patient. By the latter, we mean the patient's identifications with both the persecutory as well as the persecuted object and also the idealized as well as idealizing object. This is achieved through a focus on the immediate interpretation of the negative transference, and the emphasis on interpretation of the defensive function of idealization, as well as a focus on the patients' aggression and hostility.

In relation to Dialectic Behavioral Therapy (DBT), some of the most salient differences between the two treatments concern the frame. To avoid the secondary gain that can be experienced by extra contact with the therapist and to encourage the development of autonomy [92], the TFP therapist is considered unavailable between sessions except in the case of emergencies, whereas in DBT, the patient is encouraged to phone the individual therapist between sessions. Another difference is the emphasis in TFP on technical neutrality (not siding with any part of the patient's internal conflicts but rather helping the patient see and resolve the conflicting parts within himself) vs. strategies used in DBT including validation, coaching, and cheerleading that may temporarily suppress, but not integrate negative internal forces. Despite these differences, both TFP and DBT have in common a firm, explicit contract, a focus on a hierarchy of acting out behaviors, a highly engaged therapeutic relationship, a structured disciplined approach, and utilization of supervision groups as essential for therapists.

In TFP, hypothesized mechanisms of change derive from Kernberg's [90] developmentally based theory of BPD, which conceptualizes the disorder in terms of undifferentiated and unintegrated affects and representations (or concepts) of self and other. Partial representations of self and other are paired and linked by an intense affect in mental units called "object relations dyads." These dyads are representational elements of psychological structure. In BPD, the lack of integration of the internal object relations dyads corresponds to a "split" psychological structure in which totally negative dyads are split off or segregated from idealized positive dyads of self and other. The putative global mechanism of change in patients treated with TFP is the integration of these polarized affect states and representations of self and other into a more coherent whole. Through the exploration and integration of these "split-off" cognitive-affective units of self- and other representations, Kernberg postulates that the patient's awareness and experience in life become more enriched and modulated as the patient develops more nuanced internal representations that correspond better to the complexity of life and thereby develops the capacity to think more flexibly, realistically, and benevolently. The integration of the split and polarized concepts of self and others leads to a more complex, differentiated, and realistic sense of self and others that allows for better modulation of affects and in turn clearer thinking. Therefore, as split-off representations become integrated, patients tend to experience an increased coherence of identity, relationships that are balanced and constant over time and therefore not at risk of being overwhelmed by aggressive affect, a greater capacity for intimacy, a reduction in self-destructive behaviors, and general improvement in functioning.

Using the techniques of clarification, confrontation, and interpretation, the TFP therapist provides the patient with the opportunity to integrate cognitions and affects that were previously split and disorganized. In addition, the engaged, interactive, and emotionally intense stance of the therapist is typically experienced by patients as emotionally holding (containing) because the therapist conveys that he or she can tolerate the patient's negative affective states without denying them or reacting in a retaliatory way to them. The therapist's expectation of the patient's eventual ability to have a thoughtful and disciplined approach to emotional states (i.e., that the patient is a fledgling version of a capable, responsible, and reflective adult) is thought to be experienced as supportive and cognitively holding. The therapist's timely, clear, and tactful interpretations of the dominant, affect-laden themes and patient enactments in the here-and-now of the transference frequently shed light on the reasons that representations remain split off and thus facilitate integrating polarized representations of self and others.

With regard to the flow of treatment, the structured frame of TFP facilitates the full activation of the patient's distorted internal representations of self and other in the ongoing relationship between patient and therapist: this activation of internal images in the present relationship constitutes the transference. The unintegrated representations of self and other are activated in the treatment setting as they are in every aspect of the patient's life where these partial representations play a role in determining the patient's perception of real life interactions and in motivating the patient's behavior. The difference in the therapy is that the therapist both experiences the patient's representation of the interaction and also nonjudgmentally observes and comments on it (within the psychoanalytic literature, this is known as the "third position"). This is facilitated by the therapist establishing a treatment frame and contract, which in addition to providing structure and holding for the patient and a consensual reality from which to examine acting out behavior, minimizes the therapist's potential for acting in ways that might cause iatrogenic harm. The therapist does not respond to the patient's fragmented partial representation, but helps the patient observe it and the implied other that is paired with it.

As these internal object relations unfold in relation with the therapist, the TFP therapist helps the patient become more cognizant of his internal state in the moment through clarification and reflection since patients often experience affect in a primary way without symbolic representation. This process of clarification helps the patient mentalize internal states. However, in most cases, this technique alone will not lead to integration because clarification does not address the conflicts that keep the partial representations separated. Confrontation – the technique of inquiring about the elements of the patient's verbal and nonverbal communications in contradiction with each other – and interpretation of obstacles to integration are needed to get the patient beyond the level of split organization. Interpretation includes helping the patient see that he or she identifies at different moments in time with each pole of the predominant object relation dyads within him or her. Increasing the patient's awareness of his or her range of identifications increases his or her ability to integrate the different parts.

On the practical level, the relationship with the therapist in TFP is structured to create controlled conditions that facilitate the patient's experiencing affects without being overwhelmed by them in a way that destroys communication. The negotiation of a treatment frame provides a safe setting for the reactivation of the internalized relation paradigms. The safety and stability of the therapeutic environment permit the patient to begin to reflect about what is going on in the present with another person, in light of these internalized paradigms. This is similar to what attachment theorists would describe as a safe haven, which along with the guidance of an attachment figure, allows for the exploration of the content of the mind. With guidance from the therapist, the patient becomes aware of the extent to which his perceptions are based on internalized representations in contrast to the current situation. The therapist's help to cognitively structure what at first seemed chaotic also provides a containing function for the patient's affects.

TFP fosters change by inhibiting the vicious circle of setting off reactions in others that often occurs when the patient behaves with emotion dysregulation in the "real" world (often eliciting the

very responses that the patient fears from others). The objective and nonjudgmental attitude of the therapist assists in the reactivation of the internalized experience patterns, their containment, and their exploration for new understandings. Instead of attempting to deter these behaviors by educative means, TFP brings the patient's attention to the internal mental representations behind them, with the goal of understanding, modifying, and integrating them.

Key to the change process is the development of introspection or self-reflection: the patient's increase in reflection is hypothesized to be an essential mechanism of change. The disorganization of the patient involves not only internal representations of self and others, relationships with self and others, and predominance of primitive affects, but also the processes that prevent reflection and full awareness. These primitive defensive processes that characterize a split psychological structure erase and distort awareness. Thought processes can be so powerfully distorted that affects, particularly the most negative ones, are expressed in action without cognitive awareness of their existence.

As the patient progresses in the course of TFP from split-off contradictory self-states to reflectiveness and integration, from action to reflection, this increase in reflectiveness involves two specific levels. The first level is an articulation and reflection of what one feels in the moment. The patient increases his or her ability to experience, articulate, and contain an affect and to contextualize it in the moment. A second, more advanced, level of reflection is the ability to place the understanding of momentary affect states of self and others into a general context of a relationship between self and others across time. This level reflects the establishment of an integrated sense of self and others – a sense against which momentary perceptions can be compared and put in perspective.

To create the conditions that allow for the therapeutic work just described, the therapist and patient must initially set up an appropriate treatment contracts before beginning the therapy *per se*. The functions of the contract include defining the responsibilities of patient and therapist, protecting the therapist's ability to think clearly and reflect, providing a safe place for the patient's dynamics to unfold, setting the stage for interpreting the meaning of deviations from the contract as they occur later in therapy, and providing an organizing therapeutic frame that permits therapy to become an anchor in the patient's life. The patient responsibilities include attendance and participation, paying the fee, and reporting thoughts and feelings without censoring. The therapist's responsibilities include attending to the schedule, making every effort to understand and, when useful, comment, clarifying the limits of his/her involvement, and predicting threats to the treatment. The treatment contract makes the expectations of the therapy explicit [93]. There is some controversy regarding the value of treatment contracting. The APA guidelines recommend that the therapist contract around issues of safety. Others [94] have suggested that the evidence contraindicates their use and shows them to be ineffective [95]. However, the Kroll [95] study was designed to determine the extent that no-suicide contracts were employed (which was found to be 57%), and, although 42% of psychiatrists who used no-suicide contracts had patients that either suicided or made a serious attempt, the design of the study does not allow for assessment of the efficacy of no-suicide contracts. Other data suggest the utility of contracting around self-destructive behavior and treatment threats [34, 96–99]. For example, Yeomans et al. [96] in a pre–post study of 36 patients with borderline personality disorder found that the quality of the therapist's presentation and handling of the patient's response to the treatment contract correlated with treatment alliance and the length of treatment. In addition, in our earlier work on TFP [97], when we did not stress treatment contracting, our drop-out rates were high (31% and 36% at the 3-month and 6-month marks of treatment). However, based on the findings of Yeomans et al. [96], Kernberg and colleagues further systematized and stressed the importance of the treatment contract and in later studies [42, 57, 98, 99], our group found lower rates of drop-out (19%, 13%, and 25%) over a year-long period of treatment. We suggest that these findings taken together suggest that sensitively but explicitly negotiated treatment contracts may have one of the desired effects: resulting in less drop-out and longer treatments. Future research will need to address the issue of treatment contracts more directly, particularly testing the effects on parasuicidality and suicidality.

TFP Case Example

As an example of the contract, we will offer the case of a 35-year-old woman who was referred after 10 years of multiple outpatient and inpatient treatments for depression. For 6 months before presenting for treatment, she had remained isolated at home with chronic suicidal ideation. After careful diagnosis, her diagnosis was determined to be borderline PD with strong narcissistic features. The treatment contract begins with a discussion of the diagnostic impression and the conditions of treatment that allow for treatment that can lead to change in both symptoms and personality structure. The therapist therefore discussed with the patient that her depressive moods might stem from underlying ways of thinking of herself and others that were automatic to her, not fully in her awareness, and not fully accurate. The patient was interested in exploring this possibility so the therapist moved on to discuss the contract. One element of the contract was that treatment could not provide true gains unless the patient became involved in some kind of activity in life so that she could apply what functional capacities she had and report back in therapy about the difficulties that arose in that setting. The patient's initial response was that any kind of activity was so overwhelming to her that she relapsed back into the depths of depression. The therapist pointed out that the patient was not presently exhibiting the symptoms of a depressive episode. The patient replied that she had achieved a fragile equilibrium that would be shattered by any attempt to engage in an activity. The therapist was confident enough of the diagnosis of a primary Axis II disorder, and his consequent belief that the patient was capable of taking some responsibility in the area of functioning, to state:

The choice of treatment is entirely up to you. If you find what I'm saying is unreasonable, or simply not something that would interest you, we could look into alternative more supportive treatments that would not ask as much of you, but would likely not lead to as much change. I understand that entering into situations where you are involved with other people is very stressful for you and that you have failed at efforts to function in the past. What I am proposing is that you begin some kind of activity, and, when you begin to have those reactions, we can explore here what is going on there that contributes to your anxiety and distress. It will very likely be related to the kind of reactions you have that we will be exploring here and in other settings.

The patient agreed in principle and the contracting went on to address what activity the patient might realistically engage in at that point. She initially proposed reading stories to children at the local preschool one afternoon each week. The therapist felt that this did not adequately address the needs of an intelligent adult woman to engage in an activity that would lead to ending her financial dependency on her parents. He proposed starting with a part-time clerical position while she looked into various training possibilities. The patient responded: "I'd rather die than work at a clerical job," a reaction that supported the therapist's diagnostic impression of strong narcissistic features. Their discussion of an appropriate activity, over two sessions, led to the patient's proposing that she could begin to get training in a paraprofessional area, which she did.

Once the treatment frame is in place, the therapy begins and the central work proceeds as described previously, helping the patient recognize and integrate the various split-off representations of self and other that make up her internal world. An example is that of a woman who started TFP at age 32 with problems of depression, chronic suicidal ideation, and an inability to maintain social relations or any job because of chronic arguments with others. The first prominent dyad that emerged in her discourse was the image of a weak, injured self who was constantly berated and put down by others. Yet, the patient's initial interactions with the therapist were characterized by a nonstop discourse on her part that left the therapist feeling controlled and unable to speak freely. Exploration of this revealed a devalued image of self in relation to another who would berate her and eventually abandon her. The patient's primitive defense mechanisms were such that she projected the "bad" critical and abandoning object on the therapist and then felt the need to then control it in him. The following interpretation began to free the patient from her use of projective identification to allow her to participate in a more open and interactive interchange.

Responding to the patient's rapid-fire speech in every session, the therapist commented: "Have you noticed how you fill the sessions with a kind of pressured speech that does not leave me any room to comment?" [Generally, if the therapist tried to speak, the patient would speak over him.] "It is as though you feel the need to control me, to keep me from acting freely."

Patient [with a combination of anger and tears]: "If I didn't control you, you'd leave me, like everyone else."

Exploration of this fear helped the patient understand that her behavior was rooted in an anxiety stemming from an internal image of the other that determined how she experienced her therapist. The next stage of therapy was marked by the patient's increasing criticism of the therapist, which she did not recognize as such consciously. She felt she was reacting in a justified way to his shortcomings and failures toward her (e.g., his going away at times). The therapist helped the patient observe her own identification with and enacting of the devaluing, critical one, helped her see its relation to feeling devalued and criticized, and also helped her understand that neither one of these needed to be the case. The patient gained awareness that the drama she experienced endlessly with others was the enactment of a relationship between two parts of herself and that she was living the contradiction of being both the victim and the critic/attacker, although with less awareness of the latter and usually experiencing this relationship as between her and others (a situation she often created) rather than within herself. This awareness allowed her to begin to tame the harsh critical part within her.

As therapy advanced, there were signs of the patient's attachment to the therapist: coming on time while protesting that therapy was a waste of time, missing her therapy while angrily proclaiming that her therapist was irresponsible for going away, etc. Her therapist made the interpretation that it must be difficult for her to be attached to him (thus going a step beyond anything she had stated and bringing the positive dyad into their dialog more explicitly) because of her fear that the kind of longing she experienced for him could never be reciprocated by anyone. The therapist's matter-of-fact mention of this felt-but-unspoken positive relationship freed the patient to begin to discuss her fantasies of an ideal relationship with him as the perfect provider and protector she had never experienced. The patient had been reluctant to express this idealized view of their relation for fear that the negative, rejecting image of the other would prove real and destroy her longing for closeness in a brutally humiliating way. The ability to discuss and observe both sides of the split allowed the patient to achieve an integrated, more balanced view of herself, others, and relationships.

Contrasting Clinical Approaches in TFP and MBT

According to Bateman and Fonagy [72], the goal of Mentalization-Based Therapy (MBT) is to help clients adopt a mentalizing stance by becoming curious about their thoughts, intentions, beliefs, and especially the awareness of manifest affects about themselves and others. As in TFP, MBT focuses on the transference in the here-and-now, but, in contrast to TFP, MBT emphasizes that since clients with BPD experience the transference as "real" and "accurate," it therefore should be responded to as such. Rather than challenging the aspects of the transference that involve distortion or displacement from past experiences, MBT focuses on the self-protective function of the transference and works with it to help the client stay in and progress in treatment. A further difference between TFP and MBT, and also DBT, is TFP's view of aggressive affects as innate to the human nature with a potential to be mastered and channeled to productive goals, in contrast to the view that aggression is principally or solely a response to mistreatment or abuse.

The vignette just given provides an opportunity to contrast the clinical approaches in TFP and MBT. For example, the TFP therapist responded to the patient's angry accusations of the therapist's irresponsibility by interpreting the unacknowledged positive attachment to the therapist. The goal of this intervention is to help her recognize a split-off part of her experience, her positive affect for the

therapist that remains outside of her awareness, and begin to integrate these disparate representations of herself in relation to the therapist (e.g., loving *and* hating). In contrast, a MBT therapist would be more likely to focus on the manifest affect of anger and the patient's own understanding of that "real" experience of the therapist's irresponsibility, without interpreting possible underlying affects.

An MBT therapist would be concerned that to interpret the patient's underlying positive feelings for the therapist would have the effect of inserting the therapist's own mental state into the therapeutic process rather than letting the patient's mental state emerge by inviting her to join the therapist in curiosity about her present experience. In contrast, a TFP therapist would be concerned that to not interpret her disparate experiences of herself in relation to the therapist threatens to leave these representations unintegrated and enacted outside of consciousness.

Another difference in the clinical approaches of TFP and MBT involves the timing of transference interpretations. Bateman and Fonagy [72] note that when the attachment system is highly activated in the context of strong affect, the capacity for mentalization becomes inhibited. For this reason, an MBT therapist would be reluctant to interpret the transference when the patient is feeling angry (as in the vignette) out of concern about the patient's diminished capacity to reflect on the interpretation being offered. An MBT therapist might respond to the patient's anger with supportive interventions intended to bolster the attachment between patient and therapist as a means of increasing the patient's capacity to mentalize.

In contrast, a TFP therapist would be interested in helping the patient to make links between disparate experiences of herself in relation to the therapist *as those affects are occurring in the treatment* as a means of integrating these affect-laden representations of self and others. Further, a TFP therapist would be concerned that providing supportive interventions in the context of the patient's anger may implicitly suggest to the patient that the aggressive part of her is not accepted by the therapist, and the therapeutic relationship can be sustained only so long as her aggression is hidden. In this context, a supportive intervention may actually bolster her perception of herself as vulnerable/victimized, while the aggressive aspects of herself remain split off and enacted outside of consciousness. (For a further explication of differences in the clinical approaches of TFP and MBT, see [100].)

Contrasting Clinical Approaches in TFP and DBT

According to Linehan [23], the treatment approach of Dialectical Behavior Therapy (DBT) balances two goals, validation of the patient's experience and change in problem behaviors. DBT starts with the assumption that patients are doing the best they can to improve their lives given the resources available to them, but have not been provided with the skills and problem-solving strategies to more effectively lead their lives. Towards this end, patients are taught mindfulness, emotion regulation, distress tolerance, and interpersonal skills in individual and group treatment contexts. DBT notes that the decision-making strategies of patients with BPD are often over-influenced or under-influenced by emotion (known as "emotion mind" and "rational mind," respectively). Therefore, one of the main goals of treatment is help patients more consistently make decisions in "wise mind," which integrates and extends emotional and rational thinking. To put it differently, one could say the goal of DBT is that "where emotion mind was, there shall be wise mind" – which bears a striking similarity to Freud's [101] goal of treatment "where id was, there shall ego be."

Like TFP, a main focus of treatment in DBT is suicidal and self-destructive behaviors, treatment-interfering behaviors, and behaviors that interfere with the patient's quality of life. Both treatments include explicit contracting around these behaviors as well as explicit instructions to the patient to prioritize these topics respectively above all others in sessions. When these destructive behaviors arise during the course of therapy, both treatments emphasize a relentless, disciplined and detailed analysis of what has occurred. Finally, both treatments stress the importance of therapists being in

supervision or consultation with colleagues when working with patients of this level of intensity. In some ways, the parallels between the frames of these treatments are not surprising given that Linehan spent a half-year sabbatical at Cornell University Medical Center, Westchester, studying with Otto Kernberg and John Clarkin in 1986 during the early days in her developing DBT.

Despite these similarities, the process of treatment in DBT and TFP are markedly different. The vignette just given again provides an opportunity to contrast the clinical approaches in TFP and DBT. For example, to return to the moment when the patient became angry and critical of the therapist's perceived shortcomings, the TFP therapist responded by interpreting her ambivalence about developing a positive attachment to the therapist. In contrast, a DBT therapist would be more likely to focus on the effectiveness of this angry interpersonal behavior, rather than its underlying motivation. The DBT therapist would validate the real disappointment that accompanies the therapist's going away, while at the same time teach the patient to use a gentler and more light-hearted, courteous expression of disappointment (i.e., the GIVE skills).

To give another example, in the vignette where the patient voiced a concern that to engage in work would be so overwhelming to her that it would "throw her back into the depths of depression," a DBT therapist would validate the patient's perspective on how painful and overwhelming increased activity may feel, while at the same time advocating for making change in order to improve the individual's quality of life. In contrast, once the treatment frame was in place, the TFP therapist explored and clarified, rather than validated, the patient's perception of a weak and injured self who was controlled by others (in this case the therapist). Further, the TFP therapist helped the patient to examine this perception of self and others in all the forms it took, including times when the patient acted controlling and put others in a weakened state (as observed in the treatment process). A TFP therapist would argue that discussing and observing the totality of her experience allowed her to achieve a more integrated, balanced view of herself, others, and relationships.

In evaluating these two examples, a TFP therapist would have a number of concerns about validating the patient's subjective experience (of justified anger at others' failings, of a view of oneself as weak and vulnerable). Specifically, a TFP therapist would be concerned that this approach evades the patient's aggression, colludes with the patient's distortions, and fosters a defensive idealization of the therapist. For example, to validate the patient's self-perception as weak, helpless, and easily thrown "into the depths of depression," a TFP therapist would say, would be to validate a distortion the patient has about herself. In contrast, a DBT therapist would maintain that the patient's outrage and vulnerable self-image stem from countless painful invalidating, and these real experiences need to be acknowledged as such. To not validate this aspect of the patient's experience, a DBT therapist would say, would be to provide the patient with one more version of an invalidating environment. More akin to MBT, a DBT therapist would accept the patient's subjective experience as "real" and "accurate" to her and therefore respond to it as such.

A TFP therapist would counter that accepting the patient's motivation at face value (i.e., to engage in work would be overwhelming) leaves a crucial underlying motivation unaddressed; the patient's statement, "I'd rather die than work at a clerical job," indicates that she experienced an acknowledgement of her current level of functioning to be a narcissistic injury that her inactivity protects her from. In contrast, a DBT therapist would be concerned that interventions focusing on the patient's underlying narcissism only pathologize the patient. However, a TFP therapist would argue that this approach is not only not pathologizing, but is actually a validating intervention (albeit validation in a different sense of the word). While DBT validates the self-perceptions the patient accepts of herself (i.e., incapable), through technical neutrality, TFP aims to accept the total experience of the patient, including those split-off parts that the patient cannot accept about herself (i.e., narcissistically injured). A TFP therapist would be concerned that to not acknowledge, label, and give voice to the totality of the patient's experience implicitly suggests to the patient that relationships can be sustained only so long as her unacceptable aspects of self remain hidden. For this reason, it is our experience that interpretations of unacceptable split-off parts of the self are eventually met with

relief, because it signals to the patient that the therapist can see them “warts and all,” and it will not destroy the relationship.

Both TFP and DBT are interested in comprehensive change, with DBT working towards a “life worth living,” while TFP aims to achieve the capacity “to love and to work” as Freud famously said (quoted by [102]). In TFP, this is thought to be primarily accomplished through an integration of disparate representations of self in relation to other (i.e., being able to tolerate and integrate both loving *and* hating feelings). In contrast, in DBT, treatment promotes change when the therapist “blocks or extinguishes bad behaviors, drags good behaviors out of the patient, and figures out ways to make the good behaviors so reinforcing that the patient continues the good ones and stops the bad ones” ([23], p. 97). A TFP therapist would have concerns about this approach to lasting comprehensive change, in that while DBT seems to be effective in replacing bad with good behaviors, it has less to offer in helping patients move towards deep, intimate relationships and a consolidated sense of self. To be sure, there is enormous value in reducing or eliminating intense, chaotic acting-out behaviors, and to the degree that DBT addresses such behaviors it should be lauded. However, a TFP therapist would note that when the storms of acting out subside often, what lies underneath is an unintegrated self that struggles with the complexities of love relationships. It is in this midphase of TFP that the integration of aggression with love and sexuality becomes a central focus of treatment.

Empirical Evidence for Transference-Focused Psychotherapy

There is now accumulating evidence for the effectiveness and efficacy of TFP [26, 42, 57, 98]. The initial study [98] examined the effectiveness of TFP in a pre–post design. Participants were recruited from varied treatment settings (i.e., inpatient, day hospital, and outpatient clinics) within the New York metropolitan area. Participants were all women between the ages of 18 and 50 who met criteria for BPD through structured interviews. All therapists (senior therapists to postdoctoral trainees) selected for this phase of the study were judged by independent supervisory ratings to be both competent and adherent to the TFP manual. Three senior supervisors rated the therapists for TFP adherence and competence. Throughout the study, all therapists were supervised on a weekly basis by Kernberg and at least one other senior clinician.

Overall, the major finding in this pre–post study was that patients with BPD who were treated with TFP showed marked reductions in the severity of parasuicidal behaviors, fewer emergency room visits, hospitalizations, days hospitalized, and reliable increases in global functioning. The effect sizes were large and no less than those demonstrated for other BPD treatments [49, 75]. The 1-year drop-out rate was 19.1%, and no patient committed suicide. These results compared well with other treatments for BPD: Linehan et al. [49] had 16.7% drop-out, and one suicide (4%); Stevenson and Meares’ study [103] had a 16% drop-out rate and no suicides; and Bateman and Fonagy’s study [75] had 21% drop-out and no suicides. None of the treatment completers deteriorated or were adversely affected by the treatment. Therefore, it appears that TFP is well-tolerated. Further, 53% of participants no longer met criteria for BPD after 1 year of twice-weekly outpatient treatment [71]. This rate compared quite well with that found by others [76, 103]. In addition, reliable increases in global functioning were observed in these patients. These results suggest the potential utility of TFP for treating BPD patients and that more research on TFP is warranted (Table 8.2).

A second study [104] provided further support for the effectiveness of TFP in treating BPD. In this study, 32 women diagnosed with BPD and treated with TFP were compared to 17 patients in a TAU group. There were no significant pretreatment differences between the treatment group and the comparison group in terms of demographic or diagnostic variables, severity of BPD symptomatology, baseline emergency room visits, hospitalizations, days hospitalized, or global functioning scores. The 1-year attrition rate was 19%. Patients treated with TFP, compared to those treated with

Table 8.2 Results of Clarkin et al. [98] TFP pre–post study ($N=17$)

	Means		<i>p</i> -Value
	Pre-Tx	Post-Tx	
BPD Dx	100%	47.10%	–
Parasuicidal behavior	5.18	4.24	0.45
Medical risk	1.72	1.14	0.02
Physical condition	1.89	1.12	0.01
Hospitalizations	1.24	0.35	0.02
Days hospitalized	39.21	4.53	0.06
GAF	45.57	59.85	<.001

Note: BPD Dx was assessed as the percentage of patients with a DSM-III diagnosis of BPD, from the SCID-II. Parasuicidal Behavior, Medical Risk, and Physical Condition were all assessed from the suicidality subscale of the Overt Aggression Scale – Modified Version for Outpatients [129] over the previous 12-month period. Medical Risk was indicative of the severity of parasuicidal and suicidal behaviors. Physical Condition was indicative of the condition following such behaviors. Hospitalizations were assessed by checking medical records and represent the total number of hospitalization in the previous 12-month period. GAF represents the DSM-III Global Assessment of Functioning scale score

Table 8.3 Results of TFP vs. TAU study

	TFP ($N=32$)		ITT	Change Sig	TAU ($N=17$)			Between Group Comparison	
	Pre-Tx	Post-Tx	Post-Tx		Pre-Tx	Post-Tx	Sig		
ER Visits	1.18	0.42	0.59	<.01	1.53	1.73	<i>ns</i>	TFP>TAU	<.01
Hospitalizations	1.72	0.46	0.91	<.001	2.47	1.93	<i>ns</i>	TFP>TAU	<.01
Days Hospitalized	61.1	7.08	25.87	<.001	0.48	53.4	<i>ns</i>	TFP>TAU	<.01
# of BPD Criteria Met	7.74	4.41	5.15	<.001	7.69	–	–	TFP>TAU	–
GAF	45.57	61.0	59.85	<.001	44.8	44.66	–	TFP>TAU	<.01

Note: ER visits represents the number of emergency room visits in the previous 12-month period. Hospitalizations represents the total number of hospitalization in the previous 12-month period. # of BPD criteria was assessed with the SCID-II and provides a dimensional rating of the severity of the disorder. GAF represents the DSM-III Global Assessment of Functioning scale score

TAU, showed significant decreases in suicide attempts, hospitalizations, and number of days hospitalized, as well as reliable increases in global functioning. All of the within-subjects and between-subject effect sizes for the TFP-treated participants indicated favorable change. The within-subject effect sizes ranged from 0.73 to 3.06 for the TFP-treated participants, with an average effect size of 1.19 (which is well above what is considered “large”) [105] (Table 8.3).

The only RCT to date that has compared an experimental treatment for BPD to a well-established, well-delivered, alternative treatment has been the RCT conducted by The Personality Disorders Institute, funded in part by the Borderline Personality Disorders Research Foundation, to assess the efficacy of TFP compared with DBT and supportive psychotherapy (SPT) for patients with BPD. DBT, which has received preliminary empirical support for its effectiveness, was selected as the active comparison treatment. The putative mechanisms of change in these two treatments are conceived in very different ways. DBT is hypothesized to operate through the learning of emotion-regulation skills in the validating environment of the treatment [106]. TFP is hypothesized to operate through the integration of conflicted, affect-laden conceptions of self and others via the understanding of these working models as they are actualized in the here-and-now relationship with the therapist. SPT [107, 108] was used in contrast to these two active treatments as a control for attention and support but also as a component control for TFP.

Table 8.4 Results of Clarkin et al. [26] randomized clinical trial

Symptom-based measures	Significance of change		
	TFP	DBT	SPT
<i>Primary</i>			
Suicidality	<.05	<.05	ns
Anger	<.05	<.05	ns
Irritability	<.05	ns	ns
Verbal assault	<.05	ns	ns
Direct assault	<.05	ns	ns
Barratt Factor 1 impulsivity	ns	ns	ns
Barratt Factor 2	<.05	ns	ns
Barratt Factor 3	ns	ns	<.05
<i>Secondary</i>			
Anxiety	<.05	<.05	<.05
Depression	<.05	<.05	<.05
GAF	<.05	<.05	<.05
Social adjustment	<.05	<.05	<.05

Note: Suicidality, Anger, Irritability, Verbal, and Direct Assault were assessed with the Overt Aggression Scale – Modified version [129]. Barratt Factors are from the Barratt Impulsivity Scale [130]. Anxiety was assessed with the State-Trait Anxiety Inventory [131]. Depression was assessed with the Beck Depression Inventory [132]. GAF represents the DSM-III Global Assessment of Functioning scale score. Social Adjustment was assessed by the Social Adjustment Scale [133]

In this study, BPD patients were recruited from New York City and adjacent Westchester County. Ninety-eight percent of the participants were clinically referred by private practitioners, clinics, or family members. Ninety patients (6 men and 84 women) between the ages of 18 and 50 were evaluated using structured clinical interviews and randomized to one of the three treatment cells. Results showed that all three groups had significant improvement in both global and social functioning, and significant decreases in depression and anxiety. Both TFP- and DBT-treated groups, but not the SPT group, showed significant improvement in suicidality, depression, anger, and global functioning. Only the TFP-treated group demonstrated significant improvements in verbal assault, direct assault, irritability [26] (Table 8.4).

In an earlier report on this sample, we [57] examined changes in attachment organization and reflective function as putative mechanisms of change. Attachment organization was assessed using the Adult Attachment Interview (AAI [109]) and the reflective function coding scale (RF [74]). After 12 months of treatment, we found a significant increase in the number of patients classified as secure with respect to attachment state of mind for TFP, but not the other two treatments. Significant changes in narrative coherence and RF were found as a function of treatment, with TFP showing increases in both constructs during the course of treatment. Findings suggest that 1 year of intensive Transference-Focused Psychotherapy can increase patients' narrative coherence and reflective function. Our findings are important because they show that TFP is not only an efficacious treatment for BPD but works in a theoretically predicted way and thus has implications for conceptualizing the mechanism by which patients with BPD may change. In addition, patients in TFP did better on those variables than the patients in DBT and SPT. Our findings are especially important given the literature showing that many treatments do not show specific effects on specific, theory-driven mechanisms [110–118] (Table 8.5).

There are a number of methodological strengths of these studies [26, 42, 57] such as the use of multiple domains of change to measure outcome, including behavioral, observer-rated, phenomenological, and structural change (i.e., attachment representations, object relations, and mentalization skills). In addition, this study included a broad range of BPD patients and not exclusively those with

Table 8.5 Results of Levy et al. [42] and Levy et al. [57] randomized clinical trial

Structural measures	TFP		DBT		SPT		Contrast
	Pre-Tx	Post-Tx	Pre-Tx	Post-Tx	Pre-Tx	Post-Tx	
Reflective functioning	2.86	4.11	3.31	3.38	2.8	2.86	TFP>DBT=SPT
Coherence of narrative	2.93	4.02	3.00	3.25	3.25	3.16	TFP>DBT=SPT

Note: Reflective Functioning was assessed based on Fonagy's [74] manual for scoring RF. Coherence of Narrative was assessed based on the Adult Attachment Interview coding system [134]

parasuicidality, representing the full spectrum of BPD manifestations. Further, all therapists were experienced in their respective treatment model, had practice cases prior to beginning the study, and were rated for adherence and competence in their delivery of therapy during the study. Adding to the external validity of this research, treatments were delivered in community mental health settings, including outpatient hospitals and private offices of therapists.

However, there are also a number of critiques that can be made of these [26, 42, 57] studies. First, allegiance effects should be considered. Allegiance effects occur when the therapy condition that is consistent with the investigator's own orientation produces larger effects than the comparison treatment due to subtle methodological choices that favor the investigator's preferred therapy. Recent research by Luborsky et al. [83] suggests that this effect may be even more powerful than previously thought, accounting for 69% of the variance in treatment outcome even in high-quality studies. One might argue that, because the investigators in this study were psychodynamic in their orientation and the study was conducted at Cornell Medical Center where the developers of TFP are well established, an allegiance effect may have been operating. However, the fact that these studies were conducted by people strongly associated with the therapy and at a "home" institution is no different from existing studies on BPD where all studies are done by investigators who are highly devoted to the treatment under study and most have been completed at "home" or "satellite" sites (i.e. [27, 49, 52, 64, 75]).

Clarkin et al. explicitly attempted to address allegiance issues in two ways [84]. First, they conducted the study at an institution which had long established programs in all three treatments under study. Although Kernberg had implemented training and treatment in his expressive psychotherapy for BPD (which would later be structuralized into TFP), proponents of supportive psychotherapy (e.g. [119–122]) had also established training and treatment on the Cornell campus. Further, Linehan herself helped develop the Cornell DBT program with Swenson [123–125] which is the second oldest and most established DBT program after Linehan's in Seattle. Second, they utilized treatment cell leaders for all three conditions that were internationally recognized experts in their respective treatments. All three treatment cell leaders were published in their modality and had years of experience treating patients and supervising therapists in their respective modality. Treatment cell leaders selected their own therapists based on the therapists' previous demonstration of adherence and competence in their respective treatments, and all therapists were supervised, monitored, and rated through weekly in-person supervision of video-taped sessions. Luborsky et al. [83] note that one of the most potent methodological choices that result in allegiance effects is the selection of therapists who differ in skillfulness that favor the allegiance of the researcher. Therefore, it was ensured that therapists in the treatment cells did not differ in terms of level of experience. Until the McMain et al. [69] study, Clarkin and colleagues had made the most extensive and honest attempt to insure comparability across therapy conditions and minimize allegiance effects. However, the Clarkin and colleagues studies did not include a research investigator from control conditions as did the McMain study.

A second critique may have to do with the adherence of therapists in the DBT condition [94]. However, it is important to remember that the DBT therapists in the Clarkin and colleagues studies all had specific training in DBT, including having attended the requisite number of intensive trainings with Linehan or other certified trainers (see [42, 57]). They had demonstrated prior competence and were supervised by an acknowledged expert who has received multiple grants from NIH for

treatment studies utilizing DBT. Additionally, throughout the study the DBT therapists were video-taped and their sessions were supervised in a group on a weekly basis. The supervisor provided feedback and rated therapists for adherence and competence with instructions to notify the PI of any concerns in these areas ([26], see p. 923). The supervisor reported no concerns about adherence and competence during the course of the study. Additionally, the findings from the Clarkin et al. study are consistent with the McMain findings in which therapists were also adherent and competent.

Finally, the fact that there were no differences in outcome between DBT and TFP cannot technically be interpreted as equivalence between TFP and DBT due to a lack of power to detect existing group differences. The number of participants in each group was 30, which although consistent with the Division 12 guidelines for demonstrating equivalence, is underpowered to detect differences. However, we can say that there were no differences in outcome between DBT and TFP other than in the attachment and mentalization constructs for which TFP was significantly superior.

As more data from this RCT are assessed, we will have a better understanding of how the treatment performs under more stringent experimental conditions. Because the RCT better controls for unmeasured variables through randomization, offers controls for attention and support, and compares TFP to an already established, well-delivered, alternative treatment, its outcome will be a strong indicator of the treatment's efficacy and effectiveness. In addition to assessment of outcome, the RCT has also generated process-outcome studies designed to assess the hypothesized mechanisms of action in TFP that result in the changes seen in these patients [41, 42, 57].

Despite the initial evidence that these studies provide for the value of TFP, the fact that the Giesen-Bloo et al. [27] study, discussed earlier, found that patients treated in TFP did not improve as well as those treated in SFT led the American Psychological Association Division 12 to conclude that "TFP is designated as having controversial research support because of mixed findings. TFP performed favorably in one randomized controlled trial [26], but did not perform well in another [27]. Thus, more research is needed before TFP can be considered to have modest or strong research support."

A recent study in Germany and Austria by Doering et al. [28] provides a response to this recommendation directly by further establishing TFP as an efficacious treatment. Doering et al. [28] completed an RCT comparing 1 year of TFP to treatment by experienced community psychotherapists (ECP). While patients improved in both treatments, patients randomly assigned to TFP evidenced lower drop-out and showed significantly greater reductions in number of patients attempting suicide, number of inpatient admissions, BPD symptoms, and significantly greater improvements in personality organization and psychosocial functioning after 1 year of treatment. Both groups improved significantly in depression and anxiety and the TFP group in general psychopathology, all without significant group differences. Self-harming behavior did not change in either group.

There are a number of strengths of this study. First, the study had a large sample size of 104 women. Second, the researchers reported both intent-to-treat and completer analyses, addressing the concern that the efficacy of TFP in clinical and psychosocial functioning was not an artifact of treatment dose and missing data due to drop-out. Third, both the TFP and ECP therapists were well trained and conducting treatment at multiple sites, and the ECP group was composed of experienced therapists who are committed to treating BPD patients. Fourth, the efficacy of TFP was demonstrated by an independent group not affiliated with Cornell Medical Center. In terms of limitations, a number of weaknesses of this study were related to the healthcare system in Germany and Austria, where insurance covers most psychotherapy at most levels of care. As a result, drop-out was higher in this study, as patients had the freedom to transfer to another therapist with ease (Figs. 8.1–8.4).

In sum, despite the aforementioned critiques, the evidence for TFP is strong and significantly strengthened by the findings from Doering et al. [28] and consistent with the literature overall. That is, there is no evidence that any one approach is significantly better than any other as a function of effect sizes or comparisons with bona fide alternative treatments. TFP represents one of a number of treatments that may be useful in the treatment of BPD. TFP is the only treatment to date that has shown evidence of changing mental representations or internal structure.

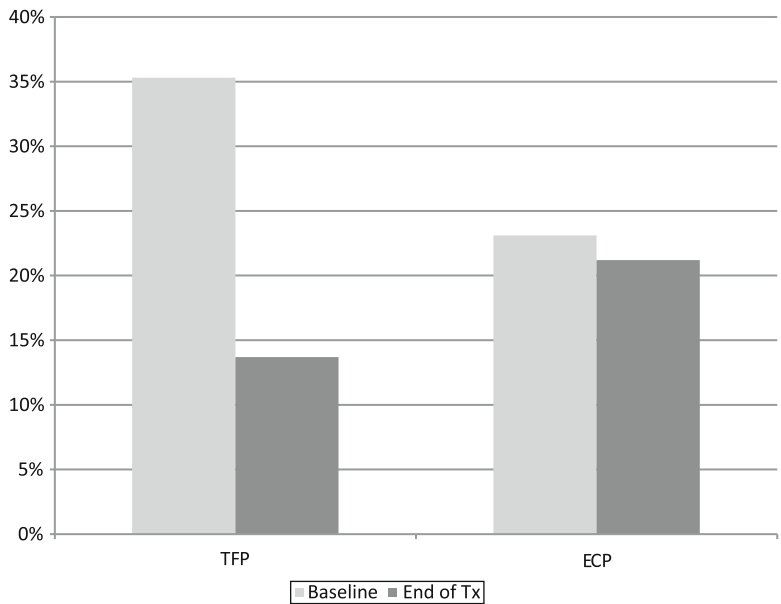


Fig. 8.1 Percent attempted suicide. Within group – TFP: $p = .001$, $d = 0.8$; ECP: ns. Between group – TFP>ECP $d = 0.8$, $p = 0.009$

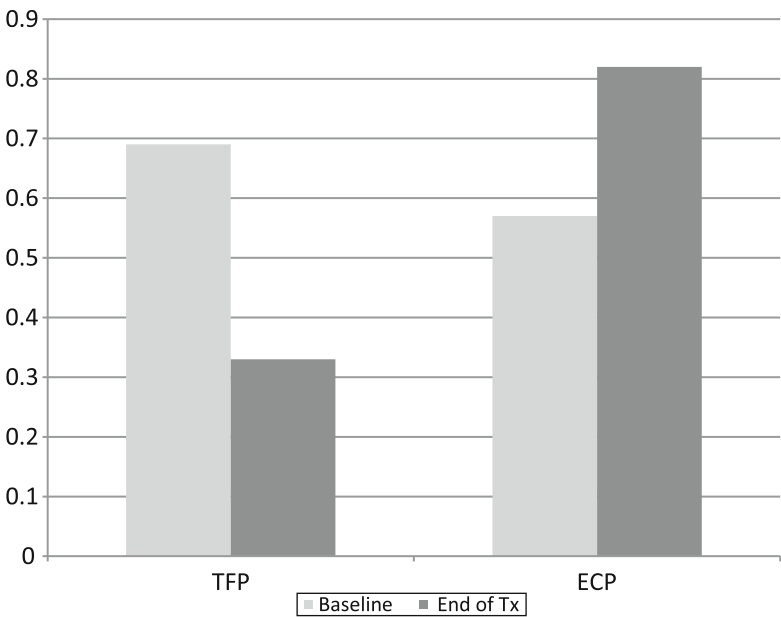


Fig. 8.2 Number of inpatient hospital admissions. Within group – TFP: $p = .001$, $d = 0.5$; ECP: ns. Between group – TFP>ECP $d = 0.5$, $p = 0.001$

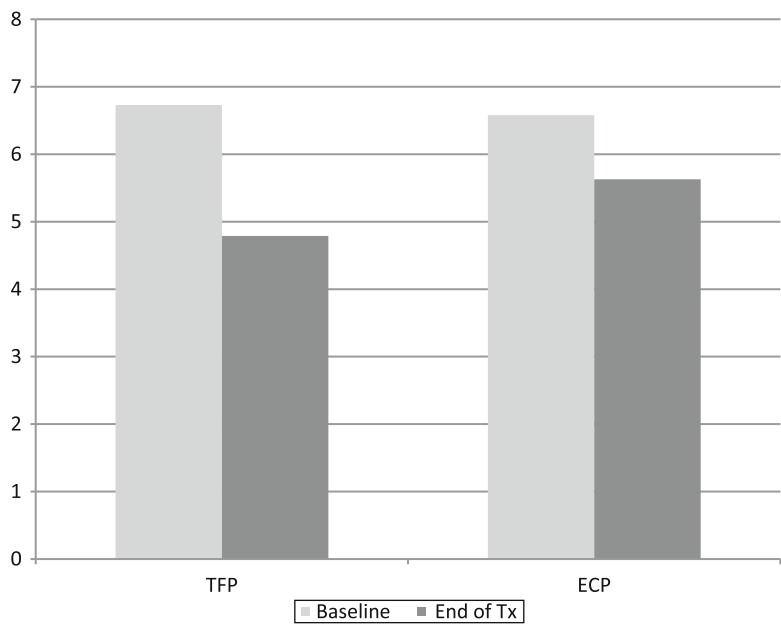


Fig. 8.3 Number of DSM-IV criteria for BPD. Within group – TFP: $p=.001$, $d=1.6$; ECP: $p=.001$, $d=0.8$. Between group – TFP>ECP $d=1.6$, $p=0.001$

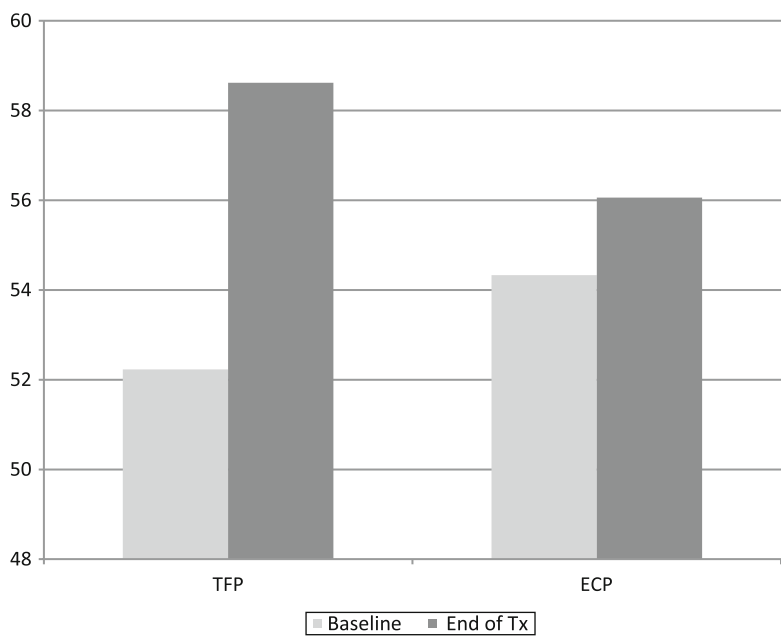


Fig. 8.4 GAF score. Within group – TFP: $p=.001$, $d=1.0$; ECP: $p=.01$, $d=0.3$. Between group – TFP>ECP $d=1.0$, $p=0.002$

Conclusions

In summary, there are a number of conclusions that can be drawn from the data reviewed in this chapter. Most generally, there are a number of different psychodynamic treatment models that are useful and supported empirically for treating BPD. In addition, there may be other models, which share similar principles that are also quite effective but remain untested. We would recommend that proponents of these approaches work toward their examination in RCT designs.

Specifically, we have learned that:

1. Psychoanalysis can be modified to specific types of pathology and can be modified in different ways successfully [26, 75, 103].
2. The principles and goals of psychodynamic treatments for borderline personality disorder can be articulated and manualized [22, 72].
3. Psychodynamic psychotherapy can be taught to trainees, early career therapists, experienced therapists, and nurses (not just experienced psychoanalyst) [28, 75, 78, 98, 103].
4. Psychotherapy sessions can be video or audio taped without disrupting the treatment [26, 98, 116].
5. There is little evidence that purely noninterpretive psychodynamic psychotherapies (such as some supportive psychotherapies) are effective with BPD patients, although little is known about the extent to which supportive techniques can be or should be integrated in treatments for BPD [26, 42, 57]. Kernberg would argue for less supportive techniques particularly with for low-level BPD patients, whereas Bateman and Fonagy [72] would argue more integration of supportive techniques. Recent data from an RCT by Hoglend further support the notion that patients with low-levels of object relations do particularly well in transference-based treatments [126].
6. Data suggest that therapists can reduce drop-out by increasing the structure and explicitly focusing on frame issues with BPD patient; explicit contracts are particularly helpful but may not be necessary if a solid structure and frame can be established and maintained [26, 28, 42, 57, 98].
7. Randomized clinical trials of psychodynamic treatments for BPD can be performed [26, 28, 42, 57, 75].
8. Some dynamic treatments for BPD can be considered to have beginning empirical support that meets the APA Division 12 criteria for well-established treatments [26, 28, 42, 57, 75–77].
9. Unselected and severely disturbed BPD patients can be treated in psychodynamic psychotherapy, not just those with high IQs, high reflective function, or good quality of object relations [26, 42, 57, 75, 98, 126].
10. BPD patients can show important change in just 1 year [26, 28, 42, 57, 75, 98].
11. Psychodynamic treatments may have broader outcome, longer lasting outcome, and show changes in personality than those shown in other treatments [26, 28, 42, 57, 75, 77, 98].
12. Long-term treatment is necessary and important in the treatment of BPD in order to see structural changes in personality organization.
13. Supervision is a critical component for the treatment of BPD. All the empirically supported treatments for BPD, not just the psychodynamic ones, have structured ongoing supervision for therapists [26, 27, 42, 49, 57, 75, 78, 98]. Additionally, in some studies, differences between groups [27, 64] appear related to difference in the delivery of adequate supervision [42, 57, 85].
14. All treatments for BPD with empirical support are well structured, devote considerable effort to enhancing compliance (e.g., attention to contracting and frame), have a clear focus, whether that focus is a problem behavior or an aspect of interpersonal relationship patterns; are highly coherent to both therapist and patient; encourage a powerful attachment relationship between therapist and patient, enabling the therapist to adopt a relatively active rather than a passive stance; and are well integrated with other services available to the patient.
15. With regard specifically to TFP, accumulating evidence indicates that TFP is an effective treatment for BPD. The study by Doering et al. is significant in that it is an independent replication

of the efficacy of TFP, directly addressing the need for greater empirical support for TFP raised by APA Division 12. As previously discussed, multiple sources of treatment evidence are necessary in order to build an empirically grounded framework for specific forms of psychotherapy. TFP has demonstrated its efficacy through treatment evidence at different levels of internal and external validity, including clinical case studies, pre–post design study, quasi-experimental comparison study, RCT with comparison to experienced therapists in the community, and finally RCT with comparison to established well-delivered alternative treatments, in combination with the examination of evidence for specific mechanisms of action. Taken together, this body of research raises TFP to the criteria articulated by APA Division 12 for well-established treatments.

The next step is the identification of the active ingredients or mechanisms of therapeutic action in these treatments [41]. Effectiveness and efficacy aside, the probative importance of these studies for understanding a treatment's actual mechanisms of action are both indirect and limited [127]. Therefore, despite the support for the effectiveness and efficacy of existing treatments for borderline personality disorder, clinicians and researchers are still confronted with a high degree of uncertainty about the underlying processes of change. The examination of putative mechanisms of change has the potential to answer theoretical questions and validate models by showing that theoretically specified mechanisms of change are actually related to the treatments' effectiveness. It is very possible that these treatments may work due to unintended mechanisms such as common factors (e.g., expectancies; see [128]) or a specific technique factor that is essential to good outcome but not necessarily unique to any one treatment [34]. Finally, there may simply be different avenues to effect change in patients with BPD or that different treatments may be more effective with different types of BPD patients.

Additionally, establishment of the underlying mechanisms of the psychopathology in BPD will help to validate clinical approaches. For example, showing through the use of experimental psychopathology paradigms that identity diffusion or deficits in reflective function underlie the symptoms in BPD would go a long way to establishing the importance of the treatment goals emphasized in TFP.

Finally, given the chronicity of BPD, it is crucial to establish the long-term significance of the changes that occur in our treatments. There is already some preliminary evidence that MBT has long-term effectiveness. Currently, with funding from the American Psychoanalytic Association, we are in the process of carrying out a long-term follow-up of the patients treated in our RCT to examine the maintenance of treatment gains and the long-term efficacy of TFP.

References

1. Parron R. How to do research? Reply to Otto Kernberg. *Int J Psychoanal.* 2006;87:927–32.
2. Kernberg OF. The pressing need to increase research in and on psychoanalysis. *Int J Psychoanal.* 2006;87:919–26.
3. Kernberg OF. Research anxiety: a response to Roger Perron's comments. *Int J Psychoanal.* 2006;87:933–7.
4. Alexander F. Five-year report of the Chicago Institute for Psychoanalysis: 1932–1937. Chicago: Chicago Institute for Psychoanalysis; 1937.
5. Bordin ES. Dimensions of the counseling process. *J Clin Psychol.* 1948;4:240–4.
6. Fenichel O. Ten years of the Berlin Psychoanalytic Institute 1920–1930. Berlin: Berlin Psychoanalytic Institute; 1930.
7. Holt RR, Luborsky LB. Personality patterns of psychiatrists: a study in selection techniques, vol. 2. Topeka: The Menninger Foundation; 1958.
8. Jones E. Decennial report of the London Clinic of Psychoanalysis, 1926–1937. London: London Clinic of Psychoanalysis; 1936.

9. Knight RO. Evaluation of the results of psychoanalytic therapy. *Am J Psychiatry*. 1941;98:434–46.
10. Luborsky LB. Self-interpretation of the TAT as a clinical technique. *J Proj Tech*. 1953;17:217–23.
11. Strupp HH. Psychotherapeutic technique, professional affiliation, and experience level. *J Consult Psychol*. 1955;19(2):97–102.
12. Wallerstein R, Robbins L, Sargent H, Luborsky L. The psychotherapy research project of the Menninger Foundation. *Bull Menninger Clin*. 1956;20(5):221–80.
13. Blatt SJ. The effort to identify empirical supported psychological treatments and its implications for clinical research, practice, and training. *Psychoanal Dialogues*. 2001;11:633–44.
14. Bornstein RF. The impending death of psychoanalysis. *Psychoanal Psychol*. 2001;18:3–20.
15. Fonagy P. On the relationship of experimental psychology and psychoanalysis. Comment on “experimental psychology and psychoanalysis: what we can learn from a century of misunderstanding”. *Neuro-psychoanal*. 2000; 2(2):222–32.
16. Fonagy P, Jones EE, Kächele H, Krause R, Clarkin J, Perron R, Gerber A, Allison E. An open door review of outcome studies in psychoanalysis. 2nd ed. London: International Psychoanalytic Association; 2001.
17. Gerber AJ. A proposal for the integration of psychoanalysis and research. *Psychol Psychoanal*. 2001;21(3): 14–17.
18. Levy KN, Wasserman RH, Scott LN, Yeomans FE. Empirical evidence for transference-focused psychotherapy and other psychodynamic psychotherapy for borderline personality disorder. In: Levy R, Ablon JS, editors. *Handbook of evidence-based psychodynamic psychotherapy: bridging the gap between science and practice*. New York: Humana Press; 2009. p. 93–119.
19. Westen D, Morrison K. A multidimensional meta-analysis of treatments for depression, panic, and generalized anxiety disorder: an empirical examination of the status of empirically supported therapies. *J Consult Clin Psychol*. 2001;69(6):875–99.
20. Yeomans FE, Clarkin JF. New developments in the investigation of psychodynamic psychotherapy. *Curr Opin Psychiatry*. 2001;14:591–5.
21. Clarkin JF, Yeomans FE, Kernberg OF. *Psychotherapy for borderline personality*. New York: Wiley; 1999.
22. Clarkin JF, Yeomans F, Kernberg OF. *Psychotherapy of borderline personality*. New York: Wiley; 2006.
23. Linehan MM. *Cognitive-behavioral treatment of borderline personality disorder*. New York: Guilford Press; 1993.
24. Bateman AW, Fonagy P. Mentalization-based treatment of BPD. *J Pers Disord*. 2004;18(1):36–51.
25. Young JE, Klosko J, Weishaar ME. *Schema therapy: a practitioner’s guide*. New York: The Guildford Press; 2003.
26. Clarkin JF, Levy KN, Lenzenweger MF, Kernberg OF. A multiwave RCT Evaluating three treatments for borderline personality disorder. *Am J Psychiatry*. 2007;164:922–8.
27. Giesen-Bloo J, Van Dyck R, Spinhoven P, Van Tilburg W, Dirksen C, Van Asselt T, et al. Outpatient psychotherapy for borderline personality disorder: a randomized clinical trial of schema focused therapy versus transference focused psychotherapy. *Arch Gen Psychiatry*. 2006;63:649–58.
28. Doering S, Hörz S, Rentrop M, Fischer-Kern M, Schuster P, Benecke C, Buchheim A, Martius P, Buchheim P. Transference-focused psychotherapy vs. treatment by community psychotherapists for borderline personality disorder: a randomised controlled trial. *Br J Psychiatry*. 2010;196:389–95.
29. Borkovec TD, Castonguay LG. What is the scientific meaning of empirically supported therapy? *J Consult Clin Psychol*. 1998;66(1):136–42.
30. Ablon JS, Jones EE. Validity of controlled clinical trials of psychotherapy: findings from the NIMH Treatment of Depression Collaborative Research Program. *Am J Psychiatry*. 2002;159:775–83.
31. Blatt SJ, Zuroff DC. Empirical evaluation of the assumptions in identifying evidence based treatments in mental health. *Clin Psychol Rev*. 2005;25(4):459–86.
32. Goldfried MR, Wolfe BE. Toward a more clinically valid approach to therapy research. *J Couns Clin Psychol*. 1998;66(1):143–50.
33. Howard KI, Krause MS, Orlinsky DE. The attrition dilemma: toward a new strategy for psychotherapy research. *J Consult Clin Psychol*. 1986;54(1):106–10.
34. Levy KN, Scott LN. The ‘art’ of interpreting the ‘science’ and the ‘science of interpreting the ‘art’ of treatment of borderline personality disorder. In: Hoffman S, Weinburger J, editors. *The art and science of psychotherapy*. London: Brunner-Routledge; 2007.
35. Castonguay LG, Beutler LE. Principles of therapeutic change: a task force on participants, relationships, and techniques factors. *J Clin Psychol*. 2005;62(6):631–8.
36. National Institute of Mental Health. *Psychotherapeutic interventions: how and why they work*. In: Workshop sponsored by the NIMH Division of Services and Intervention Research. Rockville, MD; December 2002.
37. Rosen GM, Davison GR. Psychology should list empirically supported principles of change (ESPs) and not credential trademarked therapies or other treatment packages. *Behav Modif*. 2003;27:300–12.
38. Gabbard GO, Gunderson JG, Fonagy P. The place of psychoanalytic treatments within psychiatry. *Arch Gen Psychiatry*. 2002;59(6):505–10.

39. Clarke M, Oxman A. Cochrane reviews will be in Medline. *Br Med J*. 1999;319(7222):1435.
40. Chambless DL, Hollon SD. Defining empirically supported therapies. *J Consult Clin Psychol*. 1998; 66(1):7–18.
41. Clarkin JF, Levy LN. Psychotherapy for patients with borderline personality disorder: focusing on the mechanisms of change. *J Clin Psychol*. 2006;62(4):405–10.
42. Levy KN, Clarkin JF, Yeomans FE, Scott LN, Wasserman RH, Kernberg OF. The mechanisms of change in the treatment of transference focused psychotherapy. *J Clin Psychol*. 2006;62:481–501.
43. Morrison KH, Bradley R, Westen D. The external validity of controlled clinical trials of psychotherapy for depression and anxiety: naturalistic study. *Psychol Psychother Theory Res Pract*. 2003;76(2):109–32.
44. Seligman MEP. The effectiveness of psychotherapy: the Consumer Reports study. *Am Psychol*. 1995;50(12): 965–74.
45. Kazdin A. Progression of therapy research and clinical application of treatment require better understanding of the change process. *Clin Psychol Sci Pract*. 2001;8:143–51.
46. Levy KN. Psychotherapies and lasting change. *Am J Psychiatry*. 2008;165:556–9.
47. Connor-Smith JK, Weisz JR. Applying treatment outcome research in clinical practice: techniques for adapting interventions to the real world. *Child Adolesc Ment Health*. 2003;8(1):3–10.
48. Carroll KM, Rounsaville BJ. Bridging the gap: a hybrid model to link efficacy and effectiveness research in substance abuse treatment. *Psychiatr Serv*. 2003;54(3):333–9.
49. Linehan MM, Armstrong HE, Suarez A, Allmon D, Heard HL. Cognitive-behavioral treatment of chronically parasuicidal borderline patients. *Arch Gen Psychiatry*. 1991;48(12):1060–4.
50. Kernberg OF, Burnstein E, Coyne L, Appelbaum A, Horowitz L, Voth H. Psychotherapy and psychoanalysis: final report of the Menninger Foundation's Psychotherapy Research Project. *Bull Menninger Clin*. 1972;36:1–275.
51. Wallerstein R. Forty-two lives in treatment – a study of psychoanalysis and psychotherapy. New York: Guilford Press; 1986.
52. Linehan MM, Schmidt H, Dimeff LA, Craft JC, Kanter J, Comtois KA. Dialectical behavior therapy for patients with borderline personality disorder and drug-dependence. *Am J Addict*. 1999;8(4):279–92.
53. Koons CR, Robins CJ, Tweed JL, Lynch TR, Gonzalez AM, Morse JQ, Bastian LA. Efficacy of dialectical behavior therapy in women veterans with borderline personality disorder. *Behav Ther*. 2001;32(2):371–90.
54. Verheul R, van den Bosch LM, Koeter MWJ, de Ritter MAJ, Stijnen T, van den Brink W. Dialectical behaviour therapy for women with borderline personality disorder: 12-month, randomised clinical trial in The Netherlands. *Br J Psychiatry*. 2003;182:135–40.
55. Westen D, Novotny C, Thompson-Brenner H. The empirical status of empirically supported therapies: assumptions, methods, and findings. *Psychol Bull*. 2004;130:631–63.
56. Westen D, Bradley R. Empirically supported complexity: rethinking evidence based practice in psychotherapy. *Curr Dir Psychol Sci*. 2005;14:266–71.
57. Levy KN, Meehan KB, Kelly KM, Reynoso JS, Weber M, Clarkin JF, Kernberg OF. Change in attachment patterns and reflective function in a randomized control trial of transference focused psychotherapy for borderline personality disorder. *Journal of Consulting and Clinical Psychology*. 2006;74:1027–40.
58. Borkovec TD, Nau SD. Credibility of analogue therapy rationales. *J Behav Ther Exp Psychiatry*. 1972;3:257–60.
59. Rokke PD, Carter AS, Rehm LP, Veltum LG. Comparative credibility of current treatments for depression. *Psychotherapy*. 1990;27(2):235–43.
60. Corrigan PW. Getting ahead of the data: a threat to some behavior therapies. *Behav Ther*. 2001;24:189–93.
61. Scheel KR. The empirical basis of dialectical behavior therapy: summary, critique, and implications. *Clin Psychol Sci Pract*. 2000;7(1):68–86.
62. Smith LD, Peck PL. Dialectical behavior therapy: a review and call to research. *J Ment Health Counsel*. 2004; 26(1):25–38.
63. Westen D. Integrative psychotherapy: integrating psychodynamic and cognitive-behavioral theory and technique. In: Snyder CR, Ingram R, editors. *Handbook of psychological change psychotherapy processes and practices for the 21st century*. New York: Wiley; 2000. p. 217–42.
64. Linehan MM, Comtois KA, Murray AM, Brown MZ, Gallop RJ, Heard HL. Two-year randomized controlled trial and follow-up of dialectical behavior therapy vs. therapy by experts for suicidal behaviors and borderline personality disorder. *Arch Gen Psychiatry*. 2006;63(7):757–66.
65. Lynch TR. Dialectical Behavior Therapy: Recent research and developments. Conference Presentation: International Conference on Borderline Personality Disorder: National Education Alliance for Borderline Personality Disorder, London, England; 2006.
66. Linehan MM, Heard HL, Armstrong HE. Naturalistic follow-up of a behavioral treatment for chronically suicidal borderline patients. *Arch Gen Psychiatry*. 1993;50(12):971–4.
67. van den Bosch LMC, Koeter MWJ, Stijnen T, Verheul R, van den Brink W. Sustained efficacy of dialectical behaviour therapy for borderline personality disorder. *Behav Res Ther*. 2005;43:1231–41.
68. van den Bosch LM, Verheul R, Langeland W, Van Den Brink W. Trauma, dissociation, and posttraumatic stress disorder in female borderline patients with and without substance abuse problems. *Aust N Z J Psychiatry*. 2003;37:549–55.

69. McMain SF, Links PS, Gnam WH, Guimond T, Cardish RJ, Korman L, Streiner DL. A randomized trial of dialectical behavior therapy versus general psychiatric management for borderline personality disorder. *Am J Psychiatry*. 2009;166:1365–74.
70. Gunderson JG. *Borderline personality disorder: a clinical guide*. Washington, DC: American Psychiatric Press; 2001.
71. Clarkin JF, Levy KN. Influence of client variables on psychotherapy. In: Lambert M, editor. *Handbook of psychotherapy and behavior change*. 5th ed. New York, NY: John Wiley & Sons, Inc. 2003. p. 194–226.
72. Bateman AW, Fonagy P. *Mentalization-based treatment for borderline personality disorder: a practical guide*. Oxford: Oxford University Press; 2006.
73. Fonagy P, Bateman AW. Mechanisms of change in mentalization-based treatment of BPD. *J Clin Psychol*. 2006;62:411–30.
74. Fonagy P. Reflective functioning manual: version 4.1 for the application to the adult attachment interviews. Unpublished manuscript. London: University College London; 1997.
75. Bateman A, Fonagy P. Effectiveness of partial hospitalization in the treatment of borderline personality disorder: a randomized controlled trial. *Am J Psychiatry*. 1999;156(10):1563–9.
76. Bateman A, Fonagy P. Treatment of borderline personality disorder with psychoanalytically oriented partial hospitalization: an 18-month follow-up. *Am J Psychiatry*. 2001;158(1):36–42.
77. Bateman A, Fonagy P. 8-Year follow-up of patients treated for borderline personality disorder: mentalization-based treatment versus treatment as usual. *Am J Psychiatry*. 2008;165:556–9.
78. Bateman A, Fonagy P. Randomized controlled trial of outpatient mentalization-based treatment versus structured clinical management for borderline personality disorder. *Am J Psychiatry*. 2009;165:556–9.
79. Clarkin JF, Fonagy P, Gabbard GO. *Psychodynamic psychotherapy for personality disorders: a clinical handbook*. Arlington: American Psychiatric Publishing, Inc; 2010.
80. Kellogg S, Young J. Schema therapy for borderline personality disorder. *J Clin Psychol*. 2006;62:445–58.
81. Oldham JM. Borderline personality disorder and suicidality. *Am J Psychiatry*. 2006;163(1):20–6.
82. Arntz A. Borderline personality disorder. In: Beck TA, Freeman A, Davis DD, Associates X, editors. *Cognitive therapy of personality disorders*. 2nd ed. New York: The Guilford Press; 2004. p. 87–215.
83. Luborsky L, Diguier L, Seligman DA, Rosenthal R, Krause ED, Johnson S, et al. The researcher's own therapy allegiances: a "wild card" in comparisons of treatment efficacy. *Clin Psychol Sci Pract*. 1999;6:95–106.
84. Clarkin J, Levy K, Lenzenweger M, Kernberg O. The Personality Disorders Institute/Borderline Personality Disorder Research Foundation randomized control trial for borderline personality disorder: rationale, methods, and patient characteristics. *J Pers Disord*. 2004;18(1):52–72.
85. Yeomans FE. Questions concerning the randomized trial of schema-focused therapy vs. transference focused psychotherapy. *Arch Gen Psychiatry*. 2006;64(5):609–10.
86. Giesen-Bloo JH, Arntz A, van Dyck R, Spinhoven P, van Tilburg W. Outpatient treatment of borderline personality disorder: analytical psychotherapy versus cognitive behavior therapy. In: Paper presented at the World Congress of Behavioral and Cognitive Therapies. Vancouver, Canada; 17–21 July 2001.
87. Giesen-Bloo JH, Arntz A, van Dyck R, Spinhoven P, van Tilburg W. Outpatient treatment of borderline personality disorder: analytical psychotherapy versus cognitive behavior therapy. In: Paper presented at the Transference Focused Psychotherapy for Borderline Personality Symposium. New York; 16–17 November 2002.
88. Chalmers T, Smith H, Blackburn B, Silverman B, Schroeder R, Reitman D, Ambroz A. A method for assessing the quality of a randomized control trial. *Control Clin Trials*. 1981;2:31–49.
89. Yeomans FE, Clarkin JF, Kernberg OF. *A Primer of transference-focused psychotherapy for the borderline patient*. Northvale: Jason Aronson; 2002.
90. Kernberg OF. *Severe personality disorders: psychotherapeutic strategies*. New Haven: Yale University Press; 1984.
91. Steiner J. *Psychic retreats – pathological organisations in psychotic, neurotic and borderline patients*. London: Routledge; 1993.
92. Yeomans FE. When a therapist overindulges a demanding borderline patient. *Hosp Community Psychiatry*. 1993;44:334–6.
93. Clarkin J. The utility of a treatment contract. *J Pract Psychiatry Behav Health*. 1996;2:368–9.
94. Sanderson C, Swenson C, Bohus M. A critique of the American Psychiatric Practice Guideline for the treatment of patients with borderline personality disorder. *J Pers Disord*. 2002;16:122–9.
95. Kroll J. Use of no-suicide contracts by psychiatrists in Minnesota. *Am J Psychiatry*. 2000;157:1684–6.
96. Yeomans FE, Gutfreund J, Selzer MA, Clarkin JF. Factors related to drop-outs by borderline patients: treatment contract and therapeutic alliance. *J Psychother Pract Res*. 1994;3(1):16–24.
97. Smith TE, Koenigsberg HW, Yeomans FE, Clarkin JF. Predictors of dropout in psychodynamic psychotherapy of borderline personality disorder. *J Psychother Pract Res*. 1995;4(3):205–13.
98. Clarkin JF, Foelsch PA, Levy KN, Hull JW, Delaney JC, Kernberg OF. The development of a psychodynamic treatment for patients with borderline personality disorders: a preliminary study of behavioral change. *J Pers Disord*. 2001;16(6):487–95.

99. Clarkin JF, Levy KN, Lenzenweger MF, Kernberg OF. The Personality Disorders Institute/Borderline Personality Disorder Research Foundation randomized control trial for borderline personality disorder: rationale, methods, and patient characteristics. *J Pers Disord.* 2005;18(1):52–72.
100. Gunderson JG, Bateman A, Kernberg O. Alternative perspectives on psychodynamic psychotherapy of borderline personality disorder: the case of “Ellen”. *Am J Psychiatry.* 2007;164:1333–9.
101. Freud S. New introductory lectures on psychoanalysis. Oxford, England: W. W. Norton; 1964.
102. Erikson EH. *Childhood and society.* New York: Norton; 1950.
103. Stevenson J, Meares R. An outcome study of psychotherapy for patients with borderline personality disorder. *Am J Psychiatry.* 1992;149(3):358–62.
104. Levy KN, Clarkin JF, Schiavi J, Foelsch PA, Kernberg OF. Transference Focused Psychotherapy for patients diagnosed with borderline personality disorder: a comparison with a treatment-as-usual cohort, Psychotherapy, in review.
105. Cohen J. *Statistical power analysis for the behavioral sciences.* Mahwah: Erlbaum; 1988.
106. Lynch TR, Chapman AL, Rosenthal MZ, Kuo JR, Linehan MM. Mechanisms of change in dialectical behavior therapy: theoretical and empirical observations. *J Clin Psychol.* 2006;62(4):459–80.
107. Applebaum SA. *Effecting change in psychotherapy.* London: Aronson; 1981.
108. Applebaum SA. Supportive psychotherapy. In: Oldham JM, Skodol AE, Bender DS, editors. *Textbook of personality disorders.* Arlington: The American Psychiatric Publishing, Inc.; 2005.
109. George C, Kaplan N, Main M. The Berkeley Adult Attachment Interview. Unpublished manuscript. Berkeley: Department of Psychology, University of California; 1985.
110. Ablon JS, Levy RA, Katzenstein T. Beyond brand names of psychotherapy: identifying empirically supported change processes. *Psychother Theory Res Pract Train.* 2002;43(2):216–31.
111. Ablon JS, Jones EE. How expert clinicians' prototypes of an ideal treatment correlate with outcome in psychodynamic and cognitive-behavioral therapy. *Psychother Res.* 1998;8:71–83.
112. Castonguay LG, Goldfried MR, Wiser S, Raue PJ. Predicting the effect of cognitive therapy for depression: a study of unique and common factors. *J Consult Clin Psychol.* 1996;64(3):497–504.
113. DeRubeis RJ, Feeley S. Determinants of change in cognitive therapy for depression. *Cogn Ther Res.* 1990;14(5):469–82.
114. DeRubeis RJ, Evans MD, Hollon SD, Garvey MJ, Grove WM, Tuason VB. How does cognitive behavioral therapy work? Cognitive change and symptom change in cognitive therapy and pharmacotherapy for depression. *J Consult Clin Psychol.* 1990;58:862–9.
115. Ilardi SS, Craighead WE. The role of nonspecific factors in cognitive therapy for depression. *Clin Psychol Sci Pract.* 1994;1(2):138–56.
116. Jones EE, Pulos SM. Comparing the process in psychodynamic and cognitive-behavioral therapies. *J Consult Clin Psychol.* 1993;61:306–16.
117. Shaw BF, Elkin I, Yamaguchi J, Olmstead M, Vallis TM, Dobson KS, Lowery A, Sotsky SM, Watkins JT, Imber SD. Therapist competence ratings in relation to clinical outcome in cognitive therapy of depression. *J Consult Clin Psychol.* 1999;67(6):837–46.
118. Trepka C, Rees A, Shapiro DA, Hardy GE. Therapist competence and outcome of cognitive therapy for depression. *Cogn Ther Res.* 2004;28:143–57.
119. Appelbaum AH. Beyond interpretation: a response from beyond psychoanalysis. *Psychoanal Inq.* 1981;1:167–85.
120. Appelbaum AH. Psychotherapeutic routes to structural change. *Bull Menninger Clin.* 1994;58:37–54.
121. Rockland LH. *Supportive therapy for borderline patients: a psychodynamic approach.* New York: Guilford Press; 1992.
122. Rockland LH. Psychoanalytically oriented supportive therapy: literature review and techniques. *J Am Acad Psychoanal.* 1989;17(3):451–62.
123. Swenson CR. Kernberg and Linehan: two approaches to the borderline patient. *J Pers Disord.* 1989;3(1):26–35.
124. Swenson CR, Sanderson C, Dulit RA, Linehan MM. The application of dialectical behavior therapy for patients with borderline personality disorder on inpatient units. *Psychiatr Q.* 2001;72(4):307–24.
125. Swenson CR, Torrey WC, Koerner K. Implementing dialectical behavior therapy. *Psychiatr Serv.* 2002;53(2): 171–8.
126. Hoglend P, Amlo S, Marble A, Bogwald KP, Sorbye O, Sjaastad MC, Heyerdahl O. Analysis of the patient–therapist relationship in dynamic psychotherapy: an experimental study of transference interpretations. *Am J Psychiatry.* 2006;163:1739–46.
127. Garfield SL. Issues and methods in psychotherapy process research. *J Consult Clin Psychol.* 1990;58(3):273–80.
128. Weinberger J. Common factors aren't so common: the common factors dilemma. *Clin Psychol Sci Pract.* 1995;2:45–69.
129. Coccaro EF, Harvey PH, Kupshaw-Lawrence E, Herbert JL, Bernstein DP. Development of neuropharmacologically based behavioral assessments of impulsive aggressive behavior. *J Neuropsychiatry Clin Neurosci.* 1991;3(Suppl. 2):44–51.

130. Patton JH, Stanford MS, Barratt E. Factor structure of the Barratt Impulsiveness Scale. *J Clin Psychol.* 1995;51:768–74.
131. Spielberger CD, Gorsuch RL. Manual for the state-trait anxiety inventory. Palo Alto: Consulting Psychologists Press; 1983.
132. Beck AT, Ward CH, Mendelson M, Mock J, Erbaugh J. An inventory for measuring depression. *Arch Gen Psychiatry.* 1961;4:561–71.
133. Weissman MM, Bothwell S. Assessment of social adjustment by patient self-report. *Arch Gen Psychiatry.* 1976;33:1111–15.
134. Main M, Goldwyn R. Adult Attachment scoring and classification system. Unpublished manuscript. University of California at Berkeley; 1984.

Chapter 9

What Happens After Treatment: Can Structural Change be a Predictor of Long-Term Outcome?*

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Keywords Follow-up • Long-term psychotherapy • Outcome research • Psychoanalytic/psychodynamic • Psychotherapy • Structural change

The first systematic follow-up study of therapeutic results was delivered by the Berlin Psychoanalytic Institute and reported by Fenichel [1]. This study set a precedent that many psychoanalysts were to follow in subsequent years [2–4] (for a review see [5]). At times, the work of these analysts had far-reaching social impacts; the studies Dührssen [6] performed at the Berlin Central Institute for Psychogenic Illnesses led to the inclusion of psychodynamic (PD) and psychoanalytic (PA) treatments among the forms of therapy covered by health insurance in Germany. From the available literature, it is clear that the PA community has cared about the issue of the long-term effects of treatment from early on.

Follow-up studies are generally conducted in order to establish whether the effects of psychotherapy remain stable after the completion of treatment. Of primary interest in such investigations is the persistence of effects with respect to a specific form of treatment as compared to another or to a control condition. Such studies provide evidence concerning whether the therapeutic effect of a treatment remains constant or even increases up to a follow-up measurement at a specified point in time [7].

Using the data from the Heidelberg–Berlin Study, we adopted a different approach in investigating the long-term effects of therapy outcomes. We addressed the following question: Which specific type of change should occur by the end of therapy in order to ensure that the broad positive effects

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that influence many central life domains are found later on (at a follow-up)? Which forms of pre–post change are associated with such effects, after a longer interval of time has elapsed following therapy completion? The following example illustrates these points of interest: let us assume that an investigation measures changes in symptom distress and interpersonal problems from the onset to the end of therapy. An outcome criterion that reflects treatment effects in various life domains is identically applied at the end of therapy and at a follow-up. It is found that while change in symptom distress and interpersonal problems both highly correlate with the criterion at the end of therapy, only one of the two measures (e.g., changes in interpersonal problems) continues to significantly correlate with assessments at 3-year follow-up. This result may suggest that in comparison with changes in symptom distress, pre–post changes in interpersonal problems represent a more important outcome due to their association with long-term, extensive positive changes in the life of the patient. In a further step, this finding might be used to infer the type of change that therapeutic work should focus on.

PA theory of personality uses the term “structure” to refer to the temporally stable organization of personality and the habitual patterns that individuals adopt in an attempt to resolve their unconscious conflicts [8, 9]. PA theory of therapy thus postulates a special form of change that is assumed to account for particularly persistent effects: so-called “structural change.” Structural changes are differentiated from more superficial changes, under which, for example, symptom reduction is subsumed. It is assumed that changes at this deeper level of the personality are essential in attaining persistent therapeutic effects at all levels (including the symptomatic level). The techniques employed within PA treatment (e.g., encouragement of regression, interpretation of transference, etc.) aim to promote such “structural changes” [10–12].

Investigations suggest that changes of this type are not an exclusive characteristic of PA treatments, but can also be achieved with other forms of psychotherapy, such as expressive or supportive approaches [13, 14]. When considering the pivotal importance of structural change for the self-image of PA therapy, it is astounding that this concept has remained largely undefined for a considerable length of time, has scarcely been empirically investigated, and has only recently been subject to operationalization attempts. These attempts include: the Karolinska Psychodynamic Profile developed by Weinryb and Rössel [15]; the Scales of Psychological Capacities by Wallerstein and coworkers [16, 17]; the Reflective Functioning Scale designed by Fonagy et al. [18]; the Shedler-Westen Assessment Procedure [19]; and the Heidelberg Structural Change Scale (HSCS) [20] which is based on the Operationalized Psychodynamic Diagnostic (OPD) system [21, 22]. Despite substantial differences between these instruments, a common feature is their reliance on complex clinical ratings of the patient and his or her changes that can only be conducted by well-trained raters. The patient is not considered able to perform self-ratings of structural change.

The majority of the above-listed instruments – with the exception of the HSCS – are conceptually designed to measure change as a reduction in unfavorable personality styles, or a dissolution of inner inhibitions or other constraints. Change is thus implicitly defined as an abatement or eradication of pathology. This definition is conceptually problematic when it comes to measuring change in the context of PA therapy. Since the famous clinical follow-up investigations of Pfeffer [23], which were supported by Schlesinger and Robbins [24], more recent systematic studies have confirmed that patients remain susceptible with respect to their central conflicts for a long time after successful courses of therapy, and they transiently react in a neurotic manner when conflict-laden topics are touched upon (for example, [25]). What is fundamentally changed is rather the individual’s ability to deal with such situations in a regulatory fashion. Following therapy, the patient is able to find healthier solutions in place of the neurotic ones that were previously employed. These observations suggest that changes due to PA treatment should be conceptualized as changes in methods of dealing with conflictual tendencies and vulnerabilities, rather than as the elimination of these characteristics. Adaptive handling of critical situations becomes possible when the patient gains not only cognitive, but, more importantly, emotion-based insight into his or her own unconsciously motivated problematic areas of life [26]. We maintain that this form of change is captured by the HSCS, which measures therapy-based changes in dealing with individually defined problem areas [20, 27].

In PA literature, it has been argued that in contrast to purely symptomatic changes, or changes in overt behavioral patterns, structural changes broadly impact many life domains and are associated with a change in the experience of self [28]. Changes of this kind are not easily captured using, for example, pre–post comparisons, since it is not only certain aspects of the patient which are subject to change (symptoms, behavior patterns, relationship problems, etc.) but the entire reference system within which the patient evaluates his or her experience and behavior. According to Sandler and Sandler [29], this occurs when the patient attains reconciliation with previously unaccepted parts of the self, and, in so doing, is able to temper judgements of the self and others. In some circumstances, it may be possible that a problem – for example, in the interpersonal domain – can therefore be solved without the overt changes that the patient desires at the onset of therapy, through changes in his or her internal judgements. In this case, the patient would nonetheless retrospectively state that his or her interpersonal difficulties had improved as a result of therapy. Similarly, a patient may also retrospectively note favorable changes in life domains in which no problems had been perceived prior to the onset of therapy (which are, however, critically identified in hindsight). Retrospective evaluations of change thus reflect shifts in a patient’s internal reference system in addition to manifest changes in symptoms and behavior. In our view, it is therefore worth considering whether retrospective evaluations might for this very reason represent an option in assessing more fundamental therapeutic changes from the perspective of the patient.

Retrospective evaluations are viewed critically in the research literature. Pre–post measures or rather pre–post comparisons [30] are considered to be a standard for measurement of success. Critics point out that numerous investigations have repeatedly demonstrated only a weak correlation between retrospective evaluations and prospectively conducted pre–post measurements.

However, patients do not necessarily expect a certain level of symptom change as a result of their therapy; rather, they expect the attainment of personal goals which vary considerably according to the individual. In retrospective outcome evaluations, symptom changes are therefore not objectively evaluated through pre–post measurements, but rather assessed in terms of the attainment of a personal goal. In line with this argumentation and with reference to the considerations discussed earlier, we would like to add that fundamental therapeutic changes can result in further modification of these individual goals and in turn of the patient’s evaluation criteria. We therefore advocate that retrospective evaluations of change be employed for the assessment of outcome alongside pre–post comparisons. Such criteria were applied in the current study for the purpose of assessing the short- and long-term effects of treatment in various life domains.

According to PA clinical experience, the process of change does not conclude with the completion of therapy. In the “post-analytic phase” [26], further important developmental steps occur. Giving up the transference relationship through a mourning process may lead to the identification with the function of the analyst that is theoretically associated with the formation of self-analytic skills [31]. While the end of therapy to a certain extent marks a completion of the work of the analyst – and in favorable cases, the achievement of structural changes – many effects do not become apparent until a later date, when the patient has attained a higher level of autonomy and has acquired methods of independent self-regulation on the basis of newly gained insights. In light of this delayed manifestation of therapeutic effects, PA researchers call for a distinction between treatment outcomes measured at the end of therapy and those measured at a later date [26, 32, 33]. An interval of between 2 and 5 years is recommended as an adequate time frame for a follow-up at which point persistent therapeutic effects in the life of the patient can be detected [33]. In line with this view, we assume in the present study that structural changes (pre–post) in particular predict therapeutic effects that can be measured after a longer post-therapy interval.

The present investigation is based on data collected in the Heidelberg–Berlin Study [34–36], which investigated the differential effects of two forms of PD therapy. Rather than focusing on these differential treatment effects, however, the current investigation adopted the research approach outlined at the outset of the introduction in order to determine which pre–post changes (i.e., changes from the onset to the end of therapy) best predicted retrospective patient assessments in the total

patient group at the end of therapy and at 1-year and 3-year follow-up. It was assumed that structural change would be a better predictor of the criterion as compared with changes in symptoms or interpersonal problems, and that this would apply regardless of treatment group. However, in order to examine a potential influence of group on the association between predictors and criterion, interactions between pre–post measures and treatment form were nonetheless subject to statistical testing.

Method

Participants

The original study was conducted as a conjoint investigation in Heidelberg and Berlin. Design and results are described in detail in Grande et al. [35]. Psychoanalysts in private practice were requested to include consecutive patients seeking treatment. Patients with psychotic disorders and those below the age of 18 years were excluded. Sixty-two cases in which patients completed their therapy as planned and also participated in the study to the very end were initially included. Nine cases dropped out from the study. Five other patients terminated their study participation during the course of therapy while continuing with their treatment.

The study was originally designed to compare two therapeutic approaches, namely PA and PD treatment (compare [35]). Three of 62 cases were excluded from data analysis due to the nature of the original study design and the fact that the initially planned therapy method (PA or PD) was so extensively modified by the respective therapist in the course of treatment that it was no longer possible to allocate these three treatments to their original group. Fifty-nine cases thus remained; 32 in the PA group and 27 in the PD group. These patients formed the basis of our analyses. Of these, 55 patients (93.2%; 29 PA and 26 PD) participated in the 1-year follow-up and 53 (89.8%; 29 PA and 24 PD) in the 3-year follow-up.

The average age of the 59 patients was 37.3 years ($SD=9.4$); 39 (66.1%) were women and 20 (33.9%) men. Thirty-two (54.2%) patients were high school graduates; the remaining 27 left school at an earlier stage. The diagnostic evaluation was performed by the individual therapists based on the International Classification of Diseases (ICD-10 [37]). During the planning of the study, this procedure was instrumental in substantially enhancing study acceptance among therapists. All analysts were provided with ICD research criteria [37] and were also given the opportunity to discuss and clarify respective cases with project representatives in instances of diagnostic uncertainty. Analysts took frequent advantage of this option. Personality disorders were diagnosed in accordance with ICD-10 (F60, F61) by independent raters based on interviews (carried out in line with OPD guidelines, see below). These raters were highly experienced in the use of the ICD. Since the narcissistic personality disorder is not included in the ICD, this diagnosis was undertaken in accordance with DSM-IV criteria (and encoded as F60.81). The most frequent ICD diagnoses were depressive disorders (F32–34: 66.1%), anxiety disorders (F41: 40.7%), and somatoform disorders (F45: 37.3%), followed by compulsive disorders (F42: 22.0%), sexual dysfunctions (F52: 22.0%), adjustment disorders (F43: 18.6%), and eating disorders (F50: 18.6%). Multiple diagnoses were allowed. Thirty-one (52.5%) patients were diagnosed with a personality disorder, most frequently narcissistic (11 cases F60.81: 18.6%) or borderline (six cases F60.31: 10.2%). (Further personality disorders: two cases of emotionally unstable personality disorder impulsive type F60.30, dependent personality disorder F60.7, and histrionic personality disorder F60.4; one case of paranoid personality disorder F60.0, anankastic personality disorder F60.5, and anxious avoidant personality disorder F60.6; one dual diagnosis F60.1 and F60.81; four unspecified personality disorders.) An average of 2.5 clinical diagnoses (comparable with Axis I in DSM) and three diagnoses including personality disorders were made per patient.

The Global Severity Index (GSI) of the Symptom Checklist-90-Revised (SCL-90-R [38, 39]) was used to measure current overall distress. The mean value at the onset of therapy was $M=1.06$ ($SD=0.59$). In comparison, Brockmann et al. [40] report a mean GSI value of $M=0.92$ ($SD=0.54$) for an unselected sample of 31 patients at the onset of psychoanalytically oriented outpatient psychotherapy, and Schauenburg and Strack [41] found a mean value of $M=1.22$ ($SD=0.65$) in a mixed group of 410 patients from PA practices.

For the total score of the Inventory of Interpersonal problems (IIP [42]), we found a mean value of $M=1.62$ ($SD=0.49$) at therapy onset. In comparison, Brockmann et al. [40] report a mean value of $M=1.69$ ($SD=0.43$) at the start of therapy for their unselected patient sample. In a controlled study with a sample of 63 patients receiving outpatient psychoanalysis for a depressive disorder, Huber et al. [43] found a mean IIP total value of $M=1.81$ ($SD=0.38$). In sum, the degree of impairment shown by our patients was thus representative of that which is generally found under naturalistic conditions in psychoanalytically oriented outpatient therapies in Germany.

Therapists

In order to qualify for participation in the study, therapists were required to have completed PA training at an institute recognized by the German Association for Psychoanalysis, Psychotherapy, Psychosomatics, and Depth Psychology (DGPT) – the umbrella organization for PA therapy schools in Germany. A course of training as stipulated by the statutes of the DGPT qualifies and entitles therapists to recover the costs of PA and PD therapies from statutory German health insurance schemes. The 59 treatments were conducted by 45 analysts from Heidelberg and Berlin. Some therapists [14] contributed one PA and one PD case to the study, others either one PA or one PD case. The analysts had a mean age of 51.8 years ($SD=6.7$); 29 (60.4%) were women and 19 (39.6%) men. Twenty-six (54.2%) were psychologists and 22 (45.8%) physicians (psychiatrists). Average professional experience as psychotherapist was 20 years ($SD=7.59$; *min.* 5 years, *max.* 40 years), and approximately half had completed their PA training at least 7 years ($SD=7.35$; *min.* 2, *max.* 31 years) before the start of the project. Accordingly, all analysts involved in the study were well-trained and experienced psychotherapists.

Treatment

Differences between the two PD approaches, PA and PD, did not form the focal point of this investigation. Therapeutic format was, however, considered as a potential moderator. PA was primarily (for more than half of therapy duration) conducted with the patient in a lying position, with a frequency of at least three sessions per week, and a total of at least 150 sessions. PD was for the most part conducted with the patient in a sitting position, with a frequency of one session per week, and a total of between 25 and 100 sessions. Given its connection with the therapeutic techniques employed and the objectives associated with the respective treatment approach, session frequency represented a crucial defining factor. With an average duration of 44.2 months ($SD=14.3$; $Mdn=43.8$), PAs lasted almost twice as long as PDs, which had an average duration of 24.2 months ($SD=8.5$; $Mdn=23.1$). In the PA group, the number of sessions ($M=310$; $SD=102.9$; $Mdn=300$) was more than four times higher than in the PD group ($M=71.1$; $SD=25.5$; $Mdn=75$). Variances of duration in both groups were, however, substantial reflecting the wide range of session numbers.

As mentioned previously, PA and PD are associated with different therapeutic techniques and objectives. Therapists used an item checklist every 3 months to indicate their present therapeutic

Table 9.1 OPD axes and list of potential problem areas

Relationship
Individualized formulation of a core dysfunctional relationship pattern
<i>Life-determining conflicts</i>
1. Dependence/autonomy conflict
2. Submission/control conflict
3. Care/autarchy conflict
4. Self-value conflicts
5. Guilt conflicts
6. Oedipal-sexual conflicts
7. Identity conflicts
<i>Structural capacities/vulnerabilities</i>
1. Capacity for experience of self
2. Capacity for self-control
3. Capacity for defence
4. Capacity for object-experience
5. Capacity for communication
6. Capacity for attachment

aims and the treatment techniques employed. In line with the standard commentary on the German guidelines for psychotherapy [44], supportive and focal interventions and objectives were evaluated as being characteristic of PD (items: clarify, advise, relieve stress, encourage, structure, focus-oriented work on personality problems), whereas regression and transference-oriented approaches were classified as being characteristic of PA (items: encouragement of/work on transference, admission/encouragement of regressive processes, work on dreams, unrestricted and extensive work on personality problems). In each case, these items were summated to form a PD or a PA score, which was then divided by the number of items [35]. Scores thus ranged from 0 to 1, with a maximum score of 1 indicating that all items typical of one of the treatment forms had been checked. Scores were averaged across all assessment occasions. In this way, differences between the PD and PA groups were established. The average PA score was 0.50 ($SD=0.19$) in the PA group and 0.23 ($SD=0.17$) in the PD group. This difference was significant, T [45]=5.747, $p<0.001$, one tailed. The average PD score was 0.22 ($SD=0.15$) in the PA group and 0.36 ($SD=0.16$) in the PD group. This was once again significant, T [45]=3.64, $p<0.01$, one tailed. Effect sizes [46] were 1.53 for the PA score and 0.96 for the PD score.

Measures

Structural changes were measured using a two-step approach: in a first step, core problem areas were defined for each patient based on the OPD; the second step involved an assessment of change for each patient over the course of therapy with respect to the identified problem areas. Outcome measures were thus individualized. The OPD [29] comprises three PD axes which are relevant in this context (Table 9.1): the relationship axis captures the dominant dysfunctional relationship patterns displayed by a patient; the conflict axis assesses the presence and degree of intensity of eight types of conflict; the structure axis defines patients' functional levels with regard to six structural capacities or vulnerabilities. (*Cave:* Given the similar-sounding terms "structure" and "structural change," it is necessary to clearly distinguish between the two: while "structure" in the OPD refers to psychological capacities or deficits, "structural change" in the context of the PA discussion denotes a basic form of personality modification with respect to relationship patterns, unconscious conflicts, and patients' structural features in the sense of the OPD.)

The validity of the OPD has been investigated in a large number of studies, the results of which have been summarized and discussed by Cierpka et al. [47]. In the meantime, several other studies on the validity of the OPD in terms of relationship diagnostics [48], conflict diagnostics [49], and structure diagnostics [50] have been published. Overall, these studies show that the three PD axes of the OPD can be used to capture central PA concepts and to describe mental dysfunctions.

OPD ratings are based on clinical interviews conducted in accordance with the OPD interview manual [21]. Interviews were conducted by study collaborators (i.e., not by the therapists) and video recorded. The interview, which takes between 1 and 1½h, focuses on the subjective experiences and behavior of the patient within personal relationships with the aim of identifying indications of patients' latent conflicts and structural features. For the purpose of assessing changes, the interviews were reconducted at the end of treatment, and once again video recorded.

Based on the OPD assessment, core problem areas were defined for each patient. The term "core" refers to those aspects of the patient's OPD profile that were presumed to produce and/or sustain psychic and somatic symptoms and interpersonal difficulties. The definition of such problem areas thus carried the status of a PD hypothesis, inferring that change had to take place within these areas in order to effectuate a substantial reduction or disappearance of patients' symptoms and complaints. Since therapists were ignorant to the core problem identified, they were not able to gear their interventions towards alleviating problems in these areas. The items listed in Table 9.1 were used to determine the core problem areas. Taking these items together (one core dysfunctional relationship pattern, eight types of conflict, and six dimensions of structural capacity/vulnerability) produces a total of 15 problematic features from which problem areas can be selected for each patient. Previous studies [27, 51] have indicated that a selection of five items from the overall OPD profile is sufficient to identify a patient's problem constellation. Two independent raters carried out the identification of problem areas. Given the importance of valid item selection for this procedure, discrepancies between raters were discussed in order to reach a consensus. In cases of doubt, a third expert was included.

In a second step, the HSCS (Fig. 9.1) was used to identify the way in which patients dealt with the selected problem areas. Ratings were performed based on the video-recorded OPD interviews. The HSCS is a modified form of the Assimilation of Problematic Experiences Scale [52–54] which is more strongly oriented towards a PA model of process and change [20]. Each stage of the scale marks a therapeutically significant step, beginning with increasing awareness of a previously unperceived problem area, extending to the therapeutic working through of associated aspects and experiences, and then to subsequent basic changes in both the patient's experience and specific external behaviors. The scale was applied at the onset and the end of treatment in order to assess the way in which the patient dealt with the problem areas represented by the selected OPD items. This was carried out for each of the five problem areas. Based on the assumption that these problems interact with one another and collectively produce the patient's difficulties, mean structural change scores were calculated by averaging HSCS ratings across the five problem areas. Structural changes were thus represented as shifts in mean HSCS scores along the scale. For calculation purposes, intermediate scale points (e.g., 3– and 3+, see Fig. 9.1) were assigned corresponding scores (e.g., 2.7 and 3.3, respectively). To date, the HSCS has been employed in two studies [27, 51, 55].

Interrater reliability for the selection of the five OPD core problem areas and the HSCS rating was measured based on a total of six experienced raters. In line with specifications of the OPD Task Force [21], all raters received at least 60 h of training in applying the OPD; performance checks were conducted based on predefined criteria [56] as well as using four to six standard videos before raters began their work. Raters were subsequently trained to use the HSCS by two of the developers of the scale. Compared with the OPD ratings, the HSCS represents a less demanding instrument, and its application is rapidly learned. Performance checks were once again conducted using four to six standard videos, following which raters entered the study. Since the study extended over a period of several years, the entire group met regularly (approximately four times per year) to perform collective ratings and discuss discrepancies.

Fig. 9.1 Heidelberg Structural Change Scale
(Source: Reprinted with permission from Rudolf et al. [36])

Stages	Manual excerpt
1. <i>Problem area warded off</i>	exact 1 match 1+ tendency ↓ The problem is entirely unconscious; associated experiences are evaded; problematic behaviour is ego-syntonic; the patient has "no problem" with the problem area
2. <i>Unwanted preoccupation with the problem</i>	tendency ↑ 2- exact 2 match 2+ tendency ↓ Unpleasant feelings and thoughts in connection with the problem area can no longer be immediately rejected, but preoccupation with the problem is reluctant; external confrontations with the problem take place, but are rejected as disturbances; the patient does not realise that problems might be associated with his/her own person
3. <i>Vague awareness of the problem</i>	tendency ↑ 3- exact 3 match 3+ tendency ↓ Patient notices/suspects the existence of a problem that is part of him/herself and cannot simply be rejected; recurrence causes the problem to take on a continuing existence; negative affects originate from the tension between the insistent nature of the problem and the pat.'s defensive/aversive attitude
4. <i>Acceptance and exploration of the problem</i>	tendency ↑ 4- exact 4 match 4+ tendency ↓ The problem begins to take on a new shape within the pat.'s consciousness; there are incipient indications of an active, "head-on" preoccupation with the problem; the problem can now be formulated as an "assignment" and can hence be made the subject of therapeutic work; destructive, rejective responses may interfere with this attitude but can no longer undermine it altogether
5. <i>Deconstruction in the problem area</i>	tendency ↑ 5- exact 5 match 5+ tendency ↓ Querying and disintegration of accustomed coping modes; uncertainty concerning evaluations of own person and others; perception of own limitations and deficiencies; resignation and moods of despair alternate with urges toward reparation; old modes are lost and cut off, new ones not yet accessible
6. <i>Reorganization in the problem area</i>	tendency ↑ 6- exact 6 match 6+ tendency ↓ Abandonment and final relinquishing of accustomed coping modes; pat. is increasingly self-reliant in his/her own experience and able to take control of and assume responsibility for his/her own life in the problem area; increasingly conciliatory approach to problem area; solutions materialize spontaneously and unexpectedly; re-integration
7. <i>Integration of the problem</i>	tendency ↑ 7- exact 7 match Dealing with the problem has become something natural; the area has lost its special significance in the eyes of the pat.; the problem is something which belongs to the past, preoccupies pat. as a memory

Two raters assessed each case, and different groups of raters performed the ratings at the onset and the end of therapy. In the case of material collected at the end of therapy, the Berlin group rated the Heidelberg material and visa versa. Raters assessing the HSCS at the end of treatment were informed about the problem areas which had been defined for each patient at the onset of treatment but otherwise had no baseline information about the patient or information concerning developments over the course of therapy. For the selection of problem areas from the OPD profile at the start of treatment, a kappa of 0.62 was calculated [46]. With regard to HSCS ratings, an interrater agreement of ICC (1.1)=0.83 was found.

The SCL-90-R [38, 39] was used by patients for self-assessment of symptom status. The GSI served as a measure of present overall distress. For the assessment of relationship problems, the German version of the IIP-D [42] was applied. Here, the total score was also used; due to the heterogeneity of the patient group, it would not have been possible to test hypotheses on specific symptom clusters or specific interpersonal problems. Hence, therapy effects were not assessed with reference to SCL-90-R or IIP-D subscales. Both the SCL-90-R and the IIP-D were completed by patients at the start and end of therapy.

At the end of treatment as well as at 1-year and 3-year follow-up, patients further performed a *retrospective evaluation of therapy outcome* using an eight-item questionnaire covering various aspects of therapeutic change: mental symptoms, somatic symptoms, interpersonal problems, coping with life demands, overall capacity, enjoyment potential, self-esteem, and general contentment with life. Questionnaire instructions were as follows: "Please call to mind the troubles and difficulties from which you suffered upon beginning psychotherapy. When you view yourself now: To what extent have these troubles and difficulties changed since back then?" These instructions were followed by the above-listed aspects of change (e.g., "interpersonal problems") which were to be rated on a six-point scale. With the anchor points -1 deteriorated/0 unchanged/+1 slightly improved/+2 clearly improved/+3 considerably improved/+4: maximally improved. Internal consistency (Cronbach's alpha) for the total scale amounted to 0.94. Items were summated and divided by the number of items; resulting values ranged between -1 and +4.

This instrument for retrospective outcome evaluation had been developed in the context of a previous investigation on 162 courses of PD therapy (the so-called Berlin Psychotherapy Study, compare [45]). Patients in this study were requested to describe changes which in their eyes had been central in the form of free text. A qualitative analysis of these texts leads to the identification of the change categories which are assessed by the eight items included in the present instrument.

Mean values and standard deviations for the retrospective assessment scale were as follows: $M=2.00$ ($SD=1.01$) at the end of treatment, $M=1.94$ ($SD=1.01$) at 1-year follow-up and $M=2.02$ ($SD=1.00$) at 3-year follow-up. On average, patients thus rated their situation as having "clearly improved" across all assessment occasions. In each case, average ratings were spread approximately one scale point around the mean.

Data Analysis

The investigation examined how well various pre-post changes were able to predict the retrospective outcome evaluations of patients at the end of treatment and at 1-year and 3-year follow-up. Pre-post changes were measured using the SCL-90-R (GSI), the IIP-D (total score), and the HSCS (mean rating with respect to the five problems areas). Residual scores resulting from a regression of initial scores on scores at the end of therapy were used as a measure of change. This approach corrects for regression to the mean and is recommended for application when employing individualized measures of change such as the HSCS [57].

Table 9.2 Summary of nine hierarchical multiple regression analyses for the prediction of patient evaluations of treatment outcome: separate analyses for each measure of pre–post change

		Step 1: Change measure only	Step 2: Change measure $\times$ treatment
End of therapy ($n=54$)	GSires	$\Delta R^2=0.26$, $\Delta F(1, 52)=18.70^{***}$	$\Delta R^2=0.04$, $\Delta F(1, 51)=3.30$
	IIPtotalres	$\Delta R^2=0.45$, $\Delta F(1, 52)=43.14^{***}$	$\Delta R^2=0.00$, $\Delta F(1, 51)=0.10$
	HSCSres	$\Delta R^2=0.22$, $\Delta F(1, 52)=14.44^{***}$	$\Delta R^2=0.00$, $\Delta F(1, 51)=0.00$
One-year follow-up ($n=53$)	GSires	$\Delta R^2=0.10$, $\Delta F(1, 52)=5.50^*$	$\Delta R^2=0.00$, $\Delta F(1, 51)=0.01$
	IIPtotalres	$\Delta R^2=0.17$, $\Delta F(1, 52)=10.60^{**}$	$\Delta R^2=0.00$, $\Delta F(1, 51)=0.00$
	HSCSres	$\Delta R^2=0.25$, $\Delta F(1, 52)=17.26^{***}$	$\Delta R^2=0.02$, $\Delta F(1, 51)=1.37$
Three-year follow-up ($n=50$)	GSires	$\Delta R^2=0.01$, $\Delta F(1, 52)=0.66$	$\Delta R^2=0.01$, $\Delta F(1, 51)=0.47$
	IIPtotalres	$\Delta R^2=0.06$, $\Delta F(1, 52)=2.87$	$\Delta R^2=0.06$, $\Delta F(1, 51)=2.99$
	HSCSres	$\Delta R^2=0.20$, $\Delta F(1, 52)=11.90^{***}$	$\Delta R^2=0.00$, $\Delta F(1, 51)=0.04$

GSires residual scores of the Global Severity Score (SCL-90), *IIPtotalres* residual scores of the total score of the Inventory of Interpersonal Problems (*IIP*), *HSCSres* residual scores of the Heidelberg Structural Change Scale (*HSCS*), ΔR^2 increase in explained variance associated with the step

* $p<0.05$; ** $p<0.01$; *** $p<0.001$

For the prediction of outcome evaluations, a series of hierarchical regression analyses were performed. Three residual change scores (*GSires*, *IIPtotalres*, and *HSCSres*) were separately entered as predictors of the three outcome evaluations. The first predictor to be entered into each regression analysis was the measure of change (e.g., *GSires*), followed by the interaction between the measure of change and the treatment (e.g., Treatment $\times$ *GSires*) in order to examine the potential influence of treatment form on the prediction of outcome. With three measures of change and three outcome criteria, a total of nine analyses were necessary.

We hypothesized that, in line with the asserted long-term effects of structural change, pre–post changes in the *HSCS* (*HSCSres*) would be significantly more predictive of outcome at 1-year and certainly at 3-year follow-up as compared with pre–post changes in both *IIPtotalres* and *GSires*. Predictive superiority of the *HSCSres* exclusively at 1-year follow-up (but not at 3-year follow-up) would thus not confirm our hypothesis. Predictive superiority of *HSCSres* exclusively at 3-year follow-up would limit the validity of our hypothesis to very long-term effects. This would correspond with the expectation found in other PA follow-up studies that long-term effects can only be examined 2–5 years after therapy completion (compare [33]). We therefore examined two hypotheses, a limited hypothesis (relating to the 3-year follow-up) and an extended hypothesis (additionally relating to the 1-year follow-up). Finally, differences between treatment forms were not expected to have any influence on the described associations, and the interaction between treatment and measures of change was not expected to be significant.

No predictions were made regarding the relative strength of the associations between the three measures of change and the outcome criterion at the end of therapy; however, a comparison of these associations was also calculated.

In testing the hypotheses, correlations between outcome criterion and *HSCSres* were compared with correlations between outcome criterion and *IIPtotalres* as well as with correlations between outcome criterion and *GSires*, at each of the three assessment occasions. The significance of observed differences ($\Delta r_{ab} - r_{ac}$) was subsequently examined. Since two comparisons were required for testing each hypothesis, a $p=0.025$ level of significance was selected based on the Bonferroni correction. The correlations required for comparisons were calculated in Step 1 of each of the hierarchical regression analyses described above (see also Table 9.2).

Results

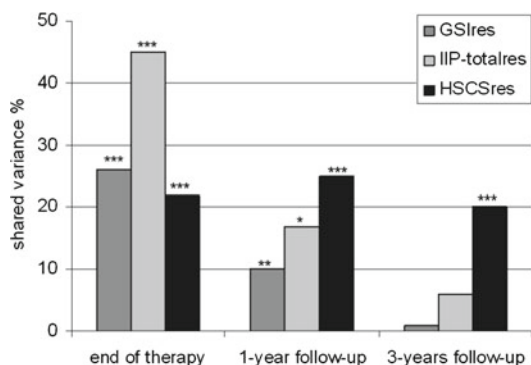
Table 9.2 presents the results of the nine regression analyses, in which the predictive value of the three measures of change was separately investigated. For the prediction of outcome evaluations, pre–post changes in GSI accounted for 26.5% of criterion variance at the end of therapy, 9.7% at 1-year follow-up, and 1.4% at 3-year follow-up. The variable IIPtotalres accounted for 45.3% of variance at the end of therapy, 17.2% at 1-year follow-up, and 5.6% at 3-year follow-up. In contrast, HSCSres accounted for a highly significant amount of variance in the prediction of all three outcome criteria: 21.7% at the end of therapy, 25.3% at 1-year follow-up, and 19.9% at 3-year follow-up. These first step results of regression analyses are also presented in Fig. 9.2. Interactions between treatment form and the three measures of change (Table 9.2) did not account for a significant amount of variance at any of the three retrospective assessment occasions.

Differences between HSCSres-criterion correlations and IIPtotalres-criterion correlations were as follows: $z = -1.75$ ($p = 0.042$) at the end of therapy, $z = 0.64$ ($p = 0.261$) at 1-year follow-up, and $z = 1.40$ ($p = 0.081$) at 3-year follow-up. The z -value at the end of therapy has a negative sign, thus indicating that the correlation between IIPtotalres and the criterion was higher at this occasion than the correlation between HSCSres and the criterion. (This effect was reversed at both follow-ups.)

Differences between HSCSres-criterion correlations and GSIres-criterion correlations were as follows: $z = -0.34$ ($p = 0.367$) at the end of therapy, $z = 1.30$ ($p = 0.097$) at 1-year follow-up, and $z = 2.04$ ($p = 0.021$) at 3-year follow-up. The z -value at the end of therapy once again has a negative sign thus indicating that the correlation between GSIres and the criterion was higher at this occasion than the correlation between HSCSres and the criterion. (This effect was again reversed at both follow-ups.)

In light of the striking decrease in IIPtotalres-criterion and GSIres-criterion correlations from the end of therapy across 1-year follow-up and to 3-year follow-up, we finally examined post hoc whether these changes were statistically significant. Analyses were exclusively based on the 50 cases for which data were fully available at both assessment occasions. The difference between IIPtotalres-criterion correlations at the end of therapy and at 3-year follow-up was $z = 3.43$ ($p < 0.001$); between GSIres-criterion correlations at the end of therapy and at 3-year follow-up $z = 2.84$ ($p = 0.002$); and between HSCSres-criterion correlations at the end of therapy and at 3-year follow-up $z = 0.42$ ($p = 0.33$). There was thus no significant change in HSCSres-criterion correlations from the end of therapy to 3-year follow-up.

Fig. 9.2 Shared variances between predictors and criterion. *GSIres* residual scores of the Global Severity Score (SCL-90), *IIPtotalres* residual scores of the total score of the Inventory of Interpersonal Problems (IIP), *HSCSres* residual scores of the Heidelberg Structural Change Scale (HSCS); * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$



Discussion

Results confirm that, in comparison with symptomatic changes, structural changes achieved by the end of therapy are a significantly better predictor of retrospective outcome evaluations conducted by the patient 3 years after therapy completion. In other words, when patients are requested to evaluate their therapy-related progress in various life domains 3 years after finishing therapy, their evaluations are significantly better explained by the structural changes as compared with the symptomatic changes achieved by the end of therapy. This effect was not found at 1-year follow-up.

Our hypotheses concerning the comparison between structural and interpersonal changes were not confirmed for either 3-year or 1-year follow-up. A post hoc analysis revealed, however, that while the association between interpersonal changes and retrospective outcome evaluation was significantly stronger than that between structural changes and the criterion at the end of therapy, it clearly decreased and became even weaker than this relationship at 3-year follow-up. This decrease was highly significant and shows that when patients are asked to retrospectively evaluate the progress they have made as a result of therapy, their evaluations at the end of therapy are significantly stronger determined by interpersonal changes than is the case 3 years later.

Pre-post structural change is the only measure that continues to (highly) significantly correlate with the patient's retrospective outcome evaluation after the end of treatment.

We consider these results to be consistent with the PA view that treatment should strive to achieve fundamental changes in the patient's personality changes that have long-term effects in the life of the patient. Since change processes often continue beyond the end of therapy, the complete scope of these effects is not necessarily immediately visible to the patient. As a result, it is frequently only with hindsight that patients recognize and appreciate the value of their therapy. The patient's experience at the end of therapy is more strongly influenced by other therapeutic effects, namely by changes in the areas of symptom distress and relationship problems. When it comes to evaluating those specific therapeutic changes which will have a long-term effect on the patient's life at this point in time, a clinical expert assessing the structural changes seems able to provide a more reliable judgment, with which the patient somewhat "belatedly" then agrees.

In selecting retrospective patient outcome evaluations as outcome criterion in the present study, we chose to assign this measure a central role. As discussed in the introduction, such measures have been challenged in the literature and judged rather critically in comparison to pre-post measures [30, 58]. However, we argue that retrospective outcome evaluations capture something different from that which is reflected by prospectively measured pre-post changes, given that they are based on relative assessments that relate to individual goals rather than absolute assessments of therapeutic achievements. We further point out that individual goals and therefore the internal evaluation norms of the patients change over the course of therapy (compare also [57]) and that such changes to the inner reference system represent a particular aim of PA treatment. We would like to emphasize this point with reference to the reports of the patients at the follow-ups: similar to other PA follow-up studies [32], our patients repeatedly retrospectively reported that their views and evaluations had been fundamentally transformed during but also following their therapy and that they now saw themselves and other people "in a different light" so to speak. Problems that had caused much distress prior to therapy appeared less significant in hindsight and behaviors and arrangements which had previously seemed "normal" were perceived as problematic. What Menninger [59] wrote about the effects of PA therapy based on the example of a fictitious case would seem to apply to more than just a few of these patients: "...although it is true that his expectations were not met, his gains were beyond his expectations" (as cited in [28], p. 751). In our opinion, these complex processes of change can at least be globally assessed using retrospective evaluations, all the more so considering that no other options are available. At the same time, we are all too aware that retrospective evaluations of change show certain weaknesses. They demand that the patient performs a complex cognitive operation that may impair the accuracy of their evaluation: they must first recall their level of distress at the onset of

therapy (which may differ from what they reported at that time), assess their current level of distress, and subsequently determine the difference between the two. For future studies of this kind, it would in our view therefore seem desirable to employ methods and strategies that allow for changing success criteria without having to accept the limitations of retrospective evaluations.

Some further methodological limitations must be noted: a number of therapists (14 of 45) contributed two courses of therapy to the study. Our data are therefore nested, a fact which was not accounted for in our statistical analyses. Diagnoses were not assessed in a standardized manner, and their validity is therefore questionable. Moreover, due to the naturalistic design of the study, it was not possible to examine the way in which therapists actually worked within courses of therapies independently of information provided by the therapists themselves. Therapy duration and the number of sessions varied enormously in both treatments. As therapist self-reports are the only adherence measure available to us, we have no independent evidence that the stated treatment was actually practised. Our study is therefore not able to answer the question concerning the therapeutic interventions and strategies needed to achieve structural change and the long-term benefits investigated: Therapeutic approach had no influence; interaction effects between the two forms of PD treatment and pre–post changes were not observed in any of our analyses.

In our view, the approach adopted in the present study enables a comparison of different types of pre–post changes with regard to short- and long-term therapeutic effects. The results of such comparisons carry consequences for practical clinical work: if certain pre–post changes are associated with more long-term effects, then therapy should aim to work towards effectuating these very changes. The question concerning what the therapist can do to contribute to such changes thus represents an important issue to be addressed in future investigations.

References

1. Fenichel O. Statistischer Bericht über die therapeutische Tätigkeit 1920–1930. In: Radó S, Fenichel O, Müller-Braunschweig C, editors. *Zehn Jahre Berliner Psychoanalytisches Institut. Poliklinik und Lehranstalt*. Wien: Int Psychoanal Verlag; 1930. p. 13–9.
2. Alexander F. Five year report of the Chicago Institute for Psychoanalysis, 1932–1937. Chicago: Institute for Psychoanalysis; 1937.
3. Jones E. Report of the clinic work: 1926–1936. London: Clinic of Psychoanalysis; 1936.
4. Knight RP. Evaluation of the results of psychoanalytic therapy. *Am J Psychiatry*. 1941;98:434–46.
5. Bergin AE. The evaluation of therapeutic outcomes. In: Bergin AE, Garfield SL, editors. *Handbook of psychotherapy and behavior change*. New York: Wiley; 1971. p. 217–70.
6. Dührssen A. Katamnestiche Ergebnisse bei 1004 Patienten nach analytischer Psychotherapie. *Z Psychosom Med Psychoanal*. 1962;8:94–113.
7. Lambert MJ, Ogles BM. The efficacy and effectiveness of psychotherapy. In: Lambert MJ, editor. *Bergin and Garfield's handbook of psychotherapy and behaviour change*. New York: Wiley; 2004. p. 139–93.
8. Rapaport D. The structure of psychoanalytic theory: a systemizing attempt, *Psychological issues series*, vol. II. New York: International Universities Press; 1960.
9. Horowitz M, Kernberg OF, Weinshel E, editors. *Psychic structure and psychic change: essays in honour of Robert R. Wallerstein*. Madison: International Universities Press; 1993.
10. Kernberg OF. Psychic structure and structural change: an ego psychology–object relations theory viewpoint. In: Shapiro T, editor. *The concept of structure*. Madison: International Universities Press; 1991. p. 315–37.
11. Kernberg OF. Psychoanalysis, psychoanalytic psychotherapy, and supportive psychotherapy: contemporary controversies. *Int J Psychoanal*. 1999;80:1075–91.
12. Moore BE, Fine BD. *Psychoanalytic terms and concepts*. New Haven: Yale University Press; 1990.
13. Wallerstein RS. Forty-two lives in treatment. A study of psychoanalysis and psychotherapy. New York: Guilford; 1986.
14. Wallerstein RS. Psychoanalysis and psychotherapy: relative roles reconsidered. *Annu Psychoanal*. 1988;16: 129–51.
15. Weinryb RM, Rössel RJ. Karolinska psychodynamic profile – KAPP. *Acta Psychiatr Scand*. 1991;83:1–23.

16. DeWitt KN, Hartley D, Rosenberg SE, Zilberg NJ, Wallerstein RS. Scales of psychological capacities: development of an assessment approach. *Psychoanal Contemp Thought*. 1991;14:343–61.
17. Wallerstein RS. Scales of psychological capacities. Version 1. Unpublished manuscript; 1996.
18. Fonagy P, Target M, Steele M, Steele H. Reflective-functioning manual: for application to Adult Attachment Interviews. Version 5.0. London: University-College; 1988.
19. Shedler J, Westen D. The Shedler–Westen Assessment Procedure (SWAP): making personality diagnosis clinically meaningful. *J Pers Assess*. 2007;89:41–55.
20. Rudolf G, Grande T, Oberbracht C. Die Heidelberger Umstrukturierungsskala. Ein Modell der Veränderung in psychoanalytischen Therapien und seine Operationalisierung in einer Schätzskala [The Heidelberg Structural Change Scale. A model for change in psychoanalytic therapies and its operationalization in an assessment scale]. *Psychotherapeutics*. 2000;45:237–46.
21. OPD Task Force, editor. Operationalized psychodynamic diagnostics. Foundations and manual. Seattle: Hogrefe & Huber; 2001.
22. OPD Task Force, editor. Operationalized Psychodynamic Diagnosis (OPD-2). Manual of diagnosis and treatment planning. Cambridge: Hogrefe & Huber; 2008.
23. Pfeffer AZ. A procedure for evaluating the results of psychoanalysis: a preliminary report. *J Am Psychoanal Assoc*. 1959;7:418–44.
24. Schlesinger N, Robbins F. The psychoanalytic process: recurrent patterns of conflicts and changes in ego functions. *J Am Psychoanal Assoc*. 1975;23:761–82.
25. Leuzinger-Bohleber M, Target M. A follow-up study – critical inspiration for our clinical practice? In: Leuzinger-Bohleber M, editor. Outcomes of psychoanalytic treatment. London: Whurr Publishers; 2002. p. 143–73.
26. Thomä H, Kächele H. Psychoanalytic practice. 1 Principles. Paperback ed. (1994). Berlin/New York: Springer/Aronson; 1987.
27. Grande T, Rudolf G, Oberbracht C, Pauli-Magnus C. Progressive changes in patients' lives after psychotherapy: which treatment effects support them? *Psychother Res*. 2003;13:43–58.
28. Wallerstein RS. The goals of psychoanalysis. *J Am Psychoanal Assoc*. 1965;13:748–70.
29. Sandler J, Sandler A. The second censorship, the three box model, and some technical implications. *Int J Psychoanal*. 1983;64:413–25.
30. Hill CE, Lambert MJ. Methodological issues in studying psychotherapy processes and outcome. In: Lambert MJ, editor. Bergin and Garfield's handbook of psychotherapy and behaviour change. New York: Wiley; 2004. p. 84–135.
31. Ticho GR. On self-analysis. *Int J Psychoanal*. 1967;48:308–18.
32. Leuzinger-Bohleber M, Stuhr U, Rüger B, Beutel M. How to study the quality of psychoanalytic treatments and their long term effects on patients well-being. A representative multiperspective follow-up study. *Int J Psychoanal*. 2003;84:263–90.
33. Wallerstein RS. The generations of psychotherapy research. An overview. In: Leuzinger-Bohleber M, Target M, editors. Outcomes psychoanalytic treatment: perspectives for therapists and researchers. London: Whurr; 2001. p. 30–60.
34. Grande T, Rudolf G, Oberbracht C, Jakobsen Th, Keller W. Investigating structural change in the process and outcome of psychoanalytic treatment. The Heidelberg–Berlin Study. In: Richardson Ph, Kächele H, Renlund C, editors. Research on psychoanalytic psychotherapy with adults. London: Karnac; 2004. p. 35–61.
35. Grande T, Dilg R, Jakobsen T, Keller W, Krawietz B, Langer M, et al. Differential effects of two forms of psychoanalytic therapy – results of the Heidelberg–Berlin study. *Psychother Res*. 2006;16:470–85.
36. Rudolf G, Grande T, Dilg R, Jakobsen Th, Keller W, Oberbracht C, et al. Structural changes in psychoanalytic therapies – the Heidelberg–Berlin Study on Long-Term Psychoanalytic Therapies (PAL). In: Leuzinger-Bohleber M, Target M, editors. Longer-term psychoanalytic treatment – perspectives for therapists and researchers. London: Whurr Publishers; 2002. p. 201–22.
37. Dilling H, Mombour W, Schmidt MH, Schulte-Markwort E, editors. Internationale Klassifikation psychischer Störungen ICD-10, Kapitel V (F). Forschungskriterien [International classification of mental disorders. ICD-10, chapter V (F). Research criteria]. Bern: Huber; 1994.
38. Derogatis L. Symptom Checklist-90-Revised: administration, scoring, and procedures manual. 3rd ed. Minneapolis: National Computer Systems; 1994.
39. Franke G. SCL-90-R: Die Symptom-Checkliste von Derogatis (The Derogatis Symptom Checklist) (2nd ed. (2 Aufl)). Göttingen: Beltz; 2002.
40. Brockmann J, Schlüter T, Brodbeck D, Eckert J. Die Effekte psychoanalytisch orientierter und verhaltenstherapeutischer Langzeittherapien [Effects of psychoanalytically oriented and of behavioural long-term therapies. A comparative study]. *Psychotherapeutics*. 2002;47:347–55.
41. Schauenburg H, Strack M. Measuring psychotherapeutic change with the Symptom Checklist 90R – SCL 90 R. *Psychother Psychosom*. 1999;6:199–207.

42. Horowitz LM, Strauß B, Kordy H. IIP-D: Inventar zu Erfassung interpersonaler Probleme (IIP-D: Inventory of Interpersonal Problems) (2nd ed. (2 Aufl)). Göttingen: Beltz; 2000.
43. Huber D, Henrich G, Klug G. The Inventory of Interpersonal Problems (IIP): sensitivity to change. *Psychother Res.* 2007;17:474–81.
44. Rüter U, Dahm A, Kallinke D. Faber-Haarstrick: Kommentar Psychotherapierichtlinien (The Faber-Haarstrick Commentary on Psychotherapy Guidelines) ((6th ed.) 6 Aufl). München, Jena: Urban & Fischer Verlag; 2003.
45. Rudolf G. Die therapeutische Arbeitsbeziehung (The psychotherapeutic working alliance). Berlin: Springer; 1991.
46. Cohen J. Statistical power analysis for the behavioral sciences. 2nd ed. New York: Academic; 1977.
47. Cierpka M, Grande T, Rudolf G, van der Tann M, Stasch M, OPD Task Force. The operationalized psychodynamic diagnostics system: clinical relevance, reliability and validity. *Psychopathology.* 2007;40:209–20.
48. Stasch M, Schmal H, Hillenbrand E, Cierpka M. Fokussierte Interventionen mit der OPD in der stationären Psychotherapie. Effekte auf Ergebnis und Verlauf der Behandlung (Focal interventions based on the OPD in inpatient treatment. Effects on outcome and process). *Z Psychosom Med Psychother.* 2007;53:309–23.
49. Schneider G, Mendlar TM, Heuft G, Burgmer M. Validität der Konfliktachse der Operationalisierten Psychodynamischen Diagnostik (OPD-1) – empirische Ergebnisse und Folgerungen für die OPD-2 (Validity of axis III „conflicts“ of Operationalized Psychodynamic Diagnostics (OPD-1) – empirical results and conclusions for OPD-2). *Z Psychosom Med Psychother.* 2008;54:46–62.
50. Böker H, Schopper C, Straub M, Himmighoffen H, Endrass J, Küchenhoff B, et al. Automutilistisches Verhalten bei Patientinnen mit affektiven Störungen: Untersuchung der Persönlichkeitsstruktur und Affektregulation mittels Operationalisierter Psychodynamischer Diagnostik (OPD) (Automutilistic behaviour in female patients with affective disorders: investigation of personality structure and affect regulation by means of Operationalized Psychodynamic Diagnostics (OPD)). *Psychother Psychosom Med Psychol.* 2007;57:319–27.
51. Grande T, Rudolf G, Oberbracht C, Jakobsen T. Therapeutische Veränderungen jenseits der Symptomatik. Wirkungen stationärer Psychotherapie im Licht der Heidelberger Umstrukturierungsskala (Therapeutic changes beyond symptoms. The effects of inpatient psychotherapy in light of the Heidelberg Structural Change Scale). *Z Psychosom Med Psychother.* 2001;47:213–33.
52. Stiles WB, Elliot R, Llewelyn SP, Firth-Cozens JA, Margison FR, Shapiro DA, et al. Assimilation of problematic experiences by clients in psychotherapy. *Psychotherapy.* 1990;27:411–20.
53. Stiles WB, Meshiot CM, Anderson TM, Sloan WW. Assimilation of problematic experiences: the case of John Jones. *Psychother Res.* 1992;2:81–101.
54. Stiles WB, Shapiro DA, Harper H, Morrison LA. Therapist contributions to psychotherapeutic assimilation: an alternative to the drug metaphor. *Br J Med Psychol.* 1995;68:1–13.
55. Schneider G, Schmitz-Moormann S, Bär O, Driesch G, Heuft G. Psychodynamische Therapiefoki in einer stationären multimodalen Therapie – Zusammenhänge zu den Selbstauskunftsskalen und individuellen Therapiezielen (Psychodynamic therapy foci in inpatient psychotherapy – relations to self-assessment scales and individual therapeutic goals). *Z Psychosom Med Psychother.* 2006;52:259–73.
56. Grande T. Zur Beurteilung der Leistung einzelner OPD-Rater und Standards für die Verwendung der OPD in der empirischen Forschung (Qualification of OPD-raters and the use of the OPD in empirical research). In: Dahlbender RW, Buchheim P, Schüssler G, editors. *Lernen an der Praxis. OPD und Qualitätssicherung in der Psychodynamischen Psychotherapie* (Learning from practice. OPD and quality assurance in psychodynamic psychotherapy). Bern: Huber; 2004. p. 245–50.
57. Beutler LE, Hamblin DL. Individualized outcome measures of internal change: methodological considerations. *J Consult Clin Psychol.* 1986;54:48–53.
58. Lambert MJ, Hill CE. Assessing psychotherapy outcomes and processes. In: Bergin AE, Garfield SL, editors. *Handbook of psychotherapy and behavior change.* New York: Wiley; 1994. p. 72–113.
59. Menninger KA. *Theory of psychoanalytic technique.* New York: Basic Books; 1958.

Part II

The Neurobiology of Psychotherapy

Chapter 10

Commentary: Neurobiology of Psychotherapy – State of the Art and Future Directions

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Keywords Neuroscience • Neuroimaging • Psychoanalysis • Psychodynamic Psychotherapy • Psychotherapy • Psychotherapeutic Change

The region of intersection between neurobiological research and psychoanalysis is fertile and growing. As every chapter in this section attests, both empirical methods and psychoanalytic theories have advanced toward a kind of interaction that would have delighted Sigmund Freud. While this area of research grows and finds its identity, perhaps the greatest challenge will be for it to define its goals. Therefore, with these chapters in mind, I propose the following unifying principles:

1. The best descriptions of psychopathology lie not in the use of sharply defined categories, but rather in a set of continuous trait and state variables describing the content and structure of an individual's mental life [1, 2].
2. The origins of most psychopathology are understood best as an interaction between inherited/genetic factors that lead to psychological traits, strengths, and vulnerabilities on the one hand and environmental factors, particularly experience, on the other [3, 4].
3. Psychological traits and processes are best understood not by being divided into the categories “cognitive,” “affective,” and “social,” but rather as a combination of all three [5].
4. The mechanism(s) of action in psychotherapies of all kinds, including psychoanalysis and psychodynamic psychotherapy, overlap more than current clinical theories describe, thus beginning to explain the widespread finding that there are multiple effective ways to treat psychiatric illness with talk therapy [6, 7]; (Chaps. 11, 12, 13, 15, 16).

It is no coincidence that the psychoanalytic intellectual tradition has led us to the realization that former dichotomies are insufficient for describing our psychological lives. The psychoanalytic perspective is anchored in the notion that individuals create narratives that shape their thinking and behavior. By thinking *about* these strategies (what current researchers often refer to as “metacognition”), we gain the ability to make incremental modifications to these narratives, with significant impact on the way we organize old and new information. Just as we do this in successful individual treatments, we now have the opportunity to integrate multiple perspectives in our theory and research. These chapters are an important step in that direction.

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Unsurprisingly, there are many ways to embark on such an integration. These may be seen as lying on a continuum from detail-oriented investigation of individual empirical techniques and empirical findings related to psychopathology (what we can call the “trees”) to broader theoretical and systems-neuroscience discussions of how our knowledge fits together (the “forest”). The chapters by Lehtonen et al. (Chap. 12) and Karlsson (Chap. 13) describe in detail two important techniques (positron emission tomography (PET) and single photon emission computed tomography (SPECT)) for measuring the state of the brain serotonin system, known to be central to a broad range of mental functions, and using this to quantify change in response to psychodynamic psychotherapy [9]. Buchheim and colleagues (Chap. 14) similarly describe how they use functional magnetic resonance imaging (fMRI) to analyze the psychological response of patients with borderline personality disorder (BPD) to attachment-related images. Ghaznavi et al. (Chap. 18) outline a promising study design, incorporating PET as well, for integrating neuroimaging in a psychodynamic psychotherapy treatment.

At the other end of the spectrum, Gabbard (Chap. 15), Riess (Chap. 17), and Viamontes (Chap. 19) take a bird’s eye perspective on the role of neurobiology in understanding psychopathology and treatment from a psychodynamic perspective. By citing individual empirical findings in the realms of BPD (Gabbard) and the neurobiological systems that underlie a wide range of mental processes (Viamontes), these authors paint a new and exciting picture of the mind, in which language formerly thought of as purely “psychological” or “biological” is seamlessly integrated. Roffman et al. (Chap. 11) and Wong and Haywood (Chap. 16) stake out a middle ground, in which specific concepts, particularly in cognitive neuroscience, are used to bridge non-psychoanalytic and psychoanalytic ideas about the brain and mind.

Mechanisms of Action

A unifying and centrally motivating pursuit in the field of psychodynamic research is to identify the mechanisms of action for change in psychodynamic psychotherapy and psychoanalysis [7]. Perhaps, no other question is as central to the daily thinking of clinicians, researchers, and even patients themselves [9]. The work of empirical psychodynamic researchers, such as those represented in this section, suggests first that we know more about this now through neurobiological research than was known before, and second, that at least some of our difficulties lie in the use of different and sometimes ambiguous terminology [10]. To that end, I will suggest three principle mechanisms of action, anchored in what we know about both psychotherapeutic change and neural mechanisms of learning.

Exploration of Affect: Exposure and Response Prevention

One of the most basic mechanisms of change, often referred to as simple learning and known from decades of animal research to be mediated by the hippocampus and amygdala, involves desensitization to a stimulus through repeated exposure, without concurrent negative consequences (i.e., response prevention) [11]. This mechanism is discussed most consistently by non-dynamic clinicians and theorists (and forms a core component of behavior therapy) and may *sound* less psychodynamic if one adheres to the entrenched false dichotomy between “cold cognitive” (i.e., exposure learning) and “social/emotional” learning. However, as described both through clinical accounts and through psychodynamic process research, a significant amount of most dynamic sessions is spent in helping patients attend to thoughts and affects that have been linked in the past to negative experiences, demonstrating that such attention is not only tolerable but will ultimately help to avoid future problems [12, 13]. In fact, one might see a significant part of the analysis of defense as allowing greater “exposure” to painful thoughts and feelings both in and outside of sessions. Dynamic and

non-dynamic clinicians would still disagree, in many cases, on whether the beneficial effect of exposure comes from the mere presence of the thoughts and feelings themselves (a more traditionally non-dynamic view) or some kind of “working through” of the thoughts and feelings. However, one might see this distinction as another kind of false dichotomy and accept that all exposures have both components (probably impossible to distinguish from one another in most circumstances). As we read the findings of important experiments such as those by Lehtonen et al. and Karlsson, we must consider to what extent exposure is the most parsimonious account for the changes they observe.

Understanding and Practicing New Relationship Patterns: Working in the Transference

It has been an accepted premise of cognitive science for some time that a considerable portion of what we “know” is stored as a set of behaviors or procedures, not as declarative or language-based ideas [14, 15]. These procedures may or may not then be accessible to our conscious awareness, but even under those circumstances, our awareness comes after the establishment of the memory and is not an intrinsic or necessary part of it. For example, a golf pro who can describe the mechanism of his swing and even notice when his swing has changed in some way nonetheless encodes the behavior of his swing separately from this description. The issue of how such procedural knowledge is changed, however, is more complicated and is, as of yet, poorly understood. It would stand to reason that devoting conscious attention to a procedure, as in the case of the golf swing, might help *practice* a different, and hopefully better, way of executing the behavior, even if in the moment of consciously applying the knowledge the behavior is more awkward and may even be less successful (imagine the self-conscious execution of a set of behaviors, in contrast with the natural fluidity of when it has become automatic).

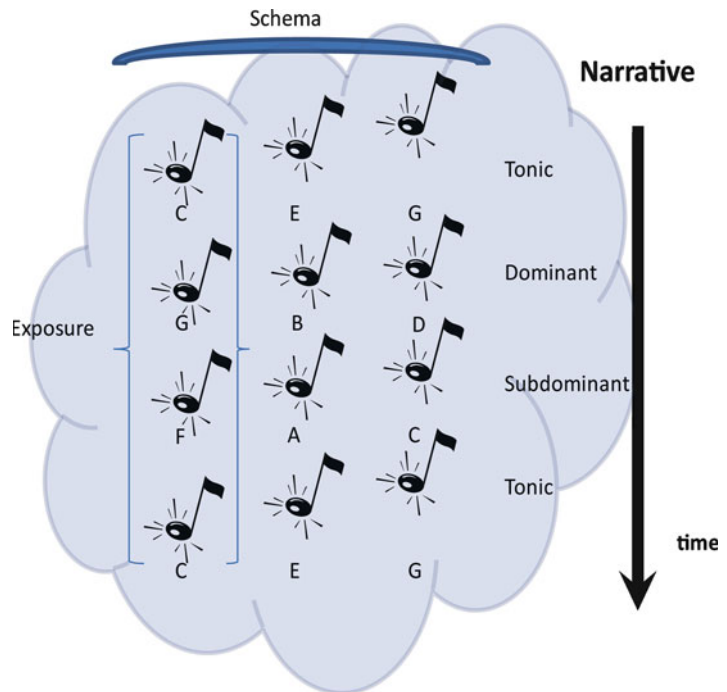
This understanding suggests that social behaviors, which require a great deal of automaticity and fluidity, are executed the vast majority of the time without any self-consciousness and fall into the category of procedural memory [14]. Therefore, a major mechanism of action in psychotherapy may be establishing the structures for *practicing* such behaviors. This may, at least in part and in some clinical situations, consist of actual practice during sessions (what has long been termed the “corrective emotional experience”) but also includes the use of some conscious framework – psychodynamic or otherwise – to remind the patient how to practice behaving more successfully in relationship contexts. The nature of the framework may matter less than its success in getting the patient to practice more adaptive behavior. Transference interpretations can be used to establish one kind of such framework, and though immediate and powerful in their nature when applied properly, are not necessarily the only effective ones.

The neural basis of procedural memory, cognitive schemas, and relationship-specific schemas is currently under investigation. Unlike declarative memory, which is subserved by the hippocampus [16], procedural memory has been shown to be based in the basal ganglia [17]. Social cognition, even that outside of conscious awareness, has been traced to regions of the temporal lobe, including the anterior temporal pole as well as the more posterior fusiform face area [18]. Investigation is currently underway to determine how circuits in these areas bring about relationship schemas.

Building a Narrative: Cognitive Restructuring

Exposure and response prevention (process 1) is the description of a narrow range of information (the stimulus) over time. Relationship patterns (process 2) describe a broader range of information (i.e., how a set of independent agents interact) but at a single point in time. Therefore, it stands to reason that the third mechanism looks at the way a broad range of independent agents interact over time, in

Fig. 10.1 Schematic of mechanisms of action in psychotherapy



other words the creation and modification of personal narratives. We can draw the analogy between a single percept as a musical note (Fig. 10.1). Thus, a relationship schema is represented by a chord and the progression of a single note is akin to a series of exposures. In this model, a narrative is analogous to a series of chord progressions, or musical composition. We accept that some aspects of how we listen to and experience music are based on a set of innate principles (e.g., the expectation that a melody progresses from tonic to dominant/subdominant and back to tonic chords) while others emerge from prior experience [19]. Similarly, we accept the unchangeability of some narratives (e.g., development, drives, conflict) yet work to build our experience and expectations within a set of narratives that are most useful to us. As with schemas, there may be many such narratives that function well, and it is the task of psychotherapy to help the patient find a set of narratives that are most useful for him or her. In psychodynamic thinking, this is often described as “co-construction,” whereas in cognitive therapy, it may be thought of as “cognitive restructuring.”

How we represent narratives neurobiologically is not yet known. Most neuroscientists would suggest that given the relatively abstract and evolutionarily late nature of this ability, it is most likely to lie in the prefrontal cortex (see Chap. 19 by Viamontes for a more detailed description). Those investigating the “embodied mind” or ideas about “mirror neurons” would likely trace the origins of narrative to the premotor cortex [20]. Research in this area is needed.

If we begin with a series of hypothetical mechanisms such as these, the path forward seems reasonably well laid out. The essence of good science is to begin with specific and testable ideas and then design experiments that tell us which parts of these ideas are supported by the evidence and which are not. There are, however, a number of pitfalls to be avoided along the way:

1. Avoid putting too much hope in single trendy ideas that are viewed as being the final “answer” to a complex and long-standing problem. While there have been many innovative ideas in neuroscience and its application to psychotherapy over the past decade (e.g., mirror neurons [21]), default mode functioning [22], right versus left brain functioning [23], quantum mechanics as a basis for free will [24], it is much more likely that the truth lies not in one new concept but in an integration

of good elements of psychodynamic theory (e.g., a motivated, complex unconscious, interaction of endowment and experience, character structure, relationship models, importance of narrative) with a range of existing models and techniques for studying neurobiology.

2. Avoid using pictures of the brain to convince others of the merits of a new theory or psychological argument. It is well known how susceptible we all are – both in and outside of the neuroscience community – to the aura of authority and certainty that surrounds a study which purports to measure a fundamental property of the brain [25]. However, it is important to keep in mind that many measures of neurobiology – functional MRI in particular – can be as unreliable and susceptible to selective interpretation as any questionnaire or behavioral measure. Undoubtedly, neurobiological measures have much to offer, but they need to be treated with the same caution and skepticism as any other indirect measure of psychological functioning.
3. Beware of arguments that use neurobiological terms to make old arguments with new authority and without clearly spelling out alternative interpretations of the data, or what one would have expected from other theories. This is particularly problematic when neurobiologic terms, such as “prefrontal cortex” or “amygdala” are used as almost word-for-word substitutes for older concepts such as “ego” and “affect.” The neurobiologic terms may themselves be well anatomically defined, but the function of these regions is far more complex than is often described in reviews, and it would be a coincidence of remarkable proportion if they overlapped with such precision with our older ideas.
4. Science is by its very nature preoccupied with small details. Thus, we must beware of any arguments that focus only on the grand arc of research – for example, those that exclusively cite general books, reviews, or other “synthesizers” of research – as opposed to the details of the individual experiments. A common fantasy of science is that it gives final answers to problems about which we had only been able to speculate beforehand. In practice, science takes two clearly articulated opposing perspectives and tries to generate data that make one seem more likely than the other.
5. Science (or neurobiology) will be neither the “savior” or the “death” of psychoanalysis or psychodynamic psychotherapy [26, 27]. Science is a tool that helps protect well-meaning people from only seeing what is consistent with their previous cherished ideas. We all have cherished ideas, and if someone – scientist notwithstanding – is intent enough on proving what they have previously believed, science is no protection. However, if we are humble enough to recognize just how little we know and how biased we can be if we are not careful, science can be a powerful way to work together as a community and not stray too far from a reasonable representation of reality. Or, in other words, truth is that which, when you ignore it, does not go away. Science is a way of systematically trying to ignore something (blinding, randomization, systematic measurements) and then looking to see if it is still present.

References

1. NIMH Research Domain Criteria (RDoC). May 2010. Retrieved Sept 2010, from <http://www.nimh.nih.gov/research-funding/nimh-research-domain-criteria-rdoc.shtml#6>.
2. Vickers AJ, Basch E, Kattan MW. Against diagnosis. *Ann Intern Med*. 2008;149:200–3.
3. Caspi A, McClay J, Moffitt TE, Mill J, Martin J, Craig IW, et al. Role of genotype in the cycle of violence in maltreated children. *Science*. 2002;297:851–4.
4. Caspi A, Sugden K, Moffitt TE, Taylor A, Craig IW, Harrington H, et al. Influence of life stress on depression: moderation by a polymorphism in the 5-HTT gene. *Science*. 2003;301:386–9.
5. Lieberman MD. Social cognitive neuroscience: a review of core processes. *Annu Rev Psychol*. 2007;58:259–89.
6. Ablon JS, Jones EE. Psychotherapy process in the national institute of mental health treatment of depression collaborative research program. *J Consult Clin Psychol*. 1999;67:64–75.
7. Jones EE. Therapeutic action: a guide to psychoanalytic therapy. Northvale, NJ: Jason Aronson; 2000.

8. Peterson BS, Bansal R, Chung YA, Dong Z, Duan Y, Gerber AJ, Hao X, Kangarlou A, Liu F, Marsh R, Plessen KJ, Royal J, Wang Z. Lewis's child and adolescent psychiatry. In: Marti A, Volkmar FR, editors. New York: Lippincott; 2007.
9. Sandler J, Dreher AU. What do psychoanalysts want? The problem of aims in psychoanalytic therapy. London: Routledge; 1996.
10. Gabbard GO, Westen D. Rethinking therapeutic action. *Int J Psychoanal.* 2003;84:823–41.
11. LeDoux JE. Emotion circuits in the brain. *Annu Rev Neurosci.* 2000;23:155–84.
12. Goisman RM. The psychodynamics of prescribing in behavior therapy. *Am J Psychiatry.* 1985;142:675–9.
13. Bram A, Björgvinsson T. A psychodynamic clinician's foray into cognitive-behavioral therapy utilizing exposure-response prevention for obsessive-compulsive disorder. *Am J Psychother.* 2004;58:304–20.
14. Westen D, Gabbard GO. Developments in cognitive neuroscience: i. conflict, compromise, and connectionism. *J Am Psychoanal Assoc.* 2002;50:53–98.
15. Westen D, Gabbard GO. Developments in cognitive neuroscience: ii. implications for theories of transference. *J Am Psychoanal Assoc.* 2002;50:99–134.
16. Squire LR, Knowlton BJ. The medial temporal lobe, the hippocampus, and the memory systems of the brain. In: Squire LR, Kandel ER, editors. *Memory.* New York: W H Freeman & Co; 2000.
17. Packard MG, Knowlton BJ. Learning and memory functions of the Basal Ganglia. *Annu Rev Neurosci.* 2002;25:563–93.
18. Pelphrey KA, Carter EJ. Brain mechanisms for social perception: lessons from autism and typical development. *Ann N Y Acad Sci.* 2008;1145:283–99.
19. Jeans J. *Science and music.* New York: Dover; 1937.
20. Gallese V, Lakoff G. The brain's concepts: the role of the sensory-motor system in conceptual knowledge. *Cogn Neuropsychol.* 2005;22:455–79.
21. Gallese V, Fadiga L, Fogassi L, Rizzolatti G. Action recognition in the premotor cortex. *Brain.* 1996; 119(2):593–609.
22. Raichle ME, MacLeod AM, Snyder AZ, Powers WJ, Gusnard DA, Shulman GL, et al. A default mode of brain function. *Proc Natl Acad Sci USA.* 2001;98:676–82.
23. Schor AN. *Affect regulation and the origin of the self.* Hillsdale, NJ: Lawrence Erlbaum; 1994.
24. Schwartz JM, Stapp HP, Beauregard M. Quantum physics in neuroscience and psychology: a neurophysical model of mind-brain interaction. *Philos Trans R Soc Lond B Biol Sci.* 2005;360:1309–27.
25. McCabe DP, Castel AD. Seeing is believing: the effect of brain images on judgments of scientific reasoning. *Cognition.* 2008;107:343–52.
26. Blass RB, Carmeli Z. The case against neuropsychanalysis. On fallacies underlying psychoanalysis' latest scientific trend and its negative impact on psychoanalytic discourse. *Int J Psychoanal.* 2007;88:19–40.
27. Hoffman IZ. Doublethinking our way to "scientific" legitimacy: the desiccation of human experience. *J Am Psychoanal Assoc.* 2009;57:1043–69.

Chapter 11

Neural Models of Psychodynamic Concepts and Treatments: Implications for Psychodynamic Psychotherapy

Joshua L. Roffman, Andrew J. Gerber, and Debra M. Glick

Keywords Anxiety disorders • Cognitive therapy • Depression • Functional MRI • Positron emission tomography • Psychodynamic therapy

Psychotherapy and neuroscience have arrived at a historic crossroad. Since the inception of analytic thinking in the late nineteenth century, proponents of psychotherapy have struggled with the question of how it influences brain function – and whether this relationship is relevant to the work or effectiveness of therapy. Despite decades of parallel progress in psychodynamic and neuroscientific research, until recently, there was little meaningful interaction between these fields of study. Rather, fierce ideologic and methodologic divisions persisted between investigators of “mind-based” and “brain-based” thinking.

In the last 10 years, though, a remarkable synergy between these fields has begun to emerge, with powerful (and overwhelmingly positive) implications for the future of psychotherapy. In this chapter, we describe how this transformation has taken place, focusing on the critical role of new technology in understanding brain function. We demonstrate how principles central to dynamic therapy have informed the design, implementation, and analysis of brain imaging experiments, and, conversely, we discuss the potential of brain imaging data to further refine and improve the process of psychotherapy. In summarizing the current literature on how psychotherapy affects brain function, we identify the strengths and weaknesses of this scientific undertaking, and discuss ways in which it may ultimately reshape clinical practice.

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Psychodynamic Therapy and the Brain

A Brief History

Curiosity about the interface of psychodynamics and brain function stretches as far back as psychoanalysis itself. In 1895, Sigmund Freud embarked upon his Project for a Scientific Psychology (or, as literally translated, “The Psychology for Neurologists”), an attempt to define the unconscious in neurological terms [1]. As mentioned in an April 26, 1895 letter to his friend and confidante Wilhelm Fleiss:

Scientifically, I am in a bad way; namely, caught up in “The Psychology for Neurologists,” which regularly consumes me totally until, actually overworked, I must break off. I have never before experienced such a high degree of preoccupation. And will anything come of it? I hope so, but it is difficult and slow going [2].

Indeed, having reached the limits of neurologic investigation for his time, Freud abandoned the project in 1896, only to embark on a new (“royal”) route to the unconscious through dream analysis. The Project notes were sent privately to Fleiss and remained unpublished until well after Freud’s death. Within the Project, though, Freud developed a prescient, theoretical framework for how neural activity underlies both normal processes (including memory, attention, and judgment) and abnormal ones (hysteria, repression, and displacement).

For the better part of a century, scientific inquiry into the mechanisms of psychotherapy was limited to observational work, often reflecting individual interactions between patients and therapists. This work evolved into a complex and largely internally valid system of psychoanalytic theory and process; however, it failed to integrate with other developments in medical science and remained entirely distant from the study of neural function [3]. (Of note, there was hardly a complete isolation of psychology and medicine: in fact, efforts in the 1940s led psychiatrists to consider psychosomatic contributions to many common medical illnesses [4, 5].)

Although a general rapprochement between psychiatry and medicine followed the introduction of psychotropic medications in the 1950s and 1960s [6], the theory and practice of psychoanalysis remained largely isolated. In the years that followed, novel neuroscientific methods shed new light on brain development, memory, psychopathology, and other elements with a close relationship to psychodynamic principles, while at the same time cognitive psychologists developed scientifically rigorous ways to understand these same phenomena. However, it was not until the 1990s – the “Decade of the Brain” – that brain and psychotherapy investigators truly began to find common ground through scientific collaboration.

In particular, one novel method to understand activity within the living brain – functional neuroimaging – has played a pivotal role in this renewed relationship. For the first time, functional imaging has provided the opportunity to correlate directly cognitive and emotional processes with brain activity profiles in both healthy individuals and those with psychiatric disorders. As a result, we are newly able to face the challenges that Freud envisioned a century ago, as recalled in a landmark paper by neuroscientist and Nobel laureate Eric Kandel: “Where, if it exists at all, is the unconscious? What are its neurobiological properties? How do unconscious strivings become transformed to enter awareness as a result of analytic therapy?” [5].

A Lingering Disparity

There is long-held consensus that talk therapies provide substantial relief for many individuals with psychiatric illness, often with similar efficacy and cost when compared to other interventions [7–9]. However, the availability of new tools to understand brain function has been slower to influence psychotherapy research than it has for cognitive psychology, neuropsychiatry, and psychopharmacology.

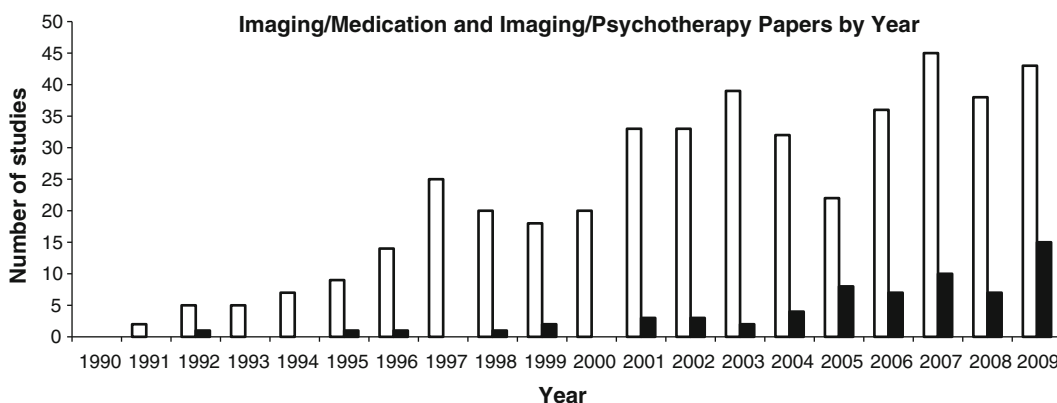


Fig. 11.1 Imaging/medication (white bars) and imaging/psychotherapy (black bars) studies by year. A Pubmed search was completed using key words related to neuroimaging (e.g., PET, fMRI, SPECT) and medication (e.g., psychotropic) to find studies including both neuroimaging and medication between 1990 and 2009. Based on the abstracts generated from this search, we selected studies based on three criteria: included studies were published in English, used human subjects, and investigated psychiatric (e.g., depression) rather than neurological (e.g., Parkinson disease) disorders. A similar search was conducted using key words related to neuroimaging and psychotherapy (e.g., psychotherapy, interpersonal therapy, cognitive behavioral therapy, and psychodynamic therapy) (Adapted with permission from Ref. [11]. Copyright © 2005 Cambridge Journals)

The extent to which psychotherapy has fallen behind psychopharmacology in this regard is dramatically evident in Fig. 11.1, which summarizes neuroimaging studies of these treatment modalities since 1990 [10, 11].

There are a number of reasons – technical, scientific, historic, even political – why this might be the case. As described throughout this book, psychotherapy research has always been, is now, and will remain, a uniquely challenging enterprise. The study of psychodynamic therapy, in particular, does not always lend itself well to the research methods that are commonplace in medicine, and often in other areas of psychiatry [12]. Neuroimaging research provides no exception to this rule. For example: at present, most functional imaging technologies cannot be used to detect meaningful brain activity patterns in individual subjects. Instead, individuals must be grouped together to acquire results that are statistically valid [13]. Therefore, because psychodynamic therapy is a highly individualized treatment that can last months or years, it would be difficult to develop standardized treatment protocols for subjects within a study cohort. In addition, even for the study of time-limited, manualized psychotherapies, there remain significant obstacles to neuroimaging investigations. Imaging studies are relatively expensive, and, with limited support from federal funding sources, cost can be a prohibitive factor. There may also be a bias toward studying the neural mechanisms of medications since they are thought of as a “biological” or “medical” intervention, while some consider psychosocial interventions relatively “soft” [10].

In spite of these complications, the use of neuroimaging has now gained substantial momentum in psychotherapy research, and this investigative approach is now extending into medical, neuroscientific, and sociocultural awareness. It is also becoming clear that these studies have important clinical implications. Understanding how psychotherapy modifies brain function could powerfully influence its perception among new patients who may be weighing it as a treatment option. Furthermore, it is not too audacious to imagine that functional imaging studies, perhaps in concert with other biological markers, could one day be used to guide treatment for individual patients. This would place psychotherapy squarely within the emerging field of individualized medicine, which many consider to be the next revolution in patient care [14].

Functional Imaging Methods and Their Application in Psychotherapy Research

Of course, these kinds of advances will be predicated on neuroimaging studies with rigorous scientific methods and robust findings. Some initial studies of neuroimaging and psychotherapy, discussed later in this chapter, illustrate some of the challenges intrinsic to this kind of research. In this section, we will introduce some basic concepts that are critical to understanding functional neuroimaging, its potential for use in psychotherapy research, and its limitations therein.

Unlike traditional brain images that produce a static picture of brain structure, functional neuroimaging provides a measure of brain activity. The most commonly used functional imaging techniques are positron emission tomography (PET), single photon emission computed tomography (SPECT), and functional magnetic resonance imaging (fMRI) [13]. Both PET and SPECT rely on radioactive tracers that are injected into the bloodstream just prior to imaging. These tracers enter the cerebral blood supply and emit a signal, detectable with a camera placed near the patient's head. As activity increases or decreases in brain regions, blood flow to these regions rises or falls accordingly. The radiotracer signal thus also varies, making it a proxy for the level of neural activity. In other words, PET and SPECT provide a reliable but still indirect measure of neuronal firing [15]. These techniques can be used to measure either resting (baseline) activity, or changes in activity related to a task (which can range from simple finger tapping to complex cognitive or emotional paradigms). PET is more expensive than SPECT but provides much better spatial resolution. Although the amount of radiation exposure is not considered harmful, it does limit the frequency with which PET and SPECT scans can occur. For example, medical centers generally permit individuals to undergo at most two PET scans per year.

In contrast, fMRI scans do not use radiation, but rather strong magnetic fields to measure brain activity. In fact, fMRI studies are conducted using the same MRI machines that are used in clinical practice, but with different programming. Like PET and SPECT, the fMRI signal also estimates cerebral blood flow, which shows regional fluctuation based on which parts of the brain are active at a given time. In this case, the signal is generated by measuring relative concentrations of deoxygenated versus oxygenated blood. Exposure to the magnet is safe, except for individuals who have pacemakers or metallic implants in their bodies, who cannot be scanned. The fMRI environment is more restrictive than PET or SPECT, as it involves lying supine and very still within a long tubular structure. However, it is more versatile due to its better temporal resolution, which permits repeated measurements of brain activity every few seconds.

It is important to recognize that brain activity, as measured by these techniques, can reflect several overlapping neural processes related to the subject's current condition. These processes must be carefully identified and disambiguated to the greatest possible extent when conducting functional imaging analysis. First, what is the state of the subject? Is she disease-free, diagnosed with an illness but currently symptom-free, or actively symptomatic? As we are learning, baseline brain activity profiles can differ substantially based on the presence or absence of psychiatric illness. Second, if a patient is being scanned, when is the scan occurring relative to a treatment intervention? For example, most psychotherapy studies thus far conducted have imaged patients twice: once just before, and once just after completion of the treatment course. By comparing these scans, one can observe a measure of treatment effects. However, in light of the first consideration, it can be difficult to differentiate changes in brain activity that are related to the treatment itself versus those related to the (hopefully improved) state of the patient's illness. Finally, what is the subject doing in the scanner? Is he resting quietly or engaged in a task? Often, activity in brain regions is compared between these two conditions to give a measure of task-related "activation." Other designs are meant to induce symptoms while the subject is being scanned, so that they may be more readily correlated with brain activity profiles.

Other Ways to Measure Therapy-Related Changes in Physiology

While functional neuroimaging can provide detailed measures of brain function, imaging techniques can also be costly and logistically difficult to arrange. Imaging analysis requires the use of complex (and often time-consuming) statistics to convert raw signals into interpretable data. Alternatively, measures of peripheral physiology can provide useful indicators of neural activity, albeit further downstream from brain activation. Psychophysiology techniques can sensitively measure moment-to-moment fluctuations in skin conductance, heart rate, and blood pressure, and do so relatively inexpensively and non-invasively. The greatest advantage of these techniques, though, is that they can be deployed repeatedly over the course of a treatment, and even *during* treatment sessions. Some investigators have compared psychophysiology measures obtained simultaneously from the patient and therapist as an objective measure of their interaction. For example, Marci et al. reported a significant relationship between patient ratings of the therapist's perceived empathy and the concordance of skin conductance between the two during therapy sessions [16].

Even with the availability of these technologies, it is still important for scientific and philosophical reasons to ask the question of why *should* psychotherapy – and psychodynamic psychotherapy in particular – change brain function? One “bottom-up” approach to this question is to examine neural correlates of the building blocks upon which psychotherapy is based. Therefore, before considering the net effect of psychotherapy on the brain function, we will first review evidence that psychoanalytic constructs are themselves associated with meaningful changes in brain activity.

Experimental Methods and Evidence for Psychoanalytic Constructs

It is widely stated and accepted by both friends and foes of psychoanalysis that psychoanalytic constructs lack the empirical evidence, in terms of behavior and neurobiology, that is enjoyed by cognitive psychology. This deficiency is taken by some as evidence for the intrinsic “untestability” of psychoanalytic hypotheses, often ascribed to the unconscious, subjective, and interpersonal nature of the phenomena central to psychoanalytic theorizing and treatment [17–19]. Others argue that the lack of evidence demonstrates the falsehood of psychoanalytic ideas, or at least, their irrelevance to an empirically based science of the brain and mind [20]. In fact, the story is more complicated than is typically represented by either side in the discussion. Research has been accumulating, with particular growth in the past decade, which support and elaborate several basic psychodynamic hypotheses related to processes, representations, and relationships [21, 22]. This research currently focuses on phenomena in normal subjects under experimental conditions, as opposed to their action in the therapeutic setting. However, links to therapeutic action are gradually becoming more plausible, and it is likely that research will continue to bridge the gap between experimental work and psychoanalytic practice in the coming years.

Neural research on psychodynamic phenomena can broadly be divided into four domains, with significant overlap: [1] memory and learning, [2] affect, [3] social cognition and relatedness, and [4] processes such as free association and defense mechanisms that reflect the interface between consciousness and unconsciousness. As experimental methodologies have improved, each of these domains has received increasing attention by cognitive neuroscientists, yielding evidence that much important mental functioning goes on outside of awareness. Thus, research that did not start out as explicitly “psychodynamic” has pointed back towards an unconscious, representational, and relational mind, and therefore towards a recognizably psychodynamic view of mental functioning. Meanwhile, a number of psychodynamic writers have suggested ways in which the accumulating data can be used to inform thinking about psychotherapy [21–26].

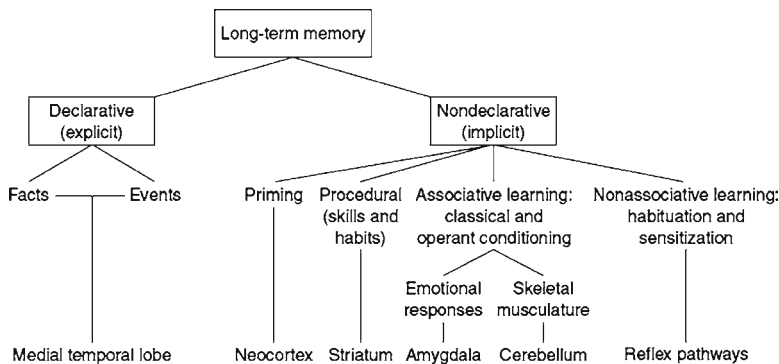


Fig. 11.2 Forms of long-term memory and associated brain regions (Reprinted with permission from Ref. [29])

Memory and Learning

Scientists, philosophers, and writers have long appreciated that much of what we know and remember is not in conscious awareness, or even accessible to awareness, at a given moment. Given our reliance on subjective reports of knowledge and memory, it has been difficult to study these phenomena systematically. Based on previous scholarship and his own clinical observations, Freud asserted that a significant portion of possible thoughts are actively excluded from awareness [27]. Due to the objectionable nature of their content, these thoughts are forced to reside in the “dynamic unconscious.” However, they continue to exert a significant influence on behavior and conscious processes, including those most relevant to psychotherapy and psychoanalysis. The concept of the dynamic unconscious is often confused, both in and out of the psychodynamic literature, with the “descriptive unconscious.” The latter is a more inclusive category that includes not only the dynamic unconscious, but also the preconscious (i.e., easily accessible by consciousness if one were to focus attention on this) and the non-conscious (i.e., inaccessible to consciousness because it has never been symbolized, e.g., procedural knowledge such as how to ride a bicycle) [28].

Over the past several decades, cognitive neuroscientists have developed methods for demonstrating and measuring various systems for memory and learning that have complicated relationships to consciousness (Fig. 11.2) [29–32]. Particularly relevant to psychodynamic therapy, long-term memory researchers have described an implicit (also called “non-declarative”) memory system, which is not readily accessible to consciousness. The existence of implicit memories was seen by exposing subjects to stimuli so brief that they were not consciously perceived (i.e., subliminal) but yet affected their performance on later tasks. This memory is often described as “associative,” though the relationship to the semantic properties that partially define declarative memories is unclear [33–36]. Investigators also found that subjects could be “primed” by consciously perceived information. Even when they did not specifically recall the information that they were previously taught, their answers to questions were influenced by having been exposed [37].

Other experimental tasks were developed to demonstrate the existence of an implicit procedural memory system, in which subjects learned motor or behavioral tasks without developing language to describe what they had learned, and sometimes without even being aware that they had learned something. For example, in the widely used Weather Task, subjects are shown one or more of a set of four symbols and asked, with no prior information, to use them to guess whether it will rain or shine [38, 39]. After responding, they are told whether they are right or wrong and the task is repeated for many trials. Subjects report the subjective experience of guessing at every answer and not learning anything during the course of the task. In fact, unbeknownst to the subject, the correct answer to each trial is calculated based on combinations of fixed probabilities assigned to each symbol.

Though subjects feel that they are guessing, their performance improves steadily during the course of the task, demonstrating that they are learning outside of awareness.

Recent functional imaging experiments have demonstrated that the brain regions subserving encoding (i.e., formation) and retrieval of explicit and implicit memory do not fully overlap. Working memory appears to rely heavily on activity in the frontal lobes, primarily in the dorsolateral prefrontal cortex. The formation of long-term declarative memories relies on structures in the medial temporal lobe, most prominently the hippocampus. There is also involvement from the amygdala and limbic system when significant affects are involved. Formation of implicit memories in priming appears to rely heavily on the frontal lobes, while formation of implicit associative memory may involve the limbic or motor systems, depending on the nature of the memory. Procedural memories formation, such as in the Weather Task, involves components of the basal ganglia, the caudate, and the putamen, if the task is predominantly cognitive, and the cerebellum and brainstem, if the task is motor. Some investigators have suggested that memories related to one's personal history, referred to as "autobiographical memory," may also use a somewhat distinct system, though the evidence remains unclear [40].

The nature of these multiple memory systems has important implications for psychodynamic theory and practice. First, there is substantial evidence that much of learning and memory takes place outside of awareness, raising the possibility for its importance in psychopathology and mental life. Given their functional and anatomical differences, it is therefore important to identify to which memory system a particular learned thought or behavior belongs. For example, a person's expectation of certain responses from a caregiver or significant other (a frequent emphasis in dynamic psychotherapy) may be encoded as an explicit memory, an implicit associative or priming memory, or a procedural memory. Several recent theorists have proposed that the procedural memory explanation is most likely [24], although all three systems may be involved to varying degrees. As each memory system has distinct modes of functioning, properties, and constraints (including capacity and method for change), identification of the role of differing memory systems in psychodynamic work is crucial. For example, it seems likely that patterns of interpersonal relatedness and emotion regulation learned in the first few years of life are encoded in a more procedural (i.e., non-symbolized) fashion. Therefore, they may be slower to change and less amenable to verbal interpretations (perhaps akin to what is described by some psychodynamic theorists as "preoedipal" content). In contrast, symptoms based in neurotic conflict that develops later in life may be represented symbolically, despite being unconscious. Such symptoms may be easier to change with accurate and timely psychodynamic interpretations (akin to so-called "oedipal" material).

Affect

Although psychodynamic thinkers have long emphasized the importance of affect, cognitive neuroscientists initially neglected this area, largely due to the difficulty of measuring or even defining it. Psychiatrists continue to debate the definitions of "mood" and "affect," and the extent to which either one can be defined objectively or subjectively. We will define affect in the broad sense as synonymous with emotion (i.e., a mental state with physiologic and psychological components).

In recent years, affect has become a major topic of research in relation to both psychopathology and normal functioning [41]. The study of fear has been made possible by observing its behavioral correlates in animals. This work led to the identification of the limbic system, particularly the amygdala, anterior cingulate, orbitofrontal, and medial prefrontal cortex, as important in affective processing [42]. Though the study and localization of other affects has been more challenging, there is growing evidence that, at least in humans, affective processing is governed by continuous properties of all affects, rather than relying on a distinct system for each feeling state.

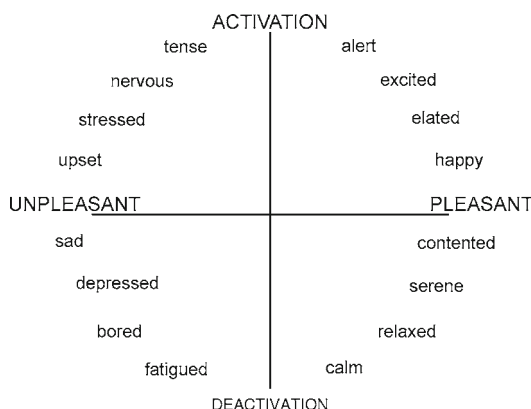


Fig. 11.3 The affective circumplex model shows how different affective states may be represented by placement on two continuous and unrelated scales: activation versus deactivation (y-axis) and unpleasant–pleasant (x-axis) (Reprinted with permission of Elsevier from Ref. [22])

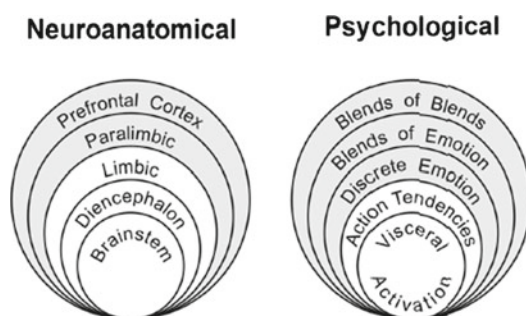


Fig. 11.4 Lane and Garfield depict hierarchical organization of emotional experience and its neural substrates. Higher levels (*larger circles*) illustrate mechanisms that add to and modulate lower levels, but do not replace them. A *white background* for lower level processes indicates an implicit process, whereas a *gray background* for a higher level process indicates an explicit process (Reprinted with permission from Ref. [25])

The circumplex model of affect [43, 44] posits that each affect is represented in the brain according to two independent properties: valence (the extent to which the affect is positive or negative) and arousal (the extent to which the affect is seen as stimulating or arousing, see Fig. 11.3). Brain systems involved in reward mechanisms, such as dopaminergic areas of the brainstem, are believed to play a role in encoding and processing valence. In contrast, systems governing attention and arousal include the reticular formation, thalamus, and dorsolateral prefrontal cortex [45]. Since both properties may be salient to the individual, they are processed in common structures such as the amygdala and anterior cingulate. With increased spatial resolution in our imaging techniques, we may learn about subdivisions of these regions relevant to different affective stimuli [46].

Psychodynamic models are concerned with how affects are generated, regulated, and expressed. Thus, neuroimaging findings suggest potential ways to measure affects that are in and out of awareness. Ochsner et al. have shown that particular brain regions are involved when subjects consciously manipulate their own affect by reappraising a visual image in a way contrary to an initial impression [47]. Lane argues that engagement of these affect regulation processes, by bringing thoughts and their associated affects into conscious awareness, forms a basic psychotherapeutic mechanism of action. He draws parallels between the hierarchical organization of psychological aspects of emotional experience and their neural substrates, suggesting that engagement of higher level systems leads to better psychological health [25] (Fig. 11.4). Etkin et al. further parceled conscious and unconscious awareness of affect by studying activation in the basolateral amygdala in response to

fearful faces [48]. They found that, when the stimuli are presented subliminally, activity in the basolateral amygdala is related to a subject's baseline trait level of anxiety, but, when stimuli are presented with the subject's conscious awareness, activity in this region is not related to anxiety. This pattern suggests that in order to understand the conscious representations of affect, we must evaluate not only automatic responses but also the compensatory responses that depend on the extent to which affect is conscious or unconscious. For example, when using imaging to distinguish between healthy controls and patients with a psychiatric diagnosis, one must always keep in mind that observed differences are just as likely to reflect the *compensation* in the individuals with the disorder as they are a core pathological feature of the disorder. Clinicians are familiar with this concept. For example, they may note an unusual degree of psychological mindedness in a patient who needed to cope with life difficulties versus a much lower level of psychological mindedness in a healthy individual who was exposed to less stress and thus never needed to develop this capacity.

Lane's typology of affect (Fig. 11.4) is useful in appreciating the range of affective phenomena that are potentially important in psychopathology and treatment. He cites behavioral and neurobiological evidence for four overlapping categories of affective processes: [1] background feeling, [2] implicit affect, [3] focal attention, and [4] reflective awareness [25]. Background feeling does not require consciousness, but is available on demand. Implicit affect is unconscious. Focal attention is a conscious spotlight on affect, related to reappraisal, as studied by Ochsner. Reflective awareness consists of an appreciation for affect in relation to self and other representations and is perhaps most central to psychodynamic theories. All are likely relevant to psychopathology and mechanisms of change. Across most psychotherapeutic modalities, it is believed that specific attention to problematic thoughts and maladaptive negative feelings helps individuals gain better control over and ameliorate the effects of these mental contents. Lane's typology is an early attempt to frame this kind of "cognitive modification" of thoughts and feelings in a general language relevant to both clinical work and neurobiology.

Social Cognition and Relatedness

Psychodynamic theorists have long argued for the important role of intrapsychic representations of relationships and interpersonal processes in the basic functioning of the mind. Early cognitive neuroscience and experimental approaches neglected social processes due to the complexity and measurement difficulties inherent to this perspective. However, along with the increasing attention on non-conscious processes and affect, cognitive scientists have also become more interested in the social brain, even coining a new subfield labeled "social cognitive neuroscience." This has been driven by success with animal models, such as Insel's work comparing monogamous and polygamous rodents [49, 50], as well as by functional neuroimaging, with its ability to study complex in vivo processes and associated cognition [51].

Many if not all aspects of the growing social cognitive neuroscience literature are relevant to psychoanalytic theory and treatment. At the most basic level, this research has led to non-analytic conceptualization and measurement of the neural basis of self versus other representations. Some evidence suggests that person (or "object" in psychoanalytic terms) representations are processed in distinct regions of the brain (i.e., the medial prefrontal cortex) [52]. There is even evidence for the possibility of dissociating brain regions involved in processing of self versus other representations [53, 54]. An alternative view is for a neuroanatomical division between processing of data about internal states (typically in the medial part of the frontal lobes) versus external behaviors and properties (typically in the lateral part of the frontal lobes) [55]. The exact location of these processes may have little impact on the theories and work of psychoanalytic treatments. Nevertheless, such work may shed light on the contrasts between self and object processing and provide tools for studying these crucial systems in association with psychopathology and treatment.

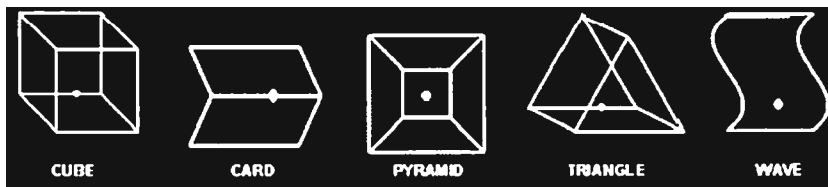


Fig. 11.5 Reversible geometric figures, as used by Peterson [22] to investigate the neural basis of bistable percepts. Each figure can be perceived either with the dot protruding out of the page or receding into the page. The neural substrate for consciously selecting either image may also subserve other conscious choices of perspective that influence our mental life, such as what goes on in psychotherapy (Reprinted with permission of Elsevier from Ref. [22])

Transference is a relational process hypothesized to be at the core of many clinical phenomena, and even the primary mechanism of change, in psychodynamic treatments [56]. Though there has been research into the effect of transference interpretations on treatment alliance and outcome [57, 58], it was thought to be difficult, if not impossible, to study the neural mechanism of the transference process (as opposed to other known cognitive phenomena). However, in the early 1990s, Susan Andersen developed a behavioral method to demonstrate and probe certain aspects of transference in a population of healthy college students. In her paradigm, subjects participate in two sessions, which they are led to believe are unrelated to one another. In the first session, the subject is asked to provide an equal number of positive and negative short descriptive sentences about one or more significant people (called significant others or “SOs”) in their lives. Subjects also select a set of “irrelevant” (i.e., neither descriptive nor counter-descriptive) adjectives in relation to each SO and provide descriptors about a series of famous people. In the second session (carried out at least a month later, so as to prevent the subject from making any connection between the two), the subject is told that he will meet a stranger and is asked, in advance, to memorize a description of that stranger. The stranger or, in some experiments, multiple strangers described are, in fact, fictitious and their descriptions are constructed in one of three ways: [1] they are created from a semi-random assortment of one of the subject’s own SO descriptions (padded with irrelevant descriptors), [2] they are created from a semi-random assortment of a *different* subject’s SO description (padded with irrelevants), or [3] they are created from a semi-random assortment of the subject’s famous person descriptors.

Andersen demonstrated that, although subjects never made the conscious connection between the strangers and their own SOs, their memory for these descriptions, affective response (in and out of awareness), and attributions to the stranger were all significantly influenced by whether the stranger resembled their own significant other or not [59–63]. Work is currently underway by Gerber and Peterson, in collaboration with Andersen, to investigate the neural bases of transference using a modified version of the paradigm suitable for the fMRI environment.

Other researchers view transference as one example of an individual having to use ambiguous stimuli to make predictions about the future [64, 65]. An incomplete set of information about a person may engage an automatic system that chooses the most likely object representation (usually outside of awareness) and fills in the missing data. Peterson and colleagues have studied the neural basis for viewing bistable percepts such as the Necker cube (where one can see one vertex of a three-dimensional cube either pointing out from the page or pointing into the page, but not both at the same time, Fig. 11.5) [66]. Frontal–striatal circuits are active when one alternates between images, suggesting a supervisory role of these circuits in other interpretations of ambiguous stimuli, such as transference.

Westen and Gabbard [67, 68] have argued that investigation into the neural basis of transference is likely to be useful for studying psychoanalytic treatments. In particular, they point to long-standing psychoanalytic debates such as whether there is one transference or many in a given clinical moment,

or whether the transference is significantly altered by real-world properties of the analyst and analytic setting (on which empirical evidence could have a useful impact). They argue that transference is predominantly a form of procedural memory. Gerber and Peterson speculate that transference processes may have elements of multiple memory systems including procedural and associative non-declarative systems. Neuroimaging findings using the Andersen paradigm may shed light on these questions, which may then highlight properties and constraints of the transference system that are relevant to theorizing and clinical techniques. For example, we may learn that some aspects of transference are rooted in procedural memories, by noting their association with activity in the basal ganglia. These elements of transference may be learned earlier in life, change more slowly, and be more amenable to supportive interventions than to higher level interpretations. In contrast, we may learn that other aspects of transference are rooted in implicit associative memories but associating them with activity in the frontal cortex and hippocampus. These elements may stem from later conflict and change relatively quickly in response to defense interpretations. Ultimately, neuroimaging of paradigms such as Andersen's could help us clarify different aspects of transference in the laboratory in such a way that could be directly applied to clinical technique.

Attachment theory, as originated by John Bowlby and carefully operationalized by Ainsworth, Main, and others, has been influential on psychodynamic theorizing and clinical practice [69, 70]. Empirical work in both humans and animals has suggested that the attachment system is fundamental to our social processes and is likely subserved by a distinct neural mechanism [71, 72]. Recent neuroimaging work has attempted to localize these processes using attachment-related stimuli such as pictures of one's own children [73, 74]. Progress in this area will likely be relevant to our understanding of how attachment affects and is changed within the treatment environment. Such work could help clarify the extent to which insecure or disorganized attachments are rooted in neurobiologically fixed deficits whose roots do not change in treatment (though we may develop helpful compensations) versus difficulties in higher level processing that can be fundamentally altered by treatment. Attachment and psychodynamic theorists have argued about these very points. It is hopeful that neurobiological methods can advance the debate.

Empathy, an inherently interpersonal process, has received considerable attention in the cognitive neuroscience literature [75–77]. Researchers have shown activation in specific brain regions, in particular the insula and the anterior cingulate cortex, that relate to both an individual's experience of his/her own distress, and his/her experience of someone else's distress. A subject's own behaviorally rated capacity for empathy is tightly correlated with the activation of these brain regions [75, 76]. In related work, Marci has shown a link between therapist empathy and physiologic correlation between patient and therapist using a measure of skin conductance [16, 78]. Marci and Riess have shown that awareness of lack of patient–therapist concordance in physiological measures can lead to significantly improved alterations in clinical interventions, helping the therapist see previously unseen anxiety in the patient [79]. Given the highly reproduced finding that patient–therapist alliance (a construct that overlaps with empathy) is closely related to therapeutic outcome, neurobiological investigation of empathy is relevant and important for our understanding of analytic treatments.

Conceptualization and empirical research into “theory of mind” (i.e., an individual's understanding about the content and functioning of other people's minds) began in the developmental psychology literature but has become an important part of work on psychopathology (in particular autism, borderline personality disorder (BPD), and schizophrenia) and therapeutic change (where it is often called “mentalization”) [80–82]. Several neuroimaging researchers have found evidence for functional localization of theory of mind in the medial prefrontal cortex, interestingly close to, and undoubtedly related to, regions implicated in self-representations [83–86]. Further investigation into the nature of theory of mind, its properties, and its capacity for modification during treatment may be an important window into a psychodynamic mechanism of action. For example, it is widely hypothesized that in certain disorders such as autism, there is a relatively fixed deficit in theory of mind. However, some have argued that it is possible to significantly improve the ability of high

functioning autistic or Asperger's individuals through therapy. It would be useful to understand whether these changes affect the same areas as the underlying disorder or are more likely to affect compensatory mechanisms. Similarly, Fonagy and others have discussed impaired theory of mind in BPD. Neuroimaging could help clarify whether this is more of a stable deficit or an inhibition of an underlying capacity that can be improved through treatment [80].

The term "mirror neurons" was coined in reference to pre-motor and parietal cells in the brain of macaque monkeys that fired *both* when the animal carried out a specific action (e.g., reaching for a banana) and when the animal observed a human experimenter performing that action [87]. The translation of this concept into humans, predominantly through functional neuroimaging experiments, has received a great deal of attention within the psychodynamic literature [88–90]. Within the mirror neuron literature, dynamic theorists have seen a potential neurobiological substrate and legitimization of the psychodynamic concept of "primary identification" (i.e., a core level experience by one person of the mental state of another). However, this argument is potentially misleading in a number of ways. First, it appears to imply that the processes of empathy and identification are somehow "neurobiologically primary" rather than mediated by higher level neuro-cognitive processes, as has been well established by clinical and empirical evidence. Second, the argument is based on an extrapolation of a finding in non-human primates (where single cell recordings are possible) to humans (where at present we can only measure activation in large groups of neurons). Finally, it is unclear how the mirror neuron literature adds to the broader theory that all concepts (including self and object representations, as well as their expected actions and affects) are stored in distributed neural representations, which are, in turn, connected to representations of behaviors being carried out both by ourselves and by others. More empirical and theoretical work is required to clarify the usefulness of the mirror neuron literature to psychodynamic therapy.

Attention, Free Association, and Defense

The study of attentional processes is also important for the investigation of unconscious and clinically relevant mechanisms. Although consciousness is typically thought of as a binary phenomenon (i.e., something is either accessible or inaccessible to awareness), research into attention suggests a broad continuum in which material is more or less accessible in any given context due to a variety of factors [91, 92]. A number of studies have demonstrated preferential attention for mental contents that are less objectionable according to basic psychodynamic principles [35, 43, 93–95]. Repression, one of the most basic of all defense mechanisms, has been studied carefully from behavioral and neurobiological perspectives [64, 96]. Evidence supports the notion that motivated forgetting relies on increased activity in the dorsolateral prefrontal cortex (which may supply the motivation) and reduced activity in the hippocampus (which fails to encode the memory) [97].

Hypnosis is an extreme example of altered consciousness often associated with Freud and psychoanalysis. However, for many years, it has been on unclear empirical grounds. Recently, neuroimagers have been able to investigate hypnosis in the MRI scanner and show that it has measurable consequences in terms of brain activity that closely parallel behavioral findings [98, 99]. In particular, Raz and colleagues have shown that effects of the Stroop Task, a highly reliable and well-accepted cognitive measure, can be significantly reduced using hypnosis. In the Stroop task, subjects are presented with a series of color words (e.g., "red," "blue," "green") written in either the *same* color that the word represents (i.e., a congruent trial) or a *different* color (i.e., an incongruent trial). They are asked to indicate for each word, the color that the word is written in, ignoring what the word itself means. Because reading is automatic, subjects take longer to respond to incongruent trials than to congruent trials, no matter how hard they try or train in the task. Giving subjects the post-hypnotic suggestion that the words are "nonsense strings" effectively reduces the extent of this

effect. This reduction correlated closely with decreased activity in the anterior cingulate cortex, a structure associated with managing conflict between two stimuli seeking attention [98].

Dreams have long been of interest to psychodynamic (and especially psychoanalytic) therapists, who have theorized that dream contents may reflect relational and dynamic mental constructs that are otherwise difficult for the conscious mind to access. Recent neuroimaging findings suggest that brain regions that are highly active during REM sleep, when most dreaming takes place, may be relevant to accessing this material [100, 101]. These regions include brainstem, limbic and paralimbic circuitry. Deactivation of the dorsolateral prefrontal cortex, as also observed during REM, may facilitate retrieval of this material through disinhibition of limbic and other subcortical processes. Experience while awake is seen to influence subsequent dreaming activity [102]. Along these lines, it may be the case that certain aspects of psychodynamic therapy engage neural circuits that are also activated (or deactivated) during dreaming, facilitating the identification and resolution of deeply held intrapsychic conflicts. Further research is needed to clarify the neurobiology common to dreaming and psychodynamic therapy process, and to understand the neural mechanics of Freud's "royal route" to the unconscious.

Early evidence is even accumulating to support one of the oldest psychodynamic notions, namely that the behavior of the mind when it is not consciously being controlled – free association – consists of more than merely background noise. Researchers have begun to describe a network of cortical regions that activate in a "default mode" when the mind otherwise appears to be at rest or wandering [103, 104]. Default mode circuits could be of crucial importance in understanding the unconscious or non-conscious mechanisms that are relevant to psychodynamic processes and treatment.

Conclusions

Empirical data is clearly accumulating that is relevant to psychodynamic processes in a wide range of areas, whereas at one point, psychodynamic psychology was the only language and method for studying the unconscious, affect, interpersonal processes, dreams, defense mechanisms, and free association. In contrast, cognitive neuroscience now offers concepts and methods for this purpose as well. A useful task of psychodynamics in this context is to integrate its own large database of clinical data and theoretical constructs with the emerging empirical findings. Several writers have begun to do so, though the explosion in research makes it difficult to identify and navigate the salient neural findings [105–110]. Advances in the years to come will reveal how these two fields fit together, hopefully with direct benefit to clinical practice.

One of the principal criticisms leveled against neuroscientific investigations of psychodynamic theory and practice has been that neuroscience has very little to offer the clinician in terms of understanding his patients in a "dynamic" way or choosing his individual techniques [19, 111]. To date, it is true that findings from the neuroscience literature have had little direct influence on the thinking of analytic clinicians and their behavior in the office. However, this lack of influence will likely change in a number of ways in the not too distant future. First, dynamic clinicians have long been moving in the direction of understanding certain deficits (e.g., of cognitive functioning, affect regulation, attachment) as related to – but not the same as – dynamic conflicts. This understanding influences their conceptualization of pathology (particularly in a developmental context) and way of speaking with their patients. This movement was driven by an entire culture of change in psychiatry, psychology, and psychoanalysis, but neuroscience has played a role in making deficits more objectifiable and real.

Second, there has been a significant movement in dynamic thinking towards an object relations approach. Though this has been stimulated by many factors, one among them is the greater emphasis in neuroscience on social functioning and the growing evidence for a neurobiological attachment

system. Finally, many dynamic clinicians feel that research into the process and outcome of patients with BPD has clarified the appropriateness of a supportive–expressive model of treatment versus a more purely interpretive, classical analytic approach. Kernberg, Fonagy, Gabbard, and others have discussed the importance of matching the structure and depth of the treatment to the personality organization of the patient [80, 112, 113]. Neuroscientific studies of BPD and the mechanisms involved in its treatment (e.g., mentalization, theory of mind, affect regulation) are relatively recent, but are already starting to support and refine this approach to matching treatment and patient.

Psychotherapy in the Era of Neuroimaging

Neuroimaging techniques have begun to provide us with not only a better understanding of psychotherapy components but also the overall effects of psychotherapy on brain function. At their fullest potential, studies of how psychotherapy affects the brain can be of tremendous value to patients, therapists, and to the field as a whole. Providing patients with information on how psychotherapy changes brain function reinforces the notion that the treatment induces meaningful changes. In the dialog between patient and therapist, neuroimaging results can enhance the vocabulary of psychotherapy process and help concretize the goals of treatment. In some cases, it may even be possible to predict how well a given patient will do with a given therapeutic approach, based on that individual's pattern of brain activity at baseline. Finally, the notion that psychotherapy has a biological substrate places the intervention in the same category as other “medical” treatments that induce measurable changes in physiology, biochemistry, or morphology. This notion could be a powerful ally in combating the residual stigma associated with psychotherapy (and psychiatric treatment in general) that promotes hesitation in many potential patients, prevents the achievement of parity with other medical treatments, and nurtures an unfounded skepticism and mistrust within some elements of culture and society.

A healthy conglomeration of studies has now begun to deliver findings with clear implications for psychotherapy theory and practice [10, 114]. Even so, the story of how psychotherapy changes brain function is far from complete. Notably, as of the time of this writing, few investigators have studied explicitly the effects of *psychodynamic* psychotherapy on brain activation, although some promising work by Lehtonen and colleagues describing effects of psychodynamic therapy on serotonin transmission in depression is described in detail in Chap. 2. However, extant studies examining other psychotherapeutic modalities have clearly shed light on the same questions that will be essential to understanding how dynamic therapy changes brain function. This section will focus on how these preliminary studies have addressed three fundamental questions related to psychotherapy and brain function: [1] Does psychotherapy affect activity within brain regions known to be involved in the pathophysiology of the target disorders [2]? Does psychotherapy differ from psychopharmacology, the other mainstay of psychiatric treatment, in this regard [3]? Do different varieties of psychotherapy that are equally effective target similar brain regions, and in similar ways?

Repairing Dysregulated Neural Machinery in Anxiety Disorders

Neuroimaging studies have provided previously unimaginable insight into how and where psychiatric disorders disrupt the normal workings of the brain. While dramatic changes in the size and shape of brain structures were long ago ruled out in the study of psychiatric conditions, functional abnormalities – i.e., inappropriate activation or deactivation of identified neural regions and circuits – have been clearly demonstrated in many disorders [115]. By the same

token, the first test of how psychotherapy induces meaningful changes in brain function is whether these changes occur in implicated brain regions, and whether these changes restore normal levels of activity.

Perhaps the clearest example of regional brain dysfunction in psychiatric conditions is obsessive compulsive disorder (OCD). One of the most consistently replicated findings in psychiatry neuroimaging research involves abnormal activity in cortico-striato-thalamic circuitry in OCD. Baseline activity in the orbitofrontal cortex (OFC), anterior cingulate cortex, striatum, and thalamus is increased in OCD, and this pattern is exacerbated by symptom provocation [116, 117]. Further, the degree of hyperactivity intercorrelates among these regions [118]. Within the striatum, the caudate nucleus in particular is thought to contribute to OCD symptoms by inappropriately managing cognitive and emotional impulses, leading to their dysregulated expression [119].

In the first published investigations of the neural effects of psychotherapy, Baxter, et al. [118] studied the effects of behavioral therapy (BT) on OCD. In two cohorts, the investigators found that successful BT was associated with significant reduction in caudate nucleus activity, as well as a decoupling of hyperactivation in the caudate, OFC, and thalamus. Although BT does not explicitly rely on psychodynamic formulation or technique, nonetheless Baxter and associates were aware of at least one dynamic implication of their work:

Another basal ganglia function, “gating,” by which certain motor, sensory, and perhaps cognitive impulses are either allowed to proceed through to perception and behavior or are held back (“filtered”) and dissipated, seems to speak to the psychodynamic concept of disordered “repression” in OCD [118].

They also note that the emotional dysregulation seen in some individuals with Huntington’s disease correlates with decreased caudate activity in these patients [120], again speaking to the role that the caudate may play in gating emotional impulses.

The neural circuitry underlying phobias has also been clearly established, involving increased activity in limbic, paralimbic, and ventral prefrontal regions. This pattern is entirely in keeping with studies associating the amygdala and adjacent structures with conditioned fear responses, and the ventral prefrontal cortex with both retention and recall of conditioned fear and in planning responses to frightening stimuli [121]. One might imagine, for example, that among individuals with specific phobias, exposure to the fear-inducing stimulus would cause increased activity in the amygdala, related to recognition and generation of the fear response, and in the prefrontal cortex, related to planning a strategy for confrontation (or retreat).

Several recent neuroimaging investigations suggest that psychotherapy for specific phobias targets these same regions. In a study of individuals with social phobia, Furmark et al. [122] examined the effect of cognitive behavioral therapy (CBT) on brain activation following symptom provocation. Prior to treatment, subjects exhibited increased activity in the amygdala and other limbic structures when asked to read a speech about a personal experience in front of multiple observers. Following eight sessions of group CBT, the same individuals demonstrated significantly lower activation of these regions when performing the same task as before. Another provocation design by Paquette et al. [123] examined changes in brain activation related to group CBT for spider phobia. With successful treatment, patients exhibited a decline in parahippocampal gyrus and prefrontal cortex activation when exposed to pictures of spiders. Analogous posttreatment reductions in amygdala hyperactivity were observed in another investigation of spider phobia, this one using only a single session of intensive exposure therapy [124]. Again, none of these studies was geared towards measuring effects of *psychodynamic* interactions on brain function. Nevertheless, given the generative roles of prior (usually developmental) traumatic experiences on phobic responses and the undoing of phobias through a therapeutic relationship, it is likely that dynamic factors play an implicit role even in CBT for phobias [125]. It remains to be seen to what extent changes in prefrontal and limbic regions as a result of CBT actually reflect dynamic processes.

Contrasting Effects of Psychotherapy and Psychopharmacology on Brain Function

For many psychiatric conditions, psychotherapy and psychopharmacology offer equivalent efficacy (or, in some cases, synergistic beneficial effects). However, do their similar clinical effects reflect parallel changes on brain activity? Evidence from other areas of medicine seems to challenge this notion. For example, while beta blockers, ACE inhibitors, and diuretics are all effective treatments for hypertension, each works through a unique mechanism (i.e., by affecting sympathetic or vascular tone, or circulating volume). With the complex neural pathophysiology of depression, it would not be surprising to see that different treatment modalities target different components of the disorder. Functional neuroimaging provides the ability to compare directly the neural mechanisms of action of psychotherapy and psychopharmacology. More importantly, as we shall later discuss, this information may one day be useful in predicting which type of therapy best matches up against a given individual's pattern of brain susceptibility – just as optimal selection of blood pressure medications can be guided by individual risk patterns (e.g., co-morbid diabetes, heart disease, or kidney disease) [126].

The question of how psychotherapy compares to pharmacotherapy in influencing brain function has been of interest to neuroimaging investigators since Baxter et al.s' first study of OCD. Indeed, in that investigation, BT was contrasted with fluoxetine on treatment-related changes in brain activity [118]. Both treatments, as it turned out, reduced activity in the caudate nucleus and disrupted the pattern of tandem hyperactivity in cortico-striato-thalamic circuitry. However, in a subsequent study conducted by Brody et al. [127], a strikingly different pattern emerged with respect to activity in another region implicated in OCD, the OFC. Taking a slightly different approach, Brody et al. examined whether baseline brain activity alone might predict response to BT versus fluoxetine. Among responders to BT, the degree of baseline activity in the left OFC cortex positively correlated with responsiveness to treatment. However, among responders to fluoxetine, the opposite pattern emerged: those with *less* baseline activity in the left OFC were more likely to respond to treatment. This same divergent pattern has been replicated in separate studies of paroxetine [128] and BT [129]. Offering an explanation for this pattern, Brody et al. proposed that "subjects with higher pre-treatment metabolism in the OFC may have a greater ability to change the assignment of affective value to stimuli," a process that more explicitly relies on psychotherapy than psychopharmacology.

Comparisons of brain activity response to psychotherapy versus medication have also intrigued investigators studying depression. In an FDG-PET study of CBT versus paroxetine, Goldapple, Mayberg and colleagues [130] focused on how these respective treatments changed brain function. Their report focused on prefrontal, limbic, and paralimbic structures that had previously been implicated in the pathophysiology of depression. Once again, a provocative contrast emerged between the two treatments (despite similar efficacy). In the paroxetine group, treatment resulted in increased prefrontal activity, and diminished activity in the hippocampus and subgenual cingulate cortex. However, in those patients receiving CBT, treatment response was associated with decreased prefrontal activity, and increased hippocampal and dorsal cingulate cortex activity – almost completely opposite to the paroxetine group. This finding is also somewhat counterintuitive, given the well-established role of the prefrontal cortex in stimulus appraisal, strategy planning, and direction of attentional resources – all elements that are actively re-trained during CBT. Rather, as the authors speculated:

Hippocampal and mid and anterior cingulate increases coupled with decreases in medial frontal, dorsolateral, and ventrolateral prefrontal activity with CBT treatment might be nonetheless interpreted as correlates of CBT-conditioned increases in attention to personally relevant emotional and environmental stimuli associated with a learned ability to reduce online cortical processes at the level of encoding and retrieval of maladaptive associative memories, as well as a reduction in both ruminations and overprocessing of irrelevant information [130].

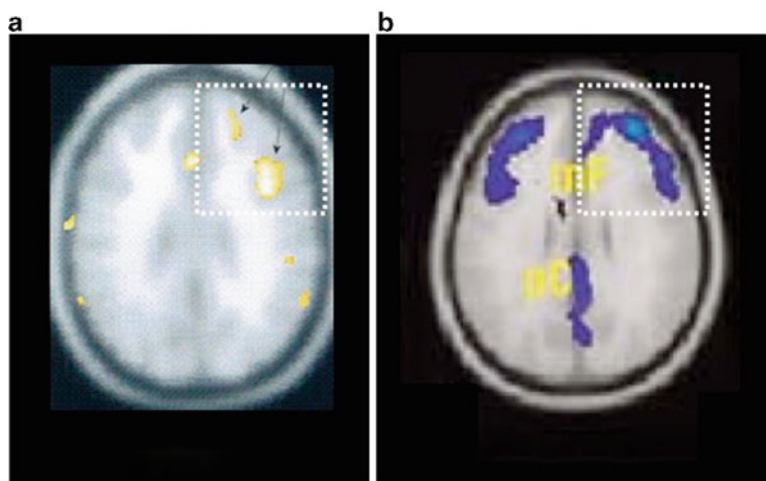


Fig. 11.6 Decreases in prefrontal activity (*dashed box*) seen after trials IPT (a) and CBT (b) ((a) Reprinted with permission from Ref. [132]; (b) reprinted with permission from Ref. [130]. Copyright © American Medical Association)

While this explanation is certainly plausible, it remains theoretical and, as we shall later consider, fails to account for other critical factors that might account for this apparent discrepancy. Impressively, though, Kennedy, Mayberg and colleagues have replicated their findings of decreased prefrontal deactivation in CBT responders, although in a more medial prefrontal region than previously reported. Kennedy et al. also replicated the previous finding of opposing changes in the anterior cingulate cortex in response to CBT (increased activity) versus a pharmacologic intervention, venlafaxine (decreased activity) [131].

In a second study comparing psychotherapy to paroxetine for depression, Brody et al. this time focused on interpersonal therapy (IPT) [132]. However, unlike the Goldapple investigation of paroxetine versus CBT [130], in this case the two treatments similarly affected the prefrontal cortex (decreasing activity) as well as limbic and paralimbic regions (increased activity in the insula and left inferior temporal lobe). This pattern is noteworthy on two fronts: on the one hand, the same pharmacologic intervention (paroxetine) appeared to work in opposing directions relative to psychotherapy in the Goldapple and Brody studies, and on the other, differing psychotherapeutic approaches appeared to induce similar changes in both studies (Fig. 11.6).

While this pattern makes it difficult to draw conclusions about whether psychotherapy and psychopharmacology induce similar changes in brain activity, it has even more hair-raising implications for psychotherapists, who sometimes ardently prefer one therapeutic approach over another. Can it be possible that, despite their dissimilarities in theory and practice, that various types of psychotherapy ultimately change the brain in similar ways?

Contrasting Effects of Varying Psychotherapeutic Approaches on Brain Function

With only few published studies available to weigh this important question – and no head-to-head investigations of the effects of different psychotherapies on brain function – it is impossible to formulate a definitive answer at present. It is likely that the answer will require a more complex experimental design than contrasting pre- and posttreatment scans of patients in different psychotherapy

groups, as well as independent replication of the results. However, let us first take a step back, and carefully consider the argument for why differing effects on brain activity might be expected.

The studies mentioned thus far used either CBT or IPT to treat depression. Consistent with a wealth of clinical experience and validation, both interventions were successful in improving depression symptoms, performing comparably to antidepressant intervention. However, while IPT and CBT are similar in that they are both time-limited, manual-guided treatments, in theory, the work of therapy differs substantially in these treatments. Unlike CBT, IPT focuses primarily on improving interpersonal relationships, often drawing material directly from the patient–therapist relationship. With a greater focus on transference, certain psychodynamic elements are touched upon more explicitly in IPT. Moreover, cognitive and dynamically oriented therapies may draw on different memory systems (described in earlier), as cognitive therapy may more strongly rely on declarative memories, and dynamic therapy on implicit memories.

Such differences may not affect the *outcome* of CBT and IPT, but they certainly should affect the *process*. In this sense, it is unfortunate that most of the currently published neuroimaging studies that focus on psychotherapy failed to include process measures and measures of treatment adherence. Without such measures, it remains possible that despite the differing “brand names,” elements of IPT contributed to CBT sessions, and vice versa. Along the same lines, it is possible that symptom improvement was significantly influenced by alternate therapeutic approaches.

This risk is more than theoretical: other investigators examining psychotherapy process with rigorous criteria strongly suggest that psychotherapeutic approach is often more eclectic than intended. For one manualized trial of IPT versus CBT [133], in *both* treatment groups, process and outcome were more closely related to cognitive behavioral techniques. Conversely, in another investigation of CBT for depression [134], psychodynamic elements both influenced the course of treatment and the outcome [135]. Many would argue that dynamic factors influence treatment process and outcomes even in psychopharmacology [136, 137] or general medical settings [138], even without the caregiver explicitly employing psychodynamic techniques. As such, even though psychodynamic psychotherapy has not “explicitly” been studied with neuroimaging, in all likelihood, dynamic elements influenced both outcome and brain activity even for patients receiving behavioral or cognitive behavioral therapy in the studies described earlier. Regardless, it is impossible to reliably disentangle the effects of varying psychotherapy techniques on brain function without measures of adherence or process.

By the same token, the oft employed “pre–post” model of comparing brain activity before and after a course of psychotherapy relates much more directly to outcome than to process. In the studies described earlier, while CBT and IPT appeared to exert very similar effects on brain function *as a result of* therapy, parallel changes may or may not occur *during* therapy. The ability to measure brain activation patterns serially over the course of psychotherapy – or, better, to measure them during psychotherapy sessions themselves – will be instrumental in addressing this question, especially when viewed alongside measures of psychotherapy process.

Thus, while the question “Does psychotherapy change brain function?” appears to be convincingly answered, the questions of “How does psychotherapy change brain function?” and, more specifically, “How do different psychotherapies change brain function?” remain largely unexplored. In the next section, we will consider how these questions might best be addressed in future studies, as well as the unique implications that these studies may have on the practice of psychodynamic psychotherapy.

Synthesis and Future Directions

Given the broad range of findings reviewed in this chapter, it is a significant challenge to synthesize it into a reliable set of conclusions. However, analogous to the method of psychodynamic therapy itself, perhaps it is more useful to comment on the process of this review than on its detailed contents

(though we will attempt to do some of both). We begin by suggesting several things that we feel that the literature *does* support.

First, we believe that given the sheer volume of scientifically sophisticated empirical investigations on psychotherapy, affect, social processes, and non-conscious mechanisms (including but not limited to dreams, hypnosis, free association, and defense mechanisms), it is increasingly clear that neurobiological research is relevant to psychodynamic concepts and treatment. That said, we have no doubt that controversy will continue to rage about the applicability of this work to the day-to-day thinking of psychodynamic theorists and clinicians. It is helpful and responsible to question the application of individual findings when the methods of investigation are so different. However, we believe it is irresponsible and counterproductive to the field when some generalize that criticism to a condemnation of the usefulness of all neurobiological research, particularly without a first-hand knowledge of that literature [17, 19].

To date, a number of important brain systems and associated regions have been implicated as important to psychodynamically relevant hypotheses. These include limbic and paralimbic structures (e.g., amygdala, insula, OFC), memory systems (e.g., dorsolateral prefrontal cortex and hippocampus), conflict management and affect regulatory systems (e.g., anterior cingulate cortex and medial prefrontal cortex), attentional systems (prefrontal, cingulate, and parietal cortices), and planning and procedural memory systems (basal ganglia).

It is perhaps equally, if not more important, to be open and frank about what the neurobiological literature does not do, and in some cases will never do, in reference to psychodynamic thinking. First, we believe that it is a fundamental error to look toward neurobiology to “prove” that psychodynamic thinking and therapy are fundamentally “true.” The body of theory and clinical work is too vast and heterogeneous for this to be possible. Furthermore, it does not seem reasonable to think that any body of concepts, particularly one that has historically isolated itself from empirical methods, is not in need of modification. This attempt is merely the flip side of the equally false argument that empirical research has “proven” psychoanalysis to have no scientific foundation [20]. Phrasing the argument in either of these ways is counterproductive as it encourages zealotry and selective interpretation of the data, as opposed to the careful scientific elaboration of complicated theories and integration of information from multiple perspectives.

Second, it seems increasingly clear that the neurobiological literature does not provide a consensus on the existence of the “unconscious mind” according to psychodynamic principles. On the one hand, it is now widely accepted by cognitive neuroscientists that important mental functioning takes place outside of awareness [139]. However, the properties and constraints of non-conscious systems – whether called unconscious, implicit, procedural, or by some other name – are complex and remain to be successfully elaborated. It appears likely that there are multiple brain systems involved in non-conscious processes, including implicit associative and implicit procedural memories, and that these systems may have links to alternate ways of thinking about non-conscious processes in psychodynamic theory (e.g., oedipal versus pre-oedipal functioning).

Third, it is important for empirical investigators and psychodynamic theorists or clinicians to be open about the ways in which new experimental paradigms and methodologies capture some, but never *all* aspects of a clinical phenomenon. It is a central fact of all scientific investigation that one needs to reduce a complex real-world phenomenon into a set of component parts in order to study it usefully. This should not be taken to be equivalent to the statement that experimental models have nothing relevant to teach us about the clinical situation [22].

Finally, we must be aware of the temptation, particularly in the era of neuroimaging, to point to particular brain regions and look for localization of individual psychodynamic processes. Given the distributed nature of brain processes and the complex interdigitation of the machinery that drives cognitive, emotional, and social processes, it is difficult to imagine wholly discrete, unambiguous localization for any particular concept, whether it be the unconscious mind, repression, transference, or structural change. Suggesting otherwise may limit the success of the dialog on these topics.

Despite these caveats, there are a number of exciting directions to which the research reviewed in this chapter seems to point. We believe that as experimental paradigms improve, accumulating data will help us identify properties and constraints of neurobiologically based systems relevant to psychodynamic theory and practice. Once these measures are well understood, it will lead to iterative testing and refinement of psychodynamic concepts and theories about normal and pathological functioning. Ultimately, these measures will also be incorporated into clinical research and lead to the iterative testing and refinement of clinical theories and techniques. Progress in clinically relevant neurobiological research will likely also depend on the further development of cutting-edge technologies that allow for measurement of brain function in the therapist's office. Psychophysiological (e.g., skin conductance, heart rate variability) and near-infrared imaging (which measures cortical activation without requiring the heavy machinery of MRI or PET) may be important in this regard, though new technologies may emerge as well [16, 140].

Though less an area of current empirical investigation, it is likely that other empirical methods now gaining currency in experimental psychiatry will become useful for psychodynamic work as well. In particular, genetics and temperament are two important (and likely related) areas of research that are undoubtedly relevant to the variability of patient outcome in psychodynamic treatment, and ultimately to our understanding of the mechanisms of psychopathology and therapeutic change. Interestingly, Freud and other psychodynamic theorists were not opposed to the importance of hereditary and temperamental factors in understanding patients, though they have had a mixed reception in the broader psychoanalytic literature [141, 142]. On the other hand, the neurobiology and genetics of temperament is a rapidly expanding area, with an abundance of recent studies establishing how certain genetic variants predispose towards affective, harm avoidance, and novelty-seeking traits through their actions on discrete neural systems [143, 144].

Though still somewhat distant, it is not difficult to imagine some of the useful consequences of a successful program of neurobiological research into psychodynamic theories and treatments. Theorists and clinicians have long wished for a better ability to predict response in patients, so as to assist in their ability to recommend which treatments for which patients. As is currently being sought with regard to other treatments in psychiatry, sophisticated research may find patterns of neurobiological activity in response to specific tasks that is predictive of psychotherapy outcome.

Two investigations of psychotherapeutic interventions have offered extremely promising preliminary results in this regard. In a study comparing BT to fluoxetine for OCD, Brody et al. [127] found that a baseline scan differentially stratified responders from non-responders for the two treatments. Patients who were to receive fluoxetine ultimately demonstrated the best response if they had low baseline activity in the left OFC, while those who would receive BT exhibited better responses if they had high activity in the same brain region. After conducting baseline scans of patients with depression, Siegle et al. [145] found that increased activity in the amygdala, and decreased in the subgenual cingulate cortex predicted significantly better responsiveness to CBT. These results have clearly important clinical implications: they suggest that a baseline brain scan can provide objective biomarkers that, if shown to be reliable, may be used to determine the likelihood of a good treatment response for a given individual. Ongoing work by Roffman and colleagues, described in detail in Chap. 16, is examining whether baseline scans likewise can predict responsiveness to psychodynamic therapy.

Equally tantalizing is the possibility that we may investigate the effectiveness of individual interventions (e.g., supportive versus transference interpretations) using in-session neurobiological techniques. Perhaps, we will someday have more sophisticated ways to gage when the alliance is strong enough to make deeper interpretations helpful [16, 57]. As all of medicine moves towards individualized treatments, psychodynamic psychotherapy will keep pace [14].

Even before these advances, clinicians can anticipate using what we learn from neurobiological research to influence their conceptualization of patients' problems and their vocabulary for discussing such concepts with their patients. Contemporary clinicians have been greatly affected in how

they talk to their patients by concepts such as attachment, mentalization, and empathy, so it is not hard to imagine that new research will yield useful changes in language too.

On another practical level, psychodynamic-neurobiological research has immediate implications for the education of psychiatrists, psychologists, therapists, and other mental health professionals. Psychodynamic teaching in psychiatry residencies and psychology graduate programs has recently been under threat specifically because critics have complained that it is not tied to a scientific literature [146]. However, even in the setting of rapidly expanding neuroscience curricula, program directors for the most part remain highly committed to psychotherapy training [147]. New research will address that challenge and also improve the teaching of concepts and techniques that have often relied more on the charisma and persuasive powers of the teacher than on the merit of the ideas. Furthermore, the ideas contained in a careful discussion of psychodynamic-empirical research are likely to be useful to trainees of many kinds. Cappas et al. suggest seven “principles of brain-based psychotherapy” about which there is considerable (with the possible exception of Principle 5) consensus [148]:

1. Genetics and environment interact in the brain to shape the individual.
2. Experience transforms the brain.
3. Memory systems in the brain are interactive (i.e., memory storage and retrieval depends on context and should not be treated as a perfect account of what happened).
4. Cognitive and emotional processes work in partnership.
5. Bonding and attachment provide the foundation for change.
6. Imagery activates and stimulates the same brain systems as does real consensus.
7. The brain can process nonverbal and unconscious information.

As research progresses, we will undoubtedly further refine and add to the principles that can usefully be taught to trainees along with their empirical foundations.

Without surrendering the core skepticism toward certainty that characterizes both good science and good psychodynamic thinking, we believe that the future of close collaboration between empirical researchers and psychodynamic theorists and clinicians is bright. As long as a mutually respectful dialog is allowed to develop, the progress in this area will drive improvements in our theory and in our clinical work with patients.

References

1. Freud S. Project for a scientific psychology; 1895.
2. Masson JM, editor. The complete letters of Sigmund Freud to Wilhelm Fleiss 1887–1904. 3rd ed. Cambridge: Harvard University Press; 1995.
3. Kandel ER. Biology and the future of psychoanalysis: a new intellectual framework for psychiatry revisited. *Am J Psychiatry*. 1999;156:505–24.
4. Alexander F. Psychosomatic medicine: its principles and applications. New York: WW Norton; 1950.
5. Kandel ER. A new intellectual framework for psychiatry. *Am J Psychiatry*. 1998;155:457–69.
6. Price BH, Adams RD, Coyle JT. Neurology and psychiatry: closing the great divide. *Neurology*. 2000;54:8–14.
7. Antonuccio DO, Danton WG, DeNelsky GY. Psychotherapy versus medication for depression: challenging the conventional wisdom with data. *Prof Psychol Res Pract*. 1995;26:574–85.
8. Goldman W, McCulloch J, Cuffel B, Zarin DA, Suarez A, Burns BJ. Outpatient utilization patterns of integrated and split psychotherapy and pharmacotherapy for depression. *Psychiatr Serv*. 1998;49:477–82.
9. Satcher D. Mental health: a report of the surgeon general. Rockville: United States Public Health Service; 1999.
10. Roffman JL, Marci CD, Glick DM, Dougherty DD, Rauch SL. Neuroimaging and the functional neuroanatomy of psychotherapy. *Psychol Med*. 2005;35:1–14.
11. Roffman JL, Marci CD, Glick DM, Dougherty DD, Rauch SL. Neuroimaging and the functional neuroanatomy of psychotherapy. *Psychol Med*. 2005;35:1385–98.

12. Westen D, Novotny CM, Thompson-Brenner H. The empirical status of empirically supported psychotherapies: assumptions, findings, and reporting in controlled clinical trials. *Psychol Bull.* 2004;130:631–63.
13. Dougherty DD, Rauch SL, Rosenbaum JF. *Essentials of neuroimaging for clinical practice.* Washington, DC: American Psychiatric Association; 2004.
14. Jones DS, Perlis RH. Pharmacogenetics, race, and psychiatry: prospects and challenges. *Harv Rev Psychiatry.* 2006;14:92–108.
15. Giove F, Mangia S, Bianciardi M, et al. The physiology and metabolism of neuronal activation: in vivo studies by NMR and other methods. *Magn Reson Imaging.* 2003;21:1283–93.
16. Marci CD, Ham J, Moran E, Orr SP. Physiologic correlates of perceived therapist empathy and social-emotional process during psychotherapy. *J Nerv Ment Dis.* 2007;195:103–11.
17. Green A. What kind of research for psychoanalysis? In: Sandler J, Sandler A-M, Davies R, editors. *Clinical and observational psychoanalytic research: roots of a controversy.* Madison: International Universities Press; 2000. p. 21–6.
18. Perron R. Reflections on psychoanalytic research problems – the French speaking view. In: IPA, editor. *An open door review of outcome studies in psychoanalysis.* London: Research Committee of the International Psychoanalytic Association; 1999. p. 8–19.
19. Hoffman IZ. “Doublethinking” our way to scientific legitimacy: the desiccation of human experience. In: Winter meeting of the American Psychoanalytic Association. New York; 2007.
20. Torrey EF. Does psychoanalysis have a future? No. *Can J Psychiatry.* 2005;50:743–4.
21. Westen D. The scientific status of unconscious processes: is Freud really dead? *J Am Psychoanal Assoc.* 1999;47:1061–106.
22. Peterson BS. Clinical neuroscience and imaging studies of core psychoanalytic constructs. *Clin Neurosci Res.* 2005;4:349–65.
23. Westen D. Implications of developments in cognitive neuroscience for psychoanalytic psychotherapy. *Harv Rev Psychiatry.* 2002;10:369–73.
24. Westen D, Gabbard GO. Developments in cognitive neuroscience: I. Conflict, compromise, and connectionism. *J Am Psychoanal Assoc.* 2002;50:53–98.
25. Lane RD, Garfield DAS. Becoming aware of feelings: integration of cognitive-developmental, neuroscientific, and psychoanalytic perspectives. *Neuropsychanalysis.* 2005;7:5–30.
26. Beutel ME, Stern E, Silbersweig DA. The emerging dialogue between psychoanalysis and neuroscience: neuroimaging perspectives. *J Am Psychoanal Assoc.* 2003;51:773–801.
27. Ellenberger HF. *The discovery of the unconscious; the history and evolution of dynamic psychiatry.* New York: Basic Books; 1970.
28. Sandler J, Holder A, Dare C, Dreher AU. *Freud’s models of the mind: an introduction.* Madison: International Universities; 1997.
29. Kandel ER, Kupferman O, Iverson S. Learning and memory. In: Kandel ER, Schwartz JH, Jessell TM, editors. *Principles of neural science.* New York: McGraw-Hill; 2000. p. 1227–46.
30. Baddeley A. Working memory: looking back and looking forward. *Nat Rev Neurosci.* 2003;4:829–39.
31. Schacter DL, Slotnick SD. The cognitive neuroscience of memory distortion. *Neuron.* 2004;44:149–60.
32. Smith EE, Kosslyn SM. Encoding and retrieval from long-term memory. In: *Cognitive psychology: mind and brain.* Upper Saddle River: Prentice Hall; 2007. p. 195–246.
33. Kihlstrom JF. The cognitive unconscious. *Science.* 1987;237:1445–52.
34. Kihlstrom JF. Availability, accessibility, and subliminal perception. *Conscious Cogn.* 2004;13:92–100.
35. Wong PS, Bernat E, Snodgrass M, Shevrin H. Event-related brain correlates of associative learning without awareness. *Int J Psychophysiol.* 2004;53:217–31.
36. Wong PS. Anxiety, signal anxiety, and unconscious anticipation: neuroscientific evidence for an unconscious signal function in humans. *J Am Psychoanal Assoc.* 1999;47:817–41.
37. Ochsner KN, Chiu CY, Schacter DL. Varieties of priming. *Curr Opin Neurobiol.* 1994;4:189–94.
38. Knowlton BJ, Squire LR, Gluck MA. Probabilistic classification learning in amnesia. *Learn Mem.* 1994;1:106–20.
39. Knowlton BJ, Mangels JA, Squire LR. A neostriatal habit learning system in humans. *Science.* 1996;273:1399–402.
40. Svoboda E, McKinnon MC, Levine B. The functional neuroanatomy of autobiographical memory: a meta-analysis. *Neuropsychologia.* 2006;44:2189–208.
41. Barrett LF, Mesquita B, Ochsner KN, Gross JJ. The experience of emotion. *Annu Rev Psychol.* 2007;58:373–403.
42. LeDoux J. The emotional brain, fear, and the amygdala. *Cell Mol Neurobiol.* 2003;23:727–38.
43. Russell JA. Core affect and the psychological construction of emotion. *Psychol Rev.* 2003;110:145–72.
44. Posner J, Russell J, Peterson BS. The circumplex model of affect: an integrative approach to affective neuroscience, cognitive development, and psychopathology. *Dev Psychopathol.* 2005;17:715–34.

45. Gerber AJ, Posner J, Gorman D, Colibazzi T, Yu S, Wang Z, et al. An affective circumplex model of neural systems subserving valence, arousal, and cognitive overlay during the appraisal of emotional faces. *Neuropsychologia*. 2008;46(8):2129–39.
46. Paton JJ, Belova MA, Morrison SE, Salzman CD. The primate amygdala represents the positive and negative value of visual stimuli during learning. *Nature*. 2006;439:865–70.
47. Ochsner KN, Bunge SA, Gross JJ, Gabrieli JD. Rethinking feelings: an fMRI study of the cognitive regulation of emotion. *J Cogn Neurosci*. 2002;14:1215–29.
48. Etkin A, Klemenhagen KC, Dudman JT, et al. Individual differences in trait anxiety predict the response of the basolateral amygdala to unconsciously processed fearful faces. *Neuron*. 2004;44:1043–55.
49. Insel TR. A neurobiological basis of social attachment. *Am J Psychiatry*. 1997;154:726–35.
50. Insel TR, Young LJ. The neurobiology of attachment. *Nat Rev Neurosci*. 2001;2:129–36.
51. Ochsner KN, Lieberman MD. The emergence of social cognitive neuroscience. *Am Psychol*. 2001;56:717–34.
52. Mitchell JP, Heatherton TF, Macrae CN. Distinct neural systems subserve person and object knowledge. *Proc Natl Acad Sci USA*. 2002;99:15238–43.
53. Kelley WM, Macrae CN, Wyland CL, Caglar S, Inati S, Heatherton TF. Finding the self? An event-related fMRI study. *J Cogn Neurosci*. 2002;14:785–94.
54. Northoff G, Heinzel A, de Greck M, BERPohl F, Dobrowolny H, Panksepp J. Self-referential processing in our brain – a meta-analysis of imaging studies on the self. *Neuroimage*. 2006;31:440–57.
55. Lieberman MD. Social cognitive neuroscience: a review of core processes. *Annu Rev Psychol*. 2007;58:259–89.
56. Cooper A. Changes in psychoanalytic ideas: transference interpretation. *J Am Psychoanal Assoc*. 1987;35: 77–98.
57. Hoglend P, Amlo S, Marble A, et al. Analysis of the patient–therapist relationship in dynamic psychotherapy: an experimental study of transference interpretations. *Am J Psychiatry*. 2006;163:1739–46.
58. Luborsky L, Crits-Christoph P. Understanding transference: the core conflictual relationship theme method. 2nd ed. Washington, DC: American Psychological Association; 1998.
59. Andersen SM, Baum A. Transference in interpersonal relations: inferences and affect based on significant-other representations. *J Pers*. 1994;62:459–97.
60. Andersen SM, Glassman NS, Chen S, Cole SW. Transference in social perception: the role of chronic accessibility in significant-other representations. *J Pers Soc Psychol*. 1995;69:41–57.
61. Andersen SM, Reznik I, Manzella LM. Eliciting facial affect, motivation, and expectancies in transference: significant-other representations in social relations. *J Pers Soc Psychol*. 1996;71:1108–29.
62. Berk MS, Andersen SM. The impact of past relationships on interpersonal behavior: behavioral confirmation in the social-cognitive process of transference. *J Pers Soc Psychol*. 2000;79:546–62.
63. Glassman NS, Andersen SM. Activating transference without consciousness: using significant-other representations to go beyond what is subliminally given. *J Pers Soc Psychol*. 1999;77:1146–62.
64. Erdelyi MH. The unified theory of repression. *Behav Brain Sci*. 2006;29:499–511.
65. Peterson BS. Indeterminacy & compromise formation: implications for a psychoanalytic theory of mind. *Int J Psychoanal*. 2002;83:1017–35.
66. Raz A, Lamar M, Buhle JT, Kane MJ, Peterson BS. Selective biasing of a specific bistable-figure percept involves fMRI signal changes in frontostriatal circuits: a step toward unlocking the neural correlates of top-down control and self-regulation. *The American Journal of Clinical Hypnosis*. 2007;50(2):137–56.
67. Westen D, Gabbard GO. Developments in cognitive neuroscience: II. Implications for theories of transference. *J Am Psychoanal Assoc*. 2002;50:99–134.
68. Gabbard GO. What can neuroscience teach us about transference? *Can J Psychoanal*. 2000;9:1–18.
69. Cassidy J, Shaver PR, editors. *Handbook of attachment: theory, research, and clinical applications*. New York: Guilford Press; 1999.
70. Fonagy P, Leigh T, Steele M, et al. The relation of attachment status, psychiatric classification, and response to psychotherapy. *J Consult Clin Psychol*. 1996;64:22–31.
71. Leckman JF, Herman AE. Maternal behavior and developmental psychopathology. *Biol Psychiatry*. 2002;51:27–43.
72. Insel TR. Is social attachment an addictive disorder? *Physiol Behav*. 2003;79:351–7.
73. Bartels A, Zeki S. The neural correlates of maternal and romantic love. *Neuroimage*. 2004;21:1155–66.
74. Buchheim A, George C, Kachele H, Erk S, Walter H. Measuring adult attachment representation in an fMRI environment: concepts and assessment. *Psychopathology*. 2006;39:136–43.
75. Lamm C, Batson CD, Decety J. The neural substrate of human empathy: effects of perspective-taking and cognitive appraisal. *J Cogn Neurosci*. 2007;19:42–58.
76. Singer T. The neuronal basis and ontogeny of empathy and mind reading: review of literature and implications for future research. *Neurosci Biobehav Rev*. 2006;30:855–63.
77. Shamay-Tsoory SG, Lester H, Chisin R, et al. The neural correlates of understanding the other's distress: a positron emission tomography investigation of accurate empathy. *Neuroimage*. 2005;27:468–72.

78. Marci CD, Orr SP. The effect of emotional distance on psychophysiological concordance and perceived empathy between patient and interviewer. *Appl Psychophysiol Biofeedback*. 2006;31:115–28.
79. Marci C, Reiss H. The clinical relevance of psychophysiology: support for the psychobiology of empathy and psychodynamic process. *Am J Psychother*. 2005;59:213–26.
80. Fonagy P, Target M, Gergely G, Jurist EL. Affect regulation, mentalization, and the development of self. London: Other Press; 2002.
81. Corcoran R, Frith CD. Autobiographical memory and theory of mind: evidence of a relationship in schizophrenia. *Psychol Med*. 2003;33:897–905.
82. Baron-Cohen S, Leslie AM, Frith U. Does the autistic child have a ‘theory of mind’? *Cognition*. 1985;21:37–46.
83. Saxe R, Moran JM, Scholz J, Gabrieli J. Overlapping and non-overlapping brain regions for theory of mind and self reflection in individual subjects. *Soc Cogn Affect Neurosci*. 2006;1:229–34.
84. Mitchell JP, Banaji MR, Macrae CN. General and specific contributions of the medial prefrontal cortex to knowledge about mental states. *Neuroimage*. 2005;28:757–62.
85. Happe F. Theory of mind and the self. *Ann N Y Acad Sci*. 2003;1001:134–44.
86. Gallagher HL, Frith CD. Functional imaging of ‘theory of mind’. *Trends Cogn Sci*. 2003;7:77–83.
87. Iacoboni M, Dapretto M. The mirror neuron system and the consequences of its dysfunction. *Nat Rev Neurosci*. 2006;7:942–51.
88. Olds DD. Identification: psychoanalytic and biological perspectives. *J Am Psychoanal Assoc*. 2006;54:17–46.
89. Gallese V. Mirror neurons and intentional attunement: commentary on olds. *J Am Psychoanal Assoc*. 2006;54:47–57.
90. Rizzolatti G, Fadiga L, Fogassi L, Gallese V. Resonance behaviors and mirror neurons. *Arch Ital Biol*. 1999;137:85–100.
91. Posner MI, Rothbart MK. Research on attention networks as a model for the integration of psychological science. *Annu Rev Psychol*. 2007;58:1–23.
92. Raz A, Buhle J. Typologies of attentional networks. *Nat Rev Neurosci*. 2006;7:367–79.
93. McGinnes E, Bowles W. Personal values as determinates of perceptual fixation. *J Pers*. 1949;18:224–35.
94. Blum GS. An experimental reunion of psychoanalytic theory with perceptual vigilance and defense. *J Abnorm Psychol*. 1954;49:94–8.
95. Silverman LH, Weinberger J. Mommy and I are one: implications for psychotherapy. *Am Psychol*. 1985;40:1296–308.
96. Shevrin H, Ghannam JH, Libet B. A neural correlate of consciousness related to repression. *Conscious Cogn*. 2002;11:334–41 [discussion 42–46].
97. Anderson MC, Ochsner KN, Kuhl B, et al. Neural systems underlying the suppression of unwanted memories. *Science*. 2004;303:232–5.
98. Raz A, Fan J, Posner MI. Hypnotic suggestion reduces conflict in the human brain. *Proc Natl Acad Sci USA*. 2005;102:9978–83.
99. Raz A, Shapiro T. Hypnosis and neuroscience: a cross talk between clinical and cognitive research. *Arch Gen Psychiatry*. 2002;59:85–90.
100. Maquet P. Functional neuroimaging of normal human sleep by positron emission tomography. *J Sleep Res*. 2000;9:207–31.
101. Maquet P, Peters J, Aerts J, et al. Functional neuroanatomy of human rapid-eye-movement sleep and dreaming. *Nature*. 1996;383:163–6.
102. Maquet P, Laureys S, Peigneux P, et al. Experience-dependent changes in cerebral activation during human REM sleep. *Nat Neurosci*. 2000;3:831–6.
103. Andreasen NC, O’Leary DS, Cizadlo T, et al. Remembering the past: two facets of episodic memory explored with positron emission tomography. *Am J Psychiatry*. 1995;152:1576–85.
104. Mason MF, Norton MI, Van Horn JD, Wegner DM, Grafton ST, Macrae CN. Wandering minds: the default network and stimulus-independent thought. *Science*. 2007;315:393–5.
105. Gabbard GO, Westen D. Rethinking therapeutic action. *Int J Psychoanal*. 2003;84:823–41.
106. Liggan DY, Kay J. Some neurobiological aspects of psychotherapy. *J Psychother Pract Res*. 1999;8:103–14.
107. Gabbard GO. A neurobiologically informed perspective on psychotherapy. *Br J Psychiatry*. 2000;177:117–22.
108. Peled A, Geva AB. Brain organization and psychodynamics. *J Psychother Pract Res*. 1999;8:24–39.
109. Olds DD. Connectionism and psychoanalysis. *J Am Psychoanal Assoc*. 1994;42:581–611.
110. Westen D. The scientific legacy of Sigmund Freud: toward a psychodynamically informed psychological science. *Psychol Bull*. 1998;124:333–71.
111. Blass RB, Carmeli Z. The case against neuropsychanalysis: on fallacies underlying psychoanalysis’ latest scientific trend and its negative impact on psychoanalytic discourse. *Int J Psychoanal*. 2007;88:19–40.
112. Gabbard GO, Gunderson JG, Fonagy P. The place of psychoanalytic treatments within psychiatry. *Arch Gen Psychiatry*. 2002;59:505–10.

113. Kernberg O. Psychoanalysis, psychoanalytic psychotherapy and supportive psychotherapy: contemporary controversies. *Int J Psychoanal.* 1999;80:1075–91.
114. Linden DEJ. How psychotherapy changes the brain – the contribution of functional neuroimaging. *Mol Psychiatry.* 2006;11:528–38.
115. Mitterschiffthaler MT, Ettinger U, Mehta MA, Mataix-Cols D, Williams SC. Applications of functional magnetic resonance imaging in psychiatry. *J Magn Reson Imaging.* 2006;23:851–61.
116. McGuire PK, Bench CJ, Frith CD, Marks IM, Frackowiak RS, Dolan RJ. Functional anatomy of obsessive–compulsive phenomena. *Br J Psychiatry.* 1994;164:459–68.
117. Rauch SL, Jenike MA, Alpert NM, et al. Regional cerebral blood flow measured during symptom provocation in obsessive–compulsive disorder using oxygen 15-labeled carbon dioxide and positron emission tomography. *Arch Gen Psychiatry.* 1994;51:62–70.
118. Baxter LR, Schwartz JM, Bergman KS, et al. Caudate glucose metabolic rate changes with both drug and behavior therapy for obsessive–compulsive disorder. *Arch Gen Psychiatry.* 1992;49:681–9.
119. Baxter LR, Schwartz JM, Guze BH, Bergman K, Szuba MP. Neuroimaging in obsessive–compulsive disorder: seeking the mediating neuroanatomy. In: Jenike MA, Baer L, Minichiello WE, editors. *Obsessive–compulsive disorders: theory and management.* 2nd ed. St. Louis: Mosby-Year Book; 1990. p. 167–88.
120. Baxter Jr LR, Mazziotta JC, Pahl JJ, et al. Psychiatric, genetic, and positron emission tomographic evaluation of persons at risk for Huntington’s disease. *Arch Gen Psychiatry.* 1992;49:148–54.
121. Milad MR, Rauch SL, Pitman RK, Quirk GJ. Fear extinction in rats: implications for human brain imaging and anxiety disorders. *Biol Psychol.* 2006;73:61–71.
122. Furmark T, Tillfors M, Marteinsdottir I, et al. Common changes in cerebral blood flow in patients with social phobia treated with citalopram or cognitive–behavioral therapy. *Arch Gen Psychiatry.* 2002;59:425–33.
123. Paquette V, Levesque J, Mensour B, et al. “Change the mind and you change the brain”: effects of cognitive–behavioral therapy on the neural correlates of spider phobia. *Neuroimage.* 2003;18:401–9.
124. Goossens L, Sunaert S, Peeters R, Griez EJ, Schruers KR. Amygdala hyperfunction in phobic fear normalizes after exposure. *Biol Psychiatry.* 2007;62:1119–25.
125. Menninger WW. Integrated treatment of panic disorder and social phobia. *Bull Menninger Clin.* 1992;56:A61–70.
126. Chobanian AV, Bakris GL, Black HR, et al. The seventh report of the Joint National Committee on prevention, detection, evaluation, and treatment of high blood pressure: the JNC 7 report. *JAMA.* 2003;289:2560–72.
127. Brody AL, Saxena S, Schwartz JM, et al. FDG-PET predictors of response to behavioral therapy and pharmacotherapy in obsessive compulsive disorder. *Psychiatry Res.* 1998;84:1–6.
128. Saxena S, Brody AL, Maidment KM, et al. Localized orbitofrontal and subcortical metabolic changes and predictors of response to paroxetine treatment in obsessive–compulsive disorder. *Neuropsychopharmacology.* 1999;21:683–93.
129. Yamanishi T, Nakaaki S, Omori IM, et al. Changes after behavior therapy among responsive and nonresponsive patients with obsessive–compulsive disorder. *Psychiatry Res.* 2009;172:242–50.
130. Goldapple K, Segal Z, Garson C, et al. Modulation of cortical-limbic pathways in major depression: treatment-specific effects of cognitive behavior therapy. *Arch Gen Psychiatry.* 2004;61:34–41.
131. Kennedy SH, Konarski JZ, Segal ZV, et al. Differences in brain glucose metabolism between responders to CBT and venlafaxine in a 16-week randomized controlled trial. *Am J Psychiatry.* 2007;164:778–88.
132. Brody AL, Saxena S, Stoessel P, et al. Regional brain metabolic changes in patients with major depression treated with either paroxetine or interpersonal therapy: preliminary findings. *Arch Gen Psychiatry.* 2001;58:631–40.
133. Ablon JS, Jones EE. Validity of controlled clinical trials of psychotherapy: findings from the NIMH treatment of depression collaborative research program. *Am J Psychiatry.* 2002;159:775–83.
134. Hollon SD, DeRubeis RJ, Evans MD, et al. Cognitive therapy and pharmacotherapy for depression: singly and in combination. *Arch Gen Psychiatry.* 1992;49:774–81.
135. Jones EE, Pulos SM. Comparing the process in psychodynamic and cognitive–behavioral therapies. *J Consult Clin Psychol.* 1993;61:306–16.
136. Knobel M. Psychodynamics of psychopharmacology. *J Nerv Ment Dis.* 1961;133:309–15.
137. Mintz D. Psychodynamic trojan horses: using psychopharmacology to teach psychodynamics. *J Am Acad Psychoanal Dyn Psychiatry.* 2006;34:151–61.
138. Weyrauch KF. The personal knowledge of family physicians for their patients. *Fam Med.* 1994;26:452–5.
139. Hassin RR, Uleman JS, Bargh JA. *The new unconscious.* New York, NY: Oxford University Press; 2005.
140. Izzetoglu K, Bunce S, Izzetoglu M, Onaral B, Pourrezaei K. Functional near-infrared neuroimaging. *Conf Proc IEEE Eng Med Biol Soc.* 2004;7:5333–6.
141. Gay P. *Freud: a life for our time.* New York: Norton; 1998.
142. Hartmann H. *Ego psychology and the problem of adaptation.* New York: International Universities Press; 1958.

143. Hariri AR, Drabant EM, Weinberger DR. Imaging genetics: perspectives from studies of genetically driven variation in serotonin function and corticolimbic affective processing. *Biol Psychiatry*. 2006;59:888–97.
144. Ebstein RP. The molecular genetic architecture of human personality: beyond self-report questionnaires. *Mol Psychiatry*. 2006;11:427–45.
145. Siegle GJ, Carter CS, Thase ME. Use of FMRI to predict recovery from unipolar depression with cognitive behavior therapy. *Am J Psychiatry*. 2006;163:735–8.
146. Weissman MM, Verdeli H, Gameroff MJ, et al. National survey of psychotherapy training in psychiatry, psychology, and social work. *Arch Gen Psychiatry*. 2006;63:925–34.
147. Roffman JL, Simon AB, Prasad KM, Truman CJ, Morrison J, Ernst CL. Neuroscience in psychiatry training: how much do residents need to know? *Am J Psychiatry*. 2006;163:919–26.
148. Cappas NM, Andres-Hyman R, Davidson L. What psychotherapists can begin to learn from neuroscience: seven principles of a brain-based psychotherapy. *Psychother Theory Res Pract Train*. 2005;42:374–83.

Chapter 12

Toward Molecular Psychotherapy of Depression?

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Introduction

The 30–40% share of genetic factors in the disposition to unipolar major depression (MD) leaves an important role for psychosocial and developmental factors in the etiology and treatment of depression [1–3]. Moreover, it is likely that the biological and psychosocial factors are not independent. Their interaction in depression has been suggested in numerous studies, although the relevant mechanisms are not well understood [4–7]. Especially in the psychodynamic picture of depression, the role of somatic factors has been little illuminated due to the lack of a viable theory that would connect somatic signs with the psychodynamic profile of depression [8, 9].

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The psychosocial symptoms of depression range from minor inhibitions of mood and pleasure to major disability that affects the quality of life, social, and occupational functioning and human relationships. Factors such as prolonged stress, personal loss or rupture in interpersonal relationships, developmental deprivation, loneliness, and occupational adversities usually underlie these symptoms [10, 11]. Clinical depression follows when the hardships are accompanied by feelings of disappointment, poorly tolerated mental pain, helplessness, and anger turned inwards. The psychodynamic conception of depression particularly centers on the meaning of object loss, inhibited mourning, and internalization of feelings of frustration and anger, sometimes acquiring the dimensions of rage [12–15].

In parallel with the psychological and psychosocial problems, several somatic signs of depression often prevail, although to an individually varying degree [16]. They include a wide spectrum of symptoms such as fatigue, affective blunting, inhibition of pleasure, diminished psychological energy, lowering of sexual interest, psychomotor and memory retardation, loss of motivation, constraints of anger expression, sleep disturbances, pain and gastrointestinal symptoms, cardiac arrhythmias, appetite disturbance, and disposition to infections.

The Need for a Theory Linking Depression of the Mind and Brain

The bodily expressions of depression make a connection between the psychological and somatic signs plausible. The parallel increase during recent years of knowledge in both biological [17, 18] and psychological treatments [19, 20] of depression clearly calls for a model to combine these divergent dimensions in the study and treatment of depression.

The current biological theory of depression pinpoints two major neurobiological mechanisms behind the somatic and affective symptoms [18, 21–26] (1) prolonged stress-related over-activity of the hypothalamic–pituitary axis (HPA) with hypercortisolism, a disturbed circadian rhythm of sleep wakefulness and cortisol excretion and (2) hypo-activity of especially serotonin, but also of norepinephrine and dopamine transmitter functions.

These biological signs do not, however, provide understanding of how the disorders of body regulation are intertwined with psychological malfunction. Integration of the neurobiological and clinical aspects in depression has proved to be a complicated matter. From the point of view of neural network connectivity, evidence has been gained that serotonin transmission perhaps is just an intermediating factor in the etiology of depression. The processes regulating the formation of new synapses may be more central [27, 28]. The abandoning of an explanatory model based on causal one-factor or additive multifactor effects has been seen as necessary, and its replacement with a multidimensional model with nonlinear variables has been suggested [5].

Through these theoretical developments, a growing recognition is taking place of the complexity of the mind–brain relations and their reciprocal nature. These new explanatory models and their implications for treatment are also becoming increasingly relevant for the psychodynamic understanding of the functions of the mind. They open new vistas to evaluate the feasibility of the psychodynamic approach in researching and treating depression from a neurobiologically informed, multidimensional perspective [9].

Several researchers, perhaps most notably Damasio [29] and Panksepp [30], have recently created a framework for describing how the human consciousness arises in an intimate relationship with emotions and affects. Damasio considers that consciousness develops from primitive body-attached vague awareness towards emotions proper, further to the capacity to feel the emotions and eventually to symbolic and verbal consciousness.

The somatically anchored and multilayered view of consciousness proposed by these authors is wider than the traditional one and gives better space for biological aspects in the phenomenology of

consciousness and its disturbance in depression. A number of psychosomatic symptoms in depression points towards the low-level consciousness of homeostatic functions such as sleep, appetite, affective experience, and alterations in vitality such as fatigue and exhaustion. They represent signs that derive from the regulation of the general psycho-physiological ambience of the personality [29].

The wider conception is also consonant with the psychodynamic understanding of ego development. It is often forgotten that Freud [31] underlined the role of the body in ego development. He regarded the ego as first and foremost a bodily ego that is shaped by body surface experiences, such as are characteristic of interactions between the infant and the mother in nursing. In these early stages of individual life, the formation of connections between the different areas of the brain is based on the simultaneity of activated signals, which then also become neurologically wired together. Multimodal sensory stimulation provided by developmental interactions is thus able to organize the bodily forms of primary consciousness. However, due its immaturity, this continues to function outside volitional and verbal control [32].

This view of the somatically anchored consciousness has been adopted by several authors such as Panksepp [30], Solms and Turnbull [33], Damasio [29], Edelman [34] and Watt [35], who all primarily regard consciousness as an interoceptive perceptual function that aims to monitor and guarantee the internal homeostatic constituents of the self-consciousness and connect it with perceptions from external reality in order to choose the best momentary adaptive behavior.

The Different Levels of Consciousness in Depression

When wishing to understand how the consciousness, with its different levels of functioning, begins to take an organized form and how it can become affected in depression, several neurophysiological mechanisms need to be considered.

First, the neural tracts from the sense organs on their way, via thalamic relays, to their specific cortical projection areas send collaterals to non-modality-specific reticular formation nuclei in the brain stem [36]. The latter have rich reciprocal connections with hypothalamic and limbic structures such as the amygdala [37, 38]. Besides their specific information, the sensory signals convey an unspecific alerting and affective response, which variably influences the homeostasis of the body and triggers behavioral activity to maintain optimal internal and external adaptation. Thus, the primary layer of consciousness is based on these lower parts of the brain such as the reticular formation of the brain stem, the pons, mesencephalon, and the periaqueductal gray.

The monitoring of bodily consciousness and vital homeostasis takes place at this level conjointly with the HPA, whereas the monitoring of self-consciousness requires other structures beginning from the cingulate cortex of the limbic system and extending to the prefrontal and insular cortices. The striatal structures are also relevant in depression. They regulate automatic motor patterns and connect them with signals from homeostatic and affect modulating centers for the appraisal of adequate (or inhibited) behavior [17, 39, 40].

The associative cortex of the parietal lobe and the insula of the temporal lobe form the second level, where the sensory information from different sources is integrated [41]. These cortical areas introduce a neocortical component to the organization of consciousness. The multimodal information flow to the parietal cortex is scanned and integrated predominantly in the parietal area of the right hemisphere into a functional image of the sensory data of body-attached self-consciousness. The insula provides the self-consciousness with affective qualities such as bodily safety, well-being, and also pain and disgust [39].

The parallel existence of the two sources of bodily consciousness, the brain stem limbic-striatal and HPA system on the one hand and the parietal cortex and insula on the other, implies that all factors that significantly influence the primary consciousness in depression are able to change both the

psycho-physiological homeostatic balance and, conjointly with it, the variable contents and colors of the bodily self-consciousness [35].

The verbal and volitional control of the self-consciousness requires for its development a third level of regulation. This is provided by the dorsolateral, orbital, and medial prefrontal cortical areas, which have important regulating two-way loops with the limbic system for modulating the affective impact deriving from lower brain centers. Disturbance of these connections has been assumed to be relevant in the neurophysiological etiology of depression [17, 42–45].

To understand the different components of clinical depressive symptoms, all these three levels need to be considered (1) the basic vital homeostatic functions, (2) the emotions and affects, and (3) the self-image and the working control of the affective and cognitive self.

The Serotonin System in Depression

The hypo-activity of the serotonin-mediated neural connections in depression has been a widely accepted, although not a unanimous observation [18, 21, 46]. Other transmitter systems, such as noradrenaline, dopamine, and the inhibitory and excitatory cortical modulators, also play a role in depression, and interaction between them can complicate the evaluation of their respective roles [18, 22]. Serotonin transmitter function, however, modulates rather than instigates the mood and affects when compared to the other transmitters. Downgrading of the serotonin system is connected with the inhibition of affects. Decreased modulation of anger and frustration, in particular, has been suggested to associate with lowered serotonin transmitter function [21, 42].

The highest density of serotonin networks in the brain is found in the brain stem raphe nuclei. Changes in serotonin availability may thus influence the variation in psycho-physiological homeostasis and affect sleep, appetite, mood, and the body-related background consciousness, and thereby also the somatic signs of depression. Serotonin pathways are, however, distributed in multiple brain structures in the limbic system, hypothalamus, and the cortical areas. Thus, the availability of serotonin has an influence on a wide variety of brain functions. Damasio [47, p. 78] has emphasized this in an elegant way: “Serotonin is a part of an exceedingly complicated mechanism, which operates at the level of molecules, synapses, local circuits, and systems, to which socio-cultural factors, past and present, intervene powerfully.”

As the role of serotonin transmission can have an impact on the symptoms of depression at several levels of brain organization, serotonin transmission can consequently also be expected to be involved in the biological effects of psychotherapy for depression.

Serotonin Function and Psychotherapy for Depression

From the beginning of the 1990s, there has slowly emerged a body of literature on changes in brain activity in relation to psychotherapy. In the majority of the studies, changes in blood flow or energy metabolism of the brain have been measured (for reviews [48–50]). Cognitive and interpersonal psychotherapy have been found to associate with the normalization of flow and energy metabolism in relatively close relation to the subjective symptoms of the patients, which have ranged from depressive states to obsessive–compulsive disorders and phobias. The alterations in brain activity during psychotherapy have partly been similar to the effects of antidepressive medication, but in an interesting way also partly different [48, 51].

Studies focusing on measures of serotonin function during psychotherapy have, until recently, been non-existent with the exception of case studies, which are to be reviewed in more detail in the

text that follows. This is predominantly explained by the pharmacological effect of antidepressants, which interfere with brain imaging of presynaptic serotonin transporter (SERT) activity, but not in the imaging of postsynaptic serotonin receptor function. Clinical depressive conditions are usually treated by antidepressants, especially by selective serotonin re-uptake inhibitors (SSRI). In the serotonin synapse, these drugs bind to the presynaptic binding sites of the SERT molecule. SSRI medication thus competes with the radioligands used for SERT imaging in the brain. Therefore, efforts to follow up the possible changes in SERT binding during psychotherapy can be expected to be successful only when drug-naïve patient samples can be obtained. This makes patient recruitment arduous and presupposes careful ethical consideration. Recently, however, methods have been developed also to estimate the SERT function during SSRI treatment [18].

Case Studies and a Naturalistic Clinical Sample

After the advent of single photon emission tomography (SPET) technology in the 1990s [52], we started looking for its clinical applications in psychiatry [53, 54]. The development of a relatively specific ligand, nor- β -CIT, for SERT imaging made it possible to particularly focus on the dynamics of SERT and differentiating it from the dopamine transporter (DAT) function in the brain [55]. We first came across of a case of a 25-year-old man with MD and personality disorder who was motivated to undergo dynamic psychotherapy once a week for 1 year, and another male subject with similar clinical symptoms, but not motivated for active treatment. Both were followed up after 1 year with clinical evaluation and a second SPET examination. After 1 year of treatment, the index subject showed an increase in midbrain SERT binding comparable to the values of six healthy age-matched controls, and he also improved clinically and was accepted to start education in a demanding novel field he had been looking to enter. The subject without active treatment had the same low SERT binding as at baseline and his clinical condition was also unchanged [56].

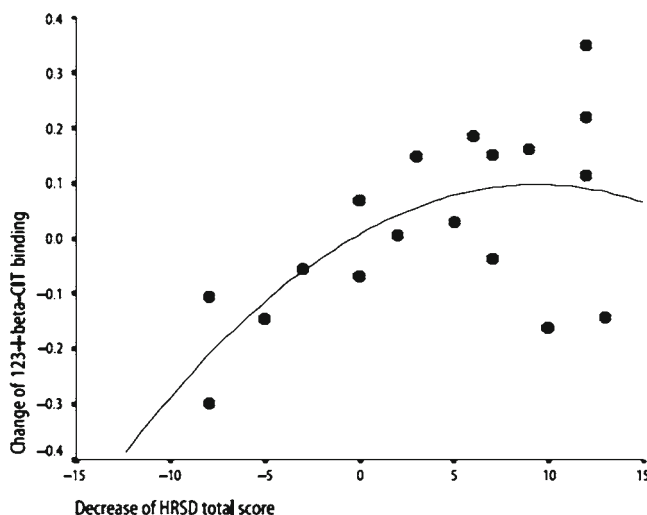
Later, we have been able to follow up two other patients. A young lady aged 21 years with MD was examined before the initiation of psychotherapy and followed up after 12 and 18 months of treatment, twice a week, with dynamic psychotherapy. During the 12-month treatment follow-up, her initially lowered SERT binding had increased to a level comparable with healthy age-matched controls, although her Hamilton depression scores remained unchanged. At the 18-month follow-up, however, clinical remission with a decline in Hamilton scores had also appeared, suggesting that SERT changes and the clinical ratings are not necessarily synchronized [57].

In another case, a lady aged 25 years whose symptom picture fulfilled the SCID criteria (DSM-IV-R) of a type II bipolar disorder (hypomania, moderate depression, and dysthymia), elevated SERT binding was recorded before treatment while she was having hypomanic symptoms. After 8 months of dynamic psychotherapy, SERT binding had declined to the level of a healthy age-matched control group. At that point, the patient decided to end the treatment [58].

The initial observations of SERT changes in relation to psychotherapy prompted us to collect a naturalistic series of 18 patients with MD. They were offered 6 months of psychotherapy, 3–4 times a month, using supportive techniques based on psychodynamic understanding of their symptoms. SERT measurements at baseline and after 6 months of psychotherapy revealed a slightly inverted U-shaped curvilinear correlation with changes in the Hamilton depression scores (Fig. 12.1) [59]. The majority of the subjects showed an increase in SERT binding jointly with a decrease in Hamilton scores. There were, however, cases with a deterioration in both SERT binding and Hamilton scores, as well as subjects displaying clinical improvement with a decrease in Hamilton scores, but no marked change in SERT binding.

We thus had indications that the lowered SERT binding in subjects with MD [60] is not a stable phenomenon. There were depressive subjects who showed an increase in SERT binding during

Fig. 12.1 Change in [^{123} I]-beta-CIT specific binding in the midbrain in relation to decrease in HRSD total score in depression ($r^2=0.403$; $p<0.02$). A second degree polynomial was used in data fit (Reproduced by permission from Ref. [59])



psychotherapy to levels comparable with healthy controls, whereas clinical improvement without SERT changes also seemed possible, as well as an increase in SERT binding without immediate symptom relief.

A Study on the Effects of Dynamic Psychotherapy for Subjects with Drug-Naïve First-Episode Depression

We next designed a study on first-episode drug-naïve subjects with depression with the intention of offering 1 year of psychotherapy, twice a week, and comparing their clinical and SPET variables before and after treatment.

The patients for the study were referred by health care centers, the student health care organization, and occupational health care services for an examination to participate in the study. The inclusion criteria were moderate or severe depression without psychotic symptoms (DSM IV diagnoses 296.22, 296.23, 296.32, 296.33). There was no time limit for the length of the preceding depression. The patients were completely drug-naïve and had received no previous psychiatric treatment. Psychotic symptoms, bipolar disorder, substance abuse, severe personality disorders, and somatic illnesses were exclusion criteria.

Psychiatric diagnoses were based on clinical assessment and verified for all study subjects by a trained independent psychiatrist using the Structured Clinical Interview for DSM-IV-R (SCID-I [61]). The severity of symptoms was measured using the 17-item Hamilton Rating Scale for Depression (HAM-D-17). Ratings were completed by a trained independent psychiatrist.

Clinical and laboratory examinations as well as MRI imaging were performed to exclude somatic disorders and focal brain abnormalities.

All patients provided written informed consent, and the study was approved by the ethical committee of Kuopio University Hospital.

The therapists had received formal 3-year or longer postgraduate professional training in psychodynamic psychotherapy. Their average length of experience as psychotherapists was 20 years. The psychotherapy consisted of approximately 80 sessions per year, twice a week, in the outpatient clinic of the Department of Psychiatry, Kuopio University Hospital.

The patients' motivation and aptitude for long-term psychodynamic psychotherapy without medication was assessed by an evaluation group consisting of a psychiatrist and a psychologist and/or a specially trained nurse. In the evaluation, meeting the patients received more information about the study.

The therapy process was independently evaluated by the patients and the therapists after 1, 3, 4, and 11 months of treatment. A set of questionnaires was designed for this purpose with the aim of comparing the evaluations of the therapy process by the patients and therapists. In order to assess the impact of the possible placebo effect of treatment expectancy prior to the initiation of psychotherapy, patients were randomly selected to either start the psychotherapy directly after the assessment or start the treatment after a 6-month waiting period.

The reliability of the SERT imaging method was evaluated by a 1-year follow-up of SERT binding in 11 healthy age-matched subjects. A control group with psychopharmacological treatment was not possible due its blocking effect on the ligand site of the SERT molecule.

Baseline Findings

So far, we have published the results from this study as follows: at baseline, i.e., before treatment, we observed lowered SERT levels in our patient sample compared to age-matched healthy controls [62]. Moreover, we have shown that there are baseline differences in SERT binding in the medial prefrontal areas, but not in the midbrain, between the carriers of short and long allelic variants of the SERT gene [63]. We also have compared the SERT binding at baseline between subjects with typical MD and those with atypical MD. Symptoms in the group of atypical depression (ATD) had a correlation with SERT binding, which was not found in patients with typical depression [64].

Follow-up of Patients with Double Depression

We compared patients fulfilling the criteria of double depression with patients with MD during the follow-up of 1 year of psychotherapy. No other significant differences were found, except that their DAT binding showed an inverse correlation to the duration of depressive and dysthymia symptoms, which was not present in patients with MD [65].

Differentiating Between the Typical and Atypical Subtypes of Major Depression

The effects of psychotherapy on SERT binding in this sample of drug-naïve patients have so far been investigated in a comparison between patients with typical and atypical MD [66].

Here, we review these results in more detail. In the sample obtained, we had ten subjects who fulfilled the DSM IV criteria for ATD and 12 subjects with a diagnosis of classical MD.

We found that SERT binding in the two groups differed significantly after 1 year of psychotherapy. Three subjects (two ATD and one MD), however, already showed symptom remission during the 6-month waiting period, so they were excluded from the final analysis. The remaining eight patients with ATD and 11 with MD were then compared.

The groups did not differ significantly in age, sex, or smoking status. Both groups had elevated Hamilton 21 scores for depression at baseline. Moreover, both groups showed a significant Hamilton score reduction during the 1 year of psychotherapy without significant between-group differences (Table 12.1).

Table 12.1 Serotonin transporter (SERT) binding after 1 year of dynamic psychotherapy in subjects with atypical ($n=8$) and typical major depression ($n=11$) (Adapted with permission of Elsevier from Ref. [66])

	Atypical depression	Major depression
Age	28.2 (7.3)	27.1 (7.3)
Female gender	75%	100.0%
Smoking status	38%	27%
<i>Hamilton 21 score</i>		
Before treatment	19.13 (3.94) ¹	22.18 (7.45) ²
After treatment	12.50 (6.84)	10.64 (7.00)
<i>Atypical score</i>		
Before treatment	12.25 (6.45) ³	5.18 (2.86)
After treatment	7.63 (6.46) ⁴	5.18 (4.85)
<i>SERT midbrain binding</i>		
Before treatment	1.12 (0.14) ⁵	1.20 (0.13)
After treatment	1.25 (0.17) ⁶	1.14 (0.18) ⁷

¹ p -Value for the change in HAM 21 in atypical depression <0.02

² p -Value for the change in HAM 21 in major depression <0.003

³ p -Value for the difference between the groups <0.005

⁴ p -Value for the change in atypical scores <0.02

⁵ p -Value for the difference between the groups <0.25

⁶ p -Value for the change in SERT binding in atypical depression <0.019

⁷ p -Value for the change in SERT binding in major depression <0.20

Scores measuring the amount of atypical features of depression were more than twofold higher in the ATD group. These scores significantly declined after 1 year of therapy and nearly to the low level of atypical features in the MD group, which also remained low after treatment (Table 12.1).

SERT binding at baseline was slightly, although not significantly higher in the MD group than in ATD patients. In the ATD group, SERT binding rose significantly during therapy, whereas in the MD patients there was a slight, non-significant decrease in the mean SERT binding (Table 12.1).

The changes in SERT binding during 1 year of psychotherapy were contrasted by the SERT data of healthy age-matched controls ($n=11$), who were examined twice with a 1-year interval. Their SERT levels were unaltered during this follow-up period (1.27 ± 0.11 and 1 year later 1.27 ± 0.14).

Thus, these two subgroups of patients with MD had similar clinical recovery rates, but a between-group difference in their SERT response to psychotherapy, and even a suggestive tendency to respond to treatment in opposite directions.

The remaining analysis of the data, including detailed evaluation of the outcome of the 1-year psychotherapy period, is expected to be completed during the next few years.

Discussion

Our findings represent the first indications of changes in molecular neural transmission related to the effects of psychotherapy. However, these observations need to be carefully evaluated for several reasons, first and foremost because of the relatively small number of patients in the two groups examined. The validity of the clinical differentiation between classical and atypical symptom profiles also has been regarded by some researchers as uncertain [67]. Furthermore, there was fluctuation in the timing and synchronization of the clinical and SERT imaging examinations in some patients, which may have increased the variance of our results.

Nevertheless, even considering the restrictions of the study, a conclusion seems founded that SERT function can be altered in individual patients during psychotherapy, and the decrease in SERT binding typical for MD is not necessarily irreversible. The quite stable SERT levels in healthy control subjects observed at two different examinations with a 1-year interval suggest that the SERT binding fluctuation observed in the patient sample was not due to variance caused by the imaging method. However, a slight contribution from the dopamine transporters to the rate of binding of the radioligand used cannot be completely ruled out.

Another strength of our study was that the subjects were drug-naïve, first-episode patients without experience of any previous treatment. Furthermore, the therapists had a similar training and a frame of working. They represented professionals engaged in the public sector. Although they were not randomly selected, they did not represent a group of therapists that would have been electively chosen for the project. The results obtained can thus be expected to be achieved in an average public sector outpatient environment where a psychodynamic model of working is applied.

No conclusions, however, can be drawn on the relative efficacy of psychodynamic and other psychotherapy forms. We only used healthy controls as a reference for the SERT changes observed, and not a clinical sample that would have been treated by another psychotherapeutic or medical method.

Although the small sample prevents far-reaching conclusions, the question may be raised whether the biological profile of classical MD differs from ATD, which is characterized by more interaction-tuned symptoms such as anxiety shown in rejection sensitivity [68]. This issue is not of minor importance, since it leads to the question of how to evaluate the changes in the clinical symptoms of depression occurring during treatment.

Both subgroups in our study showed significant clinical improvement, but only in the atypical subgroup was the symptom decrease connected with a corresponding increase in SERT binding as a sign of activation of serotonin transmission. Furthermore, in our previously reported case study on psychotherapy for a young depressive lady with atypical symptoms [57], the SERT increase took place earlier, while the symptoms of depression still remained high. Clinical symptom reduction was only seen 6 months after the second, follow-up SERT measurement. Thus, in this atypical case, SERT activation preceded clinical recovery, whereas in the subgroup of classical MD patients in our sample, no SERT changes were accompanied with the significant clinical improvement of these patients. There was probably even a slight tendency, although non-significant, for a decrease in SERT binding in these patients.

Parker et al. [68] have recently adduced evidence for the clinical validity of ATD on clinical grounds. The authors have concluded that the symptom of anxiety shown in rejection sensitivity may be more central in this clinical syndrome, and the homeostatic signs of overeating, oversleeping, and leaden paralysis probably represent more secondary features. Furthermore, Nemeroff et al. [51] have also provided evidence of differential pharmacotherapeutic and psychotherapy outcomes between subtypes of depression with and without a traumatic history. These findings support the hypothesis that there may be real differences between subgroups of depressive subjects that may also be reflected in their biological profile and therefore also in their biological responses to psychotherapy.

Although discussion of these differences can at present only remain tentative, it is important to recognize that in outcome studies on psychotherapy for depression, also when using biological markers, true inter-individual variability is to be expected. This being the case, the mean effects of treatment in a given patient sample may lead astray and bypass subgroup differences, whereas adequate consideration of subgroup differences is likely to assist in choosing a more individually tailored treatment and a more accurate evaluation of its effects.

Generalizations on the basis of our observations are not possible, except that the SERT level in depression seems to be variable and therefore also an indirect target for psychotherapy, especially in patients with anxiety and clinical sensitivity to interaction. Interestingly, however, our findings of

a SERT binding increase in a subgroup of depressive patients are supported by a recent positron emission tomography study. Karlsson et al. [69] observed an increase in serotonin 1A receptors after 6 months of dynamic psychotherapy, whereas a control group treated with SSRIs did not show serotonin receptor changes (see Chap. 11).

A decrease in both SERT levels and the number of active serotonin 1A postsynaptic receptors has been found to prevail in depression [60, 70]. From a physiological point of view, the pre- and postsynaptic sides of the serotonin synapse are interdependent. Postsynaptic serotonin receptor activity is plausibly dependent on the amount of serotonin available in the synapse. The relationship of the presynaptic SERT function, addressed in our study, with the postsynaptic serotonin receptor function is a multifaceted issue in which besides postsynaptic receptors, the role of somato-dendritic autoreceptors also needs to be considered [71]. Despite these complexities, the findings of Karlsson et al. [69] of an increase of postsynaptic serotonin 1A receptors during short-term dynamic psychotherapy also seem to point to biological effects of dynamic psychotherapy that extend their action, at least in some patients, to the molecular level of serotonin transmission.

Another factor that merits discussion with regard to the differential response to treatment in these two subgroups concerns the therapeutic technique [72]. All therapists had received similar training and they were supervised, at the start of the research project, to practice a similar approach when challenging the depressive symptoms. We created a protocol to follow up the treatment process by focusing on the evaluation of its course by both the patients and therapists. These results are not yet at our disposal, but they might shed some light on the question of whether there are differences in the treatment process between patients with different symptom profiles and whether process variables of the psychotherapy correlate with the treatment outcome [73].

One more finding in our study is of interest concerning the efficacy of psychotherapy for depression [63]. We obtained evidence that SERT availability in the medial prefrontal cortex is lower in patients carrying the short allelic variant of the SERT gene compared to long allele carriers. This difference was present only at the level of the medial prefrontal cortex, but not in the midbrain, where SERT density is highest. In an interesting way, this finding is in agreement with notions that the medial prefrontal area plays a central role in affect modulation, especially that of anger [42]. Variance in the functioning of the prefrontal-limbic loop of stress and affect modulation has been seen as central to the predisposition to adverse and eventually depressive symptoms [17]. Our findings of lower medial prefrontal SERT binding in short allele carriers also accord with the observations that short allelic variants of the SERT gene are connected with an increased predisposition to the adverse effects of life stress [74, 75]. Although this connection has been disputed [76], if it were to be proved correct, it may at least partly be based on the effects of the short allele especially in the medial prefrontal cortex.

Consequently, the lack of allelic differences in the midbrain SERT binding may indicate that the homeostatic functions of the midbrain and their disturbances in depression, such as fatigue and neurovegetative symptoms, may represent a more secondary phenomenon. This has also been suggested on clinical grounds by Parker et al. [68] and on genetic epidemiological grounds by Lux and Kendler [16].

Unfortunately, because not all patients gave their consent to genetic analysis, the subgroups of these allelic variants remained too small to allow meaningful correlation with the therapy outcome.

Conclusions and Summary

The symptoms of depression and the capacity to modulate them derive from several levels of brain organization that include the vital homeostatic functions of the brain stem, the limbic–hypothalamic complex, and the medial, dorsolateral prefrontal, parietal, and insular cortex.

Serotonin transmission is central to the midbrain regulation of homeostatic functions, but it also has an important role in other regions such as the limbic and prefrontal cortical structures of the brain.

Disturbances in serotonin function have been regarded as central in the disposition to depression, not least due to the opportunity they offer for antidepressive medical treatment. However, serotonin function as a target of the effects of psychotherapy has not previously been investigated.

Here, we have reviewed the neurophysiological and anatomical background necessary to understand the different components of clinical depressive symptoms. Thereafter, we have presented an overview of the first studies on the effects of dynamic psychotherapy on the SERT function in depressive patients.

These studies were initiated by three case reports from the late 1990s and early this millennium. We found an elevation of SERT availability after 1 year of dynamic psychotherapy in a male and a female patient. Moreover, we detected the normalization of an elevated SERT level in a patient with hypomanic symptoms of a type II bipolar disorder after 8 months of dynamic psychotherapy.

These findings first prompted us to collect a naturalistic series of depressive patients who were treated once a week with dynamic psychotherapy for 6 months while their SERT levels were also followed up. A slightly inverted U-form curvilinear correlation between their Hamilton score decrease and SERT elevation was noted, which further supported us to hypothesize that serotonin transmission may change in relation to dynamic psychotherapy.

Thereafter, we collected a series of first-episode drug-naïve patients with MD and compared their clinical outcome after 1 year of dynamic psychotherapy with their SERT levels before and after therapy. This study yielded the observation that patients with atypical symptoms, such as anxiety shown in rejection sensitivity, had a significant SERT increase after 1 year of psychotherapy, whereas patients with classical symptoms of MD showed no upgrading of SERT function. Both subgroups improved clinically in a significant and approximately similar way.

These findings warrant a conclusion that there is a subgroup of patients in the MD disorder spectrum, especially those showing signs of rejection sensitivity and other atypical symptoms, whose response to dynamic psychotherapy also is reflected in an increase in SERT binding. Patients with classical MD symptoms show a similar clinical improvement, but no changes in SERT binding. These findings call for a more detailed analysis of the significance of the improvement in clinical scores of depression and their complex correlation with the biology of depression, including the impact of genetic allelic variation of the SERT gene.

We close our review by suggesting that the inclusion of molecular markers of depressive symptoms and their genetic background reveals new dimensions for understanding the complexity of the treatment responses of depression. The application of new molecular information to outcome studies in psychotherapy can lead us slowly to the era of molecular psychotherapy and bring psychotherapy closer to other fields of psychiatry. This would be in good accordance with recently expressed visions of how to promote research in psychiatry today [77–79].

References

1. Kendler KS, Walters EE, Truett KR, Heeath AC, Neale MC, Martin NG, et al. Sources of individual differences in depressive symptoms: analysis of two samples of twins and their families. *Am J Psychiatry*. 1994;151:1605–1614.
2. Sullivan PF, Neale MC, Kendler KS. Genetic epidemiology of major depression: review and meta-analysis. *Am J Psychiatry*. 2000;157:1552–1562.
3. Kendler KS, Aggen SH. Time, memory and the heritability of major depression. *Psychol Med*. 2001;31:923–928.
4. Kendler KS. Anna-Monika-prize paper. Major depression and the environment: a psychiatric genetic perspective. *Pharmacopsychiatry*. 1998;31:5–9.

5. Kendler KS. Explanatory models for psychiatric illness. *Am J Psychiatry*. 2008;165:695–702.
6. Fanous AH, Neale MC, Aggen SH, Kendler KS. A longitudinal study of personality and major depression in a population-based sample of male twins. *Psychol Med*. 2007;37:1163–1172.
7. Kendler KS, Campbell J. Interventionist causal models in psychiatry: repositioning the mind-body problem. *Psychol Med*. 2009;39:881–887.
8. Luyten P, Blatt SJ, Van Houdenhove B, Corveleyn J. Depression research and treatment: are we skating to where the puck is going to be? *Clin Psychol Rev*. 2006;26:985–999.
9. Carhart-Harris RL, Mayberg HS, Malizia AL, Nutt D. Mourning and melancholia revisited: correspondences between principles of Freudian metapsychology and empirical findings in neuropsychiatry. *Ann Gen Psychiatry*. 2008;7:9. Published online 24 July 2008.doi: 10.1186/1744–859X-7–9.
10. Judd LL, Akiskal HS, Zeller PJ, Paulus M, Leon AC, Maser JD, et al. Psychosocial disability during the long-term course of unipolar major depressive disorder. *Arch Gen Psychiatry*. 2000;57(4):375–380.
11. Keller MC, Neale MC, Kendler KS. Association of different adverse life events with distinct patterns of depressive symptoms. *Am J Psychiatry*. 2007;164(10):1521–29.
12. Busch FN, Rudden M, Shapiro T. Psychodynamic treatment of depression: development of a psychodynamic model of depression. Arlington: American Psychiatric Publishing; 2004. p. 13–30.
13. Morgan N, Taylor T. Psychodynamic psychotherapy and treatment of depression. *Psychiatry*. 2005;4(5):6–9.
14. Taylor D, Richardson P. The psychoanalytic/psychodynamic approach to depressive disorder. In: Gabbard GO, Beck SJ, Holmes J, editors. *Oxford textbook of psychiatry*. Oxford: Oxford University Press; 2005. p. 127–136.
15. Luutonen S. Anger and depression – theoretical and clinical considerations. *Nord J Psychiatry*. 2007;1(4):246–251.
16. Lux V, Kendler KS. Deconstructing major depression: a validation study of the DSM-IV symptomatic criteria. *Psychol Med*. 2010;40:1–12.
17. Mayberg HS. Targeted electrode-based modulation of neural circuits for depression. *J Clin Invest*. 2009;119:717–725.
18. Nemeroff CB, Owens MJ. The role of serotonin in the pathophysiology of depression: as important as ever. *Clin Chem*. 2009;55:1578–1579.
19. Wampold BE. *The great psychotherapy debate*. New Jersey: Lawrence Erlbaum; 2001.
20. Sheldner J. The efficacy of psychodynamic psychotherapy. *Am Psychol*. 2010;65:98–109.
21. Meltzer HY. Role of serotonin in depression. *Ann N Y Acad Sci*. 1990;600:486–499.
22. Tiitonen J, Kuoppamäki M, Nägren K, Bergmand J, Eronen E, Syvälahti E, et al. Serotonergic modulation of striatal D2 dopamine receptor binding in humans measured with positron emission tomography. *Psychopharmacology*. 1996;126:277–280.
23. Young EA, Aggen SH, Prescott CA, Kendler KS. Similarity in saliva cortisol measures in monozygotic twins and the influence of past major depression. *Biol Psychiatry*. 2000;48:70–74.
24. Mayberg HS, Silva JA, Brannan SK, Tekell JL, Mahurin RK, McGinnis S, et al. The functional neuroanatomy of the placebo effect. *Am J Psychiatry*. 2002;159:728–737.
25. Tafet GE, Idoyaga-Vargas VP, Abulafia DP, Calandria JM, Roffman SS, Chiovetta A, et al. Correlation between cortisol level and serotonin uptake in patients with chronic stress and depression. *Cogn Affect Behav Neurosci*. 2001;1:388–393.
26. Hettema JM, An SS, van der Oord EJ, Neale MC, Kendler KS, Chen X. Association study between 1A receptor (HTR1A) gene and neuroticism, major depression, and anxiety disorders. *Am J Med Genet B: Neuropsychiatr Genet*. 2008;147B:661–666.
27. Castrén E. Is mood chemistry? *Nat Rev Neurosci*. 2005;6(3):241–6.
28. Maya Vetencourt JF, Sale A, Viegi A, Baroncelli L, De Pasquale R, O’Leary OF, et al. The antidepressant fluoxetine restores plasticity in the adult visual cortex. *Science*. 2008;320(5874):385–8.
29. Damasio A. *Looking for Spinoza: joy, sorrow and the feeling brain*. London: Vintage; 2003.
30. Panksepp J. *Affective neuroscience*. Oxford: Oxford University Press; 1998.
31. Freud FS. *The ego and the Id*. 1923. Standard ed. London: Hogarth Press; 1963. p. 3–66.
32. Lehtonen J, Partanen J, Purhonen M, Valkonen-Korhonen M, Könönen M, Saarikoski S, et al. Nascent body ego. Metapsychological and neurophysiological aspects. *Int J Psychoanal*. 2006;87:1335–1353.
33. Solms A, Turnbull O. *The brain and the inner world*. London: Karnac; 2002.
34. Edelman G. *Second nature. Brain science and human knowledge*. New Haven: Yale University Press; 2006.
35. Watt D. Toward a neuroscience of empathy: integrating affective and cognitive perspectives. *Neuro-Psychoanal*. 2007;8:119–40.
36. Moruzzi G, Magoun HW. Brain stem reticular formation and activation of the EEG. *Electroenceph Clin Neurophysiol*. 1949;1:455–473.
37. Magoun HW. *The waking brain*. Springfield: Charles C. Thomas; 1965.
38. LeDoux J. *The emotional brain*. New York: Simon and Schuster; 1996.

39. Craig AD. Pain as an interoceptive aspect of homeostasis. In: Kalso E, Estlander A-M, Klockars M, editors. *Psyche, soma and pain*, Acta Gyllenbergiana. Helsinki: The Signe and Ane Gyllenberg Foundation; 2003. p. 161–172.
40. Raij TT, Valkonen-Koronen M, Holi M, Therman S, Lehtonen J, Hari R. Reality of auditory verbal hallucinations. *Brain*. 2009;132:2994–3001.
41. Truex RC, Carpenter MB. *Human neuroanatomy*. 6th ed. Baltimore: Williams & Wilkins; 1969.
42. Dougherty DD, Rauch SL, Deckersbach T, Marci C, Loh R, Shin LM, et al. Ventromedial prefrontal cortex and amygdala dysfunction during an anger induction positron emission tomography study in patients with major depressive disorder with anger attacks. *Arch Gen Psychiatry*. 2004;61:795–804.
43. Frokjaer VG, Vinberg M, Erritzoe D, et al. High familial risk for mood disorder is associated with low dorsolateral prefrontal cortex serotonin transporter binding. *Neuroimage*. 2009;46:360–366.
44. Liotti M, Mayberg HS, Brannan SK, McGinnis S, Jerabek P, Fox PT. Differential limbic-cortical correlates of sadness and anxiety in healthy subjects: implications for affective disorders. *Biol Psychiatry*. 2000;48:30–42.
45. Thomas EJ, Elliott R. Brain imaging correlates of cognitive impairment in depression. *Front Hum Neurosci*. 2009;3:1–9.
46. Cannon DM, Ichise M, Rollis D, et al. Elevated serotonin transporter binding in major depressive disorder assessed using positron emission tomography and [11C]DASB; comparison with bipolar disorder. *Biol Psychiatry*. 2007;62:870–877.
47. Damasio AR. *Descartes' error*. London: Macmillan; 1996.
48. Roffman JL, Marci CD, Glick DM, Dougherty DD, Rauch SL. Neuroimaging and the functional neuroanatomy of psychotherapy. *Psychol Med*. 2005;35(10):1385–98.
49. Linden DEJ. How psychotherapy changes the brain – the contribution of functional neuroimaging. *Mol Psychiatry*. 2006;11:528–38.
50. Beauregard M. Effect of mind on brain activity: evidence from neuroimaging studies of psychotherapy. *Nord J Psychiatry*. 2009;63:5–16.
51. Nemeroff CB, Heim CM, Thase ME, Klein DN, Rush JA, Schatzberg AF, et al. Differential responses to psychotherapy versus pharmacotherapy in patients with chronic forms of major depression and childhood trauma. *Proc Natl Acad Sci USA*. 2003;100:14293–14296.
52. Kuikka JT, Tenhunen-Eskelinen M, Jurvelin J, Kiilianen H. Physical performance of the Siemens MultiSPECT 3 gamma camera. *Nucl Med Commun*. 1993;14:490–497.
53. Tiihonen J, Kuikka JT, Bergström KA, Karhu J, Viinamäki H, Lehtonen J, et al. Single-photon emission tomography imaging of monoamine transporters in impulsive violent behaviour. *Eur J Nucl Med*. 1997;24:1253–1260.
54. Tiihonen J, Kuikka J, Viinamäki H, Lehtonen J, Partanen J. Altered cerebral blood flow during hysterical paresthesia. *Biol Psychiatry*. 1995;37:134–135.
55. Hiltunen J, Akerman KK, Kuikka JT, et al. Iodine-123 labeled nor-beta-CIT as a potential tracer for serotonin transporter imaging in the human brain with single-photon emission tomography. *Eur J Nucl Med*. 1998;25:2728.
56. Viinamäki H, Kuikka J, Tiihonen J, Lehtonen J. Change in monoamine transporter density related to clinical recovery: a case-control study. *Nord J Psychiatry*. 1998;52:39–44.
57. Saarinen PI, Lehtonen J, Joensuu M, Tolmunen T, Ahola P, Vanninen R, et al. An outcome of psychodynamic psychotherapy: a case study of the change in serotonin transporter binding and the activation of the dream screen. *Am J Psychother*. 2005;59(1):61–73.
58. Tolmunen T, Joensuu M, Saarinen PI, Mussalo H, Ahola P, Vanninen R, et al. Elevated midbrain serotonin availability in mixed mania: a case report. *BMC Psychiatry*. 2004;4(13):27.
59. Laasonen-Balk T, Viinamäki H, Kuikka JT, Husso-Saastamoinen M, Lehtonen J, Tiihonen J. ¹²³I-β CIT binding and recovery from depression. A six month follow-up study. *Eur Arch Psychiatr Clin Neurosci*. 2004;254:152–155.
60. Malison RT, Price LH, Berman R, et al. Reduced brain serotonin transporter availability in major depression as measured by [123I]-2 betacarbomethoxy-3 beta-(4-iodophenyl) tropane and single photon emission computed tomography. *Biol Psychiatry*. 1998;44:1090–1098.
61. American Psychiatric Association. *Diagnostic and statistical manual of mental disorders*. 4th ed. Washington, DC: American Psychiatric Association; 1994.
62. Joensuu M, Tolmunen T, Saarinen PI, Tiihonen J, Kuikka J, Ahola P, et al. Reduced midbrain serotonin transporter availability in drug naïve patients with depression measured by SERT-specific [(123) I] nor-beta-CIT SPECT imaging. *Psychiatry Res*. 2007;154(2):125–131.
63. Joensuu M, Lehto SM, Tolmunen T, Saarinen PI, Valkonen-Korhonen M, Vanninen R, et al. 5-HTTLPR polymorphism and serotonin transporter binding in drug-naïve patients with major depression. *Psychiatry Clin Neurosci*. 2010;64:387–393.
64. Lehto SM, Tolmunen T, Joensuu M, et al. Midbrain binding of [123I]nor-beta-CIT in atypical depression. *Prog Neuropsychopharmacol Biol Psychiatry*. 2006;30:1251–1255.

65. Lehto SM, Tolmunen T, Kuikka J, Valkonen-Korhonen M, Joensuu M, Saarinen PI, et al. Midbrain serotonin and striatum dopamine transporter binding in double depression: a one-year follow-up study. *Neurosci Lett*. 2008; 441:291–295.
66. Lehto SM, Tolmunen T, Joensuu M, Saarinen PI, Valkonen-Korhonen M, Vanninen R, et al. Changes in midbrain serotonin transporter availability in atypically depressed subjects after one year of psychotherapy. *Prog Neuropsychopharmacol Biol Psychiatry*. 2008;32(1):229–37.
67. Stewart JW, McGrath P, Rabkin J, Quitkin FM. Atypical features and treatment response in the National Institute of Mental Health Treatment of Depression Collaborative Research Program. *J Clin Psychopharmacol*. 1998;18:429–34.
68. Parker G, Roy K, Mitchell P, Wilhelm K, Malhi G, Hadci-Pavlovic D. Atypical depression: a reappraisal. *Am J Psychiatry*. 2002;159:1470–1479.
69. Karlsson H, Hirvonen J, Kajander J, Markkula J, Rasi-Hakala H, Salminen JK, et al. Psychotherapy increases brain serotonin 5-HT_{1A} receptors in patients with major depressive disorder. *Psychol Med*. 2010;40(3):523–8.
70. Drevets WC, Thase M, Moses-Kolko EL, Price J, Frank E, Kupfer DJ, et al. Serotonin-1A receptor imaging in recurrent depression: replication and literature review. *Nucl Med Biol*. 2007;34:865–877.
71. Stahl SM. Mechanism of action of serotonin selective reuptake inhibitors. Serotonin receptors and pathways mediate therapeutic effects and side effects. *J Affect Disord*. 1998;51:215–235.
72. Krupnick JL, Sotsky SM, Simmens S, Moyer J, Elkin I, Watkins J, et al. The role of the therapeutic alliance in psychotherapy and pharmacotherapy outcome: findings in the National Institute of Mental Health Treatment of Depression Collaborative Research Program. *J Consult Clin Psychol*. 1996;64(3):532–539.
73. Ahola P, Valkonen-Korhonen M, Tolmunen T, Joensuu M, Lehto SM, Saarinen PI, et al. The perceptions of patients and their therapists of the process of psychodynamic psychotherapy for depression. *Am J Psychotherapy* 2011;65: (in press).
74. Caspi A, Sugden K, Moffitt TE, et al. Influence of life stress on depression: moderation by a polymorphism in the 5-HTT gene. *Science*. 2003;301:386–389.
75. Kendler KS, Kuhn JW, Vittum J, Prescott CA, Riley B. The interaction of stressful life events and a serotonin transporter polymorphism in the prediction of episodes of major depression: a replication. *Arch Gen Psychiatry*. 2005;62:529–5340.
76. Risch N, Herrell R, Lehner T, et al. Interaction between the serotonin transporter gene (5-HTTLPR), stressful life events and risk of depression: a meta-analysis. *JAMA*. 2009;301:2462–2471.
77. Kandel E. In search of memory: the emergence of a new science of mind. New York: WW Norton; 2006.
78. Akil H, Brenner S, Kandel E, Kendler KS, King M-C, Scolnick E, et al. The future of psychiatric research: genomes and neural circuits. *Science*. 2010;327:1580–1581.
79. Portin P, Lehtonen J, Alanen YO. Mental illness requires a multidisciplinary research plan. *Science*. 2010; 328:1229.

Chapter 13

Psychotherapy Increases the Amount of Serotonin Receptors in the Brains of Patients with Major Depressive Disorder

Hasse Karlsson

Keywords Fluoxetine • Major depressive disorder • Positron emission tomography • Serotonin receptors • Short-term psychodynamic psychotherapy

Introduction

The effects of psychotherapy have traditionally been measured by change in core symptoms, psychological abilities (personality, defenses, cognitions, etc.), or social functioning. With the advent of functional brain imaging methods (such as SPECT, PET, fMRI, and MEG), it has become possible to include a new dimension in the measurements, namely changes in brain functions after psychotherapy. Several studies investigating change in cerebral blood flow or metabolism have been published, and they have showed that different forms of psychotherapy indeed lead to brain changes [1, 2]. These studies have been usually performed with patients suffering from depressive or anxiety disorders, and the treatments have in the majority of the studies been cognitive-behavioral therapy (CBT) or interpersonal psychotherapy (IPT).

In addition to measuring blood flow and metabolism, positron emission tomography (PET) can also be used to investigate changes in receptor densities in the synapses. In depression, especially the serotonin system has been intensively investigated, and serotonergic medications are currently widely used in the treatment of depression. We have focused on the serotonin 5-HT_{1A} receptor system, which is implicated in the pathophysiology of depression [3, 4]. It has also been directly shown that patients with depressive illness have a widespread decrease in the density of serotonin 5-HT_{1A} receptors during the illness period [5–9].

Psychotherapy and the Serotonin System

There are only very few studies using brain imaging and utilizing psychodynamic therapy as the treatment. All of the published studies have focused on the serotonin system, and they are performed by two separate groups in Finland. The other group has investigated changes in serotonin transporter

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(SERT) density after psychotherapy using single photon emission computed tomography (SPECT). The first published study was a case study showing that SERT densities increased in the medial prefrontal area and thalamus after 1 year of psychodynamic psychotherapy and recovery from depression in a patient suffering from major depressive disorder and borderline personality disorder [10]. Another case study from the same group reported a subject with mixed mania and six depressed controls [11]. The patient with mixed mania had an elevated SERT availability in the midbrain compared to depressed patients who had decreased levels. All received psychodynamic psychotherapy (the mixed mania case for 8 months and the depressed patients for 12 months). After treatment, the SERT availability decreased in the single case by 9.9% and increased in the depressive controls by 12.5%. Finally, this group has reported recently that in a group ($N=19$) of depressed patients, midbrain SERT density increased after 12 months of psychodynamic psychotherapy in patients suffering from atypical depression, but no change was found among typically depressed patients [12]. The main problems with these studies are that they are not randomized and that the most recent study lacks a control group.

As far as I know, only one randomized comparative study on receptor level changes after psychodynamic psychotherapy has been published [13]. In this study, we measured changes in serotonin 5-HT_{1A} receptor densities after psychotherapy and compared them with changes after fluoxetine pharmacotherapy. PET scanning with the 5-HT_{1A} radiotracer [*carbonyl*-¹¹C]WAY-100,635 was performed before and after the intervention.

The patients with symptoms of depression were recruited through five occupational health service units providing primary health care. All of the included subjects were help-seeking patients, and they gave their written informed consent for the study. All the subjects were interviewed by a psychiatrist, using the Structured Clinical Interview for DSM-IV axis-I disorders. The severity of the depression was assessed by the psychiatrist using the 17-item Hamilton Depression Rating Scale (HDRS), and the subjects were also asked to fill in the Beck Depression Inventory (BDI).

The inclusion criteria for the study were:

1. Mild or moderate episode of major depressive disorder
2. HDRS score of 13 or more
3. Age 20–60 years
4. No psychotherapeutic or psychopharmacological treatment during the preceding 4 months
5. No DSM-IV axis-I or axis-II co-morbidity
6. No severe somatic illnesses

After fulfilling the criteria of the study, the patients were randomly allocated to receive either psychodynamic psychotherapy or fluoxetine medication.

The psychotherapy was short-term psychodynamic psychotherapy (STPP), and it consisted of 16 weekly sessions with experienced psychiatrists or psychologists ($n=5$) who had training in psychodynamic psychotherapy and work experience of over 10 years as a psychotherapist. Additionally, all of them had completed the same 2-year training program in STPP with teachers from Finland, Sweden, Norway, and the UK.

The pharmacotherapy with fluoxetine also lasted 16 weeks. The initial dose was 20 mg/day and the dose could be increased to 40 mg/day if there was no response in 3–4 weeks. The medication was supervised by a general practitioner, who was a member of the research team. The general practitioner met the patients once or twice a month. Plasma fluoxetine and norfluoxetine levels were measured at the 4-month follow-up.

In a previous paper, we reported that both treatments functioned equally well and were highly effective [14]. According to the DSM-IV criteria, a total of 68% ($n=13$) of the completers in the fluoxetine group, and 71% ($n=15$) in the psychotherapy group were clinically in remission at the 4-month follow-up ($p=0.84$). The corresponding figures for all randomized patients ($n=51$) were 52% and 58%.

In the subgroup of patients who underwent PET imaging ($N=23$), the clinical outcome in both treatment groups was also similar in terms of standard symptom ratings: the average Hamilton depression

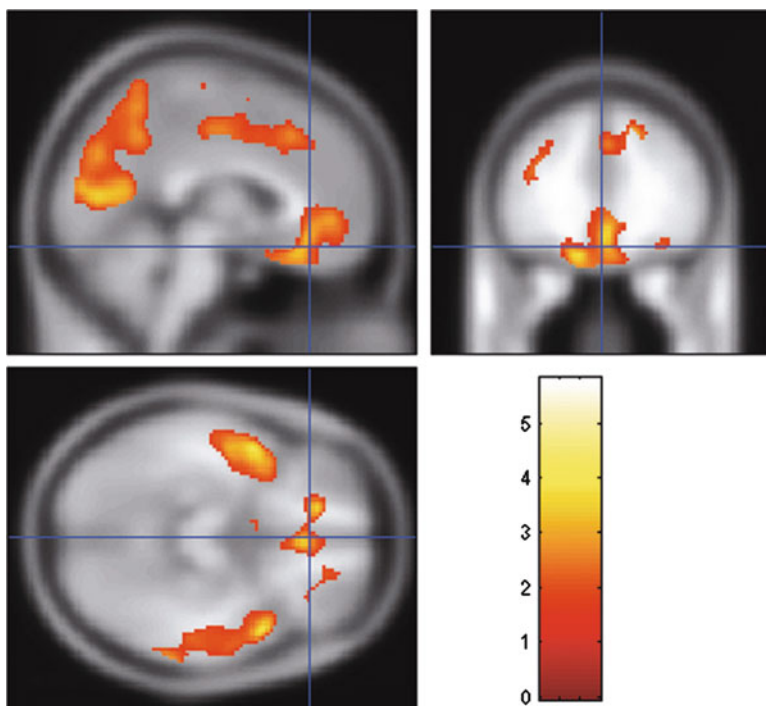


Fig. 13.1 Results from the SPM analysis shows two large clusters ($k_E=9,515$, $T_{\max}=5.82$ at $[-26, 0, -38]$ and $k_E=18,231$ voxels, $T_{\max}=4.10$ at $[-46, -20, 42]$) located mainly in frontal, temporal and parietal cortex. These clusters represent significantly increased BP in the psychotherapy group as compared with the fluoxetine group. The results are visualized on a T1-weighted MRI template in stereotactic standard space, and color bar represents the T statistic at voxel level (Reprinted with permission from Ref. [13]. Copyright © Cambridge Journals)

total score decreased in the STPP group from 19.9 to 5.6 ($p<0.001$) and in the fluoxetine group from 18.1 to 7.3 ($p<0.001$). The average BDI total score decreased from 22.4 to 8.8 ($p=0.001$) and from 24.9 to 11.5 ($p<0.001$), respectively. Thus, there was a substantial treatment response as 59% of the subjects reached remission and 77% of the subjects met the criteria for response at 4 months.

Additionally, there were no differences between the treatment groups in the baseline HDRS or BDI scores, in the reduction of HDRS or BDI, or in the proportion of patients in remission or those classified as responders following treatment.

Preparation of the radioligand [*carbonyl*- ^{11}C]WAY-100,635 and PET scanning procedures have been previously described in detail [15]. Regarding the technical details concerning the imaging, quantification, and data analysis, I refer to the original publication [13].

Analysis of the change in the 5-HT_{1A} receptor density in the treatment groups revealed a significant increase in the STPP group as compared with the pharmacotherapy group (rmANOVA: group $\times$ repetition, $p=0.014$). When compared with healthy controls, patients in the STPP group demonstrated significantly increased 5-HT_{1A} density after treatment (group $\times$ repetition, $p=0.003$), whereas patients receiving fluoxetine did not differ from healthy control subjects in terms of the change (group $\times$ repetition, $p=0.222$).

When we restricted the analysis only to responders, the difference between the groups was still evident (group $\times$ repetition, $p=0.063$) and the same applied to those in remission (group $\times$ repetition, $p=0.027$). When the main analysis was covaried with both response and remission status (group $\times$ repetition, $p=0.028$), first-episode/recurrent status (group $\times$ repetition, $p=0.029$), or level of education (group $\times$ repetition, $p=0.037$), the main result was still unchanged.

The voxel-based analysis of parametric [*carbonyl*- ^{11}C]WAY-100,635 BP confirmed the results from the main analysis (Fig. 13.1) and demonstrated two large clusters in frontal, parietal, and

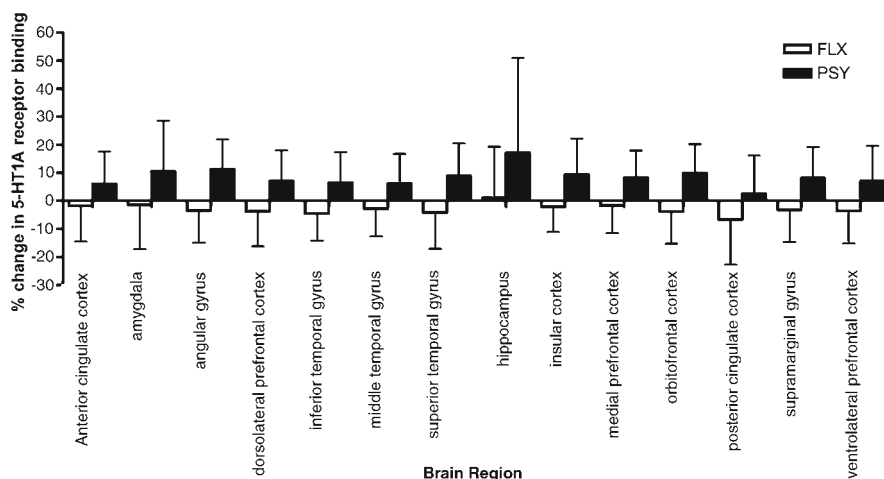


Fig. 13.2 Average percentual changes in 5HT_{1A} receptor density in different brain areas in the fluoxetine (white bars) and psychotherapy (black bars) groups (Reprinted with permission from Ref. [13]. Copyright © Cambridge Journals)

temporal cortex representing significant increase in 5-HT_{1A} density in the STPP group as compared with the fluoxetine group.

To investigate which brain regions contributed most to the overall analysis, regional rmANOVA models were also applied. Average percentage changes in different brain regions in 5-HT_{1A} receptor density in the treatment groups are shown in Fig. 13.2.

Psychotherapy Increases Serotonin 5HT-1A Receptor Densities: So What?

In this randomized study, we found an increase in the density of serotonin 5-HT_{1A} receptors in multiple cortical regions after psychotherapy among patients suffering from major depressive disorder. A similar change was not seen among patients receiving fluoxetine medication. What do these results mean?

The first very general conclusion from this study is that the artificial separation between interventions targeting either brain or mind is outdated. Psychotherapy clearly changes brain functions, and there is evidence that medication changes abilities traditionally considered to belong to the mind as distinct from the brain.

Secondly, there is previous evidence that treatment with SSRI medication does not increase the densities of 5-HT_{1A} receptors among patients suffering from major depressive disorder [6, 16], and our results are in line with these. The study by Bhagwagar et al. [7] additionally showed that recovery from depression is not accompanied by increase in brain 5-HT_{1A} receptors. However, the patients in that study suffered from recurrent depression and had used antidepressant medication earlier.

Thus, it has been suggested that the lower level of 5-HT_{1A} receptors in patients could be a trait marker of depression that increases the risk of future depression. If this is true, one important implication of our study would be that this brief psychodynamic psychotherapy may lead to a change in this trait. This possibility is indirectly supported by a finding showing that the relapse rate among

patients suffering from major depressive disorder is lower among those treated with psychotherapy compared with those treated with antidepressant medication [17].

However, another possibility is that the decreased amount of 5-HT_{1A} receptors is a state marker of major depression, but that currently widely used methods for symptom quantification (such as BDI, HDRS) do not wholly reflect the function served by this receptor system. It could be that the change in the 5-HT_{1A} system is related to something else in the depressive state than symptoms (e.g., functional ability, quality of life, change in defenses, or interpersonal relations). We are currently exploring some of these possibilities.

The main finding was that different molecular changes are associated with the two treatments despite the fact that clinically both treatments functioned equally well. A highly simplistic view of the function of the serotonin system in relation to these treatments would suggest that the two treatments could lead to similar outcomes both clinically and in the functions of the serotonin system, because fluoxetine enhances serotonergic neurotransmission by increasing the amount of the neurotransmitter in the synaptic cleft and psychotherapy by increasing the density of postsynaptic receptors.

Why, then, does psychotherapy increase the amount of serotonin receptors? The mechanisms involved remain unknown. There is evidence from animal studies that the development of the serotonin system is influenced by environmental factors, such as maternal separation in rats. For example, Vicentic et al. [18] have demonstrated that a 180-min separation from the dam (the rat mother) during postnatal days 2–14 resulted in a change in the forebrain 5-HT_{1A} receptor levels compared to non-handled pups. Also, environmental factors later in life, such as mild chronic stress, may induce changes in the 5-HT_{1A} system in rats [19]. However, all the previous studies showing that environmental factors modulate the serotonin system have been animal studies and have shown changes induced by stress or other “negative” events. This study included patients and the environmental intervention aimed at a “positive” change, and it reversed the downregulation associated with major depression and led to plastic molecular level changes in the synapse.

Given the importance of CNS serotonin in cognitive and emotional processes and the fact that psychotherapy is probably a form of emotional learning, the increase in 5-HT_{1A} receptors in the psychotherapy group could reflect a top-down modulation of the serotonin system based on increased emotion regulation and learning. Along these lines, Kandel [20] has hypothesized that psychotherapy could lead to changes in gene expression through learning by altering the strength of synaptic connections and inducing structural changes that alter the anatomical pattern of interconnections between nerve cells of the brain. Our study clearly supports this hypothesis.

Where to Go from Here?

The findings of this study should of course be replicated. In the future, it would also be important to find out if there are differences in the relapse rate of patients that have recovered from depression with the help of different treatments, but who exhibit different changes in the serotonin system after the treatment. An important aspect is also to find out if the 5-HT_{1A} system really represents a state or trait marker of depression. Future studies should also investigate the effect of different psychotherapies and of spontaneous remission on the changes in the 5-HT_{1A} system. A plausible thought is that different psychotherapies target different brain systems and, thus, would show different change patterns in the brain. No direct comparisons, however, between different psychotherapies in this regard have been performed. At this stage, we also do not know if the brain changes seen so far using different psychotherapies reflect changes that are specific for the therapies or just the recovery process in the brain (which could be similar across different therapies).

References

1. Linden DEJ. How psychotherapy changes the brain – the contribution of functional neuroimaging. *Mol Psychiatry*. 2006;11:528–38.
2. Beauregard M. Effect of mind on brain activity: evidence from neuroimaging studies of psychotherapy and placebo effect. *Nord J Psychiatry*. 2009;63:5–16.
3. Stockmeier CA. Involvement of serotonin in depression: evidence from postmortem and imaging studies of serotonin receptors and the serotonin transporter. *J Psychiatr Res*. 2003;37:357–73.
4. Neumeister A, Young T, Stastny J. Implications of genetic research on the role of the serotonin in depression: emphasis on the serotonin type 1A receptor and the serotonin transporter. *Psychopharmacology*. 2004;174:512–24.
5. Drevets WC, Frank E, Price JC, Kupfer DJ, Holt D, Greer PJ, et al. PET imaging of serotonin 1A receptor binding in depression. *Biol Psychiatry*. 1999;46:1375–87.
6. Sargent PA, Kjaer KH, Bench CJ, Rabiner EA, Messa C, Meyer J, et al. Brain serotonin 1A receptor binding measured by positron emission tomography with [¹¹C]WAY-100635: effects of depression and antidepressant treatment. *Arch Gen Psychiatry*. 2000;57:174–80.
7. Bhagwagar Z, Rabiner EA, Sargent PA, Grasby PM, Cowen PJ. Persistent reduction in brain serotonin 1A receptor binding in recovered depressed men measured by positron emission tomography with [¹¹C]WAY-100635. *Mol Psychiatry*. 2004;9:386–92.
8. Meltzer CC, Price JC, Mathis CA, Butters MA, Ziolkowski SK, Moses-Kolko E, et al. Serotonin 1A receptor binding and treatment response in late-life depression. *Neuropsychopharmacology*. 2004;29:2258–65.
9. Hirvonen J, Karlsson H, Kajander J, Lepola A, Markkula J, Rasi-Hakala H, et al. Decreased brain serotonin 5-HT_{1A} receptor availability in medication-naïve patients with major depressive disorder: an in vivo imaging study using PET and [carbonyl-¹¹C]WAY-100635. *Int J Neuropsychopharmacol*. 2008;11:465–76.
10. Viinamäki H, Kuikka J, Tiihonen J, Lehtonen J. Change in monoamine transporter density related to clinical recovery: a case control study. *Nord J Psychiatry*. 1998;52:39–44.
11. Tolmunen T, Joensuu M, Saarinen PI, Mussalo H, Ahola P, Vanninen R, et al. Elevated midbrain serotonin transporter availability in mixed mania: a case report. *BMC Psychiatry*. 2004;4:27.
12. Lehto SM, Tolmunen T, Joensuu M, Saarinen PI, Valkonen-Korhonen M, Vanninen R, et al. Changes in midbrain serotonin transporter availability in atypically depressed subject after one year of psychotherapy. *Prog Neuropsychopharmacol Biol Psychiatry*. 2008;32:229–37.
13. Karlsson H, Hirvonen J, Kajander J, Markkula J, Rasi-Hakala H, Salminen JK, et al. Psychotherapy increases brain serotonin 5HT-1A receptors in patients with major depressive disorder. *Psychol Med*. 2010 Mar;40(3):523–8.
14. Salminen J, Karlsson H, Hietala J, Aalto S, Rasi-Hakala H, Markkula J, et al. Short-term psychodynamic psychotherapy and fluoxetine in major depressive disorder – a randomized comparative study with a 12-month follow-up. *Psychother Psychosom*. 2008;77:351–7.
15. Hirvonen J, Kajander J, Allonen T, Oikonen V, Någren K, Hietala J. Measurement of serotonin 5-HT_{1A} receptor binding using positron emission tomography and [carbonyl-¹¹C]WAY-100635 – considerations on the validity of cerebellum as a reference region. *J Cereb Blood Flow Metab*. 2007;27:185–95.
16. Moses-Kolko EL, Price JC, Thase ME, Meltzer CC, Kupfer DJ, Mathis CA, et al. Measurement of 5-HT_{1A} receptor binding in depressed adults before and after antidepressant drug treatment using positron emission tomography and [¹¹C]WAY-100635. *Synapse*. 2007;61:523–30.
17. Hollon SD, DeRubeis RJ, Shelton RC, Amsterdam JD, Salomon RM, O'Reardon JP, et al. Prevention of relapse following cognitive therapy vs medication in moderate to severe depression. *Arch Gen Psychiatry*. 2005;62:417–22.
18. Vicentic A, Francis D, Moffett M, Lakatos A, Rogge G, Hubert GW, et al. Maternal separation alters serotonergic transporter and serotonergic 1A receptors in rat brain. *Neuroscience*. 2006;140:355–65.
19. Grippo AJ, Sullivan NR, Damjanoska KJ, Crane JW, Carrasco GA, Shi J, et al. Chronic mild stress induces behavioral and physiological changes, and may alter serotonin 1A receptor function, in male and cycling female rats. *Psychopharmacology*. 2005;179:769–80.
20. Kandel E. A new intellectual framework for psychiatry. *Am J Psychiatry*. 1998;155:457–69.

Chapter 14

Neural Correlates of Emotion, Cognition, and Attachment in Borderline Personality Disorder and Its Clinical Implications

Anna Buchheim, Roberto Viviani, Carol George, Horst Kächele, and Henrik Walter

Keywords Anterior cingulate cortex • Attachment representation • Borderline personality disorder • fMRI • Neuroimaging • Unresolved trauma

Introduction

Borderline personality disorder (BPD) is a heterogeneous constellation of symptoms characterized by severe and persistent problems across interpersonal, cognitive, behavioral, and emotional domains of functioning [1, 2]. Diagnostic symptoms of BPD include: (1) frantic efforts to avoid abandonment, (2) a pattern of unstable and intense interpersonal relationships characterized by alternating between extremes of idealization and devaluation, (3) markedly and persistently unstable self-image or sense of self, (4) chronic feelings of emptiness, (5) transient, stress-related paranoid ideation or severe dissociative symptoms, (6) recurrent suicidal behavior, gestures, or threats, or self-mutilating behavior, (7) impulsivity in at least two areas that are potentially self-damaging, (8) affective instability due to a marked reactivity of mood, and (9) inappropriate, intense anger, or difficulty controlling anger. These criteria are according to the DSM-IV, published in 2000 by the APA.

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Lieb et al. [3] suggested clustering these criteria into four sectors of psychopathology because patients who manifest symptoms in all four areas simultaneously can be successfully discriminated from those with other forms of personality disorder. The first area is *affective disturbance*. Patients with BPD display a range of intense dysphoric affects, sometimes experienced as aversive tension, including rage, sorrow, shame, panic, terror, and chronic feelings of emptiness and loneliness. These individuals can be distinguished from other groups by the overall degree of their multifaceted emotional pain [4, 5]. Another aspect of their affective disturbance is their tremendous mood reactivity [6], as shown by their tendency to change from one interpersonally reactive mood state to another during the course of one day. The second area is *disturbed cognition*. According to Lieb et al. [3], patients show three levels of cognitive symptomatology [7]: (1) troubling but non-psychotic symptoms, such as overvalued ideas of being bad, experiences of dissociation in terms of depersonalization and derealization; (2) quasi-psychotic or psychotic-like symptoms – i.e., transitory, circumscribed, and somewhat reality-based delusions and hallucinations; and (3) genuine or true delusions and hallucinations. Serious identity disturbance is thought to be in the cognitive realm because it is based on a series of false beliefs (e.g., one is good one minute and bad the next). The third sector of their psychopathology is *impulsivity*. Patients show two types of impulsive behavior: (1) deliberately physically self-destructive, and (2) more general forms of impulsivity [3]. Self-mutilation, suicidal communication, and suicide attempts are the constituent elements of the first type of impulsivity, whereas the second type consists of behaviors like substance abuse, disordered eating, spending sprees, verbal outbursts, and reckless driving. The fourth psychopathological symptom cluster includes *intense unstable relationships*, which are characterized by two separate but interlocking problems. The first is a profound fear of abandonment, which tends to manifest itself in desperate efforts to avoid being left alone [8] (e.g., calling people on the phone repeatedly or physically clinging to them). The second is a tumultuous quality to close relationships, which are marked by frequent arguments, repeated breakups, and reliance on a series of maladaptive strategies that can both anger and frighten others (e.g., highly emotional or unpredictable responses) [3].

Developmental Factors

BPD is a highly prevalent condition that affects approximately 1.3% of the population [9]. One of the most salient psychosocial factors associated with the development of BPD is early *childhood maltreatment*. Zanarini et al. [10, 11] found that of 358 patients with BPD, 91% reported having been abused, and 92% reported having been neglected, before age 18. The BPD patients were significantly more likely than patients with other personality disorders ($n=109$) to report having been emotionally and physically abused by a caretaker and sexually abused by a non-caretaker. They were also significantly more likely than other patients to report having a caretaker withdraw from them emotionally, treat them inconsistently, deny their thoughts and feelings, place them in the role of a parent, and fail to provide them with needed protection. Silk [12] reported that ongoing sexual abuse by a caregiver may be a strong determinant of specific aspects of the disordered interpersonal behavior and functioning found in female patients with BPD. The expectation that the world is an empty, malevolent place may have some of its roots in the repetition of sexual abuse experiences in childhood.

Rinne et al. [13] tested the hypothesis that severely abused borderline patients can be distinguished both from borderline patients without histories of severe abuse and from healthy control subjects by a hyperresponsive hypothalamic–pituitary–adrenal axis. Chronically abused BPD patients had a significantly enhanced adrenocorticotropin and cortisol response to the dexamethasone-suppressed corticotropin-releasing hormone challenge compared with non-abused subjects.

Hyperresponsiveness of the HPA axis in chronically abused BPD subjects might be due to the enhanced central drive to pituitary adrenocorticotropin release.

Although still a controversial point, traumatization might be one risk factor for developing BPD [14]. Indeed, 30–50% of BPD patients were found to fulfill criteria of posttraumatic stress disorder (PTSD) (e.g., [15]). A number of the DSM-IV diagnostic criteria for BPD are defined with reference to interpersonal behavior, such as a pattern of unstable and intense relationships, difficulty tolerating being alone, and frantic efforts to avoid real or imagined abandonment.

Attachment Theory

Attachment theory provides a powerful framework for understanding the nature of close relationships and the links between mental representations in patterns of emotion regulation and psychopathology [16]. Researchers have used two measurement strategies based on narrative assessment or self-report to assess adult attachment. In the study we demonstrate later [17], we refer on the narrative tradition using interview assessments [18–22]. This approach classifies attachment through examination of the person's state of mind with respect to attachment as expressed in linguistic qualities of the narratives. Classification falls into two main attachment groups: organized/resolved and disorganized/unresolved. Disorganized/unresolved individuals are flooded with painful affect, often evidenced through verbal descriptions of intense fear or linguistic disorientation [22]. Studies concur that the unresolved attachment classification predominates in BPD patients, related particularly to lack of resolution of physical and sexual abuse [17, 23, 24]. Attachment disorganization is considered to be one core feature in understanding BPD psychopathology in the context of affective and interpersonal problems (e.g., [17, 23, 25, 26]).

During the past few years, understanding of the underlying neurobiology of BPD has grown rapidly thanks to the application of functional neuroimaging techniques. Neuroimaging investigations are helpful to understand the underlying neural basis of the relationship between individual trauma and BPD by locating its putative functional and structural abnormality in a more general interpretive framework encompassing a wide range of psychiatric disorders [27]. Considerable empirical data have accumulated suggesting that a ventral system, in which the amygdala plays a pivotal role but includes wider portions of the medial and inferior temporal lobes, is involved in the appraisal of stimuli of emotional relevance, the generation of affective states, and the interplay between emotion and memory [28]. In contrast, psychological processes responsible for emotional control may be located in two distinct networks in the prefrontal cortex, with possible complementary roles [29], the first encompassing the dorsolateral prefrontal cortex (DLPFC) and the dorsal anterior cingulus, the second the rostral/subgenual anterior cingulate cortex (ACC). In this chapter, we focus on functional imaging studies only.

Neuroimaging Studies on Patients with Borderline Personality Disorder

According to Mauchnik and Schmahl [30], there are three domains of functional imaging findings investigating BPD: (1) affective dysregulation; (2) the complex of dissociation, self-injurious behavior, and pain processing; and (3) social interaction. By showing the involvement of the brain regions associated with the expression, control, and modulation of emotion and impulsivity in animals and humans, these studies have led to the hypothesis that dysfunctions in these networks may underlie some of the psychopathological symptoms seen in BPD (see also [31]).

Functional Imaging: Emotional, Cognitive, and Social Stimuli Studies

In general, neuroimaging studies measuring the *responsivity to emotional stimuli* provide support for the presence of a heightened responsivity to emotional stimuli among individuals with BPD. Herpertz et al. [32] examined amygdala and prefrontal cortex functioning in response to standardized emotional stimuli among right-handed female inpatients with BPD patients. Patients displayed a significantly greater activation of the amygdala in response to the negative compared to the neutral stimuli. In the control group, no such differences in amygdala activation occurred in response to the negative emotional stimuli.

In a related study, Donegan et al. [33] examined amygdala reactivity to pictures of human *facial expressions* of emotion in BPD participants and normal controls. Compared to the control group, BPD participants evidenced greater levels of left amygdala activation to sad, neutral, and fearful faces. Interestingly, the most striking difference between the groups occurred in response to neutral expressions. In evaluating the ambiguous “neutral” expressions, some of the BPD subjects disambiguated these expressions by projecting emotions or intentions into their descriptions of the neutral faces. Importantly, their attributions were uniformly negative, threatening, and untrustworthy. The strong negative reactions of these subjects to the neutral faces are consistent with the notion of transference in the psychotherapy. Findings from this study provide a foundation for elucidating the neural substrates of behavioral and emotional facets of BPD that contribute to disturbed interpersonal relations.

Another study tested a model of fronto-limbic dysfunction in facial emotion processing in BPD [34] focusing on emotions like *fear* and *anger*. BPD patients showed a significantly larger deactivation in the presence of fearful faces (relative to controls) in the bilateral rostral/subgenual ACC, and significantly greater activation in the right amygdala. There were no significant between-group differences in these areas in response to anger. The authors concluded that BPD patients exhibit changes in fronto-limbic activity in the processing of fear stimuli, with exaggerated amygdala response and impaired emotion modulation of ACC activity. The relative hyporesponsivity of the amygdala to anger might be related to an inability of BPD patients to manage socially undesirable behavior in interpersonal settings, including their own expressions of antagonistic thoughts and behaviors.

Affective dysregulation in BPD in response to both external stimuli and *memories* has been shown to be associated with functional alterations of limbic and prefrontal brain areas. In a recent functional magnetic neuroimaging (fMRI) study, Schnell et al. [35] examined in BPD patients and controls neuronal networks involved in autobiographical memory retrieval using pictures from the Thematic Apperception Test (TAT). In both groups, TAT stimuli activated brain areas known to be involved in autobiographical memory retrieval. In the TAT condition, compared to controls, BPD subjects displayed increased BOLD responses in the bilateral orbitofrontal and insular regions, in the left anterior cingulate and medial prefrontal cortex, as well as in the parietal and parahippocampal areas, which was consistent with a more aversive and arousing experience assessed by self-reports. The authors concluded that increased BOLD responses during TAT processing in BPD subjects were in line with previously reported changes in anterior cingulate and orbitofrontal cortices, which are known to be involved in memory retrieval. However, BPD subjects displayed hyperactivation in these areas for both TAT and neutral stimuli. The lack of selective activation of areas involved in autobiographical memory retrieval suggests a general tendency toward a self-referential mode of information processing in BPD, or a failure to switch between emotionally salient and neutral stimuli.

The importance of the presence or absence of *traumatic experiences* or *PTSD diagnosis* for BPD patients plays an important role, as evidenced in the following three studies.

Driessen et al. [36] recruited women with BPD who had experienced trauma (aged 21–40 years, mean 33 years) and who had various comorbidities. The authors interviewed the participants to obtain cues about *traumatic memories* and aversive non-traumatic memories, and observed them

using fMRI during recall of those memories. The authors found an activation of the orbitofrontal cortex in both hemispheres and activation of Broca's area in patients with BPD without PTSD, only a minor activation of the orbitofrontal cortex and no activation of Broca's area in patients with BPD and PTSD. Because all BPD patients tested had experienced trauma but not all had PTSD, the authors argued that the presence or absence of comorbid PTSD may constitute an important subgroup.

In BPD patients listening to *personalized scripts of their own trauma* (e.g., childhood sexual or physical abuse), Schmahl et al. [37] found an activation in right DLPFC and deactivation in left DLPFC in women without BPD. There was also activation in right anterior cingulate and left orbitofrontal cortex in women without BPD. Women with BPD failed to show activation in the anterior cingulate gyrus and orbitofrontal cortex. No activity was seen in dorsolateral prefrontal gyrus in women with the diagnosis and treatment of BPD. The authors suggested that a dysfunction of the dorsolateral and medial prefrontal cortex, including ACC is correlated with the recall of traumatic memories in women with BPD. Here, these brain areas might mediate trauma-related symptoms, such as dissociation or affective instability.

Beblo et al. [38] aimed at investigating the neural correlates of the *recall of unresolved life events* in BPD patients and healthy controls. During fMRI, participants recalled unresolved and resolved negative life events. *Individual cue words* were used to evoke autobiographical memory. When contrasting unresolved and resolved life events, patients showed significant bilateral activation of frontotemporal areas including the insula, amygdala, and the ACC, the left posterior cingulate cortex, right occipital cortex, the bilateral cerebellum, and the midbrain. In healthy participants, no differential brain activation was related to these conditions. The authors concluded that the activation of both amygdala and prefrontal areas might reflect an increased effortful but insufficient attempt to control intensive emotions during the recall of unresolved life events in patients with BPD.

As mentioned, reduced *pain sensitivity* is a central aspect of dissociative states in BPD. Therefore, Schmahl et al. [4] investigated neural correlates of reduced pain sensitivity in BPD. A total of 12 non-medicated female patients with BPD and self-injuring behavior (SIB) and 12 age-matched healthy controls underwent a functional MRI scan while heat stimuli were applied to the individuals' hands. Patients with BPD had higher pain thresholds and smaller overall volumes of activation compared with healthy controls in response to identical temperature stimuli. In response to heat stimuli individually adjusted for equal subjective painfulness in all participants, the overall volume of activation was similar. However, the pattern of activation differed significantly, thus providing a possible circuit of pathologically reduced pain perception. In BPD patients as compared with healthy controls, there was increased activation in the DLPFC and decreased activation of the posterior parietal cortex. Additionally, pain evoked deactivation of the perigenual ACC and the amygdala in BPD patients. The interaction between increased pain-induced response in the DLPFC and deactivation in the ACC and the amygdala was suggested to be associated with an antinociceptive mechanism in patients with BPD. In BPD patients, this mechanism may modulate pain circuits, downregulation of the emotional components of pain, while sensory-discriminative processes remain intact.

Another brain area that may be relevant for BPD is the anterior insula, which has appeared as a key area associated with the processing of fairness in *social interactions*, subjective emotional awareness [39], facial emotion [40], and the appreciation of the intentions and emotional states of others [41] such as empathy [42, 43].

Individuals with BPD have shown an impaired ability to understand emotional information, in addition to problems with regulating emotions [44]. The emotional instability in BPD may be related to a heightened attention or sensitivity to social-emotional cues in interpersonal relations, a tendency to self-referential emotional processing or to dysregulated emotional processing mechanisms [6].

King-Casas et al. [45] found that individuals with BPD had reduced activity of the bilateral anterior insula during a trust game as compared to controls. These individuals also had problems in maintaining cooperation with their game partner and were further impaired in their ability to repair

broken cooperation. The authors interpreted this as a consequence of the norms used in perception of social gestures being dysfunctional or missing in individuals diagnosed with BPD. This study suggests that activation of the anterior insula in a social context represents an evaluation of perceived or planned action. When an evaluation is perceived as negative, it may be associated with a feeling of discomfort. This implies that individuals with BPD may have problems in cooperation because they lack the “gut feeling” (corresponding to the anterior insula signal) that the relationship is in jeopardy and/or expect such behavior from the outset [46]. The fact that individuals with BPD were less likely to establish or maintain a cooperative relationship may then be the result of difficulties in trusting others.

In an fMRI study by Koenigsberg et al. [6], BPD persons responded to negative and positive *social-emotional* scenes with a hyperaroused visual processing system and with a more activated premotor cortex. In response to negative stimuli, persons with BPD appeared to show greater activity in the amygdala, fusiform, precuneus, and parahippocampal regions, while healthy controls mobilized dorsolateral and insular regions instead. The authors interpreted this as a use of a more reflexive, hypervigilant, and action-prone system to process social-emotional stimuli in BPD individuals, which may help explain the greater emotional sensitivity and reactivity seen in these individuals, whereas controls employ a more reflective and less reactive network [6].

Interpersonal problems in BDP patients recently have become a new focus of interest in neurobiological research [6, 45, 47, 48]. Patients frequently report that they are afraid of rejection and abandonment of significant others. As mentioned before, attachment disorganization is considered to be one core feature in understanding BPD psychopathology in the context of affective and interpersonal problems. Next, we will report in detail on one of our own studies on neural correlates of attachment trauma.

Borderline Personality Disorders and Neural Correlates of Attachment Trauma: An fMRI Study

Introduction

Every developmental attachment study and approximately half of the attachment style studies (i.e., attachment conceived as a personality dimension) reported a strong association between BPD and indices of unresolved, fearful, preoccupied, or angry/hostile attachment [24, 49–54].¹ The association between BPD and unresolved and preoccupied attachment was recently confirmed in a recent meta-analysis of developmental attachment studies using the Adult Attachment Interview (AAI) [21, 22] to assess adult attachment in clinical and non-clinical samples [55]. Disorganized/unresolved individuals (i.e., dysregulated by emotional flooding) are flooded with painful affect, often evidenced through verbal descriptions of intense fear or linguistic disorientation while talking about traumatic attachment experiences, like abuse or loss [22], and disorganized in their attachment (BPD patients appear to be caught in a vicious cycle). Current situations and attachment figures (including adult romantic partners) likely activate past memories of abuse and aloneness, and attempts to organize current attachment relationships would therefore be derailed by chronic mourning of loss, abuse (i.e., unresolved state of mind), and a complex spectrum of assaults to attachment.

¹ In this section, we summarize parts of our paper published in *Psychiatry Research: Neuroimaging*, 2008, Ref. [17].

Bowlby [56] conceived of attachment as a key mechanism related to maintaining biological homeostasis, including the modulation of physiological stress and mental health. In a recent review, we reported current findings on attachment and neurobiology in fMRI research [57]. As this synopsis of findings in healthy subjects showed, researchers investigated very different *systems* (attachment, caregiving, sexual, affiliative, etc.), often by very different means and a variety of paradigms ranging from the presentation of individual photos of loved and unknown faces to more complex approaches (reflecting on attachment-relevant events, priming experiments). At present, the delineation of a *neuronal network* of attachment is not possible yet. The diversity of applied paradigms does not allow for a comparison of results. However, there is evidence across studies that brain regions like the amygdala and orbito/prefrontal cortices are involved in processing attachment-related stimuli. In addition, there are convergent results suggesting that, when caregiving is addressed, dopamine-associated regions of the reward system are active that differ from the neural correlates of the postulated “attachment circuitry.”

These studies did not directly address the representational attachment system. While pictures of significant others are good fMRI stimuli, there is no established methodology in attachment adult research using speech as the representational window to the internal working model of attachment.

Reliable analyses of fMRI data gathered during continuous overt speech have been demonstrated in healthy controls as well as in schizophrenic patients with severe formal thought disorder [58]. Inspired from that study, we recently demonstrated the feasibility of using an established attachment measure, the Adult Attachment Projective Picture System (AAP) [18, 19], in an fMRI environment while healthy subjects were telling stories to attachment pictures [59, 60]. Based on that pilot study, we investigated the functional neuroanatomy of *attachment trauma* in BPD patients [17].

Methodology

We decided to use the AAP [18, 19] because it provides (1) a set of eight standardized picture stimuli and (2) the possibility to code and classify individual story responses to these stimuli. This combination seemed feasible for use the measure in an fMRI environment.

The picture stimuli are line drawings of a neutral scene and seven attachment scenes (e.g., illness, separation, solitude, death, and threat). The stimuli are administered in a standard order: *Neutral* – two children playing ball; *Child at Window* – a child looks out a window; *Departure* – an adult man and woman stand facing each other with suitcases positioned nearby; *Bench* – a youth sits alone on a bench; *Bed* – a child and woman sit facing each other at opposite ends of the child’s bed (Fig. 14.1); *Ambulance* – a woman and a child watch someone being put on an ambulance stretcher; *Cemetery* – a man stands by a gravesite head stone (Fig. 14.1); and *Child in Corner* – a child stands askance in a corner with hand and arm extended outward. In sum, the attachment pictures include four “monadic” scenes (individuals depicted alone) and three dyadic scenes (individuals depicted in potential attachment dyads). Individuals are instructed to tell a story about the scene, including the character(s)’ thoughts and feelings, and the outcome of the story [18, 19].

The AAP classification system designates the four main adult attachment groups (secure, dismissing preoccupied, unresolved) from the transcribed verbatim narratives of the individual’s response to the attachment picture stimuli, which are coded following a well-defined, validated manual [61]. A large-scale psychometric investigation of the AAP with 144 participants showed excellent inter-judge reliability, test–retest reliability (retest after 3 months), discriminant validity, and construct validity using the established AAI [18, 19].

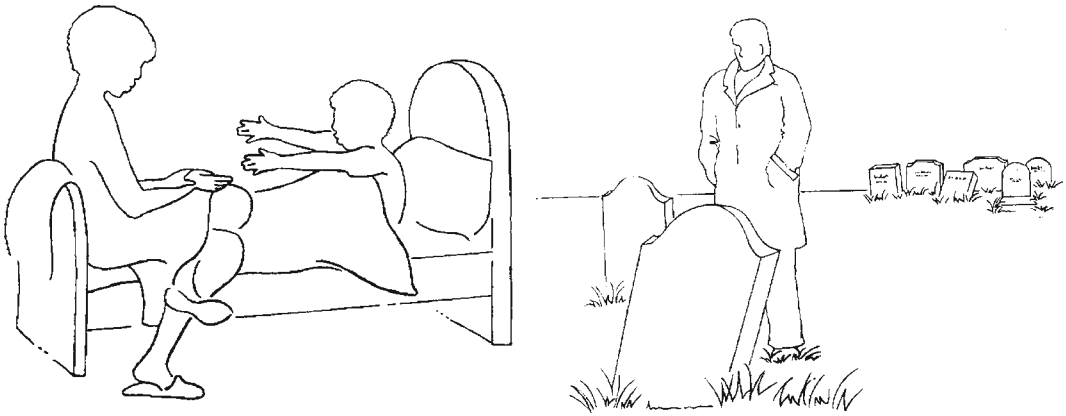


Fig. 14.1 Examples of two attachment pictures from the AAP: “Bed” (*dyadic picture*) and “Cemetery” (*monadic picture*). The AAP pictures depict events that according to theory and research activate the attachment system, for example, illness, solitude, separation, loss, and abuse. The black and white line drawings contain only sufficient detail to identify an attachment scene. Facial expressions and other details are omitted or drawn ambiguously. The drawings were developed carefully to avoid gender and racial bias (Copyright © Carol George Ref. [63]).

In our fMRI study, AAP classifications were coded by two independent reliable judges based on the transcribed verbatim AAP narratives subjects produced in the scanner. Inter-rater agreement was 100% ($\kappa=1.00$). Judges were blind to any identifying information about the subjects. The scanner-administered validity of the AAP was examined based on convergent classifications with AAIs administered outside the fMRI environment 1 month after fMRI acquisition, classified by an independent trained AAI judge also blind to all information about subjects. There was a high correspondence between the AAP and AAI “resolved” versus “unresolved” categories ($\kappa=0.70$).

Analyzing Attachment Trauma Based on the AAP Narratives

One of main features of the AAP coding system is the evaluation of attachment-based defensive processes. The AAP defines the defenses associated with unresolved attachment following Bowlby’s [56] conceptualization of defensive exclusion in pathological mourning. He viewed defense as the regulating mechanism that maintained a steady representational state, the goal of which is representational, behavioral, and physiological homeostasis [62]. Pathological mourning, including the unresolved state of mind that we view as linked especially to chronic mourning, is associated with a particular form of defensive exclusion. Bowlby [56] termed this “segregated system.” Homeostasis is extremely difficult to maintain in the face of threats to attachment, and Bowlby proposed that such memories and their associated affects must literally be segregated or blocked from conscious processing in order to prevent debilitating emotional dysregulation. Segregated systems defenses provide the individual with a rigid protection mechanism that works to prevent becoming overwhelmed and flooded by severe attachment distress, anger, sadness and fear.

The AAP operationally defines segregated systems in terms of a designated set of specific story response elements that are empirically and theoretically established indicators of attachment disorganization (termed “markers”). These include features of the response narrative that evidence danger, failed protection, helplessness, being out of control, isolation, spectral ideation, or response constriction. The AAP is judged “resolved” (i.e., re-integrated and contained as designated by the secure, dismissing, preoccupied classifications) or unresolved by evaluating if segregated systems markers are contained and re-organized in the narrative response. Resolution can take several forms, including descriptions of a character’s ability to think about attachment distress (descriptions of the character as taking constructive action), and depictions of others providing care. The failure to re-organize (i.e., being unresolved) is designated by uncontained dysregulation or constriction. Evidence of uncontained markers includes themes in which characters remain unprotected, descriptions of dysregulating distress that are not diminished or transformed, or descriptions of frightening autobiographical experiences. Constricted responses are evidenced by the inability to engage in the narrative task in response to a picture stimulus, which is conceived as the individual totally shutting down attachment so as to block overwhelming feelings of being out of control and dangerously unprotected.

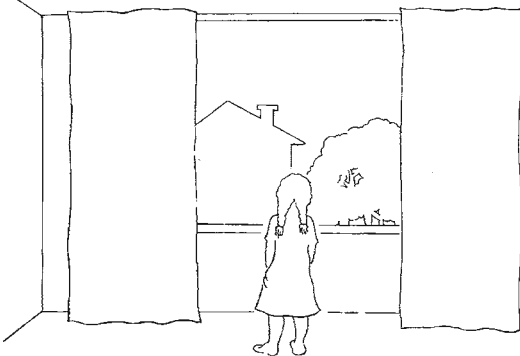
Classifying a transcript as resolved or unresolved is the first step in using the AAP. In our work, we have been interested in the patterns of dysregulation that appear in the previous transcript and beyond the classification category, in order to determine if there are different patterns in patient and non-patient responses. George [63] noted during the blind classification coding of several hundred AAPs in a range of different samples that some segregated systems markers were common and others were unusual. As a result, this author developed a supplementary set of AAP coding instructions that differentiated between what was considered “normative” (SS_{Norm}) and “traumatic” (SS_{Tr}) markers. Normative markers seemed to be related to the stimulus “pull,” for example, a death in *Ambulance* or the isolation associated with the breakup of teenage romance in *Bench*. Traumatic dysregulation markers (SS_{Tr}) were particularly frightening or bizarre responses to the AAP stimulus. These included themes of abuse, entrapment, abandonment, murder, suicide, or incarceration, or eerie descriptions of characters or events (e.g., girl floats over the bench). Some responses included descriptions of personal trauma (e.g., loss or abuse experiences), indicating merging with the depicted character and becoming flooded by personal memories. Table 14.1 provides examples that contrast SS_{Norm} and SS_{Tr} story responses to the AAP *Window*.

Both AAP judges also coded the AAP stories differentiating between normative and traumatic markers [63]. There was 100% inter-rater agreement in coding normative and traumatic markers ($\kappa=1.00$). The results presented next focus on the traumatic markers because of the specific link between BPD and traumatic childhood experience.

Hypotheses

We were especially interested in responses to monadic and dyadic attachment situations; that is, responses to stimuli portraying individuals as facing attachment threats alone versus in the presence of potential attachment figures. Given that one of the key features of BPD patients is their intolerance of aloneness [8], we predicted that AAP stimuli representing traumatic contents, such as aloneness, desperation, and physical threat, would elicit a significantly greater association with linguistic traumatic (and not only normative) dysregulation markers in the BPD group than controls. On the neural level, we hypothesized that BPD patients, as compared with controls, would show increased activation of brain regions associated with fear and pain (e.g., amygdala, ACC) during narration in response to these stimuli.

Table 14.1 Transcript examples of “resolved” and “unresolved” AAP *Window* story (Illustration: Copyright © Carol George Ref. [63])

Resolved AAP story	Unresolved AAP story
<u>Normative dysregulation (example of a control subject)</u>	<u>Normative dysregulation (example of a control subject)</u>
“A girl is <u>afraid</u>, feels bad, had a fight with her parents and has house arrest. She is looking out of the window and feels <u>terribly lonely</u> in her room alone by herself. She thinks about the fight and realizes that she has to say sorry. But she is <u>afraid</u> that her parents would reject her. She is standing there for a long time, thinking about the problem. After a while she leaves the room downstairs to her parents and tries to resolve the situation by talking to them.”	“A girl is very sad, wants to <i>hide herself behind the curtain</i>, she is very <u>frightened</u>, feels <u>abandoned</u> by everybody, she has moved in a new neighborhood. Life can be so cruel. She is <u>frightened</u> about the future and she doubts that she ever will meet friends. I have no idea how this could end. I think she stand there forever, I really don’t know.”
	<u>Traumatic dysregulation (example of a borderline patient)</u> “She feels homeless, it seems that she is incarcerated in that empty room wants to escape from this isolation, she thinks about suicide. It is also possible that she is in a mental institution, because she has already tried to commit suicide and now she has to be alone in an empty room. I have no idea. (long pause) I think she only dreams of hiding and running away.”

“Normative dysregulation markers” are underlined italics, “traumatic dysregulation markers” are bold

Sample

Thirteen female BPD patients were recruited from an inpatient psychiatric hospital and compared to 21 healthy female volunteers, matched for age and education. Psychiatric diagnoses, including diagnostic criteria for BPD, were assessed by a trained psychiatrist using the Structured Clinical Interview I and II for DSM-IV [64]. We examined the groups in relation to the following variables: movement parameters, balance of attachment classification groups in each sample, and patient medication. Six subjects were excluded from our main analysis: Four controls (movement > 2 mm, see following text), and two patients classified as resolved (not enough to allow any substantial group inferences). The final sample consisted of 11 BPD patients and 17 controls. Exclusion of the six subjects did not affect group homogeneity with respect to age (BPD: 27.8 years ± 6.7, controls: 28.4 years ± 7.5) and education (BPD: 10.8 years ± 1.4, controls: 10.9 years ± 1.6).

fMRI Procedure

The fMRI Attachment Paradigm procedure has been described elsewhere [59, 60]. In short, subjects were trained using two neutral non-AAP pictures before scanning. They were given the standard AAP instructions for story telling (“What led up to that scene; what are the characters thinking or feeling; what might happen next?”). They were asked to talk about each picture for 2 min, keeping their head as still as possible while speaking. Each picture trial during scanning consisted of the following sequence: Standard instruction (10 s); fixation cross (10 s), AAP picture (120 s), fixation cross (15 s) (Fig. 14.2).

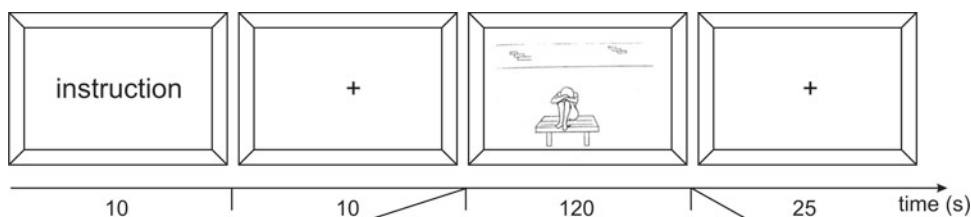


Fig. 14.2 fMRI study design

Results and Interpretations

Attachment Data

The AAP classifications for the sample were as follows: Controls, ten resolved and seven unresolved and for borderline patients, two resolved (excluded from further analysis, see earlier text), and 11 “unresolved.” The predominant prevalence of unresolved attachment among the BPD patients in this study is comparable to other studies investigating clinical populations [24, 55, 65], whereas the number of unresolved control subjects (38%) is greater than the average percentage (19%) previously reported in healthy populations [55]. Analyses of the AAP linguistic traumatic markers showed greater traumatic dysregulation in the responses of BPD patients as compared to controls in response to the monadic pictures, independent of overall attachment classification. Significant differences were found for all monadic pictures. The differences for picture stimuli *Window*, *Bench*, and *Cemetery* were highly significant ($p < 0.01$). Therefore, these three monadic pictures were selected for the fMRI analysis. There was no significant difference between the groups for any of the dyadic pictures.

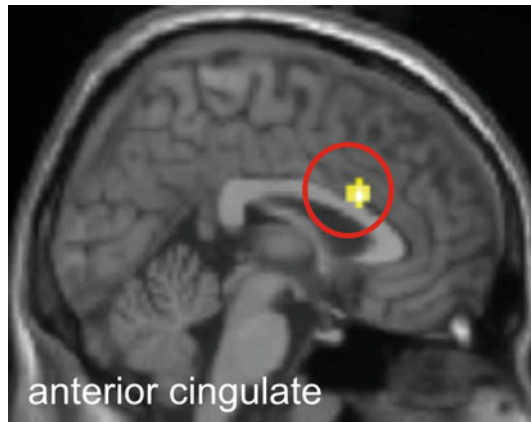
Neuroimaging Data

Due to our attachment data showing significantly more traumatic dysregulation in the narratives to monadic pictures compared to dyadic ones, we hypothesized on the neural level that BPD patients, as compared with controls, would show increased activation of limbic brain regions associated with fear and pain (e.g., amygdala, ACC) during narration in response to these monadic stimuli.

This hypothesis could be confirmed. As expected, BPD patients’ responses to monadic pictures showed significantly stronger activation of the dorsal ACC than responses of the controls (Fig. 14.3).

ACC activation is observed in response to pain and unpleasantness [66]. ACC activation in healthy subjects is associated with social relationship stimuli, including intimate relationships [67], social exclusion [68], and pictures evoking grief [69]. However, the ACC is not homogeneous [70]. The subgenual ACC is mainly concerned with emotions, in particular the representation of autonomic afferences. The dorsal region posterior to the genu of the corpus callosum is divided into two subsections, the anterior and posterior midcingulate cortex (aMCC, pMCC). These are overlapping pain and fear sites. The aMCC is innervated by the midline and intralaminar thalamic nuclei belonging to the medial pain system, and also receives direct input from the amygdala. Thus, the aMCC is linked to pain, especially fear avoidance. The observed ACC activation in our study was located in the aMCC. We interpreted this finding as a neural signature of pain and fear associated with attachment trauma. This pattern was consistent with our hypothesis and reports that abandonment fears are the most persistent long-term symptoms in BPD [71].

Fig. 14.3 Traumatic markers monadic AAP pictures: increased activation in patients relative to controls in the ACC area (coordinates x, y, z : 3, 18, 24). Parametric map thresholded at $p < 0.001$ uncorrected, cluster-level $p < 0.05$



A recent fMRI study using heat stimuli in BPD patients found an interaction of increased pain-induced response in DLPFC and deactivation in the perigenual, ventral part of the ACC and the amygdala [4]. The authors interpreted this pattern as an indicator of successful antinociception that patients have acquired by their experience of repetitive self-mutilation. We interpreted our finding of clearly more dorsal aMCC activation as an indicator of unsuccessful coping with emotional pain. However, our specific stimuli portraying aloneness did not activate the amygdala, compared to studies using more general emotional or psychophysical stimuli [4, 32, 33].

We did not have a specific hypothesis for the dyadic picture stimuli because we did not find any significant differences in the “behavioral data” (i.e., attachment narratives to these pictures in the two groups).

However, we observed group differences that required explanation: BPD patients’ responses to dyadic stimuli showed significantly stronger activation of the right superior temporal sulcus (STS) than controls. The STS has been shown to be regularly activated in theory-of-mind tasks [72]. It is a crucial part of a network involved in “thinking about others” [72]. Attachment researchers suggest that abusive childhood experiences of BPD patients lead to the inhibition of constructive “mentalizing” capacities used to reflect upon self and others. BPD patients show distorted, blocked, or “hyper-analytical” thinking processes when asked to describe attachment experiences [23, 73]. They often demonstrate a maladaptive hypersensitivity to others’ mental states that facilitates controlling perceived threatening relationships. Based on this model, we interpreted the increased STS activation in BPD patients as a neural indicator of fear-based hypervigilance in attachment relationships.

In a recent neuroimaging study by Takahashi et al. [74], the superior temporal gyrus (STG) sub-region volumes in 20 teenagers with first-presentation BPD and 20 healthy controls were investigated. The authors stated that STG volume early in the course of BPD did not differ from that of healthy controls; however, BPD participants with violent episodes had a smaller left caudal STG volume compared with those without such episodes during the previous 6 months. The authors discussed that recent functional MRI studies also suggest the involvement of the STS region in emotional dysregulation and impulsivity in BPD (Fig. 14.4) [6, 75]. Taken together with our preliminary findings, future studies should evaluate the potential involvement of the STG in the neurobiological underpinnings of BPD.

Moreover, control subjects’ responses to dyadic pictures showed significantly higher activation than BPD patients of the right parahippocampal gyrus (GH) (Fig. 14.5).

Along with the hippocampus, this region is involved in memory processes [76]. Recently, we have shown that this region is associated with a “subsequent memory effect” for neutral items that are encoded in a positive emotional context in healthy subjects [77]. Taken together, this suggests

Fig. 14.4 Traumatic markers dyadic AAP pictures: increased activation in patients relative to controls in the superior temporal sulcus (coordinates x, y, z : 60, -45, 24). Parametric map thresholded at $p < 0.001$ uncorrected, cluster-level $p < 0.05$

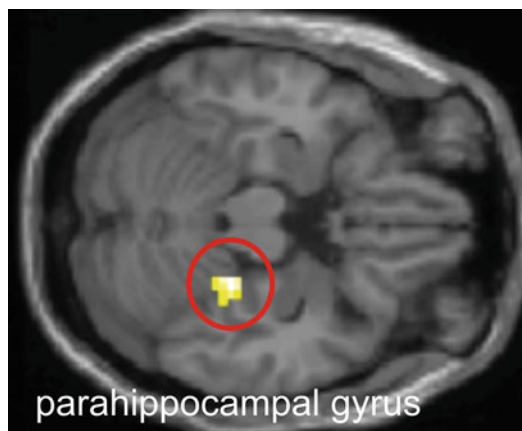
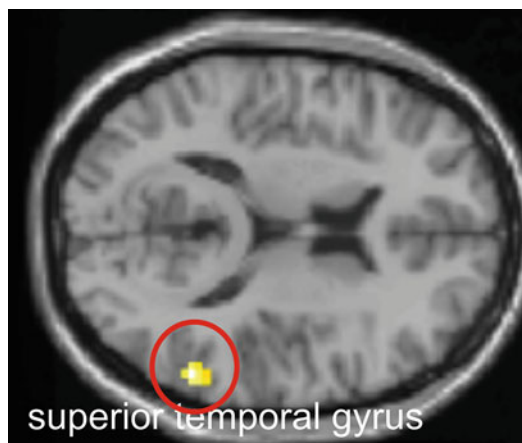


Fig. 14.5 Traumatic markers dyadic AAP pictures: increased activation in patients relative to controls, gyrus parahippocampalis (coordinates x, y, z : 33, -39, -15). Parametric map thresholded at $p < 0.001$ uncorrected, cluster-level $p < 0.05$



that the parahippocampal gyrus may mediate information about positive emotional information. Interestingly, in our AAP narratives of dyadic pictures, the unresolved control subjects describe overall positive dyadic interactions – interactions characterized by emotional warmth and mutuality. This impression was evidenced by higher scores on the AAP subscale *Synchrony*, the scale that evaluates dyadic stories for relationship mutuality (care for others or mutual enjoyment). Therefore, our finding regarding parahippocampal activation confirms that the control subjects' narratives are more associated with positive emotional memories compared to BPD patients, who show reduced activations. Our interpretation is also consistent with the fact that, on a descriptive level, the resolved control subjects showed the highest level of parahippocampal activation (i.e., more activation than unresolved controls).

Conclusions, Limitations, and Clinical Implications

Our finding of distinct prevalence patterns of linguistic markers in BPD provides a more detailed level of understanding of the organization and threats to attachment in BPD than exists in the literature to date [78]. In their selection of linguistic markers, unresolved BPD patients manifested more

traumatic than normative attachment dysregulation, whereas normative dysregulation predominated in unresolved controls. Flooded and overwhelmed, the BPD patients in this study were not able to integrate organizing narrative elements (i.e., productive thinking, safety provided by an attachment figure, constructive action) into their monadic stories, and they remained dysregulated when attachment was activated.

On a neural level, the presentation of monadic pictures triggered traumatic dysregulation, and was accompanied by activation in brain regions associated with pain and fear. BPD patients showed significantly more activation in the dorsal ACC, a region associated with pain and fear. These findings may provide evidence on the possible mechanisms related to the fearful intolerance of aloneness in BPD patients [8].

Patients and non-patients did not differ in the number of traumatic markers in dyadic stories; on a neural level, patients showed hyperactivation of the right STS and hypoactivation of the right parahippocampal gyrus. The dyadic pictures, representing the quality of potential attachment interactions, differentiated on a neural level between the groups. This finding highlights borderline patients' hypersensitive attention to the social environment [23] and addresses their poor contextualization of positive relationship memories [25].

Several limitations should be stated when interpreting our findings. First, although we made every effort to exclude patients with current psychosis and substance abuse, the influence of lifetime psychiatric conditions in the patient group cannot be ruled out. Therefore, the neural results of attachment dysregulation may not be specific to BPD, but rather a feature of patients with multiple Axis I and Axis II disorders. Second, overt speech is necessarily accompanied by movement, which may have introduced artifacts in the neuroimaging data. However, we took a series of measures to eliminate the influence of movement as much as possible (exclusion of subjects, inclusion of movement parameters as covariate of no interest, modeling the onset of every spoken word). Moreover, the areas identified in the study did not involve regions typically affected by movement artifacts (see detailed model [17]).

Clinicians have stressed aloneness as one core deficit that should be addressed in the treatment of borderline patients [8, 23, 73]. This underscores the importance for therapists to think about BPD from an attachment theory perspective, and in particular of articulating aloneness in terms of "representational attachment isolation." A recent case study [78] discussed how the AAP, used as an attachment diagnostic tool at the outset of therapy, can provide clinicians with a realistic and enriching analysis of different levels of trauma in relation to the adverse childhood experiences that shape patients' styles of discourse, defense, and coping and add a new level of understanding regarding patients' frightened and distressed behavior in transference. Based on assessment of traumatic dysregulation, treatment could focus on helping a patient to understand step by step the representational contexts associated with attachment dysregulation and the intense emotional reactions of helplessness.

Outlook

The past years have rapidly increased our understanding of the neurobiological underpinnings of BPD. The presented results are encouraging and may be fruitful for the improvement of therapies for BPD patients. According to Mauchnik and Schmahl [30], it is important to stress the limitations and deficiency of controlled studies. To address this criticism, future functional MRI studies should work with clinical control groups as well as with additional dependent variables (i.e., behavioral, subjective, or physiologic variables), and patients should not be taking psychotropic medication. The approach of working with a focus on core dimensions of the disorder, as outlined in this chapter, shows promise as a research tool and to understand mechanisms of therapy. The complexity of BPD is best understood in terms of combinations of alterations in different neurobiological systems.

Neuroscience is already being integrated into psychotherapy. This inevitable process cannot and should not be reversed. Established knowledge about brain function has already become part of psychotherapeutic education in some centers, and this development should be encouraged. Noting that neuroimaging studies are increasingly used to study effects and mechanisms of psychotherapy, Walter et al. [79] suggested a working definition of neuropsychotherapy that includes the identification of mediators and functional targets, determination of new therapeutic routes to such targets, and, finally even the design of psychotherapeutic techniques. Most studies in this field have investigated the effects of cognitive and interpersonal psychotherapy in patients with depressive, anxiety, and obsessive compulsive disorders [80]. While these studies investigated short-time therapies, the first functional imaging study examining psychodynamic treatment was initiated by our large working group with chronically depressed patients during psychoanalytic treatment at the beginning and after 15 months of treatment [81]. In that longitudinal fMRI and EEG study, we used highly individually tailored stimuli (core-sentences) based on attachment narratives (Adult Attachment Projective System) and psychodynamic clinical interviews (Operationalized Psychodynamic Diagnostic, OPD) to capture individual relevant material, which might be crucial for the psychotherapeutic process. These data are about to be analyzed and will be published elsewhere.

References

1. Gunderson JG. Borderline personality disorder: ontogeny of a diagnosis. *Am J Psychiatry*. 2009;166:530–9.
2. Linehan MM. Cognitive-behavioral treatment of borderline personality disorder. New York: Guilford Press; 1993.
3. Lieb K, Zanarini MC, Schmahl C, Linehan MM, Bohus M. Borderline personality disorder. *Lancet*. 2004;364:453–61.
4. Schmahl CG, Bohus M, Esposito F, Treede RD, Salle F, Greffrath W, et al. Neural correlates of antinociception in borderline personality disorder. *Arch Gen Psychiatry*. 2006;63:1–9.
5. Niedtfeld I, Schulze L, Kirsch P, Herpertz S, Bohus M, Schmahl Ch. Affect regulation and pain in borderline personality disorder: a possible link to the understanding of self-injury. *Biol Psychiatry*. 2010;68:383–91.
6. Koenigsberg HW, Siever LJ, Lee H, Pizzarello S, New AS, Goodman M, et al. Neural correlates of emotion processing in borderline personality disorder. *Psychiatry Res*. 2009;172:192–9.
7. Zanarini MC, Gunderson JG, Frankenburg FR. Cognitive features of borderline personality disorder. *Am J Psychiatry*. 1990;147:57–63.
8. Gunderson JG. The borderline patient's intolerance of aloneness: insecure attachments and therapist availability. *Am J Psychiatry*. 1996;153:752–8.
9. Torgersen S, Kringlen E, Cramer V. The prevalence of personality disorders in a community sample. *Arch Gen Psychiatry*. 2001;58:590–6.
10. Zanarini MC, Williams AA, Lewis RE, Reich RB, Vera SC, Marino MF, et al. Reported pathological childhood experiences associated with the development of borderline personality disorder. *Am J Psychiatry*. 1997;154: 1101–6.
11. Zanarini MC. Childhood experiences associated with the development of borderline personality disorder. *Psychiatr Clin North Am*. 2000;23:89–101.
12. Silk KR, Lee S, Hill EM, Lohr NE. Borderline personality disorder symptoms and severity of sexual abuse. *Am J Psychiatry*. 1995;152:1059–64.
13. Rinne T, de Kloet ER, Wouters L, Goekoop J, de Rijk RH, van den Brink W. Hyperresponsiveness of hypothalamic–pituitary–adrenal axis to combined dexamethasone/corticotropin-releasing hormone challenge in female borderline personality disorder subjects with a history of sustained childhood abuse. *Biol Psychiatry*. 2002;52: 1102–12.
14. Johnson JG, Cohen P, Brown J, Smailes M, Bernstein DP. Childhood maltreatment increases risk for personality disorders during early adulthood. *Arch Gen Psychiatry*. 1999;56:600–6.
15. McGlashan TH, et al. The collaborative longitudinal personality disorders study: baseline axis I/II and II/II diagnostic co-occurrence. *Acta Psychiatr Scand*. 2000;102:256–64.
16. Westen D, Nakash O, Thomas C, Bradley R. Clinical assessment of attachment patterns and personality disorder in adolescents and adults. *J Consult Clin Psychol*. 2006;74:1065–85.
17. Buchheim A, Erk S, George C, Kächele H, Martius P, Pokorny D, et al. Neural correlates of attachment trauma in borderline personality disorder: a functional magnetic resonance imaging study. *Psychiatr Res Neuroim*. 2008;163: 223–35.

18. George C, West M. The development and preliminary validation of a new measure of adult attachment: the adult attachment projective. *Attach Hum Dev*. 2001;3:30–61.
19. George C, West M. The adult attachment projective picture system. New York: Guilford Press, in press.
20. George C, West M. The adult attachment projective: measuring individual differences in attachment security using projective methodology. In: Hilsenroth M, editor. *Comprehensive handbook of psychological assessment, Personality assessment*, vol. 2. New Jersey: Wiley; 2003. p. 431–48.
21. George C, Kaplan N, Main M. The adult attachment interview. Unpublished manuscript. Berkeley: University of California; 1984/1985/1996.
22. Main M, Goldwyn R. Adult attachment interview scoring and classification system. Unpublished manuscript. Berkeley: University of California; 1984/1998.
23. Fonagy P, Target M, Gergely G. Attachment and borderline personality disorder: a theory and some evidence. *Psychiatr Clin North Am*. 2000;23:103–22.
24. Agrawal HR, Gunderson J, Holmes BM, Lyons-Ruth K. Attachment studies with borderline patients: a review. *Harv Rev Psychiatry*. 2004;12:94–104.
25. Levy KN, Clarkin JF, Yeomans F. The mechanisms of change in the TFP treatment of borderline patients with transference focused psychotherapy. *J Clin Psychol*. 2006;62:481–501.
26. Steele H, Siever L. An attachment perspective on borderline personality disorder: advances in gene-environment considerations. *Curr Psychiatry Rep*. 2010;12:61–7.
27. Phillips ML, Drevets WC, Rauch SL, Lane R. Neurobiology of emotion perception II: implications for major psychiatric disorders. *Biol Psychiatry*. 2003;54:515–28.
28. Dolan RJ. Emotion, cognition, and behaviour. *Science*. 2002;298:1191–4.
29. Drevets WC, Raichle ME. Reciprocal suppression of regional cerebral blood flow during emotional versus higher cognitive processes: implications for interactions between emotion and cognition. *Cogn Emot*. 1998;1:353–85.
30. Mauchnik J, Schmahl Ch. The latest neuroimaging findings in borderline personality disorder. *Curr Psychiatry Rep*. 2010;12:46–55.
31. Roth G, Buchheim A. Neurobiology of personality disorders. In: Clarkin JF, Fonagy P, Gabbard GO, editors. *Psychodynamic psychotherapy for personality disorders. A clinical handbook*. Washington, DC: American Psychiatric Publishing; 2010. p. 89–124.
32. Herpertz S, Dietrich TM, Wenning B, Krings T, Erbreich SG, Willmes K, et al. Evidence of abnormal amygdala functioning in borderline personality disorder: a functional MRI study. *Biol Psychiatry*. 2001;50:292–8.
33. Donegan NH, Sanislow CA, Blumberg HP, Fulbright RK, Lacadie C, Skularski P, et al. Amygdala hyperreactivity in borderline personality disorder: implications for emotional dysregulation. *Biol Psychiatry*. 2003;54:1284–93.
34. Minzenberg MJ, Fan J, New AS, Tang CY, Siever LJ. Fronto-limbic dysfunction in response to facial emotion in borderline personality disorder: an event-related fMRI study. *Psychiat Res Neuroimage*. 2007;155:231–43.
35. Schnell K, Dietrich T, Schnitker R, Daumann J, Herpertz SC. Processing of autobiographical memory retrieval cues in borderline personality disorder. *J Affect Disord*. 2007;97:253–9.
36. Driessen M, Beblo T, Mertens M, Piefke M, Rullkoetter N, Silva-Saavedra A, et al. Posttraumatic stress disorder and fMRI activation patterns of traumatic memory in patients with borderline personality disorder. *Biol Psychiatry*. 2004;55:603–11.
37. Schmahl CG, Vermetten E, Elzinga BM, Bremner D. A positron emission tomography study of memories of childhood abuse in borderline personality disorder. *Biol Psychiatry*. 2004;55:759–65.
38. Beblo T, Driessen M, Mertens M, Wingenfeld K, Piefke M, Rullkoetter N, et al. Functional MRI correlates of the recall of unresolved life events in borderline personality disorder. *Psychol Med*. 2006;36:845–56.
39. Craig AD. How do you feel—now? The anterior insula and human awareness. *Nat Rev Neurosci*. 2009;10:59–70.
40. Adolphs R, Spezio M. Role of the amygdala in processing visual social stimuli. *Prog Brain Res*. 2006;156:363–78.
41. Adolphs R, Damasio H, Tranel D, Cooper G, Damasio AR. A role for somatosensory cortices in the visual recognition of emotion as revealed by three-dimensional lesion mapping. *J Neurosci*. 2000;20:2683–99.
42. Singer T, Seymour B, O'Doherty J, Kaube H, Dolan R, Frith CD. Empathy for pain involves the affective but not sensory components of pain. *Science*. 2004;303:1157–62.
43. Singer T, Seymour B, O'Doherty JP, Stephan KE, Dolan RJ, Frith CD. Empathic neural responses are modulated by the perceived fairness of others. *Nature*. 2006;439:466–9.
44. Hertel J, Schutz A, Lammers CH. Emotional intelligence and mental disorder. *J Clin Psychol*. 2009;65:942–54.
45. King-Casa B, Sharp C, Lomax-Bream L, Lohrenz T, Fonagy P, Montague PR. The rupture and repair of cooperation in borderline personality disorder. *Science*. 2008;321:806–10.
46. Meyer-Lindenberg A. Psychology: trust me on this. *Science*. 2008;321:778–80.
47. Lotze M, Veit R, Anders S, Birbaumer N. Evidence for a different role of the ventral and dorsal medial prefrontal cortex for social reactive aggression: an interactive fMRI study. *Neuroimage*. 2007;34:470–8.
48. Straube B, Green A, Chatterjee A, Kircher T. Encoding social interactions: the neural correlates of true and false memories. *J Cogn Neurosci*. 2011;23:306–24.

49. Aaronson CJ, Bender DS, Skodol AE, Gunderson JG. Comparison of attachment styles in borderline personality disorder and obsessive-compulsive personality disorder. *Psychiatr Q.* 2006;77:69–80.
50. Fossati A, Feeney JA, Carretta I, Grazioli F, Milesi R, Leonardi B, et al. Modeling the relationships between adult attachment patterns and borderline personality disorder: the role of impulsivity and aggressiveness. *J Soc Clin Psychol.* 2005;24:520–37.
51. Critchfield KL, Levy KN, Clarkin JE, Kernberg OF. The relational context of aggression in borderline personality disorder: using attachment style to predict forms of hostility. *J Clin Psychol.* 2009;64:67–82.
52. Levy KN, Meehan KB, Kelly KM, Reynoso JS, Weber M, Clarkin JF, et al. Change in attachment patterns and reflective function in a randomized control trial of transference-focused psychotherapy for borderline personality disorder. *J Consult Clin Psychol.* 2006;74:1027–40.
53. Minzenberg MJ, Poole J, Vinogradov S. Adult social attachment disturbance is related to childhood maltreatment and current symptoms in borderline personality disorder. *J Nerv Ment Dis.* 2006;194:341–8.
54. Morse JO, Hill J, Pilkonis PA, Yaggi K, Brovdén N, Stepp S, et al. Anger, preoccupied attachment, and domain disorganization in borderline personality disorder. *J Pers Disord.* 2009;23:240–57.
55. Bakermans-Kranenburg MJ, van IJzendoorn MH. The first 10,000 adult attachment interviews: distribution of adult attachment in clinical and non-clinical groups. *Attach Hum Dev.* 2009;11:223–63.
56. Bowlby J. Attachment and loss, Loss, vol. 3. New York: Basic Books; 1980.
57. Buchheim A, Taubner S, Fizke E, Nolte T. Bindung und Neurobiologie: Ergebnisse bildgebender Verfahren (Attachment and neurobiology: neuroimaging results). *Psychotherapie in Psychiatrie, Psychotherapeutischer Medizin und Klinischer Psychologie.* 2010;5:22–31.
58. Kircher TT, Liddle PF, Brammer MJ, Williams SC, Murray RM, McGuire PK. Neural correlates of formal thought disorder in schizophrenia: preliminary findings from a functional magnetic resonance imaging study. *Arch Gen Psychiatry.* 2001;58:769–74.
59. Buchheim A, George C, Kächele H, Erk S, Walter H. Measuring adult attachment representation in an fMRI environment: concepts and assessment. *Psychopathology.* 2006;39:136–43.
60. Buchheim A, Erk S, George C, Kächele H, Ruchow M, Spitzer M, et al. Measuring attachment representation in an fMRI environment: a pilot study. *Psychopathology.* 2006;39:144–52.
61. George C, West M, Pettem O. Adult attachment projective picture system – protocol and classification scoring system. Unpublished manuscript. Mills College: Oakland; 1997–2010.
62. Bowlby J. Attachment and loss, Separation, vol. 2. New York: Basic Books; 1973.
63. George C. Adult attachment projective picture system – attachment trauma screening scoring system. Unpublished manuscript. Mills College: Oakland; 2007–2010.
64. First MB, Spitzer RL, Gibbon M, Williams JBW, Davies M, Howes MJ, et al. The structured clinical interview for DSM-III-R personality disorders (SCID-II). Part II: multi-site test-retest reliability study. *J Pers.* 1995;9:92–104.
65. Dozier M, Stovall-McClough KC, Albus KE. Attachment and psychopathology in adulthood. In: Cassidy J, Shaver PR, editors. *Handbook of attachment: theory, research, and clinical applications.* 2nd ed. New York: Guilford Press; 2008. p. 718–44.
66. Schnitzler A, Ploner M. Neurophysiology and functional neuroanatomy of pain perception. *J Clin Neurophysiol.* 2000;17:592–603.
67. Bartel A, Zeki S. The neural correlates of maternal and romantic love. *Neuroimage.* 2004;21:1155–66.
68. Eisenberger N, Lieberman MD, Williams KD. Does rejection hurt? An fMRI study of social exclusion. *Science.* 2003;302:290–2.
69. Gündel H, O'Connor MF, Littrell L, Fort C, Lane R. Functional neuroanatomy of grief: an fMRI study. *Am J Psychiatry.* 2003;160:1946–53.
70. Vogt BA. Pain and emotion interactions in subregions of the cingulate gyrus. *Nature.* 2005;6:533–44.
71. Zanarini MC, Frankenburg FR, Hennen J, Silk KR. The longitudinal course of borderline psychopathology: 6-year prospective follow-up of the phenomenology of borderline personality disorder. *Am J Psychiatry.* 2003;160:827–32.
72. Gallagher HL, Frith CD. Functional imaging of “theory of mind”. *Trends Cogn Sci.* 2003;7:77–83.
73. Fonagy P, Gergely G, Jurist EL, Target M. Affect regulation, mentalization, and the development of the self. New York: Other Press; 2003.
74. Takahashi T, Chanen AM, Wood SJ, Yücel M, Kawasaki Y, McGorry PD, et al. Superior temporal gyrus volume in teenagers with first-presentation borderline personality disorder. *Br J Psychiatry.* 2010;196:206–11.
75. Soloff PH, Meltzer CC, Becker C, Greer PJ, Kelly TM, Constantine D. Impulsivity and prefrontal hypometabolism in borderline personality disorder. *Psychiatry Res.* 2003;123:153–63.
76. Eichenbaum H. A cortical-hippocampal system for declarative memory. *Nat Neurosci.* 2000;1:41–50.
77. Erk S, Kiefer M, Grothe J, Arthur P, Wunderlich A, Spitzer M, et al. Emotional context modulates subsequent memory effect. *Neuroimage.* 2003;18:430–47.

78. Buchheim A, George C. Attachment disorganization in borderline personality disorder and anxiety disorder. In: Solomon J, George C, editors. *Disorganization of attachment and caregiving*. New York: The Guilford Press; 2011. p. 343–82.
79. Walter H, Berger M, Schnell K. Neuropsychotherapy: conceptual, empirical and neuroethical issues. *Eur Arch Psychiatr Clin Neurosci*. 2009;259:173–82.
80. Roffman JL, Marci CD, Glick DM, Dougherty DD, Rauch SL. Neuroimaging and the functional neuroanatomy of psychotherapy. *Psychol Med*. 2006;35:1385–98.
81. Buchheim A, Cierpka M, Kächele H, Taubner S, Kessler H, Wiswede D, et al. Psychoanalyse und Neurowissenschaften. Neurobiologische Veränderungsprozesse bei psychoanalytischen Behandlungen von depressiven Patienten (Psychoanalysis and neuroscience. Neurobiological changes during psychoanalytic treatment in patients with depressive disorders). *Nervenheilkunde*. 2008;27:441–5.

Chapter 15

Neurobiologically Informed Psychotherapy of Borderline Personality Disorder

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Keywords Amygdala • Anxiety • Mentalization • Prefrontal cortex • Transference

Freud's prediction that one day neurobiology would be systematically considered as part of psychoanalytic practice is now beginning to come to fruition. We have preliminary data on the neurobiological aspects of borderline personality disorder (BPD) such that it is actually possible to begin to build bridges between psychotherapeutic technique and what we know about brain functioning in this particular disorder [1, 2]. In this chapter, I will point out what I believe are linkages between the therapeutic action of psychotherapy and our knowledge from research on BPD that it is neurobiologically based. In this integrative effort, I will explore both the possible ways in which psychotherapy changes the brain and how we might shape psychotherapeutic efforts with patients who have BPD to incorporate our knowledge of neurobiology.

How Psychotherapy Changes the Brain

In our efforts to examine the way that psychotherapy changes the brain, we must navigate the choppy waters of biological reductionism. Mind is the activity of the brain [3], but all aspects of experience cannot be reduced to the causal consequences of brain mechanisms alone. Schwartz et al. [4] clarified that contemporary physics departs from classical physics by supporting the notion that intrinsic mental contents – feeling, knowing, and effort – are primary causal factors. They note that the conscious act of willfully altering the mode by which experience is processed can change the cerebral mechanisms used. Hence, psychological treatment of disorders that have a substantial neurobiological component in their etiology can be a realistic and reasonable goal.

This approach to bridging neurobiology and psychotherapy is best viewed as an example of what Kendler [5] has called explanatory dualism. Psychology and biology represent two useful explanations of similar phenomena but each uses different language to describe those phenomena.

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Kandel [6, 7] was a pioneer in the efforts to identify underlying mechanisms in how psychotherapy might change the brain. Using the marine snail *Aplysia*, he noted that when learning takes place in this organism, the number of synapses doubled and tripled as a result of the learning. He stressed that psychotherapy is a form of learning about one's self that probably results in similar changes at the synaptic level. Subsequent to Kandel's efforts, functional neuroimaging became sufficiently advanced to begin to differentiate how medication and psychotherapy may influence anatomically different brain areas, at least in some preliminary work by Goldapple et al. [8]. In a comparison of patients who received cognitive-behavioral and SSRIs for depression, psychotherapy appeared to work from the "top down" while medication worked from "the bottom up."

Another study of depressed patients [9] raises intriguing possibilities about the impact of the therapy on the brain. These investigators randomly assigned 23 patients with major depression to either short-term dynamic psychotherapy or to fluoxetine treatment. Both groups received 16 weeks of treatment. 5-HT_{1A} receptor density was estimated both before and after treatment using positron emission tomography (PET). When they examined their results, they noticed that psychotherapy increased the binding to 5-HT_{1A} receptors, but antidepressant medication did not alter the 5-HT_{1A} receptor density in these patients. They concluded that psychotherapy leads to changes in the molecular structure of the synapse in patients with major depression. While this mechanism cannot necessarily be translated directly to BPD, it is nevertheless true that serotonergic problems have been identified as fundamental to the neurobiology of BPD [10].

Much literature is devoted to the notion that emotional dysregulation is the fundamental problem in BPD [11]. Hence, there is considerable interest in how one can self-direct the regulation of emotional response. Preliminary work suggests that the prefrontal cortex may be one brain area that is critically important in this attempt to regulate one's emotions [4]. Tourette syndrome is an interesting model to study this phenomenon, since it is predominantly a disorder of self-regulation. It involves chronic motor and facial tics. Most patients with this disorder have premonitory urges, which indicate to the patients when the tics might be coming. These sensory motor impulses are suppressible, although not indefinitely. Peterson et al. [12] studied this phenomenon of tic suppression in children using neuroimaging techniques. They found that some children with Tourette syndrome were better than others at using conscious effort to suppress the tics. Those who were particularly good at it activated the frontal cortex during the effort to suppress the tics and ultimately had larger volumes of the frontal cortex and fewer symptoms. Those who were less adept at suppressing tics did not have the same plastic response. They had smaller volumes of the frontal cortex and more symptoms of the disorder. This elegant study demonstrates that brain volume actually increases in the frontal area as a result of psychological effort to regulate one's impulses.

This introduction to some of the thinking about how psychotherapy changes the brain has primarily been focused on diagnostic entities other than BPD. As we enter a more specific consideration of BPD, it will be useful to first discuss what is known about the neurobiology of BPD.

The Neurobiology of Borderline Personality Disorder

BPD has a multifactorial etiology [13]. Many have experiences of early abuse and neglect. Prospective research [14] has clearly linked borderline symptoms in adults to childhood sexual abuse and neglect. However, significant numbers of borderline patients do not have such histories in the many retrospective studies that have been conducted.

From a neurobiological perspective, transference involves the representation of others distributed in a network of neural units whose simultaneous activation constitutes the representation [15]. However, with BPD, there are other phenomena that are highly relevant in understanding the clinical

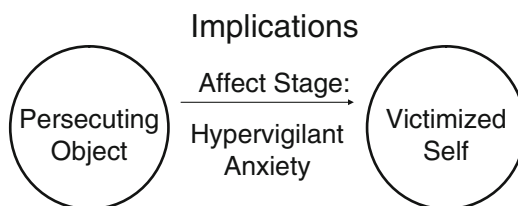


Fig. 15.1 The affect state of anxiety and hypervigilance associated with HPA hyperreactivity is linked to a specific internal object relationship involving a persecuting object and a victimized self

challenges presented by these patients. The BPD patient's hypervigilance may be linked to the heightened arousal of the hypothalamic–pituitary–adrenal axis. Borderline patients also show greater left amygdalar reactivity to standard pictures of faces with various emotional expressions. Using morphing technique with photographs of emotional faces, researchers have found that patients with BPD identify emotional states in others more rapidly than controls. Problems linked to the anterior insula may make it more difficult for patients to maintain a cooperative relationship with others. All these phenomena converge to delineate unique transference problems in the treatment of BPD patients. Each contributing factor will be elaborated in this chapter.

Hyperreactivity of the HPA Axis

One consequence of early interpersonal trauma with parents or caregivers is that borderline patients may have a persistent hypervigilance because they need to scan the environment for the possibility of others who may have malevolent intentions toward them. Neurobiological findings are confirming these sequelae of developmental trauma. Rinne et al. [16] studied 39 female BPD patients who were given combined dexamethasone/corticotropin releasing hormone (CRH) tests using 11 healthy subjects as controls. Twenty-four of these women had histories of sustained childhood abuse. Fifteen of them had no histories of sustained childhood abuse. When they examined the results, the chronically abused BPD patients had significantly enhanced adrenocorticotrophic hormone (ACTH) and cortisol responses to the dexamethasone/CRH challenge compared with non-abused subjects. In addition, there were no significant differences between non-abused BPD subjects and normal controls. They concluded that a history of sustained childhood abuse is associated with hyperresponsiveness of ACTH release. Their findings suggest that this hyperreactive physiological state is relevant to this subgroup of borderline patients but not necessarily to those who lack such histories. Sustained childhood abuse appears to increase the CRH receptors' sensitivity.

Knowledge of the hyperresponsiveness of the HPA axis fits well with our understanding of the pattern of internal object relationships in BPD. Because we understand that internal object relationships are created through building blocks of self-representations, object representations, and affects linking the two, we can infer that an anxious and hypervigilant affect state would be linked to a perception of others as persecuting and the self as victimized [2] (Fig. 15.1).

Hence, there is an expectation of malevolence in the environment, and the borderline patient may misread the intentions of others as persecuting in a way that creates repetitive conflict with others. States of arousal undermine the capacity to accurately mentalize the internal states of others. Hypervigilant misperceptions appear to be related to amygdalar hyperactivity, and a review of recent research in that area is illuminating.

The Role of the Amygdala

One function of the amygdala is to increase vigilance and to facilitate an individual's evaluation of the potential for novel or ambiguous situations [17]. A functional MRI study [18] comparing six female BPD patients with six female control subjects found that the amygdala on both sides of the borderline patients' brains showed enhanced activation compared to the control group. The investigators concluded that the perceptual cortex in a borderline patient may be modulated through the amygdala in such a way that attention to emotionally relevant environmental stimuli is increased.

Two different studies [11, 17] examined how borderline patients react to standard presentations of faces compared to control subjects. In one study [18], borderline patients showed significantly greater left amygdalar activation to facial expressions of emotion compared with normal control subjects. Of even greater importance, though, was the tendency for borderline subjects, in contrast to controls, to attribute negative attributes to neutral faces. Faces that were without expression were regarded as threatening, untrustworthy, and possibly plotting to do something nefarious. A hyperactive amygdala may be involved in the predisposition to be hypervigilant and overreactive to relatively benign emotional expressions. This misreading of neutral facial expressions is clearly related to the transference misreadings that occur in psychotherapy of borderline patients and in the recreation of "bad object" experiences in the lives of borderline patients. It is also connected to the common observation of therapists that the usual professional boundaries and therapeutic neutrality are experienced by BPD patients as cruel and withholding [19].

Implications for Psychotherapy

These findings have a number of implications for psychotherapists treating someone with BPD. First of all, in keeping with the literature on self-regulation of emotional response, one must recognize that *therapeutic change takes effort*. Now, this axiom may seem obvious, but in my experience as a consultant and supervisor, many therapists do not sufficiently engage in such conscious efforts. For example, some patients use the entire therapy hour to ventilate about what happened to them since the last session without taking time to think and reflect about the significance of the events they are describing – e.g., the factors that triggered the emotional response and the consequences in terms of interpersonal relationships. The psychotherapist needs to be forthright in interrupting the patient at times and insisting that the patient reflect about the significance of what is being described. In this way, a therapeutic alliance is formed in which the therapist and patient collaborate in pursuit of the commonly held goal of understanding experience and moderating the emotional response. From the standpoint of neurobiology, the therapist is directing mental resources away from lower-level limbic responses and toward higher-level prefrontal functions. The empirically supported psychotherapies for BPD, such as dialectical behavior therapy (DBT), mentalization-based therapy (MBT), and transference-focused psychotherapy (TFP), all feature self-reflective, mindfulness-promoting techniques. Neuroimaging studies support this approach to moderating the hyperreactive amygdalar response. Ochsner et al. [20] have shown that actively rethinking or reappraising feelings causes prefrontal activation that modulates limbic-based negative feelings such as fear. One can readily see a convergence of cognitive therapy and dynamic therapy here as both emphasize working with the patient's cognitions in these situations of strong affect.

A very preliminary pilot study of dynamic psychotherapy shows that frontal activation may be crucial to the effect of MBT [21]. In this pilot study, five patients with BPD and five controls were given brain perfusion single-photon emission tomography (SPET) pre-treatment and post-treatment. All five of the BPD patients showed a lower level of activation in the frontal areas prior to treatment compared to the control group. Each patient then received 16 months of drug-free

mentalization-based psychotherapy following Fonagy and Bateman. Only two of the five BPD patients who completed the treatment underwent the post-treatment repeat SPET.

When the results were examined, the two patients who performed post-treatment SPET showed improvement observable by decreases in impulsivity, self-destructive acts, and unstable affectivity. The post-treatment neural pattern suggested a strong frontal activation in these two subjects, absent in pre-treatment, suggesting more effective cortical modulation of subcortical areas.

Heightened Emotional Sensitivity

The misreading of neutral facial expressions by patients with BPD is only part of the total picture of how these patients read emotional faces. Wagner and Linehan [11] noted in their research that women who were diagnosed as BPD actually were more accurate in the labeling of fearful facial expressions than their non-BPD control subjects. Further research suggests that the situation is more complex.

Blair et al. [22] and Lynch et al. [23] point out that to assess the capacity of BPD patients to respond accurately to emotional expressions, one needs to design a study in which morphing facial expressions shown at varying degrees of intensity are used. They use technology such that faces change gradually and monotonically from neutral expressions to prototypic emotional expressions of maximum intensity. This technology allowed them to evaluate more than accuracy – it can also assess how intense a facial expression had to be before accurate recognition occurs.

Lynch et al. [23] studied 20 individuals with BPD and 20 normal controls using this method. As the facial expressions morphed from neutral to maximum intensity, participants with BPD correctly identified facial affect at an earlier stage than did healthy controls. Participants with BPD were more sensitive than healthy controls in identifying the emotional expressions in general, regardless of their valence. They noted that their results support the contention that heightened emotional sensitivity may be a core feature of BPD. It is possible that the heightened emotional sensitivity is related to the hyperreactive HPA axis and the hyperreactive amygdalar response associated with trauma. However, the results were not stratified in terms of the extent of childhood abuse so such conclusions cannot be drawn clearly. The authors note that their findings are consistent with the notion that emotional dysregulation is central to BPD, and that these individuals overreact to relatively minor emotional expressions and interpersonal cues. Moreover, for those patients who experience early childhood trauma, this hypervigilance to emotional states in others may be adaptive and protective.

Recognizing facial emotions has also been studied by Baron-Cohen et al. [24] through the use of the *Reading the Mind in the Eyes Test* (RMET). This test shows a photograph of a set of eyes and offers four choices that would describe the facial emotional expression reflected by those eyes. Because of the frequent observation that people with BPD distort what they see in others' faces, there has been some inference that BPD patients will not be able to mentalize well when they see these eyes and misunderstand what they reflect. Mentalizing, defined as an imaginative mental activity involved in perceiving and interpreting human behavior in terms of intentional mental states [25], is variable in patients with BPD. It resides on a continuum from being accurate at some moments and wildly inaccurate at others. Bateman and Fonagy [25] stressed that mentalization is intimately linked to the sense of being understood by an attachment figure, and patients with BPD have trouble maintaining mentalization in the context of an intense attachment relationship. The capacity to read faces and link the facial expression to the internal experience of someone is related to both the intensity of the attachment relationship and the presence or absence of strong emotions connected with that person.

Fertuck et al. [26] compared 30 patients with BPD to 25 healthy controls using the test designed for reading eyes. They found that the BPD group performed significantly better than the healthy controls on this test. This enhanced performance is probably related to the greater threat potential

perceived in facial stimuli and the hypervigilance discussed previously. Neutral faces may represent the most ambiguous threat, so there is particular vigilance paid to neutral facial expressions. Indeed, the BPD group did particularly well compared with the controls on faces with neutral emotional valence. This group of investigators stresses that the actual perception of facial expressions is fairly accurate in patients with BPD because of their need to assess moment-to-moment shifts in the emotional states of others for survival purposes. However, the problem area for BPD lies not in the perception of emotional expressions, but in the *interpretation* of emotional expressions. This problem with interpretation is most striking in the neutral faces where there is ambiguity. The difficulty appears to be in assessing whether someone is trustworthy or not. BPD patients appear to have a good deal of difficulty in linking trustworthiness with facial expression and may overreact to minor signs of malevolence.

This research helps address a longstanding controversy in the field of BPD: namely, do patients with BPD distort in their perceptions of their therapist? Some clinicians have long noted that these patients seem to have a highly developed sensitivity, sometimes referred to as “radar” for the therapist’s countertransference. Other clinicians have noted that distortions of the therapist’s intent may border on being delusional. Hence, in light of these research findings on the heightened emotional sensitivity, one could say that both attributes of the BPD patient are accurate. They do have an uncanny way of reading faces, but they may or may not be accurately interpreting what goes on inside the therapist. The accuracy probably varies depending on the state of the attachment relationship, the presence of powerful feelings, and the degree of ambiguity of the facial expression.

Implications for Psychotherapy

Therapists treating patients with BPD need to recognize that mentalizing resides on a continuum from being accurate at some moments to absent at others, based on the affective state of the patient and the intensity of the attachment to the therapist. One of the clinical implications is that therapists must be aware that the patient may be accurately tuning in to a not-yet conscious feeling state in the therapist. This implication is consonant with the time-honored cautionary note that Searles [27] and others have noted that whenever a patient has an apparently paranoid perception of the therapist, a good starting point is for the therapist to assume that there may be a kernel of truth in the perception. Clinicians should also remember that neutral faces represent the most ambiguous threat. Hence, therapists need to be aware of nonverbal communications that they are sending out to patients. The proverbial “blank screen” face is not appropriate for the treatment of BPD, and therapists will do much better to engage in a warm and spontaneous dialog with the patient while respecting the fact that the patient may be somewhat suspicious of their motives.

Therapists can also help patients with BPD by helping them to elaborate on their perceptions and the interpretations of those perceptions. Therapists may usefully ask what it was in their facial expression or in their manner that made the patient assume malevolence when the therapist intended none. One can also actively elicit alternative perspectives from the patient, a cornerstone of MBT, to help the patient begin to explore in more detail the subjectivity of others. The therapist must also keep in mind that the patient may be misinterpreting and overreacting to small changes in facial expression that really are ambiguous from the patient’s perspective.

Research repeatedly demonstrates that patients with BPD have a bias toward the perception of anger, rejection, or social threat [28]. The functional imaging studies have found abnormalities of the prefrontal-amygdalar neurocircuitry aiding affect regulation in BPD subjects, as noted previously. Hence, clinicians must be aware that the capacity for rational thinking is often interfered with because of strong emotion. Some of the emotional arousal seen in borderline patients contributes to the alterations of facial emotion recognition and interpretation of those faces. One implication of this phenomenon is that it may be useful to postpone any exploratory or interpretative work until the

intense emotional state of the BPD patient has settled down. Pine [29] has coined the phrase “strike while the iron is cold” (p. 153) to indicate this need to allow for the passage of time before attempting to engage the patient in a useful exploration of his or her perceptions.

Mirror Neurons and Mentalization

Current evidence supports the notion that mentalization relies, in part, upon internal simulations of the perceived emotions and mental states of others [30–33]. This hypothesis is strengthened by studies which demonstrate that imitating facial expressions of others induces the emotional content of those expressions in the imitator [34].

Mirror neurons in the premotor cortex appear to automatically trigger unconscious internal simulations of the observed behaviors of others so that the observer may reconstruct their mental states and emotions [30, 32, 35]. Mirror neurons are activated by *either* performance of goal-directed behaviors, like grasping or frowning, or observation of them in others [32, 35–39]. Gallese [37] hypothesizes that there is a broad array of “mirror matching mechanisms” present in the human brain that enable intersubjective communication and attribution of intentionality.

For example, representations of the frowning facial expression of another person may register in the superior temporal sulcus and fusiform gyrus of the observer [30, 31]. Nonconscious, temporoparietal representations of the frowning facial expression may activate mirror neurons in the premotor cortex [30, 31], which appear to automatically trigger unconscious simulations of frowning in the observer [32, 33, 39]. Simulations of frowning are believed to trigger the associated feeling and mental states (e.g., anger) [30].

Research suggests that conscious discernment of feeling states of self and others relies on the encoding of such *feeling state representations* in two areas of the right somatosensory cortex known as the insula and SSII [35, 40–43]. The SSII and insular regions appear to be important in generating nonconscious neural representations of feeling states associated with different emotions [34, 41]. Investigators propose that the medial prefrontal cortex reads the neural representations of self and other feeling states conveyed by SSII and insular regions [43]. This observation is relevant to the role of the medial prefrontal cortex (e.g., anterior cingulate cortex and paracingulate gyrus) in conscious attention to emotional states of the self and others [44, 45].

The anterior insula may be of particular significance since it mediates communication between the limbic system and mirror neurons, i.e., it helps replay observed actions and determines the emotional reactions to them. While the anterior insula traditionally is associated with sensing physiological states in the body, it strongly reacts to adverse or uncomfortable occurrences and social interactions, such as unfairness, risky choices, or impending loss of social status. The anterior insula also responds to the intentions and emotional states of others and imbues them with feelings. The anterior insula plays a key role in research involving trust in patients with BPD.

Neuroimaging and Trust in BPD

Using neuroimaging techniques involving two simultaneous functional MRIs, King-Casas et al. [46] utilized a trust game to study the differences between patients with BPD and normal controls. In brief, two players are involved in an economic trust scheme. One is designated as the Investor and invests money, while the other is designated as the Trustee and pays money. Brain activity is measured in the anterior insula of the Trustee during the game.

Fifty-five subjects with BPD were recruited for this ten-round, economic exchange game with healthy partners. In essence, the task studied the capacity to maintain cooperation and repair

broken cooperation. BPD patients played the Trustee role against a healthy Investor. These dyads were compared to other teams in which the Trustee was a healthy control. In the game, the Investor invests money, while the Trustee repays money. If both cooperate, both benefit from the exchange, much more so than if the Investor keeps most of the money. This task requires trust between the players, which builds up through repeated fair offers.

The Investor has \$20 and can choose to give any amount to the Trustee. The amount chosen is automatically multiplied by 3. The Trustee can then give back any amount that he or she chooses, knowing that it is a ten-round game. The healthy controls tend to return about 33% of what they receive from the Investor. The patients with BPD started out the same way, but after round 4, they started giving less. The Investors reacted by investing less. The healthy Trustees reacted strongly to small investments by the Investor. They had large activations in the anterior insula, which suggested that they recognized that they were not being treated fairly. By contrast, the Trustees who had BPD showed no relationship between what was given them and activations in the anterior insula. The researchers inferred that patients with BPD assume that no one is trustworthy, and therefore they expect everyone to be unfair. In essence, the BPD subjects lacked the “gut feeling” that the relationship was in jeopardy – i.e., they failed to mentalize the other player’s motivation and intent. It is important to note that the face of the other player was not visible to them, so that they were simply relying on their general assumptions regarding the trustworthiness of others.

The researchers concluded that BPD patients are impaired in their anterior insular activation – i.e., they do not accurately and usefully evaluate a planned action by another person with negative consequences. Hence, they have major problems in their capacities to cooperate in a task. The better outcomes were accomplished through a coaxing strategy, in which wary Investors who transferred small amounts of money are encouraged by generous returns, which signals trustworthiness. However, the healthy players used this strategy twice as often as BPD subjects. A separate study, using a similar game, from a different center [47] also found that BPD patients show less trust during interpersonal interactions.

Implications for Psychotherapy

The problems involving cooperation reflected in this study have significant implications for the notion of the therapeutic alliance in psychotherapy, which research has consistently shown to be a critical ingredient in the outcome of psychotherapy [48]. It is well known that one cannot assume a therapeutic alliance when treating a patient with BPD in the same way one can with patients who are organized at a higher psychological level [49]. The problem, of course, is that the patient cannot assume that the therapist is trustworthy, so it makes it difficult for a borderline patient to cooperate in the formation of a therapeutic alliance involving a collaborative pursuit of common goals. The therapeutic alliance with BPD patients must be regarded as an achievement of the therapy, not an automatic phenomenon. Hence, it is useful as a therapist to validate the patient’s difficulty in trusting the therapist with comments such as, “I understand why it would be difficult for you to trust my good intentions in therapy, given what you’ve experienced with authority figures in the past.” One may also say, “I recognize that I will need to earn your trust over time, and I’m prepared to attempt to do that.”

The difficulties in trust also have implications for the use of transference interpretation. We know that TFP is one of the empirically validated treatments for BPD and can be highly effective [50]. When the patient is in a position of not trusting the therapist, he or she may experience a transference interpretation in a persecutory manner, a misunderstanding of what is going on inside the patient that reflects the untrustworthiness and malevolence of the therapist. Transference interpretation has to be preceded with a series of interventions of a more supportive nature, including empathic validation, supportive strategies, and efforts to encourage the patient to elaborate on his or her feelings.

Transference interpretations tend to be much more effective when attention to building a therapeutic alliance precedes them.

Clinicians must remember that, particularly in those borderline patients who experience significant childhood trauma, there is a prominent object relations paradigm present as depicted in Fig. 15.1 of this chapter. In other words, the paradigm of persecuting object and a victimized self is likely to be either on the surface or just below the surface much of the time. Although idealization may also be present in the transference to the therapist, one must keep in mind the fragile and tenuous state of such idealizations. Split off from the more negative paradigms of persecuting object and victimized self, the idealized units may rapidly disappear if the therapist makes even a small empathic error from the standpoint of the patient.

Timetables for Change and the Neurobiology of Learning

Clinicians have long noted that patients with BPD who have experienced early childhood trauma often are slow to change. Past neuronal associations developed through intense, repeated experiences early in life are likely to remain strong, even when the therapist is providing insight through interpretation. Psychotherapists need to be aware that nonhippocampal learning that is implicit and procedural in nature may be particularly refractory to interpretive strategies. Early trauma may be encoded without going through the declarative hippocampal system.

Insight may be quite useful when hippocampal learning is involved because quick, new ways of looking at new information and adapting to new situations may be possible when the information is stored in a declarative hippocampal mode [51]. However, insight has separate and different effects than repeated experience has on changing what has been learned in the past. Another aspect of understanding therapeutic change in the psychotherapy of patients with BPD is that implicit memories will require multiple exposures over an extended period of time for change to be achieved. In other words, there is a good deal of new experience provided in the therapist–patient relationship, and it will take a good deal of time to gradually modify the neural networks involving self and other that have been ingrained early in childhood [52].

Implications for Psychotherapy

Early trauma is common in BPD patients. In many cases the internal object relationships associated with those childhood experiences of abuse or neglect are encoded in implicit procedural memories. Although the psychotherapist may observe the derivatives of those early experiences in the patient's mode of relatedness, one must have modest expectations for the impact of insight provided through interpretation on these patterns. It may be useful to explain to patients that the timetable for therapeutic change is different for different kinds of problems. Patients may find it helpful if they are told that research suggests that a period of at least 12 months is needed before substantial changes are noted.

Conclusions

Neurobiological research on BPD has now advanced to the point where bridges between psychotherapy and brain changes are possible. Indeed, many of the fundamental psychodynamic ideas about BPD are bolstered by the findings of neurobiological research. We are gaining greater insights

into how psychotherapy changes the brain. We are also able to capitalize on our knowledge of neurobiology to inform particular psychotherapeutic strategies.

We know that early childhood trauma leaves its mark in a hyperreactive HPA axis and a hyperreactive amygdala that can be linked to a particular pattern of internal object relations involving a persecuting object, a victimized self, and an affective state of hypervigilant anxiety. These brain changes in part contribute to the heightened emotional sensitivity of patients with BPD. We know that their capacity to read faces may be impressively accurate but also subject to misinterpretations of intent in others, particularly under powerful affect states or intense attachment relationships. Transference phenomena involving difficulties in perceiving others as trustworthy can also be connected to faulty activation in the anterior insula. Regulation of the amygdala and other subcortical structures by the frontal cortex is another area of impairment in BPD, and preliminary data suggest that psychotherapy may actually increase frontal activation as a brain correlate of increased reflectiveness. Finally, the impact of interventions must be geared to the type of memory involved. Hippocampal and non-hippocampal memories respond differentially to insight and repeated experience. Over time, a new neural network of self and other is formed that supercedes the old neural network, but the old neural network never disappears entirely. Hence, all the empirically validated therapies for BPD are long term in nature, requiring at least 12 months if not more to make substantial change.

There are many implications for the psychotherapist that can be drawn from these findings. Therapeutic change takes effort. The dynamic therapist must be directive at times to encourage the patient to reflect on affect states rather than simply using the therapy to ventilate. Therapists must also be willing to entertain the possibility that the patient is picking up on early nonverbal signs of the therapist's affect state that are outside of the therapist's awareness. Indeed, therapists must be conscious of what nonverbal signals they are giving out as they listen to the patient. In that regard, the classical "blank screen" visage is contraindicated when treating patients with BPD. Therapists who respond naturally and spontaneously to the patient may facilitate the formation of a therapeutic alliance with the patient, which is a therapeutic achievement, rather than a "given," with BPD patients. Transference interpretation must be carefully timed such that it is postponed until the way is paved with empathically validating comments.

Since change in psychotherapy requires this concurrent presence of old maladaptive neural networks and new adaptive networks, it may be useful to help patients understand that many of the features of the disorder will take a good deal of time to change. In educating the patient about these differences, one also helps the patient maintain hope over the course of an extended therapy.

References

1. Siever LJ, Weinstein LN. The neurobiology of personality disorders: implications for psychoanalysis. *J Am Psychoanal Assoc.* 2009;57:361–398.
2. Gabbard GO. Mind, brain, and personality disorders. *Am J Psychiatry.* 2005;162:648–655.
3. Andreasen NC. Linking mind and brain in the study of mental illness: a project for a scientific psychopathology. *Science.* 1997;275:1586–1593.
4. Schwartz JM, Stapp HP, Beauregard M. Quantum physics in neuroscience and psychology: a neurophysical model of mind-brain interaction. *Phil Trans R Soc B.* 2005;360:1309–1327.
5. Kendler KS. A psychiatric dialogue on the mind and body problem. *Am J Psychiatry.* 2001;158:989–1000.
6. Kandel ER. Psychotherapy and the single synapse: the impact of psychiatric thought on neurobiologic research. *N Engl J Med.* 1997;301:1028–1037.
7. Kandel ER. A new intellectual framework for psychiatry. *Am J Psychiatry.* 1998;155:457–469.
8. Goldapple K, Segal Z, Garson C, Lau M, Bieling P, Kennedy S, et al. Modulation of cortical-limbic pathways in major depression. *Arch Gen Psychiatry.* 2004;61:34–41.
9. Karlsson et al. Proliferation of brain serotonin 5-HT_{1A} receptors in depressed patients receiving dynamic psychotherapy. *Psychol Med*, in press.
10. Siever LJ, Davis KL. A psychobiological perspective on the personality disorders. *Am J Psychiatry.* 1991;148:1647–1658.

11. Wagner AW, Linehan MM. Facial expression recognition ability among women with borderline personality disorder: implications for emotion regulation? *J Pers Disord.* 1999;13:329–344.
12. Peterson BS, Skudlarski P, Anderson AW, Zhang H, Gatenby JC, Lacadie CM, et al. A functional magnetic resonance imaging study of tic suppression in Tourette syndrome. *Arch Gen Psychiatry.* 1998;55:326–333.
13. Zanarini MC, Frankenburg FR. Pathways to the development of borderline personality disorder. *J Pers Disord.* 1997;11:93–104.
14. Johnson JG, Cohen P, Brown J, Smailes EM, Bernstein DP. Childhood maltreatment increases risk for personality disorders during early adulthood. *Arch Gen Psychiatry.* 1999;56:600–606.
15. Westen D, Gabbard GO. Developments in cognitive neuroscience, II. Implications for the concept of transference. *J Am Psychiatr Assoc.* 2002;50:99–113.
16. Rinne T, de Kloet ER, Wouters L, Goekoop JG, DeRijk RH, van den Brink W. Hyperresponsiveness of hypothalamic–pituitary–adrenal axis to combined dexamethasone/corticotropin-releasing hormone challenge in female borderline personality disorder subjects with a history of sustained childhood abuse. *Biol Psychiatry.* 2002;52:1102–1112.
17. Donegan NH, Sanislow CA, Blumberg HP, Fulbright RK, Lacadie C, Skudlarski P, et al. Amygdala hyperreactivity in borderline personality disorder: implications for emotional dysregulation. *Biol Psychiatry.* 2003;54:1284–1293.
18. Herpertz SC, Dietrich TM, Wenning B, Krings T, Erberich SG, Willmes K, et al. Evidence of abnormal amygdala functioning in borderline personality disorder: a functional MRI study. *Biol Psychiatry.* 2001;50:292–298.
19. Gabbard GO, Wilkinson S. Management of countertransference with borderline patients. Washington, DC: American Psychiatric Press; 1994.
20. Ochsner KN, Bunge SA, Gross JJ, Gabrieli JDE. Rethinking feelings: an fMRI study of the cognitive regulation of emotion. *J Cogn Neurosci.* 2002;14:1215–1229.
21. Lai C, Daini S, Calcagni ML, Bruno I, De Risi S. Neural correlates of psychodynamic psychotherapy in borderline disorders – a pilot investigation. *Psychother Psychosom.* 2007;76:403–405.
22. Blair RGR, Colledge E, Murray L, Mitchell DGB. A selective impairment in the processing of sad and fearful expressions in children with psychopathic tendencies. *J Abnorm Psychol.* 2001;29:491–498.
23. Lynch TR, Rosenthal MZ, Kosson DS, Cheavens JS, Lejuez CW, Blair RJR. Heightened sensitivity to facial expressions of emotion in borderline personality disorder. *Emotion.* 2006;6:647–655.
24. Baron-Cohen S, Wheelwright S, Hill J, Raste Y, Plumb I. The “reading the mind in the eyes” test revised version: a study with normal adults, and adults with Asperger syndrome or high-functioning autism. *J Child Psychol Psychiatr.* 2001;42:241–251.
25. Bateman A, Fonagy P. Psychotherapy for borderline personality disorder: mentalization-based treatment. Oxford/New York: Oxford University Press; 2004.
26. Fertuck EA, Song JA, Morris WB, Wilson ST, Brodsky BS, Stanley B. Enhanced “reading the mind in the eyes” in borderline personality disorder compared to healthy controls. *Psychol Med.* 2009;39:1979–1988.
27. Searles HF. My work with borderline patients. Northvale: Jason Aronson; 1986.
28. Domes G, Schulze L, Herpertz SC. Emotion recognition in borderline personality disorder—a review of the literature. *J Pers Disord.* 2009;23:6–19.
29. Pine F. Developmental theory and clinical process. New Haven: Yale University Press; 1985. p. 153.
30. Abu-Akel A. A neurobiological mapping of theory of mind. *Brain Res Rev.* 2003;43:29–40.
31. Adolphs R. Neural systems for recognizing emotion. *Curr Opin Neurobiol.* 2002;12:169–177.
32. Grezes J, Frith CD, Passingham RE. Inferring false beliefs from the actions of oneself and others: an fMRI study. *Neuroimage.* 2004;21:744–750.
33. Ramnani N, Miall RC. A system in the human brain for predicting the actions of others. *Nat Neurosci.* 2004;7: 85–90.
34. Adolphs R, Damasio H, Tranel D, Cooper G, Damasio AR. A role for somatosensory cortices in the role of visual recognition of emotions as revealed by 3-dimensional lesion mapping. *J Neurosci.* 2000;20:2683–2690.
35. Adolphs R. The neurobiology of social cognition. *Curr Opin Neurobiol.* 2001;11:231–239.
36. Buccino G, Binkofski F, Riggio L. The mirror neuron system and action recognition. *Brain Lang.* 2004;89:370–376.
37. Gallese V. The roots of empathy: the shared manifold hypothesis and the neural basis of intersubjectivity. *Psychopathology.* 2003;36:171–180.
38. Hari R, Forss N, Avikainen S, Kirveskari E, Salenius S, Rizzolatti G. Activation of human primary motor cortex during action observation: a neuromagnetic study. *Proc Natl Acad Sci USA.* 1998;95:15061–15065.
39. Tai YF, Scherffler C, Brooks DJ, Sawamoto N, Castiello U. The human premotor cortex is ‘mirror’ only for biological actions. *Curr Biol.* 2004;14:117–120.
40. Damasio A. Looking for Spinoza: joy, sorrow, and the feeling brain. 1st ed. New York: Harcourt; 2003.
41. Damasio AR, Grabowski TJ, Bechara A, Damasio H, Ponto LLB, Parvizi J, et al. Subcortical and cortical brain activity during the feeling of self-generated emotions. *Nat Neurosci.* 2000;3:1049–1056.
42. Critchley HD, Mathias CJ, Dolan RJ. Neuroanatomical basis for first- and second order representations of bodily states. *Nat Neurosci.* 2001;4:207–212.

43. Singer T, Seymour B, O'Doherty J, Kaube H, Dolan RJ, Frith CD. Empathy for pain involves the affective but not sensory components of pain. *Science*. 2004;303:1157–1162.
44. Devinsky O, Morrell MJ, Vogt BA. Contributions of anterior cingulate cortex to behavior. *Brain*. 1995;118:279–306.
45. Stuss D, Knight R. Principles of frontal lobe function. New York: Oxford University Press; 2002.
46. King-Casas B, Sharp C, Lomax L, Lohrenz T, Fonagy P, Montague PR. The rupture and repair of cooperation in borderline personality disorder. *Science*. 2008;321:806–810.
47. Unoka Z, Seres I, Áspán N, Bódi N, Kéri S. Trust game reveals restricted interpersonal transactions in patients with borderline personality disorder. *J Pers Disord*. 2009;23:399–409.
48. Martin DJ, Garske JP, Davis KK. Relation of the therapeutic alliance with outcome and other variables: a meta-analytic review. *J Consult Clin Psychol*. 2000;68:438–450.
49. Horwitz L, Gabbard GO, Allen GO, Frieswyk SH, Colson DB, Newsom GE, et al. Borderline personality disorder: tailoring the psychotherapy to the patient. Washington, DC: American Psychiatric Press; 1996.
50. Clarkin JF, Levy KN, Lenzenweger MF, Kernberg OF. Evaluating three treatments for borderline personality disorder: a multiwave study. *Am J Psychiatry*. 2007;164:922–928.
51. Wiltgen BJ, Brown RA, Talton LE, Silva AJ. New circuits for old memories: the role of the neocortex in consolidation. *Neuron*. 2004;30:101–108.
52. Gabbard GO, Westen D. Rethinking therapeutic action. *Int J Psychoanal*. 2003;84:823–41.

Chapter 16

Foundations of Psychodynamic Therapy: Implicit Emotional Learning

Philip S. Wong and Dana M. Haywood

Keywords Implicit emotional learning • Psychotherapy

At its core, psychotherapy is about helping a person to make meaningful, enduring changes. Although change can come about in many ways and for many reasons, enduring change depends on learning. How does a psychotherapist facilitate learning so that there is enduring change in a patient's experience and/or behavior? Though therapists are concerned to varying degrees with multiple aspects of a patient's cognition, motivation, and emotional experience, change ultimately depends on learning – the acquisition of new knowledge that alters existing representations and expectations.

We must consider that a significant feature of psychopathology revolves around the phenomenal experience of a symptom: it is peremptory, unbidden, and seemingly outside one's control. Whether it is a thought, a behavior, or a feeling, the symptom is experienced as foreign and, for the most part, irrational. To explain the irrationality of symptoms, psychoanalytic theories include structures or processes that exist outside awareness.¹ These unconscious or implicit processes are thought to play a role in the formation and maintenance of symptoms.² Concepts such as the repetition compulsion (e.g. [1, 2]) include the gratification of implicit motives, which compels people to remain symptomatic despite the apparent irrationality of their symptoms. Implicit processes are presumably involved not only in the formation and maintenance of symptoms, but also in the changes required to alleviate symptoms and to alter the substrate from which they emerge. Models of psychodynamic therapy and therapeutic process therefore must account for the involvement of implicit learning in change. We must also address implicit learning as it pertains to the emotional and motivational aspects of symptom formation; hence, we focus on implicit *emotional* learning.

¹Other theories of psychopathology, of course, attempt to explain irrationality without referring to awareness and unawareness.

²We use implicit and explicit here in a descriptive sense; further explication of these terms, as well as identifying levels and kinds of awareness, will take place more fully later in the chapter in the context of specific studies.

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We can approach implicit emotional learning from two directions: from a clinical-theoretical perspective and from a research perspective. From a clinical-theoretical perspective, there are many reasons to assert that emotional learning outside awareness is important. We might consider, for example, the formative, developmental impact of early attachment relationships on current experience (e.g. [3]), and the extent to which one is aware of such influences; or, the influence of a hysterical or repressive personality style on learning and awareness (e.g. [4]). For present purposes, however, we will focus our discussion of implicit emotional learning on its role in treatment rather than its role in development or personality formation.

One central set of questions in the psychodynamic treatment literature concerns the processes by which change (i.e., learning) occurs. These questions emerge in many guises, but often turn on whether learning takes place because of explicit intellectual insight, as suggested by a traditional view of interpretation as the nexus of change (e.g. [1, 5, 6]); or because of the affective quality of the therapeutic relationship, as Alexander and French [7] suggested through their use of the term “corrective emotional experience” (also see [8]). Briefly, an emphasis on insight privileges the development of explicit awareness centered on a new interpretation or understanding of, for example, early relationship history. In contrast, an emphasis on corrective emotional experience favors experiential aspects of the therapeutic relationship and their role in learning. The experience of the therapeutic relationship is thought to offset the patient’s tendency to expect or even to recreate features of an older, conflicted relationship. Implicit features of the therapeutic relationship (sometimes referred to as the “common factors” among varied schools of psychotherapy) include those elements that are part of the structure of the therapist–patient interaction: a therapist who is in some combination interested, warm, open, nurturing, and available. The clinical-theoretical debate about insight and corrective emotional experience can be understood as reflecting two different, and perhaps overlapping, forms of learning: explicit learning in the form of insight, and implicit learning that occurs when the therapeutic relationship provides a corrective to early experience.

Research on implicit learning has direct parallels to the clinical-theoretical perspective and, in particular, to questions regarding the roles of insight and corrective emotional experience in therapeutic process. For example, there is a long history of work in learning theory that centers on the idea that learning can occur outside awareness, or implicitly [9–11]. In contrast, with the rise of cognitive theory, learning is viewed as an inferential process based on self-reflective (i.e., meta-cognitive) knowledge, necessarily involving explicit awareness. These two opposing perspectives seem to parallel the notion that learning in psychotherapy occurs via either corrective emotional implicit associations outside awareness, or explicit, higher-order interpretation and insight.

In this chapter, we will examine current approaches to conceptualizing learning theory and draw links relevant to psychodynamic theory and psychotherapy. Although our description will center on basic science approaches to learning and learning theory (including neuroscientific evidence), we will identify main features of these theories and related research findings which may enhance our understanding of psychodynamic principles. In reviewing research pertaining to explicit and implicit emotional learning, we will also provide links between the research and a clinical case.

Explicit and Implicit Learning

Dual-process models of the mind have gained favor recently. The flowering of cognitive psychology in the last half-century led to a persistent emphasis on higher-order cognition – especially deliberate reasoning and thought. Meanwhile, research into another aspect of the mind lay dormant. Mental processes were thought to exist outside one’s dominant focus, forming a critical substrate of the mind. Until recently, such processes were little studied; but over the last decade, they have come into their own as a focus of research. Terms as varied as automatic [12], implicit [13], and unconscious

[14] have become common in the psychological lexicon. In keeping with this development, dual-processing models that incorporate both levels of processing – explicit and implicit – have also gained prominence. These models are especially salient in efforts to conceptualize attitudes [15], although they are equally evident in other areas (e.g. [16, 17]).

Several essential differences are thought to exist between implicit and explicit processes, although there are also, not surprisingly, areas of ambiguity. In attitude studies, for example, explicit processes usually reflect recently acquired attitudes that stem from deliberate self-reports of what is currently in awareness (e.g. [18]). Studies on learning show a similar pattern. For example, a person's awareness of the relationship between two events (their contingency – if X, then Y) can lead to immediate learning as reflected in autonomic activity [19]. These explicit processes are commonly understood to have certain attributes or properties: deliberate, based on conscious thought or reasoning, controlled, variable, self-reported, and in awareness. Such processes involve complex cognition or meta-cognition in that they often require reflexive awareness and qualities associated with such awareness.

Implicit processes in attitude studies, in contrast, are often inferred from performance on reaction-time tasks or other indirect measures. They are considered “older” and more stable than explicit processes. In learning studies, there has been extensive research on these processes, as captured by associations between events (e.g., stimulus–response (S–R)). Thorndike [9], for example, was one of the early proponents of how associations constantly shape what people (and animals) do. Implicit processes are commonly understood as having specific attributes: automatic, spontaneous, enduring, and outside awareness. Such processes seem to involve foundational cognition in that they form the associative substrate from which complex cognitive processes emerge.

In using the terms “explicit” and “implicit,” researchers often refer to different things. These concepts are used in a systematic sense (e.g., implicit and explicit systems of the mind); in a descriptive, adjectival sense (e.g., to note that something is spontaneous or deliberate); and to refer to processes. In recent years, researchers have attempted to go beyond the terms explicit and implicit processing by conceptualizing what underlies them as, respectively, propositional and associative processes. For example, reviews on attitude change [15] and learning [17] argue that associative and propositional processes underlie the implicit–explicit distinction. Associative processes are rooted in the history of learning theory, which revolved around understanding the strengthening or weakening of S–R connections (e.g. [9, 20]). Modern-day attitude theories rely on the idea that associations are activated automatically when a relevant stimulus is encountered and do not require much cognitive effort. Further, the activation of a specific association depends in part on the memory, and in part on the situation; this activation is also thought to occur regardless of whether or not the resulting response is “true” [15]. Propositional processes are based on logical inferences that rest on information. In S–R learning, for example, verbal instructions (propositional) about the S–R relationship can lead to an immediate autonomic response; no actual experience with S and R is necessary for the learning to occur. With attitudes, logical inferences are thought to be concerned with validation of beliefs or evaluations that rest on a subjective sense of validity [15].

From our perspective, emphasizing the processes underlying explicit–implicit is a desirable way to proceed, with important limitations. Even if we focus on propositional and associative processes, at some point we will be forced to identify properties that are emergent from or concordant with these processes. In identifying such properties, we might also observe that there is significant uncertainty about whether these properties differentiate associative from propositional processes. Some properties might differentiate the two – for example, the mental effort involved in engaging associative processes appears markedly less than when engaging propositional processes. Other properties, however, highlight the ambiguity inherent in the two processes. For example, an autonomic response indicating that a person has learned a particular S–R relationship is identical whether the learning is associational (due to an actual S–R pairing) or propositional (due to verbal information about the S–R pairing). Another ambiguity is that the relationship between awareness and associative/

propositional processes is unclear [19]. These areas of ambiguity are also evident in attempting to understand whether and how associational and propositional processes affect each other. The interaction of these processes highlights many important questions. For present purposes, we understand implicit learning as involving primarily an associative process, and explicit learning as involving primarily a propositional process. In what follows, we will first focus on an area of significant ambiguity – how awareness maps on to explicit and implicit learning. Awareness, of course, is a key element of psychodynamic theory in conceptualizing unconscious processes. Then, we will describe selected studies that highlight some of the issues that emerge in examining the interaction between explicit–implicit learning and awareness.

Awareness

The history of the relationship between awareness and learning is lengthy and controversial. Implicit learning is thought to occur without awareness [9, 10]; reinforcing events automatically create S–R links that are independent of a person’s awareness. The S–R links themselves are connections or imprints, and do not convey information in any meaningful way. In contrast, the cognitive revolution highlighted the importance of information in learning. Careful examination of phenomena such as attention and conscious expectancy led to findings that seemed to contradict the idea that learning – especially motor or autonomic learning – could occur outside awareness (e.g. [21]). It seemed, for example, that in order for a person to show autonomic or motor learned responses, the person would need to be aware of the relationship or contingency between S and R. In another example, simple verbal instructions about the S–R relationship can lead to an immediate autonomic response; no actual experience with S and R is necessary for the learning to occur. This supports the idea that propositional processes – complex cognitive manipulation of information via verbal instruction reflecting awareness – are sufficient for learning to occur. An actual presentation of the S–R relationship is unnecessary. In stark contrast, a vast literature on animal learning shows the salience of using associative principles in understanding behavior. It is clear that such principles capture many aspects of learning, and that awareness may not be necessary. The difference between human and animal learning points to a major question about how to understand propositional and associative processes in terms of complex cognitive constructs such as awareness, attention, expectancy, and the like.

Significant philosophical issues attach to the role of awareness (consciousness) in learning. We will not address those issues here, except to note that awareness might be understood as an emergent or concordant property that exists in the interaction between associative and propositional processes. Awareness, in other words, is complexly related to these processes.³

Awareness can be characterized in two distinct ways – primary and secondary. Similar distinctions regarding awareness have been made previously in the literature (e.g. [23]). Primary awareness (or perceptual awareness) refers to the phenomenal experience of an object. This awareness is perceptual in the sense that there is no real way to challenge an individual’s subjective sense or phenomenal experience of the quality of an object. Secondary awareness, in contrast, refers to taking a recursive perspective toward an object; it is awareness of being aware. This awareness presumably involves more complex cognition than primary awareness, and it bears similarity to the propositional processes that are investigated via self-report.

In addition to distinguishing between primary and secondary awareness (or “levels” of awareness), we must also be clear about the object toward which awareness is directed. The object can be

³Brakel [22], for example, sets forth a model of mind in which primary process (often associated with activity outside awareness) is propositional.

physical – either an object itself or its representation. However, the object can also refer to something like the relationship between S and R; this understanding of “object” is typically the kind of awareness that researchers have investigated in studies of human autonomic learning. The modern-day understanding of human autonomic learning is that a person must be “aware” of the contingency between S and R in order for learning to occur. In this case, the object of awareness is a relationship and the level of awareness is usually secondary (i.e., awareness of being aware).

Studies on implicit emotional learning are often ambiguous regarding the level of awareness investigated, as well as specification of the object of awareness. For example, the acquisition of a learned response without awareness of the S–R contingency can be examined experimentally when a stimulus is in primary awareness (and available to secondary awareness), or when a stimulus is virtually inaccessible to primary awareness (i.e., subthreshold) and therefore very likely unavailable to secondary awareness. Variations of these experimental variables illustrate the complexities of awareness and of its role in learning.

Implicit Emotional Learning

In later sections of this chapter, we will describe several studies undertaken from a cognitive neuroscience perspective with potential relevance to psychoanalytic concepts, and in particular, to ideas concerning implicit emotional learning. These studies explore basic psychological processes, using principles of association derived from Pavlovian (S–R) theory and related phenomena, which may be applicable in identifying broad truths about learning, emotion, and unconscious mental processes. Such studies may also have implications for how we learn – and in the context of treatment – how learning and change occur. Although these studies do not directly involve clinical populations or treatment, they focus on core learning principles that can inform us indirectly about how we conceptualize these issues.

Two forms of implicit learning are illustrated in the studies described. In the traditional Pavlovian approach, the conditional stimulus (CS) takes on a signal or predictive value in relation to the unconditional stimulus (US). Awareness of the relationship between CS and US – the contingency – is what is thought to be necessary for the conditional response (CR) to emerge. A second approach, which is termed evaluative learning (or evaluative conditioning; e.g. [24, 25]), rests on the observation that simple contiguity (in space or time) between two stimuli facilitates the transfer of affect from one (US) to another (CS). We begin with a discussion of implicit evaluative learning and then turn to implicit Pavlovian learning. A clinical case is used to illustrate aspects of each kind of learning in a long-term psychodynamic psychotherapy.

Implicit Evaluative Learning

In daily life, one might encounter a person reporting a puzzling reaction to an object or event: “I don’t know why I like (or don’t like) it, I just do.” This experience illustrates preference or liking with unknown origins. One understanding how such a preference develops centers on implicit (associative) processes. In this model, the affective valence of one object is thought to transfer to another object. When both objects are in awareness, associative and propositional processes are likely to interact. For example, a person might have a negative associative reaction (perhaps based on past experience) to object A (US). If object A is then paired with a relatively neutral item for that person – object B (CS) – the person might automatically react negatively (via association) to object B. However, more complex (propositional) cognition could take over and lead to greater liking of the object B because of a conscious belief that one “should” like object A, or because the affective link between object A and object B can be deliberately minimized. When the affective object A is *outside* awareness, however, the

source of the reaction to object B is unclear. The person may react to object B based on a previous associative link that is now outside awareness; in other words, the source of the response to object B is unknown and could help to explain irrational symptoms associated with object B.

Basic Science Example

In an evaluative learning paradigm, pairing of an initially neutral stimulus (CS) with a positive or negative stimulus (US) leads to a new response to the CS that is consistent with the affective valence of the US with which it had been previously paired. The response to the CS is usually a behavioral measure such as reaction time or liking ratings. Variations in CS or US, and how the US is presented, have allowed researchers to examine associative learning such that neither the stimuli nor the measures require manifest propositional processes. Previous findings have shown that such learning indeed takes place, especially with relatively simple stimuli such as single words or faces expressing emotion. In addition, previous findings have supported the conclusion that the effects observed were relatively limited in time – perhaps only up to a second. In a recent study conducted by our lab group [26], we sought to examine this evaluative learning effect further by focusing on three questions: (1) Do naturalistic situations (pictures) yield an evaluative learning effect? (2) How does awareness influence the effect? (3) What is the time course of learning? We used an evaluative learning paradigm in which the US was presented virtually outside primary awareness and in which we examined the impact of learning over time.

In this study, the US involved presentations of emotionally evocative pictures that were perceptually masked – or presented in such a way that the participant had only a fleeting experience in awareness of fragments of the picture. The pictures were taken from an emotion picture library [27], and depicted people in complex and graphic positive or negative situations. The CS was a neutral geometric figure-ideograph that also served, simultaneously, as the perceptual mask by appearing on the screen immediately after the US. For an individual trial presentation, a participant was shown a positive or negative picture (US), which was linked with a CS that followed immediately at the same screen location (spatial and temporal contiguity). The main measure was a liking rating of the CS. At times, a participant could experience a fleeting flash (of the briefly presented US) just prior to the CS appearing on the screen; at other times, there was no such experience even though a US had been presented. A participant saw a series of trials as described, and provided liking ratings for each individual ideograph (CSs). We then examined whether the aggregate liking ratings of the formerly neutral CSs had been influenced by the preceding pictures.

The results suggest strongly that implicit evaluative learning takes place with complex, naturalistic emotional stimuli, and that these effects last at least several seconds if not much longer. Additionally, we made more detailed observations about the relationship between awareness of the US and the evaluative learning effect. Participants reported in a post-experiment questionnaire occasionally noticing a fleeting flash of a fragment of an object just prior to an individual presentation of the CS; however, no participant was able to identify – based on subjective experience – what was presented. We also conducted extensive behavioral (forced-choice identification) tests to examine whether participants could discriminate between the actual picture presented and a foil. These tests showed that participants could, in fact, discriminate between the two pictures, which suggests that enough partial information was processed for them to do so. Overall, then, the relationship between awareness and the evaluative learning effect in this study is complex. Based on the behavioral data, participants were aware of the US *in some sense* – at least enough to perform successfully on the forced-choice test. However, there was no indication of secondary awareness of the full nature of the US other than reports of fleeting fragments of images. We can conclude that participants may have had primary awareness of the US, though quite possibly only as a partial image. Nonetheless, the results of the study suggest that implicit evaluative learning takes place with naturalistic scenes,

and that participants were not reflexively aware of the US but were perceptually aware during the learning process.

In summary, it seems that associative links (via evaluative learning) to complex, naturalistic, emotional stimuli can be established without a person's reflective awareness that such links have been established. Further, such learning may have more lasting effects than previously thought (consistent with findings reported elsewhere showing that evaluative learning may sometimes be stronger when participants are unaware of the relationship between CS and US than when they are aware, e.g. [28]).

Clinical Example: Ms. G (Part 1)

A woman in her early 30s, Ms. G, started weekly psychotherapy because of general unhappiness marked by intense moodiness and instability in relationships, and by a largely directionless career. After graduating from an elite college, Ms. G found herself in a series of chaotic romantic relationships with men, and struggling – through several false starts – to establish a career. She was living a marginal existence in a large city, surviving month to month on odd jobs and her ability to find a boyfriend to live with.

Ms. G was in long-term psychodynamic therapy for many years; the following sequence took place in the fourth year of therapy. By this time, Ms. G had begun to establish herself in a career, saving enough money to live alone in an apartment. This was an extremely important developmental step for Ms. G, in that along with the emergence of some financial independence, it signaled her ability to keep from jumping into one chaotic relationship after another. Ms. G was initially thrilled and proud. However, soon after moving, she was overcome with a depressive episode of unknown origin; she started to neglect her work and withdraw from social events. The new apartment was suddenly and unaccountably viewed negatively.

Over the next year, several themes emerged in the therapy that shed light on the etiology of the puzzling depressive symptoms, and on efforts to help Ms. G change. Over time, Ms. G's associations kept returning, in one form or another, to her early childhood experiences of intense physical abuse and emotional neglect by her father. Ms. G recalled that in response to each episode of abuse, she typically retreated to her childhood room, alone. She vividly recalled shutting herself in the room, feeling despondent and at times suicidal. Here, the etiology of Ms. G's symptom could be understood in an evaluative learning context: her implicit negative memory of the early childhood room (object A or US) is linked associatively to her explicit experience of the new apartment (object B or CS).

The evaluative learning findings also suggest that what is learned may have lasting effects, and may be most powerful when the person is unaware of the CS–US link. However, the course of therapy and impetus to change was clearly – and not surprisingly – more complicated than the findings suggest. Ms. G was initially unaware of the possible link between her childhood room and her new apartment. At some point after Ms. G associated repeatedly to her childhood room, the therapist interpreted the link – in other words, making explicit (via reflexive awareness) the CS–US link. Ms. G responded tearfully, acknowledging that this understanding made much sense, and returned to this understanding in the following session. However, did this new awareness, accomplished through interpretation, lead to change? Not in any measurable way for at least 6 months!

Yet, over a longer period of time (1.5–2 years post-move), Ms. G showed increasing comfort with her new apartment and a waning of depressive symptoms. It is unclear what specifically contributed to this change, although we offer two possible explanations. First, it is possible that the interpretation simply took time to take effect. Second, the transference situation throughout this phase of the therapy was very likely based on unresolved paternal conflict.⁴ For example, Ms. G reacted strongly

⁴Space limitations preclude more detailed discussion of this issue.

to the (male) therapist's absences, and often voiced worry that he did not approve of her impulsive behavior. Further, Ms. G sometimes evoked anger and frustration in the therapist, which was understood in part as an unwitting effort to re-enact her childhood relationship with her father. We speculate that the therapist as a supportive (not abusive) paternal figure established corrective associations for Ms. G that facilitated her working through the depressive episode. In other words, we consider the possibility that part of what helped Ms. G at this time with this issue was a corrective experience based on associative – not just propositional – elements of the therapy. The “new” room – the new apartment – was now associated with a “new” object – the therapist.

Implicit Pavlovian (Associative) Learning

In Pavlovian studies on learning, the CS takes on a signal or predictive value in relation to the US. Awareness of the contingency between CS and US is thought to be necessary for the CR to emerge. The contingency is usually probabilistic, which can affect the time course of acquisition of a response. Furthermore, both the acquisition and maintenance of a response depend on many factors such as the type of conditioning, reinforcement, blocking, and extinction (see [20], for a general overview). Two examples follow: in the first example, we challenge the findings that contingency or reflexive awareness is necessary for associative learning to occur; in the second example, we identify a brain response using a Pavlovian learning paradigm that is thought to index implicit expectation.

Clinical Example: Ms. G (Part 2)

Can a person experience an emotional event and *unconsciously* associate different things (cues) with the event? If so, at another point in the future, something that manifestly seems irrelevant – but is really a cue via unconscious association – may in fact be quite relevant to understanding the original event. In this example, the manifestly irrelevant cue contains predictive information about what might follow (which is different from the evaluative learning example described previously, where the affect is transferred from one object to another).

A simple but common example can be observed with Ms. G, who often struggled with substance abuse, occasionally bingeing on alcohol or various street drugs. After an initial period during which she denied having a problem, Ms. G acknowledged the need to stop drinking and using drugs. She spoke tearfully about her father's difficulties with alcohol abuse and said that she desperately wanted to be different from him in this way. However in her efforts to stop, Ms. G routinely experienced the following sequence: she would vow to avoid drinking on a particular evening when out with friends; then, after a few hours of “being good,” she would ultimately succumb, saying “one thing led to another and before I knew it, I was back at the bar and headed for a blackout.”

Part of the therapy process was aimed at identifying cues both within and outside Ms. G's awareness. Ms. G could readily identify some “triggers,” such as certain friends, events, or neighborhoods. In identifying these triggers, Ms. G could sometimes stem the tide of drinking to excess but more often than not she would lose control and give in. We speculate that it was only through gradual identification of implicit cues that Ms. G was able to gain control of her behavior.

The implicit cues were more challenging to identify, although they emerged in Ms. G's associations. For example in associations to her childhood experiences and her father's drinking, Ms. G became aware of a pattern: a household filled with weeks of sadistic anger and tension, followed by sudden emotional release and drunken celebration. She recalled numerous examples of her father

behaving similarly; she realized after quite some time that one predisposing condition to *her* drinking was a mental state in which she felt “elated” after finishing a project. She felt such relief about “not having screwed something up” that she invariably wanted to celebrate – by drinking.

In learning terms, Ms. G’s celebratory drinking episodes were implicitly associated with her father: she was unaware of the predictive relationship between a mental state (elation) and drinking. We speculate that identification of this association – a cue (elation; CS) that then “predicts” a particular behavior (drinking; US) – led to therapeutic change. Of course, much additional work around this implicit association to father took place, especially in facilitating Ms. G’s dawning awareness that, through her drinking, she was also identifying with her drunken father. Clearly, multiple factors contribute to learning and change.

Basic Science Example

While our clinical and psychodynamic observations lead us to believe that generalizations of the kind just described happen outside awareness, the learning theory literature contradicts this observation in at least one important way. As discussed earlier in this chapter, there are many reasons to conclude from recent research that cognitive factors – especially awareness of the S–R contingency – are essential in autonomic or motor learning (e.g. [17, 21]). Exploration of the relationship between awareness and S–R learning has, for the most part, involved efforts to measure secondary awareness through self-report measures or moment-to-moment probes about knowledge of the contingency (e.g. [29]).

In what follows, we describe two studies in which we sought to examine the question of whether implicit (or at the time what we called unconscious) associative learning could be demonstrated. In these studies, we made two critical changes to previous efforts to examine this phenomenon. First, we used stimuli (CSs) that were presented so quickly (below the threshold for visual perceptual awareness) that we had reason to believe they were outside both primary and secondary awareness. Since the stimuli were outside awareness, we reasoned that participants could not possibly have known the S–R contingency. We reasoned further that if we could establish a CR to subthreshold stimuli we might show that associative learning could take place fully outside awareness. Second, in these studies, we relied primarily on measures of central nervous system activity as an index of implicit learning. Using event-related brain potentials (ERPs), we hoped to take advantage of the sensitivity of ERPs as well as extend learning theory to understanding the central nervous system.

In these studies [30, 31], the experimental approach involved using a trace conditioning paradigm in which there is a delay between offset of the CS and onset of the US. This paradigm has been used previously to show that learning as measured by skeletal reactions (e.g., eyeblinks) seems to require awareness of the S–R contingency (e.g. [32]). Each of our studies used slightly different CS–US parameters, while measuring ERPs.⁵ In one study [31], the CSs were facial schematics with emotional expressions; the US was a mild finger shock; and the CS–US delay was 800 ms. In the other study [31], the CSs were words (cancer and murder); the US was a white noise blast; and the CS–US delay was 3 s. In both studies, the stimuli were presented in three phases: (1) in awareness (40 ms); (2) outside awareness via brief (1 ms) subthreshold presentations; and (3) in awareness (40 ms). The second phase was the acquisition phase during which the CS–US link was established (using varied probabilities). From a participant’s perspective during the acquisition phase, the US (finger shock or white noise) comes on randomly since there is no conscious visual percept of the CS. A key question is whether change occurs between phases 1 and 3 (presentations of the CSs in awareness) due to

⁵We also reported findings from measuring facial EMG; Bunce, Bernat, Wong, Shevrin [33].

learning in phase 2. After the main experiment, we collected subjective and behavioral measures of awareness.

ERP methodology allows for millisecond (ms) resolution of brain activity as measured across an array of scalp electrodes. The brain responses are time locked to the onset of the presentation of the CSs so that when individual trials are averaged, overall time-related patterns can be detected. Considering the ERP results from both studies, some strikingly consistent results emerged when comparing phase 1 and 3 results and the difference between CS+ (linked to US in phase 2) and CS− (not linked to US in phase 2). Specifically, the results showed greater activation for the CS+ than the CS− at around 300 ms post-stimulus onset, which in ERP terminology is a P300 component. Additionally, two ERP components after the P300 – LP and SW – also differentiated the CS+ and CS−. There was some indication in the second study [31] that even earlier differentiation occurred at around 100 ms post-stimulus (P1–P2). The awareness measures of the CSs (presented for sub-threshold durations identical to those used in phase 2 learning) showed in both behavioral and subjective responses that participants were completely unaware of the CSs. This suggests strongly that associative learning in phase 2 was outside awareness.

In summary, the results across two studies using different S–R parameters suggest that associative learning – as measured by central nervous system brain activity – can occur outside awareness. Further, and consistent with the clinical example described previously, a person could possibly have been aware of his or her reaction in phase 3 to the CS (which was in awareness). This awareness is parallel to Ms. G's awareness that elation (CS) seemed to lead to drinking (US); Ms. G was unaware, however, of the developmental origin of the association.

Clinical Example: Ms. G (Part 3)

A person usually makes explicit associations to an emotional event. As has been observed in the consulting room, a highly emotional or traumatic event can lead to complex reactions that include conscious worry that another similar event will occur. However, from a psychodynamic perspective, we might also expect that complex reactions to a trauma will occur outside awareness.

Ms. G's struggles often involved chaotic romantic relationships that ended up in aggressive fights (with Ms. G as both the source and object of abuse). These fights were reminiscent of the physical abuse by her father. In one romantic relationship, Ms. G felt that she had finally found a partner who did not have (in her words) "a big temper." For months, it seemed that she was right. Eventually, however, Ms. G became increasingly provocative, which expectably elicited anger in her partner. It seemed that Ms. G was unwittingly interacting with her partner as if he were a (paternal) figure from her past. Is there any neurobehavioral evidence for complex reactions to trauma that exist outside awareness?

Basic Science Example

In an effort to address this question and others like it, we decided first to establish evidence that learning in awareness had taken place during an aversive situation. We then examined the effects – outside awareness – of what was learned. In this study [34], we used a paired-stimulus aversive learning paradigm that is similar in structure to our studies previously described. The CSs were facial schematics with emotional expressions; the US was a mild finger shock; and the CS–US delay was 2,500 ms. The stimuli were presented in three phases, with the following awareness conditions: (1) outside awareness (1 ms); (2) in awareness during learning; and (3) outside awareness (1 ms).

The second phase was the acquisition phase during which the CS–US link was established (using varied probabilities). From a participant’s perspective during the acquisition phase, the US (finger shock) was clearly predicted by the CS+ (in awareness) such that learning occurred quickly. For this study, a key question is whether change occurs *outside awareness* between phases 1 and 3, as a result of the aversive learning in phase 2. After the main experiment, we collected subjective and behavioral measures of awareness.

ERPs and autonomic reactions (skin conductance; SCR) were monitored during the experiment. The aversive learning phase 2 results showed expected ERP and SCR responses indicating that learning took place. Examination of the response to the CSs presented outside awareness (phases 1–3) revealed two striking things. First, it was clear that the subthreshold CSs in phase 3 (now associatively linked to the aversive experience) elicited an autonomic reaction. This finding was consistent with earlier reports that CSs presented outside the focus of attention could elicit a CR [35]. Second, an unexpected ERP response was observed, an expectancy wave, which emerged just prior to the time when the US had been delivered in phase 2. This expectancy wave, elicited in response to subthreshold CSs, showed that the brain was organizing in anticipation of the US, and that *this anticipation was elicited unconsciously*. The subjective and behavioral measures of awareness showed that participants were completely unaware of the CSs in phases 1 and 3 – there was no indication whatsoever of primary or secondary awareness.

In summary, results from this study suggest that after associative learning takes place in awareness, there is evidence showing that the CSs are salient outside awareness. Additionally, the subthreshold CSs elicited an expectancy wave response, which was an initially surprising although ultimately understandable finding. It was as if the brain were organizing – outside awareness – in anticipation of a previously experienced aversive (traumatic) event. More specifically, participants were unaware of the eliciting stimuli (CSs). Whether participants had secondary awareness of “expecting” the US in phase 3 is less clear, although subjective reports indicated that participants had no such awareness. It seems plausible, then, to conclude that anticipation of an aversive event occurred entirely unconsciously. This conclusion is consistent with the possibility that Ms. G harbored an implicit expectation that her partner would have “a big temper” in a way that was reminiscent of her father’s, although the results do not speak fully to the possibility of enactment.

Conclusions

Implications of Studies on Implicit Emotional Learning for Clinical Theory and Practice

Studies on implicit, associative processes – evaluative learning and Pavlovian learning – inform our theories of psychopathology and treatment in multiple, interrelated ways. Experimental data help us to understand how unconscious or implicit processes might contribute to the formation and maintenance of symptoms. Research results also force consideration of the relative roles of explicit (reflexive, interpretive, propositional) and implicit (associative) activities in facilitating change through psychotherapy.

Evaluative learning involves the transfer of affect from one thing to another. One study [26] suggests that associative links to complex, naturalistic, emotional stimuli can be established without reflexive awareness that such links have been established. Further, it seems that such learning may have more lasting effects than previously thought. In our clinical example (Ms. G, Part 1), Ms. G’s depressive experience in her new apartment was initially puzzling. In psychotherapy, her depression was associatively and implicitly linked to her troubled experience in her childhood room.

We describe how the impetus to treatment change likely involved both explicit interpretation of the associative link and an implicit corrective association in the therapeutic relationship (see [5] for a similar perspective).

Pavlovian learning involves establishing a predictive relationship between two events, with awareness having a varied role. Our clinical examples show that attention to implicit associations can inform etiology and treatment.

We first describe two studies (that contradict earlier findings in the literature) suggesting that associative learning – as measured by central nervous system brain activity – can occur outside awareness [5]. In our clinical example (Ms. G, Part 2), we illustrate how Ms. G's inability to stop her drug and alcohol abuse was connected to at least one implicit cue: that the feeling of elation seemed to lead to – or predict – excessive drinking. Additional exploration showed that Ms. G was unaware of the developmental origin of the association, and that helping her to articulate these origins explicitly may also have facilitated change. In another study, we show that after associative learning takes place in awareness, the original stimuli continue to be salient outside awareness [30, 31]. We identify implicit expectation in brain activity: anticipation of a previously experienced aversive event can occur entirely unconsciously. In our clinical example (Ms. G, Part 3), we describe how Ms. G inexplicably encountered problems in a relationship that manifestly seemed good. The problems seemed to stem from an implicit expectation that her partner would have “a big temper” like her father's.

In addition to highlighting associative learning of the evaluative and Pavlovian types, our studies illustrate how conceptualizing the relationship between learning and awareness is relevant to understanding psychopathology and treatment. The hallmark of a symptom is a disjunctive, peremptory, and puzzling emotional experience, such as Ms. G's inexplicable depression; inability to stop drinking; and tendency to spoil a relationship. The studies discussed illustrate divergent activity between what happens implicitly and explicitly, which may be one way of understanding the formation and maintenance of a symptom. Stated differently, the studies show that learning takes place in *and* out of awareness; further, it is the *interaction* between what happens in and out of awareness that may lead to disjunctive symptomatic experiences. From a methodological perspective, our studies are also consistent with those showing the limits of measures based primarily on propositional cognition or self-report (e.g. [36]). It is advisable to use both explicit and implicit approaches in order to obtain a full understanding of any phenomenon.

The results from Pavlovian learning studies may have particular relevance to psychodynamic theory, in that such studies reveal how predictive information (if X then Y) is organized implicitly. Such predictive information may be closely connected to our understanding of the dynamic unconscious.

One example of this connection is the identification of brain activity that indexes an anticipatory reaction outside awareness in response to a memory of a previous aversive event. This is an especially intriguing finding. From a phenomenological perspective, the finding suggests that a previously traumatized person may not have any experience of explicit worry or apprehension. Yet, simultaneously, processes unfolding outside awareness might give rise to implicit expectation of another traumatic event. Such implicit expectation (in which [34] posit an associative link, not a propositional belief), may or may not lead to pathological symptom formation. There are a variety of reasons, however, to believe that this anticipatory response outside awareness may be related to the psychodynamic construct of signal anxiety [37]. One way to conceptualize signal anxiety is that it involves an implicit expectation associated with a previous trauma; this expectation may reflect the operation of psychological defense. However, it is important to remember that the Wong et al. [34] study did not test specific psychodynamic constructs related to signal anxiety. For example, no distinction was made between a reality-based and fantasy-based trauma, and there was no effort to measure psychological defense. The limits of this study are also evident in the clinical case (Ms. G, Part 3). Implicit expectation based on previous trauma can explain several things. However, the

observation that Ms. G may have actively provoked a fight with her partner – being both the object and the source of anger – refers to a more complex motivational construct having to do with the *need* or *wish* to repeat rather than the fact of repeating. Yet, the finding of implicit expectation in brain activity provides a tantalizing clue that is consistent with the idea that implicit or unconscious processes need to be incorporated strongly into our models of the mind.

Future Directions in Learning Theory

This chapter has focused primarily on basic science approaches to implicit–explicit learning and learning theory. In reviewing the research, we identified parallels to psychodynamic principles (especially the role of unconscious processes) in order to illustrate some universal applications of learning theory. We also realize, however, that there are limits to analog or conceptual studies of the sort that we report. For example, drawing equivalence between an aversive stimulus in the laboratory and a trauma in vivo has significant limitations. An obvious extension of this line of inquiry, which might address such limitations, includes investigations of clinical populations using some of the principles and methodology described here. These studies are now beginning to emerge in the literature, most notably in the effort to systematically understand the role of implicit processes in psychopathology. Investigations of fear [38], phobia [39], panic [40], and anxiety [41] are some examples.

On a larger scale, new developments in learning theory have begun to strongly support the idea that much learning happens implicitly in a social context. Recent work in infant–child development and the emergence of language illustrates clearly that the social context is an essential factor contributing to the success or failure of learning [42]. Evidence is also rapidly accumulating that much learning in social contexts takes place implicitly, especially for infants; however, there is some debate about the mechanisms involved [42]. For example, the traditional Pavlovian learning model described in this chapter will probably need to incorporate more elements of probability than is done in current S–R models. However, what is clear from these new developments in infant–child research, as well as the research described in this chapter, is that much more learning happens implicitly than previously believed; it would be wise to take this into account in future theories of psychopathology and psychotherapy.

References

1. Freud S. Remembering, repeating, and working through. Standard Edition. 1914;12:145–56.
2. Freud S. Inhibitions, symptoms and anxiety. Standard Edition. 1926;20:87–174.
3. Fonagy P, Steele M, Moran G, Steele H, Higgitt A. Measuring the ghost in the nursery: an empirical study of the relation between parents' mental representations of childhood experiences and their infants' security of attachment. *J Am Psychoanal Assoc*. 1993;41:957–90.
4. Bonanno GA, Singer JL. Repressive personality style: theoretical and methodological implications for health and pathology. In: Singer J, editor. *Repression and dissociation: implications for personality theory, psychopathology, and health*. Chicago: University of Chicago Press; 1990. p. 435–70.
5. Gill MM. The interpersonal paradigm and the degree of the therapist's involvement. *Contemp Psychoanal*. 1983;19:200–37.
6. Wallerstein R. The corrective emotional experience: is reconsideration due? *Psychoanal Inq*. 1990;10:288–324.
7. Alexander F, French TM. *Psychoanalytic therapy: principles and application*. New York: Ronald Press; 1947.
8. Stone L. *The psychoanalytic situation*. New York: IUP; 1961.
9. Thorndike EL. *Human learning*. New York: Century; 1931.
10. Reber A. *Implicit learning and tacit knowledge: an essay on the cognitive unconscious*. New York: Oxford University Press; 1993.
11. Sloman A. The empirical case for two systems of reasoning. *Psychol Bull*. 1996;119:3–22.

12. Bargh JA, Chartrand TL. The unbearable automaticity of being. *Am Psychol.* 1999;54:462–79.
13. Greenwald AG, Banaji MR. Implicit social cognition: attitudes, self-esteem and stereotypes. *Psychol Rev.* 1995; 102:4–27.
14. Wilson TD. *Strangers to ourselves: discovering the adaptive unconscious.* Cambridge: Belnap; 2002.
15. Gawronski B, Bodenhausen GV. Associative and propositional processes in evaluation: an integrative review of implicit and explicit attitude change. *Psychol Bull.* 2006;132:692–731.
16. Moors A, De Houwer J. Automaticity: a theoretical and conceptual analysis. *Psychol Bull.* 2006;132:297–326.
17. Shanks DR. Learning from association to cognition. *Annu Rev Psychol.* 2010;61:273–301.
18. Wilson TD, Lindsey S, Schooler TY. A model of dual attitudes. *Psychol Rev.* 2000;107:101–26.
19. Lovibond PF, Shanks DR. The role of awareness in pavlovian conditioning: empirical evidence and theoretical implications. *J Exp Psychol Anim B.* 2002;28:3–26.
20. Macintosh NJ. *Conditioning and associative learning.* Oxford: Clarendon; 1983.
21. Dawson ME, Schell AM. Information processing and human autonomic classical conditioning. *Advances in Psychophysiology.* 1985;1:89–165.
22. Brakel LAW. *Philosophy, psychoanalysis, and the A-rational mind.* Oxford: Oxford University Press; 2009.
23. Bower GH. Awareness, the unconscious, and repression: an experimental psychologist's perspective. In: Singer JL, editor. *Repression and dissociation.* Chicago: University of Chicago Press; 1990. p. 209.
24. De Houwer J, Baeyens F, Field AP. Associative learning of likes and dislikes: some current controversies and possible ways forward. *Cognition Emotion.* 2005;19:161–74.
25. Wong PS, Root JC. Dynamic variations in affective priming. *Conscious Cogn.* 2003;12:147–68.
26. Wong PS, Bohraus A, Haywood D, Islam S. In the blink of an eye: affective priming with pictures, in preparation; 2011.
27. Lang PJ, Bradley MM, Cuthbert BN. *International affective picture system (IAPS): technical manual and affective ratings.* Gainesville: University of Florida; 1997.
28. Baeyens F, Eelen P, Van den Bergh O. Contingency awareness in evaluative conditioning: a case for unaware affective-evaluative learning. *Cogn Emotion.* 1990;4:3–18.
29. Ohman A, Soares J. Emotional conditioning to masked stimuli: expectancies for aversive outcomes following nonrecognized fear-relevant stimuli. *J Exp Psychol.* 1998;127:69–82.
30. Wong PS, Bernat E, Bunce S, Shevrin H. Brain indices of nonconscious associative learning. *Conscious Cogn.* 1997;6:519–44.
31. Wong PS, Bernat E, Snodgrass M, Shevrin H. Event-related brain correlates of associative learning without awareness. *Int J Psychophysiol.* 2004;53:217–31.
32. Clark RE, Squire LR. Classical conditioning and brain systems: the role of awareness. *Science.* 1998;280: 77–81.
33. Bunce SC, Bernat E, Wong PS, Shevrin H. Evidence for unconscious learning: preliminary support for the conditioning of facial EMG to subliminal stimuli. *J Psychiat Res.* 1999;33:341–7.
34. Wong PS, Shevrin H, Williams WJ. Conscious and nonconscious processes: an ERP index of an anticipatory response in a conditioning paradigm using visually masked stimuli. *Psychophysiology.* 1994;31:87–101.
35. Ohman A, Dimberg U, Esteves F. Preattentive activation of aversive emotion. In: Archer T, Nilsson L, editors. *Aversion, avoidance, and anxiety. Perspectives on aversively motivated behavior.* Hillsdale: Erlbaum; 1988. p. 169–94.
36. Shedler J, Mayman M, Manis M. The illusion of mental health. *Am Psychol.* 1993;48:1117–31.
37. Wong PS. Anxiety, signal anxiety, and unconscious anticipation: neuroscientific evidence for an unconscious signal function in humans. *J Am Psychoanal Assoc.* 1999;47:817–41.
38. Siegel P, Weinberger J. Very brief exposure: the effects of unreportable stimuli on fearful behavior. *Conscious Cogn.* 2009;18:939–51.
39. Huijding J, De Jong PJ. Beyond fear and disgust: the role of (automatic) contamination-related associations in spider phobia. *J Behav Ther Exp Psychiatry.* 2007;38:200–11.
40. Teachman BA, Marker CD, Smith-Janik SB. Automatic associations and panic disorder: trajectories of change over the course of treatment. *J Couns Clin Psychol.* 2008;76:988–1002.
41. Mathews A, Ridgeway V, Cook E, Yiend J. Inducing a benign interpretational bias reduces trait anxiety. *J Behav Ther Exp Psy.* 2007;38:225–36.
42. Meltzoff AN, Kuhl PK, Movellan J, Sejnowski TJ. Foundations for a new science of learning. *Science.* 2009;325:284–8.

Chapter 17

Neurobiological Correlates of the Psychotherapy Relationship and E.M.P.A.T.H.Y.: The Role of Biomarkers in Psychotherapy *

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Keywords Biomarkers • Empathy • Patient–doctor communication • Patient–doctor relationship • Psychotherapy

Introduction

Psychotherapy is associated with measurable changes in central and peripheral neurobiology and is a standard treatment that is as strongly rooted in brain plasticity as are psychopharmacological interventions [1]. Physiological and neurobiological underpinnings of the psychotherapy relationship have been measured by a number of biomarkers, including autonomic nervous system (ANS) arousal manifested by heart rate, respiration rate, muscle tension, the Galvanic Skin Response (GSR), electroencephalography (EEG), and neuroimaging studies of empathy. A key component of empathy in the patient–therapist dyad lies in attunement of the therapist to physiological displays of emotion as well as to patient-reported somatic cues that indicate emotional states with neurobiological correlates. Increased awareness of physiological manifestations and somatic sensations of emotion may assist in deepening the process of psychotherapy. Biomarker research could significantly influence the practice of psychotherapy by providing predictors for the development of specific disorders, aiding diagnoses, predicting and guiding a course of treatment, and tailoring individual treatments for specific disorders. While biomarker research is unfolding, there are neurobiologically based clinical observations organized by using the E.M.P.A.T.H.Y. mnemonic [2] that may guide and enhance psychotherapy. Empathic attunement is vitally necessary for all forms of psychosocial and psychopharmacological interventions with patients.

The theoretical bases for many models of psychotherapy have historically focused on verbal exchanges intended to foster modifications in human feelings, cognitions, attitudes, and behaviors [3]. While common factors such as empathy, trust, respect, support, and openness are considered critical features in most theories of psychotherapy, biological markers for these factors have received relatively little attention despite their crucial role in forming a therapeutic alliance. Empathy is necessary

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but not sufficient for formation of the therapeutic alliance, which has been defined as “the persistent and ultimately predictable and expectable experience on the part of the patient of the steady, reliable, reasonable, fair, kind, tolerant, non-judgmental, but also non-corruptible attitude of the analyst” [4]. According to Havens, “Alliance formation is the first order of clinical business [5],” and the strength of the therapeutic alliance is significantly and consistently related to psychotherapeutic and medical outcomes [6–10].

The theoretical approaches of three widely practiced psychotherapies – psychodynamic therapy (PDT), cognitive behavioral therapy (CBT), and interpersonal therapy (IPT) – suggest that, while attention to emotions and affects is, to varying degrees, an integral part of each of these therapeutic approaches, explicit exploration of somatic manifestations of emotions is not generally considered a necessary means to achieving therapeutic outcomes. Although these conventional therapies are frequently sought in response to somatic sensations signaling anxiety, panic, flashbacks, and other signs of somatic distress, specific training in detection, management, and interpretation of the *physical* manifestations of emotions is not an integral part of most psychotherapy curricula. Modalities that explicitly emphasize attention to the body in order to understand emotional states include biofeedback [11], mindful meditation [12], hypnosis [13], the mind–body relaxation response [14], and internal family systems therapy [15]. These are at times utilized in conjunction with conventional therapies to attend specifically to somatic sensations.

PDT and psychoanalysis encourage patients to use free association and dreams to explore the conscious and unconscious behavioral, cognitive, and emotional patterns that repeat themselves across patients’ past and present relationships, and that often manifest themselves in the current relationship between patient and psychotherapist. Through this process, the patterns in the repetition compulsion and their concomitant emotions are examined, and patients are encouraged to identify and express their emotions, resulting in abreaction and the ability to forge more adaptive relationships to one’s self and others. Explicit examination of somatic or sensory states accompanying specific affects may occur; however, such exploration is at the discretion of the clinician, as feelings are primarily accessed through words and memories rather than through a direct exploration of somatic experiences or explicit decoding of physical manifestations of emotional states.

CBT, with its roots in Skinner’s operant conditioning theory of learning, employs a wide range of written and verbal techniques. These techniques include self-monitoring; identifying and challenging negative or distorted thoughts; and reporting type and intensity of mood, by examining verbal and written accounts of patient experiences. The emphasis in CBT is on changing patient cognitions, leading to change in feeling states and behaviors [16]. Thus, CBT is primarily a cognitive, rather than a somatic exploration.

IPT, based on Harry Stack Sullivan’s Interpersonal School, emphasizes verbal accounts of current patient relationships that focus on one of four clinical areas (unresolved grief; role transitions; interpersonal and role disputes; and interpersonal deficits) with the aim of exploring thoughts and feelings that lead to dysphoric states. However, IPT does not place emphasis on identifying where these dysphoric states are felt in the body.

Whereas verbal exchange is essential for communication of thoughts and feelings in psychotherapy, the renowned analyst, Elvin Semrad, was well-known for his interest in identifying biological markers that indicated where his patients experienced their emotions. Rako’s *Semrad: The Heart of a Therapist* [17] is a compilation of Semrad’s therapeutic statements that evince his keen interest in making connections between expressed emotions and where they are felt in the body. These statements include: “This is what makes the difference, the *tissues* of the person involved, not the fancy thought upstairs. He’s living a real honest human experience, with every tissue of his being;” “Once he showed his tears, that was enough for me. I respect the autonomic nervous system to show feelings like I respect few other things;” “What does his body tell him?” “Acknowledging the feelings and reality of her body is overwhelming her mind with Guilt” [17]. Semrad was known to explicitly ask his patients, “Where do you feel your pain?” [18]

Emotions are physiologically grounded in the ANS and effect several target organs to enhance individual and species survival via complex neural, hormonal, and physiological processes [19]. Familiar somatic descriptions of negative emotions such as feeling: “heavy hearted,” “sick to my stomach,” “all choked up,” “as if my head were exploding,” having “butterflies in my stomach,” or “heart-pounding terror,” and positive emotions such as feeling “light hearted” and “floating on air” indicate that humans feel their emotions in their bodies.

Porges’ polyvagal theory states that, in mammals, the neurological basis of social engagement is evolutionarily linked to the ANS and how it relays emotional experiences [20]. Porges describes three parts of the ANS, including (a) vagal visceral unmyelinated afferents which decrease metabolism in response to environmental threats and contribute to somatic feelings associated with emotional distress, including behavioral immobilization (also called the “freeze” response) seen in certain animals feigning death; (b) the sympathetic nervous system, which increases heart rate and motor activity for the “fight or flight” response; and (c) the para-sympathetic nervous system involving the myelinated vagus nerve regulating cardiac activity with discriminating responsiveness to social approach or avoidance by down-regulating cardiovagal tone. The myelinated vagus nerve is also linked to adaptive social behavior by relay mechanisms to the cranial nerves that regulate facial expression, vocalizations, and listening, all critical components of interpersonal engagement.

The interface of psychological and physiological variables during psychotherapy has been the subject of investigation for decades. Reports on physiological changes measuring ANS activity occurring in patients during psychotherapy date back as early as the 1930s, when affective changes during psychoanalysis were correlated with GSR and heart rate [21]. Since then, numerous investigators have reported physiological changes in patients during psychotherapy, including changes in finger temperature [22], muscle tension [23], respiration rate [24], heart rate, blood pressure, body temperature, gastric motility, EEG, and GSR [25, 26]. GSR, also known as the electrodermal response, is a method of measuring the electrical resistance of the skin. GSR measures sympathetic nervous system activity (but not para-sympathetic) because the skin is innervated primarily by the sympathetic nervous system. The human eccrine gland secretes sweat in direct proportion to sympathetic arousal. Thus, GSR is highly sensitive to emotional states, including anger, fear, and the startle response, occurring between two people. In addition, reductions in GSR have been correlated with patient mastery and control over threatening material, and, conversely, increases in GSR have been correlated with decreased sense of mastery [25]. These studies support the hypothesis that affective intensity during psychotherapy (especially negative affect) is associated with greater autonomic arousal than calm affect states representing greater mastery or sense of control [25].

Physiology Between Patient and Clinician

Another group of physiological studies examined physiological states *between* patient and therapist during psychotherapy where the autonomic arousal of both members of the dyad was simultaneously measured. Early studies using measures of skin conductance (SC) and heart rate suggested that patients and therapists were highly reactive to each other [27].¹ These studies showed that physiologic responses in patients and therapists sometimes varied together in “concordance” and at other

¹ SC provides a satisfactory overall measure of GSR. There are two distinct processes of measurement occurring at high and low levels of Galvanic skin resistance that overlap in the mid-range. The resistance measurement of these two widely different levels spans the range of reactivity from the low to the higher levels of autonomic arousal. The differing magnitudes of the measures of these two reactive phenomena can be meaningfully combined in, and quantitatively represented on a single scale of measurement when using units of conductance [115].

times varied oppositely in “discordance” during a psychotherapy session [28]. This research showed a relationship between concurrent SC fluctuations (as a representation of autonomic activity) and perceived empathy in dyadic interactions [25], a finding that was recently replicated at Massachusetts General Hospital (MGH) [29, 30].

The evidence for the significance of perceived therapist empathy by patients during psychotherapeutic treatments [31, 32] has led to investigations into the biological correlates of empathy. The rationale for using biological markers during psychotherapy is that greater awareness of simultaneous autonomic responses may assist in deepening the process of psychotherapy. Neuroimaging and psychophysiology research have revealed significant insights into underlying mechanisms of empathy and interpersonal processes that may affect the patient–doctor relationship [33]. Humans have sophisticated perceptions of others’ behavior that either elicit feelings of social comfort or potential danger, which may be particularly acute in the patient–psychotherapist relationship. The ANS is linked to the affective experiences of self and other that motivate approach and avoidance behaviors based on systems of social engagement. Therefore, exquisite sensitivity to ANS activation may enhance therapist and patient awareness of real or perceived interpersonal threats, fantasies, thoughts, conflicts, impulses, or emotions [25].

According to Ax, psychotherapist empathy could be thought of as “an autonomic nervous system state which tends to simulate that of another person” [34] and his research revealed linkages between the physiological responses of psychotherapist and patient. DiMascio found that patient and therapist heart rate varied together “in concordance” during some moments in psychotherapy and oppositely in “discordance” during other moments in psychotherapy [35]. These early studies provided indirect support for a physiological component to “empathic relatedness” during psychotherapy [28, 36].

Patient–Clinician Skin Conductance Concordance

Historically, investigation of perceived empathy and simultaneous SC fluctuations was first conducted in non-clinical student–counselor dyads [37]. The frequency of SC peaks between clients and counselors was positively correlated with student ratings of counselors’ empathy. Subsequent studies have demonstrated support for a physiological basis of empathy. Wiesenfeld measured SC responses of women watching video clips of infants expressing a range of emotions where high empathy females had larger SC responses and matched facial expressions of the infants more often than low empathy females [38]; Levenson and Reuf found that subjects’ ratings of negative emotion when watching a video clip of a distressed married couple were highest when the subject and the couple had high levels of physiologic concordance [33]; Marci and Orr found low levels of perceived empathy and low SC concordance in patients interviewed with high emotional distance expressed by the interviewer [39]. These studies suggest that empathy and physiological concordance occurs in dyadic settings that do not necessarily have a therapy focus but may represent critical factors in caring human relationships.

Studies of dyadic and group interactions during psychotherapy have also demonstrated that both the behavior of the patient and the therapist influence one another physiologically in a powerful way. When there is psychological rapport, autonomic activity in both is reduced; however, when there is conflict and negative interaction, autonomic activity is heightened for both patient and therapist [40, 41]. The most important conclusion from these studies is that physiological synchrony between patient and therapist occurs when the therapist is accurately perceiving and empathizing with the patient. Thus, physiological changes during therapy do not occur in isolation, but instead reflect moment-to-moment interactions within the therapy pair. This may be interpreted as an exquisitely tuned index of therapeutic alliance [25].

Recent research at MGH of 20 patient–therapist dyads specifically investigated the relationship between SC and perception of therapist empathy during psychotherapy in videotaped sessions where simultaneous measures of patient and therapist SC were obtained. The results demonstrated a significant correlation between the number of epochs of physiological SC concordance and patient-perceived empathy as measured by the Empathic Understanding Scale ($r=0.47, p=0.03$) [42]. These results support a biological model of physiological concordance and perceived patient empathy during psychotherapy. The moment-to-moment physiological concordance suggests there is an unconscious central nervous system mapping of one person’s experience on the other that is mediating a physiological response; neuroimaging research supports this claim [43].

Clinical Case Example: Using Skin Conductance Monitoring in Psychotherapy

A middle-aged woman presented for psychotherapy with a psychodynamically oriented psychiatrist for help with understanding and responding to her mother’s obsession with the patient’s weight, which was manifested by verbal and emotional abuse. The patient had learned to conceal her emotional needs from her mother since childhood, for fear of overwhelming her overburdened mother. The patient was 70 lbs or pounds overweight, had never lost weight, and her weight was steadily increasing, despite her primary care physician’s repeated concerns about her health. Although she made significant progress in setting limits on her mother’s verbal abuse and was able to increasingly tolerate the “silent treatment” issued by her mother about her eating habits, she stated explicitly that weight loss was not her therapy goal, nor would she want to discuss her weight with her therapist.

Subsequently, her therapist was asked to participate in a research investigation where therapists and patients would receive SC monitoring during a videotaped psychotherapy session. The therapist asked the patient if she would be interested in enrolling, and the patient said she would be happy to enroll in the study, especially if it could help others or herself. The SC tracings demonstrated a high degree of physiological concordance, which matched the patient’s assessment of the therapist as empathic on the questionnaire for the monitored session [42]. However, measurements of SC also revealed a hidden state of autonomic arousal in this patient who had learned to mask her anxious feelings since childhood as a way of maintaining a connection with her overburdened mother [29]. In sharp contrast to the rest of the session, there were a few moments in which the patient’s SC spiked to three times that of the therapist’s, despite the fact that the patient showed no overt signs of anxiety or autonomic activation. The patient had repeated her early pattern of concealing her anxiety from her mother now, with her psychiatrist.

It is important to consider whether sharing biomarker data is therapeutically indicated. For example, paranoid or obsessive patients may find this type of information threatening, negative, or critical in nature [25]. The decision to introduce this question was based on the formulation of the patient in addition to the patient’s expressed interest in how the findings of the study could help others and herself. The episodes of discrepancy between SC in the therapy pair led the therapist to ask the patient if she were interested in seeing the results and to discuss the possible meanings of the findings. When the patient examined the tracings, she murmured, “It’s as if I’m seeing an ‘x-ray’ of my psyche.”

The patient had been the most agreeable child in a large family, with siblings who had physical disabilities. She had learned to conceal her own anxious states in the service of acting as her mother’s emotional caretaker and confidant. The patient used food to soothe herself, became obese, and subsequently became the object of her mother’s ridicule, which ultimately led her to seek psychotherapy to resolve this painful double-bind. This case (present author was the therapist) demonstrates that

some patients may benefit both emotionally and clinically from direct observation of their own SC tracings. The therapy dyad together examined their simultaneous autonomic arousal levels gathered from time-series analysis. (For examples of SC tracings, see [29, 42]).

The physiological data allowed the therapist to gain deeper empathy for her patient because it illuminated the patient's emotional experience in a way that had never been expressed. Importantly, the data also led the therapist to examine the videotape of the monitored session for indications of subtle clues of somatic markers that revealed signs of her patient's anxiety. The high peaks of autonomic arousal corresponded to physical changes in facial expression and skin tone (slight flushing), averted eye contact, fingers raised to hair, and a throaty chortle. These physical signs served as markers for detecting subtle signs of anxiety that were not verbally expressed, but matched the spikes on the SC data. These observations of the patient's unique physical manifestations of her anxiety led to a deeper level of therapist insight into how this patient revealed her anxiety and fostered greater empathy for this patient's suffering.

During the next year of psychotherapy, the patient-therapist relationship deepened to a new level of compassion. For the first time, the patient was able to talk about her shame regarding her weight and lack of exercise. Insight into her habitual sedentary lifestyle and use of food to soothe herself led to more adaptive behaviors to manage her anxiety. She hired an exercise trainer and became more comfortable revealing her anxiety and vulnerability to her therapist. And, most remarkably, the patient lost 40 lb in the next year, the first time this patient had ever lost weight. The therapist's attunement to physical signals of emotional pain and anxiety increased her empathy, and ultimately helped her patient achieve not only her initial, stated therapy goals, but an unexpressed goal to lose weight, that had been too threatening to state when she had initiated the psychotherapeutic process.

This case illustrates a session where, even with a high overall degree of physiological concordance and high ratings of perceived therapist empathy, the areas of discrepancy illuminated areas of concealed anxiety. One could mistakenly conclude that an optimal session would depict full physiological concordance. In this case, the discrepant SC tracing provided a window to explore less obvious, but ultimately very important, causes of her anxiety and led to dramatic weight loss. Examination of the patient's defenses of masking her anxiety and vulnerability ultimately led to greater empathy and more relational solutions to manage her anxiety. The patient hired a trainer to help her exercise and began to express her anxiety to her therapist more directly. This case provides an example of the potential of a biological marker of physiological activity to enhance attention to clinical manifestations of emotions and to improve outcomes in psychotherapy. It also provides evidence that subtle physical signs or mannerisms manifested during psychotherapy may be markers for internal, but undisclosed, affects, such as anxiety. Careful therapist attunement to these signs may enhance and deepen psychotherapy if explored.

This case supports the notion that therapist observation of patient signals (such as playing with hair, fidgeting, or other voluntary signals) may enhance appreciation for emotional signals, even if the facial expression of the patient does not reveal emotions. Empathy is an emotional, social, and cognitive process that allows an observer to understand and feel another's emotions. Empathic individuals appear to show a non-conscious motor mimicry of facial expressions, postures, and mannerisms of others to a greater extent than less empathic individuals [44–47]. Action representations of others' facial and bodily movements that are mapped onto the brain of the observer appear to involve the ACC and the insula, which together form a "salience network" that functions to segregate the most relevant internal and extrapersonal stimuli in order to guide behavior. The anterior and posterior insula appear to interact as a hub, to integrate salient stimuli and events with visceral and autonomic activity. Together, they help to generate a heightened physiological awareness of salient stimuli and to generate appropriate behavioral responses [48].

The Neurobiology of Empathy

The neurobiology of empathy has its roots in early mirror neuron research. A specialized class of neurons in the premotor cortex and inferior parietal cortex, called “mirror neurons,” provided the first neurobiological basis for translating motor actions that individuals observe in others into internal representations in the observers brain, facilitating understanding of another person’s actions [49]. Initial claims that mirror neurons were responsible for a wide range of abilities including speech acquisition, perception, altruism, emotion, empathy, theory of mind, and autism spectrum disorders (deficiency of mirror neurons) have recently been challenged by some investigators [50, 51]. However, early mirror neuron research led to prolific fMRI investigations of “self” versus “other” brain mechanisms that facilitate empathic understanding of one person’s experiences by another. Current research is identifying similar hemodynamic changes in neuroanatomical structures representing the “self” and “other” that facilitate understanding of other persons’ experience that are activated both when a subject experiences and observes touch, somatic sensations [52], pain [53, 54], and emotions, such as disgust [55]. Much of the information needed to empathize with patients can be accomplished by perception of facial expressions, posture, tone of voice, affect, and awareness of the observer’s own physiological response to the patient [33].

There is significant overlap between central neuroanatomical structures implicated in neuroimaging studies of empathy and brain structures that control SC fluctuations. Converging clinical and neuroimaging findings suggest that the anterior cingulate cortex (ACC) (specifically the subgenual ACC, which connects with neighboring ventral striatal, orbitofrontal cortex (OFC), and medial temporal regions) mediates modulation of emotion, cognition, sensation, and movement. Important functions of the cingulate also include the mobilization of appropriate responses to internal and external stimuli, emotional-cognitive integration, motor preparation, and conflict monitoring. The ACC carries out these functions by activating somatic states that focus attention on internal and external demands and motivate appropriate action [43]. The ACC generates emotional motivation through its projections to autonomic, visceromotor, and endocrine systems.

A principal function of the ACC is the regulation of bodily states of arousal to meet concurrent behavioral demands. The ACC, the OFC, and the amygdala are involved in decoding facial expression, direction of gaze, and other non-verbal behaviors. Together, these provide information about the social context that directly affects the emotional appraisal process and autonomic response for threatening or benign stimuli with projections to the amygdala to extract threatening stimuli [56]. The orbitofrontal circuit modulates the pursuit of reward by evaluating context, consequences, and risk associated with behavior. The ACC plays a major role in coordinating these emotional appraisals and autonomic arousal processes with cognitive and social perceptions, such as observing others experiencing pain and experiencing self pain, which relate directly to neural structures implicated in empathy. These structures include activity in the insula, ACC, the midcingulate cortex (MCC), and supplementary and pre-supplementary motor areas which are involved in the processing of acute pain and the selection and organization of movements involved in participant *and observer* movements of avoidance during pain observation. One neuroimaging study demonstrated a link between observing others’ pain and the response of the observer’s motor system, suggesting that part of the empathic response (like that of a response to pain itself) consists of overt motor actions such as motor preparedness for approach or avoidance, such as flinching when seeing another person cut his finger [57]. Other reports implicate the anterior insula, which is activated both for experiencing pain and in observing others in pain, suggesting a shared neural circuitry for empathy for pain [53, 58, 59].

The human ability to empathize requires cognitive information or direct observation of others experiencing painful or other emotions. Neuroimaging studies have identified neural correlates of empathy by identifying brain activity associated with the imitation and observation of different facial expressions of emotion [44]. Another novel MRI study demonstrated that empathic responses can be

elicited automatically without emotional cues such as a facial expression, but merely by presenting an arbitrary cue such as a colored light that signals the feeling state of another person. In a groundbreaking study of 16 couples, the female partners received a neutral signal that indicated that their spouses were receiving painful electric shocks to their hands. Simply observing a cue that their partners were experiencing pain resulted in the activation of a well-defined pain matrix in the female partners' brains [53].

This was the first neuroimaging study to demonstrate that when people say, "I feel your pain," it is not just a figure of speech. They feel the pain in an attenuated form because most (but not all) of their own neural pain matrix is activated when they know that someone else is experiencing pain. The neural systems that are activated in experiences of both "self" and "other" pain include the rostral ACC, bilateral anterior insula (extending into inferior prefrontal cortex), cerebellum, and brainstem. Areas specific to *receiving* pain in subjects include activity in the posterior insula/secondary somatosensory cortex, the sensorimotor cortex, and the caudal ACC. The authors reported a direct correlation between activity in the observers' ACC and scores on empathy scales [53].

Detection of Physical and Physiological Signs of Emotion with the E.M.P.A.T.H.Y. Mnemonic

There is a critical need to improve empathy in all areas of medicine that could be addressed with specific training protocols [60]. Enhanced detection of physical markers of emotion can assist clinicians in becoming more attuned to patients' needs. Biomarkers have been defined as "a specific physical trait used to measure or indicate the effects or progress of a disease, illness, or condition" [61]. Many physical signals and signs of emotion are frequently overlooked in the practice of psychiatry, including psychotherapy. Not only can these physical manifestations be important indicators of what is occurring within the patient, but they may also provide a window into underlying neurobiology and, hence, may play a similar role to conventional biomarkers. These signals and signs can be organized using a novel mnemonic device, E.M.P.A.T.H.Y. [2].

Riess E.M.P.A.T.H.Y. Training (RET) model recently demonstrated statistically significant increases on scales of self-reported empathy, scores on an assessment of knowledge of the neurobiology of empathy in resident physicians, and statistical trends on scales of patient perception of physician empathy and communication skills in a pilot study [62]. The E.M.P.A.T.H.Y. approach may enhance therapeutic practices common to all models of psychotherapy and to the patient–doctor relationship in general. At the pedagogical level, this novel review of physical manifestations of emotion could be included in the traditional "review of systems" in that it is part of a comprehensive patient interview. This may encourage up-regulation of empathy in the patient–doctor relationship at the critical time of forming an alliance with a new or prospective patient. This practice could be applied to all specialties, as it is a critical component of humanism in medicine [60]. Use of this mnemonic to review physical manifestations of emotions could easily be incorporated into psychotherapy process and outcomes research to determine if enhanced awareness to biological markers facilitates empathy. There are biological correlates to empathy.

The E.M.P.A.T.H.Y. Mnemonic

In order to empathize with the patient's anxiety in the clinical case example, it was critical to have enhanced awareness of her physical clues. By scrutinizing the video tapes for physical signs of anxiety that matched the indicators on the SC tracings, the author was led to develop a new tool for enhancing empathy in patient–doctor relations [2]. Such training includes an approach emphasizing

attention to physical signals. The mnemonic **E.M.P.A.T.H.Y.** focuses attention on specific neural correlates of empathy that are grounded in the neuroscience and attachment literature. They include **(E)** for making meaningful **eye contact**; **(M)** for decoding **muscles of facial expression**; **(P)** for **posture decoding**; **(A)** for **affect perception**; **(T)** for **tone of voice**; **(H)** **hearing** and **healing** the patient; and **(Y)** for **“Your Response,”** which asks clinicians to take notice of their own emotional response to the patient. Attention to these behaviors and responses, like measuring skin conductance or GSR, can serve as phenotypes of a sort, in that they can reflect meaningful neurobiological activity and can also be considered as a gateway to exploring critical but less obvious manifestations of patients’ symptoms. Use of this mnemonic as a device to review physical manifestations of emotions could easily be incorporated into psychotherapy process and outcomes research to determine if enhanced awareness to biological markers facilitates not only empathy, but also discussions of possible undisclosed emotions.

Neural Correlates of E.M.P.A.T.H.Y.

E = Eye contact

Philosophers and child psychiatrists have long understood the importance of gaze. “The look of the other is necessary to know I exist,” observed philosopher Jean-Paul Sartre [63], and O’Donohue echoes, “One of the deepest longings of the human soul is the longing to be seen” [64]. The necessity of eye contact for secure maternal–infant attachment is well described by Bowlby. The initial focal point of an infant’s gaze is 17 cm, the approximate distance between the infant’s eye and the mother’s face, when held in her arms while feeding. Research shows that infants are negatively affected by a lack of eye contact. In addition, the lack of engagement by a depressed mother’s “still face” predicts insecure attachment as early as 6 months [65–67]. Research by Ainsworth [67] and Bowlby [68] provide a study of affective engagement as a motivated human behavior for human connection.

The human face provides a wealth of information about expressed emotion and is a primary instrument for social communication. For example, eye contact is usually the first signal that one person has been noticed by another person [69]. Neural correlates of eye gaze processing have been found to be abnormal in children with autism. Neuroimaging and electrophysiological studies have shown that in normal controls, eye contact is processed in the superior temporal sulcus and the amygdala [70], and brain activation patterns in these areas are affected by whether changes in gaze are congruent or incongruent with neurological responses to visual emotional targets (such as facial expression). While individuals with autism show neural activity in similar regions as normal individuals (amygdala and superior temporal sulcus), modulation of eye contact to respond to new targets in different contexts is reduced [71].

A functional magnetic resonance imaging (fMRI) study on the effects of eye contact on amygdala sensitivity to anger and fear faces found that gaze direction differentially modulates the perception of anger and fear facial displays. Anger faces with direct gaze (unambiguous threat) and fear faces with averted gaze (indicating where in the environment the threat is located) are recognized more quickly and accurately. Whereas anger faces with averted gaze (ambiguous threat) and fear with direct eye contact (also an ambiguous threat) elicited stronger responses in the left amygdala [72]. The importance of eye contact in the patient–therapist relationship underscores the necessity of making eye contact perceived as safe to the patient. Clinicians who avert their gaze while entering data on their computers or taking extensive notes with averted gaze risk alienating their patients. Patients may experience signs of disengagement conveyed by poor eye contact and an averted face as a lack of interest, disapproval, or dislike.

M=Muscles of Facial Expression

The capacity to understand another person's actions, intentions, and emotions is critical to human survival. The cranial nerves that regulate social engagement through facial expression, vocal and verbal communication, and affective experiences are connected neuroanatomically to the portion of the vagus nerve that regulates cardiac contractions. When a person sees a safe or trustworthy facial expression, a neural circuit that projects from the temporal cortex to the amygdala inhibits limbic defensive fight, flight, or freeze behaviors [73]. In patient–therapist encounters, subtle micro-expressions of the face [74] may be particularly threatening to the patient due to the unequal status of the relationship, and the patient's internal regulatory processes may promote withholding of particular affects and information. Members of the same species who are in unequal positions of power are especially sensitive to perceived facial threats, and when communication is inhibited, all parties are at risk for interpersonal misperceptions. Clinicians should be aware of the negative effects that blank expressions can have on patients. Cohn's research demonstrates that the same still-face paradigms that are emotionally disorganizing and predict insecure attachment as early as 6 months of life can also be elicited by the unresponsive face of a caregiver [66]. Because of the vital importance of good communication, understanding the neural correlates of interpersonal communication may help physicians become better attuned to accurate perception of patients' implicit communications.

Humans and their primate relatives use muscles of facial expression to communicate. According to Darwin, who cataloged the importance of facial expression in *The Origin of Emotions in Man and Animals* [75], the primary function of emotions is to ensure survival of the individual and species by awareness and reflection. Paul Ekman, a pioneer in the field of facial expression, concluded that humans have seven basic emotions that are common across all cultures. The seven universal emotions are sadness, anger, fear, surprise, happiness, disgust, and contempt. Micro-expressions of emotions are generally displayed for 0.25 seconds, and the untrained eye can easily miss important information conveyed by a patient's fleeting facial expression [76]. Mirror neurons facilitate translation of observed actions into internal representations that may be felt, to some degree, by the observer.

Neuroimaging studies have explored the neural correlates of empathic experience by comparing brain activity associated with the observation versus imitation of pictures showing different emotional facial expressions [44]. For example, one study measured neural responses elicited by watching videos of faces with disgusted versus pleased expressions and compared those results to responses induced by smelling aversive versus pleasant odors. Activity in the insular cortex was elicited by a disgusting smell and also by the sight of the facial expression for disgust [55]. These results support the observation that regions associated with feeling an emotion can be activated by seeing the facial expression of the same emotion. Therefore, by looking closely at an emotional face, the same neural networks associated with the specific emotion displayed are activated in the observer's brain. Moreover, if the facial expression is imitated by the observer, the neural circuits are stronger than by observation alone. This phenomenon gives doctors a useful tool to understand the emotions of their patients. By imitating the facial expression (e.g., a sad face), the observer elicits the same emotion [44].

Additionally, investigators have also found that automatic mimicry reactions to observing emotional facial expressions of happiness or anger in observers occurs to a higher degree in high-empathy observers than low-empathy subjects, as measured by electromyographic (EMG) activity. The differences between the groups in emotional empathy were reported to be related to differences in automatic somatic reactions to facial stimuli rather than to differences in their conscious interpretation of the emotional situation [77, 78]. Saarela et al. demonstrated that humans can detect intensity of pain from another's face. When subjects observed painful expressions, increased activation was observed in the observers' bilateral anterior insula, left ACC, and left inferior parietal lobe, which correlated with the intensity of observed pain, and also with subjects' self-rated empathy.

Thus, the intersubjective representation of pain in the human brain may be more detailed than previously thought [79]. Theoretically, this empathic experiencing of another's suffering often motivates the observer to act to relieve that person's suffering [74].

P = Posture

Darwin suggested that the evolutionary purpose of emotions is to predispose humans to act adaptively, and that characteristic body movements and postures are associated with emotional states that have evolved to promote survival [80]. Although most investigations of emotion perception have focused on neural activity generated by images of facial expressions for decoding emotions, body movements may be just as important for understanding the neurobiology and meaning of emotional behaviors [58]. In the clinical case described earlier, the patient's motor movements while playing with her hair coincided with spikes in her SC tracings, indicating a motor and postural sign of her anxiety that the therapist began to recognize after examining the SC data. While perception of facial expressions involve the amygdala, fusiform cortex, prefrontal cortex, OFC, medial frontal cortex, superior temporal sulcus, and somatosensory cortex [81, 82], some of these same areas also play a role in processing body movements. An important finding is that observing bodily postures activates two well-known areas that are predominantly associated with processing facial expression (the inferior occipital gyrus and middle fusiform gyrus). The activation in facial-expression-related areas may result from context-specific perceptual mechanisms that fill in the missing face information. There appears to be a striking similarity in visual encoding between faces and body postures [83].

A 2004 fMRI study found that viewing fearful whole-body expressions, as contrasted with emotionally neutral postures, produces high activity in areas that are known to specifically process emotional information (amygdala, OFC, posterior cingulate, anterior insula, retrosplenial cortex, and nucleus accumbens). Conversely, comparisons of happy bodily expressions with neutral ones only yielded increased activity in visual areas. These findings may suggest that potentially threatening or dominant body postures, such as standing over patients, asserts undue authority and may intimidate patients and prevent them from expressing their intimate concerns. Likewise, physical barriers between patients and clinicians may also create emotional boundaries. A computer screen positioned between the doctor and patient and an averted gaze may express emotional distance whether or not intended. When doctors are seated at eye level, a collaborative message is conveyed, and studies show that patients perceive the doctor as having spent more time with them and as having been more empathic than when standing [84, 85].

Recent neurobiological models of empathy suggest that motor, perceptual, or emotional states of one individual activate corresponding representations in another individual who is observing that state [86–89]. In primate studies, single-cell recordings show that premotor (“mirror”) neurons become activated both during execution of a given action and during observation of the same action performed by another primate. This may account for the unconscious “mirroring” that takes place when two individuals seated opposite one another find themselves assuming the identical posture. Shared motor responses are also seen when one person is injured (such as getting a hand slammed in a car door) and both the participant and the observer react by flinching. Similar indications of motor activity signaling pain or anxiety, such as the touching of hair in the case example, can be understood as a motor manifestation (external marker) of internal pain and may even be unconsciously shared or mirrored by the observer [53, 57, 58]. Similar to facial expressions, manipulating posture has been used to produce feelings of anger, sadness, disgust, and fear in the observer [90–92]. Interestingly, prideful postures can be experimentally manipulated [93], and arrogance and pride [94] are qualities in physicians that are linked to malpractice claims, suggesting that prideful postures portrayed by clinicians evoke negative emotions.

A = Affect

Affect refers to the emotion conveyed by the patient that is consciously observed by the clinician. Emotional appraisal of patient affects allows therapists to orient themselves to the particular emotion of the session. Neural correlates of affect include perceptions routed through the thalamus, ACC, amygdala, and OFC, all of which project to the insula, which in turn relays emotional contents to limbic areas [44, 53, 58, 59]. Attunement to patient affects, and mirroring changes in affect by verbal and facial expression, may facilitate empathic responsiveness on the part of the physician and affect regulation on the part of the patient. Ainsworth's [67] and Bowlby's [68] research provides support for a human motivation for affective engagement. Physicians must also be aware of the effect of no affective expression on patients.

T = Tone of Voice

Human beings are exquisitely sensitive to variations in tone of voice. Hearing helps humans to understand actions and motivations of others via neural mechanisms for shared experiences of sounds [95]. Research by Ambady, using content-filtered slices of conversations between surgeons and patients, preserving only intonation, pitch, and rhythm but erasing the content, showed that judges could accurately predict which surgeons had been sued and which ones had not [94]. The affective tone of a therapy session may be set more by tone of voice than the words spoken. Changes in patient tone of voice and how a clinician responds may determine that patient's perception of the therapist's empathy and attunement. Aggressive tones of anger and rage versus gentle, soothing sounds have been shown to induce the identical range of emotional feelings in the listener when passages were read using the pace, rhythm, and pitch of these emotions [96–98].

H = Hearing/Healing

“What am I hearing and what would be healing for this patient today?” This item in the mnemonic asks the clinician to be mindful of what is coming across in the patient's narrative to which it is most salient for the clinician to respond. This requires an assessment of the overall state of the patient. It may be noticing an especially intense affect, a situation in the patient's life, or something that has happened to a loved one that calls for stated compassion and empathy. It could also be a rupture in the patient–therapist relationship that needs attending to and healing. The neural correlates for hearing have been discussed [96–98], and the shared neurobiology of pain and painful facial expressions [44, 53] should prompt an empathic response to the patient that would hopefully be experienced as healing. A compassionate nod, a gentle tone of voice, can make the emotional difference in an office visit.

Y = Your Response

Dimascio [99] was the first to demonstrate the importance of the shared autonomic physiological response between patient and therapist in psychotherapy. Many studies support the notion that empathy has a physiological substrate that provides an internal experience that is shared between people. The psychoanalytic concept of “projective identification” [100] is a process whereby patients' unexpressed emotions are experienced by the clinician as the first signal of what the patient is feeling. “Projective identification” may occur by a process in which patients' feelings are projected onto

clinicians through a summation of therapist perceptions of patients' explicit and implicit physical and physiological cues that are both consciously and unconsciously perceived by the therapist. This results in an internal representation of patient affect that is introjected and experienced by the clinician.

Projective identification has recently been validated by mirror neuron and physiological research [29, 49, 99], which supports the theory that observers have an internal representation of another's experience. Neuroimaging studies indicate that these projections are decoded by the action of mirror neurons that identify subtle cues and micro-expressions [74] that do not meet threshold consciousness but are experienced by the observer. Many clinicians are aware of dreading certain patient encounters because of the negative affects they associate with those patients. By developing a critical curiosity [101] about their own feelings, physicians may be able to identify the affect that the patient generally engenders within themselves. Negative effects such as guilt, anger, entitlement, or disrespect elicited in the physician may be the precise feelings that the patient is experiencing but not disclosing. When clinicians are able to reflect on their own feelings with curiosity and not simply react to what is being projected on to them, a space for new possibilities is created. The capacity to respond with what would be helpful to the patient, rather than react emotionally, is what distinguishes a clinician who can detect the vulnerability behind even the most intense projections and focus on the patient's needs rather than focus on him or herself.

Psychotherapy and Brain Biomarkers

Psychotherapy: Biomarkers of Physiological Changes in the Brain

Neuroimaging, EEG, genetics research, and physiological responses, measured by GSR and SC research, are revolutionizing biological psychiatry. In addition to clinical biomarkers of emotion, research advances are demonstrating physiological changes in the brain associated with psychotherapy. Whereas psychopharmacological interventions have been a primary focus for biomarker research, a comprehensive review indicated a great potential for neuroscientific tools to be used in psychosocial treatments [102].

Studies using fMRI and positron emission tomography (PET) have found psychotherapy has measurable effects on the brain [103, 104], and the following are some examples: PET studies have shown similar changes in brain activity by both pharmacotherapy and psychotherapy. For example, in obsessive-compulsive disorder, both cognitive behavioral therapy (CBT) and pharmacotherapy were associated with a reduction in metabolic activity in the caudate nucleus [105]. In depressed patients, decreases in dorsal and ventral prefrontal cortical metabolism were found in response to IPT and pharmacotherapy [106]; and short-term PDT and pharmacotherapy demonstrated increased brain serotonin 5-HT_{1A} [107]. In phobic disorders, CBT and pharmacotherapy demonstrated significant reduction of activity in limbic and paralimbic regions [108]. Further psychotherapy biomarker research is needed to continue to elucidate patterns for treatment selection and to tailor individual treatments for specific disorders.

Biomarkers: Also Associated with Treatment Response to Psychotherapy

EEG and neuroimaging studies have revealed effects of psychotherapy on brain function across a range of psychiatric disorders [109]. Several studies have suggested that EEG may help to identify persistent versus episodic biological characteristics of major depressive and anxiety disorders [109–111]. Specifically, the EEG gamma band was useful for identifying anxiety states from baseline and

relaxation in patients with generalized anxiety disorders compared to controls [109]. Thase and colleagues examined depressed patients and the relationship between EEG sleep profiles and response to IPT and found that subjects with abnormal sleep profiles had poorer clinical outcomes than subjects with more normal sleep profiles [112]. In an earlier study, they found that CBT and tricyclic antidepressants may share several common EEG sleep correlates of treatment responsivity [113].

Neuroimaging, EEG, GSR, SC, and genetic research are revolutionizing biological psychiatry. Whereas psychopharmacological interventions have been a primary focus for biomarker research, the aforementioned studies indicate a great potential for neuroscientific tools, including the untapped field of genetics, to be used in psychosocial treatments as well. Prospective studies are needed to provide algorithms for tailored individualized treatment plans for psychotherapeutic interventions, allowing clinicians and patients to avoid lengthy and costly “trial and error” approaches [102]. A major shortcoming of psychotherapy is that it is currently very difficult to predict which treatment is best for which patient, and treatment failure may not become apparent until weeks or months or even years have been invested. There is an urgent need for continued biomarker research in psychotherapy, which promises individualized, biologically based data to improve selection, effectiveness, and efficiency of psychosocial treatments.

In parallel with ongoing biomarker research, emphasis must be placed on detecting physiological signs of emotion that are grounded in neuroanatomy and physiology that will enhance clinical effectiveness.

Clinicians must be trained to detect subtle signs of emotions [60, 114], and the R.E.T. approach may enhance therapeutic practices common to all models of psychotherapy. In the future, psychotherapy will be increasingly guided by advances in neuroscience research that will help to provide a strong scientific foundation. Together with scientific research, the clinician’s mandate will always include forming a working alliance with patients guided by astute clinical observation of all aspects of the patient’s presentation. There is no substitute for looking at, hearing, experiencing, identifying, and empathizing with our patients. The therapeutic relationship is the substance and substrate of empathy for all forms of psychotherapy, and the necessary foundation for all psychiatric interventions.

References

1. Kandel ER. A new intellectual framework for psychiatry. *Am J Psychiatry*. 1998;155(4):457–69.
2. Riess H. Biomarkers in the psychotherapeutic relationship: the role of physiology, neurobiology, and the biological correlates of E.M.P.A.T.H.Y. *Harv Rev Psychiatry*. 2011;19(3):162–74.
3. Fonagy P, Kurtz A. What works for whom? A critical review of treatments for children and adolescents. New York: Guilford Press; 2002.
4. Meissner WW. The therapeutic alliance. New Haven: Yale University Press; 1996. p. 5.
5. Havens L. The best kept secret: how to form an effective alliance. *Harv Rev Psychiatry*. 2004;12(1):56–62.
6. Joyce AS, Piper WE, Ogradniczuk JS. Therapeutic alliance and cohesion variables as predictors of outcome in short-term group psychotherapy. *Int J Group Psychother*. 2007;57(3):269–96.
7. Martin DJ, Garske JP, Davis MK. Relation of the therapeutic alliance with outcome and other variables: a meta-analytic review. *J Consult Clin Psychol*. 2000;68(3):438–50.
8. Krupnick JL, Sotsky SM, Simmens S, et al. The role of the therapeutic alliance in psychotherapy and pharmacotherapy outcome: findings in the national institute of mental health treatment of depression collaborative research program. *J Consult Clin Psychol*. 1996;64(3):532–9.
9. Kelley JM, Lembo AJ, Ablon JS, et al. Patient and practitioner influences on the placebo effect in irritable bowel syndrome. *Psychosom Med*. 2009;71(7):789–97.
10. Kaptchuk TJ, Kelley JM, Conboy LA, et al. Components of placebo effect: randomised controlled trial in patients with irritable bowel syndrome. *BMJ*. 2008;336(7651):999–1003.
11. Thompson M, Thompson L. *The Neurofeedback Book: an introduction to basic concepts in applied psychophysiology*. Wheat Ridge: Association For Applied Psychophysiology And Biofeedback; 2003.
12. Epstein RM. Mindful practice. *JAMA*. 1999;282(9):833–9.

13. Hammond DC. Hypnotic induction and suggestion: an introductory manual. 1st ed. Des Plaines: The American Society of Clinical Hypnosis; 1988.
14. Benson H, Klipper MZ. The Relaxation Response. Updated and expandedth ed. New York: HarperCollins; 2000.
15. Schwartz RC. Internal family systems therapy. New York: Guilford Press; 1995.
16. Heimberg RG, Barlow DH. New developments in cognitive-behavioral therapy for social phobia. *J Clin Psychiatry*. 1991;52(Suppl):21–30.
17. Semrad EV, Rako S, Mazer HE. Semrad: the heart of a therapist. New York: Aronson; 1980. p. 138–40.
18. Briggin, IF. Personal communication.
19. Harris J. The evolutionary neurobiology, emergence and facilitation of empathy. In: Farrow T, Woodruff P, editors. *Empathy in mental illness*. New York: Cambridge University Press; 2007.
20. Porges SW. The polyvagal theory: phylogenetic contributions to social behavior. *Physiol Behav*. 2003;79(3): 503–13.
21. Lasswell HD. Verbal references and physiological changes during the psychoanalytic interview: a preliminary communication. *Psychoanal Rev*. 1935;22:10–24.
22. Mittlemann B, Wolff HG. Emotions and skin temperature observations on patients during psychotherapeutic (psychoanalytic) interviews. *Biopsychosocial Med*. 1943;5:211–31.
23. Shagass C, Malmo RB. Psychodynamic themes and localized muscular tension during psychotherapy. *Psychosom Med*. 1954;16:295–313.
24. Heim E. Emotion, breathing and speech. *J Psychosom Res*. 1968;12(4):261–74.
25. Glucksman ML. Psychological measures and feedback during psychotherapy. *Psychother Psychosom*. 1981; 36(3–4):185–99.
26. Roessler R, Bruch H, Thum L, Collins F. Physiologic correlates of affect during psychotherapy. *Am J Psychother*. 1975;29(1):26–36.
27. Lacey JL. Psychophysiological approaches to the evaluation of psychotherapeutic process and outcome. In: Rubinstein EA, Parloff MB, editors. *Research in psychotherapy*. Washington, DC: National Publishing Co.; 1959. p. 160–208.
28. Coleman R, Greenblatt M, Solomon HC. Physiological evidence of rapport during psychotherapeutic interviews. *Dis Nerv Syst*. 1956;17:71–9.
29. Marci CD, Riess H. The clinical relevance of psychophysiology: support for the psychobiology of empathy and psychodynamic process. *Am J Psychother*. 2005;59:213–26.
30. Marci CD, Ham J, Moran EK, Orr SP. Physiologic correlates of empathy and social–emotional process during psychotherapy. *J Nerv Ment Dis*. 2007;195(2):1–9.
31. Orlinsky DE, Grawe K, Parks BK. Process and outcome in psychotherapy. In: Bergin AE, Garfield SL, editors. *Handbook of psychotherapy and behavior change*. 4th ed. New York: Wiley; 1994. p. 270–378.
32. Burns DD, Nolen-Hoeksema S. Therapeutic empathy and recovery from depression in cognitive-behavioral therapy: a structural equation model. *J Consult Clin Psychol*. 1992;60:441–9.
33. Levenson RW, Ruef AM. Empathy: a physiological substrate. *J Pers Soc Psychol*. 1992;63(2):234–46.
34. Ax AF. Goals and methods of psychophysiology. *Psychophysiology*. 1964;1:8–25.
35. Dimascio A, Boyd RW, Greenblatt M. Physiological correlates of tension and antagonism during psychotherapy: a study of “interpersonal physiology”. *Psychosom Med*. 1957;19:99–104.
36. Kaplan HB, Bloom SW. The use of sociological and social–psychological concepts in physiological research: a review of selected experimental studies. *J Nerv Ment Dis*. 1960;131:128–34.
37. Robinson JW, Herman A, Kaplan BJ. Autonomic responses correlate with counselor–client empathy. *J Couns Psychol*. 1982;29(2):195–8.
38. Wiesenfeld AR, Whitman PB, Malatesta CZ. Individual differences among adult women in sensitivity to infants: evidence in support of an empathy concept. *J Pers Soc Psychol*. 1984;46(1):118–24.
39. Marci CD, Orr SP. The effect of emotional distance on psychophysiological concordance and perceived empathy between patient and interviewer. *Appl Psychophysiol Biofeedback*. 2006;31(2):115–28.
40. Stanek B, Hahn P, Mayer H. Biometric findings on cardiac neurosis: changes in ECG and heart rate in cardiopathic patients and their doctor during psychoanalytical initial interviews. *Psychother Psychosom*. 1973;22: 289–99.
41. Kaplan HB. Social interaction and GSR activity during group psychotherapy. *Psychosom Med*. 1963;25:140–5.
42. Marci CD, Ham J, Moran E, Orr SP. Physiologic correlates of perceived therapist empathy and social–emotional process during psychotherapy. *J Nerv Ment Dis*. 2007;195(2):103–11.
43. Critchley HD, Mathias CJ, Josephs O, et al. Human cingulate cortex and autonomic control: converging neuroimaging and clinical evidence. *Brain*. 2003;126(Pt 10):2139–52.
44. Carr L, Iacoboni M, Dubeau M, Mazziotta JC, Lenzi GL. Neural mechanisms of empathy in humans: a relay from neural systems for imitation to limbic areas. *Proc Natl Acad Sci USA*. 2003;100(9):5497–502.

45. Gallese V, Fadiga L, Fogassi L, Rizzolatti G. Action recognition in the premotor cortex. *Brain*. 1996;119(Pt 2): 593–609.
46. Rizzolatti G, Fogassi L, Gallese V. Neurophysiological mechanisms underlying the understanding and imitation of action. *Nat Rev Neurosci*. 2001;2(9):661–70.
47. LeDoux JE. Emotion circuits in the brain. *Annu Rev Neurosci*. 2000;23:155–84.
48. Menon V, Uddin LQ. Saliency, switching, attention and control: a network model of insula function. *Brain Struct Funct*. 2010;214(5–6):655–67. Available from: <https://phstwlpl.partners.org:2443/login?url=http://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=psyc&AN=2010-13004-021>.
49. Iacoboni M, Molnar-Szakacs I, Gallese V, Buccino G, Mazziotta JC, Rizzolatti G. Grasping the intentions of others with one's own mirror neuron system. *PLoS Biol*. 2005;3:529–35.
50. Hickok G. Eight problems for the mirror neuron theory of action understanding in monkeys and humans. *J Cogn Neurosci*. 2009;21(7):1229–43. Available from: <https://phstwlpl.partners.org:2443/login?url=http://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=medl&AN=19199415>.
51. Decety J. To what extent is the experience of empathy mediated by shared neural circuits? *Emotion Rev*. 2010;2(3):204–7.
52. Keysers C, Wicker B, Gazzola V, Anton J, Fogassi L, Gallese V. A touching sight: SII/PV activation during the observation and experience of touch. *Neuron*. 2004;42:335–46.
53. Singer T, Seymour B, O'Doherty J, Kaube H, Dolan RJ, Frith CD. Empathy for pain involves the affective but not the sensory components of pain. *Science*. 2004;303(5661):1157–62.
54. Singer T, Lamm C. The social neuroscience of empathy. *Ann N Y Acad Sci*. 2009;1156:81–96.
55. Wicker B, Keysers C, Plailly J, Royet JP, Gallese V, Rizzolatti G. Both of us disgusted in my insula: the common neural basis of seeing and feeling disgust. *Neuron*. 2003;40(3):655–64.
56. Viamontes GI, Beitman BD. Neural substrates of psychotherapeutic change. Part II: beyond default mode. *Psychiatr Ann*. 2006;36(4):238–46.
57. Morrison I, Peelen MV, Downing PE. The sight of others' pain modulates motor processing in human cingulate cortex. *Cereb Cortex*. 2007;17(9):2214–22. Available from: <https://phstwlpl.partners.org:2443/login?url=http://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=medl&AN=17124286>.
58. Morrison I, Lloyd D, di Pellegrino G, Roberts N. Vicarious responses to pain in anterior cingulate cortex: is empathy a multisensory issue? *Cogn Affect Behav Neurosci*. 2004;4(2):270–8. Available from: <https://phstwlpl.partners.org:2443/login?url=http://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=med4&AN=15460933>.
59. Phillips ML, Drevets WC, Rauch SL, Lane R. Neurobiology of emotion perception I: the neural basis of normal emotion perception. *Biol Psychiatry*. 2003;54(5):504–14.
60. Riess H. Empathy in medicine – a neurobiological perspective. *JAMA*. 2010;304(14):1604–5. Available from: <https://phstwlpl.partners.org:2443/login?url=http://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=medl&AN=20940387>.
61. American Heritage Dictionaries, editor. *The American Heritage Stedman's medical dictionary*. 2nd ed. Boston: Houghton Mifflin Harcourt; 2004.
62. Riess H, Kelley JM, Bailey R, Konowitz P, Gray ST. Improving empathy and relational skills in otolaryngology residents: a pilot study. *Otolaryngol Head Neck Surg*. 2011;144(1):120–2.
63. Sartre JP. *Transcendence of the ego*. Translated by Williams F, Kirkpatrick R. New York: Noonday Press; 1936; 98–106.
64. O'Donohue J. *Anam cara. A book of celtic wisdom*. New York: Harper Collins; 1998.
65. Bowlby J. The making and breaking of affectional bonds. I. Aetiology and psychopathology in the light of attachment theory. *Br J Psychiatry*. 1977;130:201–10.
66. Cohn JF, Campbell SB, Ross S. Infant response in the still-face paradigm at 6 months predicts avoidant and secure attachment at 12 months. *Dev Psychopathol*. 1991;3(4):367–76.
67. Ainsworth MDS, Bell SM, Stayton DJ. Infant-mother attachment and social development: 'socialisation' as a product of reciprocal responsiveness to signals. In: Richards MPM, editor. *The integration of a child into a social world*. London: Cambridge University Press; 1974. p. 99–135.
68. Bowlby J. *Attachment and Loss: vol. 1 attachment, vol. 1*. New York: Basic Books; 1969.
69. Siegel DJ. *The developing mind*. New York: The Guilford Press; 1999.
70. Allison T, Puce A, McCarthy G. Social perception from visual cues: role of the STS region. *Trends Cogn Sci (Regul Ed)*. 2000;4(7):267–78.
71. Pelphrey KA, Morris JP, McCarthy G. Neural basis of eye gaze processing deficits in autism. *Brain J Neurol*. 2005;128(5):1038–48.
72. Adams Jr RB, Gordon HL, Baird AA, Ambady N, Kleck RE. Effects of gaze on amygdala sensitivity to anger and fear faces. *Science*. 2003;300(5625):1536.
73. Harris J. The evolutionary neurobiology, emergence and facilitation of empathy. In: Farrow TFD, Wodruft WR, editors. *Empathy in mental illness*. Cambridge, UK: Cambridge University Press; 2007. p. 168–86.

74. Ekman P, Friesen WV. Facial action coding system. Palo Alto: Consulting Psychologists Press; 1978.
75. Darwin C. The expression of emotions in man and animals. London: John Murray; 1872.
76. Ekman P. Emotions revealed: recognizing faces and feelings to improve communication and emotional life. New York: Holt, Henry & Company; 2004.
77. Sonnbj-Borgström M. Automatic mimicry reactions as related to differences in emotional empathy. *Scand J Psychol.* 2002;43(5):433–43. Available from: <https://phstwlp1.partners.org:2443/login?url=http://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=med4&AN=12500783>.
78. Chlopan BE, McCain ML, Carbonell JL, Hagen RL. Empathy: review of available measures. *J Pers Soc Psychol.* 1985;48(3):635–53. Available from: <https://phstwlp1.partners.org:2443/login?url=http://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=psyc2&AN=1985–19046–001>.
79. Saarela MV, Hlushchuk Y, Williams AC, Schürmann M, Kalso E, Hari R. The compassionate brain: humans detect intensity of pain from another's face. *Cereb Cortex.* 2007;17(1):230–7. Available from: <https://phstwlp1.partners.org:2443/login?url=http://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=med1&AN=16495434>.
80. Darwin C. The expression of emotions in man and animals. London/New York: J. Friedman Publishers/St. Martin's Press; 1979/1872.
81. Dolan RJ. Emotion, cognition, and behavior. *Science.* 2002;298(5596):1191–4.
82. Adolphs R. Recognizing emotion from facial expressions: psychological and neurological mechanisms. *Behav Cogn Neurosci Rev.* 2002;1(1):21–62.
83. de Gelder B, Snyder J, Greve D, Gerard G, Hadjikhani N. Fear fosters flight: a mechanism for fear contagion when perceiving emotion expressed by a whole body. *Proc Natl Acad Sci USA.* 2004;101(47):16701–6.
84. Johnson RL, Sadosty AT, Weaver AL, Goyal DG. To sit or not to sit? *Ann Emerg Med.* 2008;51(2):188–93. 193.e1–2.
85. Bruera E, Palmer JL, Pace E, et al. A randomized, controlled trial of physician postures when breaking bad news to cancer patients. *Palliat Med.* 2007;21(6):501–5.
86. Avenanti A, Buetti D, Galati G, Aglioti SM. Transcranial magnetic stimulation highlights the sensorimotor side of empathy for pain. *Nat Neurosci.* 2005;8(7):955–60.
87. Preston SD, de Waal FB. Empathy: its ultimate and proximate bases. *Behav Brain Sci.* 2002;25(1):1–20 [discussion 20–71].
88. Decety J, Jackson PL. The functional architecture of human empathy. *Behav Cogn Neurosci Rev.* 2004;3(2):71–100.
89. Fadiga L, Fogassi L, Pavesi G, Rizzolatti G. Motor facilitation during action observation: a magnetic stimulation study. *J Neurophysiol.* 1995;73(6):2608–11.
90. Duclos SE, Laird JD, Schneider E, Sexter M, Stern L, Van Lighten O. Emotion-specific effects of facial expressions and postures on emotional experience. *J Pers Soc Psychol.* 1989;57(1):100–8.
91. Fazio RH. Self-perception theory: a current perspective. In: Zanna MP, Olson JM, Herman CP, editors. *Social influence: the ontario symposium*, vol. 5. Hillsdale: Erlbaum; 1987. p. 129–50.
92. Flack WFJ, Laird JD, Cavallaro LA. Separate and combined effects of facial expressions and bodily postures on emotional feelings. *Eur J Soc Psychol.* 1999;29(2–3):203–17.
93. Laird JD, Kuvalanka K, Grubstein L, Kim TH, Nagaraja T. Posture and confidence: standing (and sitting) tall makes you feel good. *J Nonverbal Behav*; in press.
94. Ambady N, Laplante D, Nguyen T, Rosenthal R, Chaumeton N, Levinson W. Surgeons' tone of voice: a clue to malpractice history. *Surgery.* 2002;132(1):5–9.
95. Kohler E, Keysers C, Umiltà MA, Fogassi L, Gallese V, Rizzolatti G. Hearing sounds, understanding actions: action representation in mirror neurons. *Science.* 2002;297(5582):846–8.
96. Hatfield E, Hsee CK, Costello J, Weisman MS. The impact of vocal feedback on emotional experience and expression. *J Soc Behav Pers.* 1995;10(2):293–312.
97. Siegman AW, Boyle S. Voices of fear and anxiety and sadness and depression: the effects of speech rate and loudness on fear and anxiety and sadness and depression. *J Abnorm Psychol.* 1993;102(3):430–7.
98. Russell JA, Bachorowski J, FernandezDols J. Facial and vocal expressions of emotions. *Annu Rev Psychol.* 2003;54:329–49.
99. Di Mascio A, Boyd RW, Greenblatt M. Physiological correlates of tension and antagonism during psychotherapy: a study of "interpersonal change". *Psychosom Med.* 1957;19(2):99–104.
100. Tansey MJ, Burke WF. Understanding countertransference: from projective identification to empathy. Hillsdale: Analytic Press, Inc.; 1989.
101. Epstein RM. Mindful practice. *JAMA.* 1999;282(9):833–9.
102. Roffman JL, Marci CD, Glick DM, Dougherty DD, Rauch SL. Neuroimaging and the functional neuroanatomy of psychotherapy. *Psychol Med.* 2005;35:1–14.
103. Mundo E. Neurobiology of dynamic psychotherapy: an integration possible? *J Am Acad Psychoanal Dyn Psychiatry.* 2006;34(4):679–91.

104. Westen D. Implications of developments in cognitive neuroscience for psychoanalytic psychotherapy. *Harv Rev Psychiatry*. 2002;10(6):369–73.
105. Baxter LR, Schwartz JM, Bergman KS, Szuba MP. Caudate glucose metabolic rate changes with both drug and behavior therapy for obsessive–compulsive disorder. *Arch Gen Psychiatry*. 1992;49(9):681–9.
106. Brody AL, Saxena S, Stoessel P, et al. Regional brain metabolic changes in patients with major depression treated with either paroxetine or interpersonal therapy: preliminary findings. *Arch Gen Psychiatry*. 2001;58(7):631–40.
107. Salminen JK, Karlsson H, Hietala J, et al. Short-term psychodynamic psychotherapy and fluoxetine in major depressive disorder: a randomized comparative study. *Psychother Psychosom*. 2008;77(6):351–7.
108. Furmark T, Tillfors M, Marteinsdottir I, et al. Common changes in cerebral blood flow in patients with social phobia treated with citalopram or cognitive-behavioral therapy. *Arch Gen Psychiatry*. 2002;59:425–33.
109. Oathes DJ, Ray WJ, Yamasaki AS, et al. Worry, generalized anxiety disorder, and emotion: evidence from the EEG gamma band. *Biol Psychol*. 2008;79(2):165–70.
110. Buysse DJ, Kupfer DJ, Frank E, Monk TH. Electroencephalographic sleep studies in depressed outpatients treated with interpersonal psychotherapy: II. Longitudinal studies at baseline and recovery. *Psychiatry Res*. 1992;42(1):27–40.
111. Buysse DJ, Kupfer DJ, Frank E, Monk TH. Electroencephalographic sleep studies in depressed outpatients treated with interpersonal psychotherapy: I. Baseline studies in responders and nonresponders. *Psychiatry Res*. 1992;42(1):13–26.
112. Thase ME, Buysse DJ, Frank E, et al. Which depressed patients will respond to interpersonal psychotherapy? The role of abnormal EEG sleep profiles. *Am J Psychiatry*. 1997;154(4):502–9.
113. Thase ME, Simons AD. The applied use of psychotherapy in the study of the psychobiology of depression. *J Psychother Pract Res*. 1992;1(1):72–80.
114. Riess H, Marci C. The role of neurobiology and physiology of empathy in enhancing the patient–doctor relationship. *Med Encounter*. 2007;21(3):38–9.
115. Darrow CW. The rationale for treating the change in galvanic skin response as a change in conductance. *Psychophysiology*. 1964;1(1):31–8.

Chapter 18

Bridging Technology and Psychotherapy: Toward Investigating Psychological and Neural Correlates of Psychodynamic Psychotherapy

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Keywords CCRT • Depression • Neuroimaging • PET • Psychodynamic psychotherapy • QEEG

“... we are in a society that is enamored of high tech. So, people think that psychotherapy is just handholding – that it cannot actually have a serious impact on a person or his brain. This is one of the reasons it is so important... to get scientific results that lend credibility to psychotherapy as a real treatment...”

Glen O. Gabbard

American Psychiatric Association Annual Meeting 2010
“Psychoanalysis and Psychotherapy: Long-Term Outcome.”

Generations of therapists can attest to the ability of psychotherapy to effect change in people’s lives, changes that we now know undoubtedly reflect changes in the brain. At the same time, as Gabbard [1] suggests, the need to understand *explicitly* the neural basis of psychotherapy through scientific research is greater than ever. In this chapter, we review an ongoing study investigating psychological and neural correlates of brief psychodynamic psychotherapy in individuals suffering from major depression. The study, to the best of our knowledge, is the first of its kind; most studies to date of neural correlates of psychotherapy have focused on cognitive behavioral therapy and interpersonal therapy (IPT) ([2], Chap. 9).

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This chapter will describe the evolution of our ongoing study of the neural correlates of psychodynamic psychotherapy for depression. We review the criteria by which we selected a mode of psychodynamic psychotherapy. We will also review measures of the therapeutic process and psychological functioning, to illustrate how they might be utilized to assess change over the course of the therapy. Finally, we will review how to incorporate neuroimaging (in this case, ^{18}F fluorodeoxyglucose positron emission tomography, or FDG PET) in a way that is informative and has the potential to be clinically relevant. In showcasing our methods, it is not our goal to provide a definitive roadmap for investigating how psychodynamic psychotherapy affects individuals and their brains, nor to draw definitive scientific conclusions, as our study is not complete. Rather, we hope to demonstrate how the building blocks of psychotherapy research, many of which are described in this book, can readily be merged with brain imaging technology to discover concrete answers to the question of what changes psychodynamic psychotherapy may have on brain function.

Goals of Psychodynamic Psychotherapy

Arguably, any investigation into the impact of psychodynamic psychotherapy necessitates an understanding of the goals of psychodynamic psychotherapy. If one is to study the change that can be brought about by a given intervention, what better place to start than with the changes one hopes to bring about by employing that intervention? One of the most succinct and elegant discussions of the goals of psychodynamic psychotherapy can be found in Nancy McWilliams' book, *Psychoanalytic Case Formulation* [3]. She conceptualizes the overarching objectives of alleviating suffering and improving functioning through changes in character as a set of nine goals, which provide a useful framework for thinking about the change that psychodynamic therapists seek to bring about in their patients (described more fully in Chap. 20).

One of the goals of psychodynamic psychotherapy which McWilliams [3] identifies is *symptom relief*. Most people enter into psychodynamic psychotherapy with the hopes of finding relief from a particular problem, be it relief from depression or relief from a pattern of unhealthy relationships. Another goal, and arguably one of the most central to analytically oriented therapies, is *insight*, bringing what is unconscious into consciousness. By doing so, one may achieve an understanding about the reasons one is predisposed to certain patterns of behavior, thought, and affect. A third goal is for patients to achieve a sense of agency, which speaks to the powerlessness many patients experience because of their symptoms and maladaptive defenses. As McWilliams [3] eloquently puts it,

[Patients] are being controlled by their depression or their anxiety or their dissociation or their obsession or compulsion or phobia or paranoia and have lost the sense of being master of their own ship.

Related to this, another goal of psychodynamic psychotherapy is for the patient to attain a better sense of *identity*, a conscious sense of who he or she is and how to reconcile that sense with the individual's wishes and drives, among other things. The fifth goal identified by McWilliams [3] is for the patient to gain *self-esteem*, by which she means one's ability to accept oneself despite being less than perfect.

The last four of the nine goals of psychodynamic psychotherapy identified by McWilliams [3] are more difficult to articulate, but, as a group, provide a gestalt for achieving fulfillment and satisfaction in life. One of those goals is being able to *recognize and handle feelings* effectively. That is, being able to know what one feels, to understand why one feels that way, and to use those feelings to benefit oneself and others. Another goal of psychodynamic psychotherapy is achieving *ego strength and self cohesion*, by which McWilliams [3] means the patient's ability to recognize realities, even harsh ones, and adapt to them in a resilient fashion. A penultimate goal is for patients to attain or increase their *capacity for love and work*. The capacity for love – building and maintaining healthy relationships – grows out of the ability to appreciate not only one's own complexities and

shortcomings but those of others. The capacity for work arises out of a balanced understanding of what is in one's power to change, and speaks to having a sense of purpose or meaning in life. A final goal of psychodynamic psychotherapy is achieving *serenity*, enjoying what is rather than pursuing the ever elusive happiness which often seems to rest on the pursuit of unattainable and/or self-defeating goals.

Brief Psychodynamic Psychotherapy

The time-limited nature of the treatment makes brief psychodynamic psychotherapies more amenable to scientific investigation than traditional long-term psychodynamic psychotherapy. Given some of the loftier goals of psychodynamic psychotherapy – the capacity to love and work, achieving serenity – it is no surprise that most people associate it with being in treatment for several years. However, Freud himself treated a number of patients successfully, over only weeks or months [4]. Brief psychodynamic psychotherapy is, thus, not only *not* heretical, but in some instances actually quite effective. Necessarily, the goals of a brief psychodynamic psychotherapy are more circumscribed than those of a longer term treatment; however, the main difference is not in the type of change sought, but the scope of that change. Book [5] described the difference in the following way:

Brief psychodynamic psychotherapy has as its goals symptomatic relief and *limited, but significant, character change*...[whereas in long term psychotherapy] the goal is *major and pervasive* character change along a number of dimensions.

The brief psychodynamic therapies usually last less than 1 year and consist of sessions once weekly [5] as opposed to traditional psychodynamic psychotherapies or analyses which can last several years and require multiple weekly sessions. Gabbard [1] has defined brief as less than 24 sessions lasting less than 6 months.

Therapy Process

Intervention duration is not the only potential challenge for researchers of psychodynamic psychotherapy; therapy process, which can vary between patients and therapists, presents yet another challenge. Studies examining psychotherapy process with rigorous criteria strongly suggest that psychotherapeutic approaches are often considerably more eclectic than intended. One way to address this challenge is to select a manualized therapy.

However, utilization of a manualized treatment alone is not sufficient to address potential differences in process. In a study looking at a trial of IPT, which tends to be more psychodynamically oriented versus cognitive behavioral therapy (CBT) for depression [6], process in *both* treatment groups was closely aligned with cognitive behavioral techniques. Conversely, in another investigation of CBT for depression [7], it was found that psychodynamic elements influenced both the course of treatment and the outcome [8].

To address this challenge, we elected to videotape all sessions and measure process using the Psychotherapy Q-Set (PQS) [9]. The PQS is a 100-item measure that describes the contributions of the patient, therapist, and patient–therapist interactions to the session. It addresses with considerable effectiveness many of the complexities encountered in the study of the therapy process and has been utilized in research for 25 years [10]. PQS ratings can not only determine the degree to which sessions adhere to a psychodynamic model of therapy, but can also provide discrete process measures that can be correlated with both symptomatic/functional improvement and corresponding changes in brain physiology (described more fully in Chap. 20).

Selecting the Therapy: The Core Conflictual Relationship Theme Method

For the purposes of our study, we selected a brief manualized psychodynamic psychotherapy known as the Core Conflictual Relationship Theme (CCRT) method [11]. The therapy is limited to 16 individual sessions and is centered on a core, repetitive, interpersonal concern. The patients in our study present for treatment of depression; the core conflict identified early in the therapy may contribute substantially to the development and perpetuation of depression by interfering with the capacity for satisfying relationships in the person's life. The patient may be relatively unconscious of the CCRT, or may have some sense of this problematic and recurring theme, at the beginning of treatment.

The 16 sessions consists of three phases. In Phase I, "Demonstrating the Ubiquity of the CCRT" (sessions 1–4), the therapist and the patient together identify a CCRT that frequently causes difficulty in the patient's relational life. Although the CCRT describes maladaptive interpersonal functioning, it is derived empirically from "relationship episodes" described by the patient. In essence, it is a summary statement of the patient's experiences rather than a psychodynamic interpretation. A CCRT consists of three components: a wish in the context of a relationship, an actual or anticipated response from the "other" in the relationship, and the subsequent affective or behavioral response from the self (the patient). The goals of Phase I are to use the patient's own words to articulate the CCRT and to help the patient realize how ubiquitous this particular CCRT is in the patient's life.

In Phase II, "Working Through the Response of the Other" (sessions 5–12), the therapist and patient examine either the actual or anticipated reactions to the patient's identified wish, examining and challenging the patient's expectations of how the other will react. By doing so, the patient can learn to be motivated by intrinsic wishes/goals rather than potentially distorted fears of how others might respond. Work in this phase focuses on the patient's understanding that fear or anticipation of negative responses from others may be a distortion rooted in early childhood experience. Further, the patient comes to appreciate that he may play a role in eliciting actual negative responses from others, again because of early experiences with important others. The therapist conceptualizes the former as transference distortions and the latter as episodes of a repetition compulsion. Thus, Phase II relies strongly on psychodynamic concepts and an appreciation for the patient's developmental history. Phase II can also focus on the patient–therapist relationship itself, and indeed, the therapist is encouraged to identify and discuss transference episodes arising in the treatment that relate to the CCRT.

In Phase III, "Termination" (sessions 13–16), the therapist and patient focus on the upcoming conclusion of therapy. Termination issues, which are often difficult, are colored by the patient's CCRT. The therapist might even see the patient regress amidst the stress of termination, so the phase allows yet another opportunity to challenge underlying assumptions of the CCRT. Finally, the therapist and patient work to consolidate the gains made by the patient during treatment. To ensure a valid termination, the patient and therapist may not continue their working relationship beyond the last session, a point that is emphasized as needed by the therapist over the course of treatment. If the patient and therapist agree at the end of treatment that additional therapy is warranted, the patient is referred to a different psychotherapist.

Selecting the Patients and Therapists

The patients in the study are adults, between the ages of 18 and 60 years, with a diagnosis of major depressive disorder, according to the fourth edition of the Diagnostic and Statistical Manual for Mental Disorders-Text Revision [12]. Patients are evaluated using the Structured Clinical Interview (SCID) for DSM Disorders and must have a current depressive episode less than 5 years in duration. All patients come into the study having already started treatment with a Selective Serotonin Reuptake Inhibitor (SSRI), Serotonin Norepinephrine Reuptake Inhibitor (SNRI), or bupropion at adequate

doses. At the time of the screening visit (to determine eligibility for the study), patients must have been on a stable dose of antidepressant for the past 4 weeks. Additionally, since changes in medication can result in changes in neural activity, patients who require medication adjustment during the study are discontinued from the study.

The reasoning behind including medicated patients was twofold. First, psychotropic medication use clearly affects brain physiology, as demonstrated by both functional neuroimaging and electroencephalogram (EEG) studies. For example, EEG studies have shown that SSRIs and SNRIs affect cordance, which is strongly associated with cortical perfusion, a measure of increased neural activity. Cook et al. [13] found that depressed patients who responded to treatment with either fluoxetine or venlafaxine showed significant decreases in prefrontal cordance measures from baseline when compared to medication non-responders or patients treated with placebo. Similarly, Leuchter et al. ([14], poster presentation at APA Annual Meeting, San Francisco, CA) demonstrated that treatment with venlafaxine results in significant decreases in QEEG cordance in the right frontocentral and left parietal regions among normal subjects; this effect was not observed in normal subjects treated with placebo. Given that one aim of the study is to investigate the effects of psychodynamic psychotherapy on the brain, we needed to limit the study to either medicated patients or non-medicated patients. Since studies have demonstrated that the most effective treatment for depression may be a combination of antidepressants and psychotherapy [15, 16], we elected to include only medicated patients.

To increase diagnostic homogeneity, individuals with a diagnosis of most major DSM-IV Axis I disorders other than major depressive disorder, presence or history of psychotic features, or a history of antidepressant-related mania are excluded. To ensure safety, women who are pregnant or with childbearing potential and not using a medically accepted means of contraception are excluded, due to potential harm of PET exposure on a developing fetus. Individuals with current serious safety risk (suicidal or homicidal) are excluded and appropriately referred. To increase the likelihood that the changes we observe are the result of our intervention, individuals who have had involvement in individual or group psychotherapy currently or in the past 6 months and electroconvulsive therapy (ECT) in the last 12 months are excluded. Those with a serious medical illness (e.g., unstable diabetes, kidney disease), including neurological illnesses (e.g., seizure or head trauma with loss of consciousness) are also excluded. In order to minimize confounding effects of medications or non-adherence with their antidepressants, we exclude patients taking other psychotropic agents (including benzodiazepines, anticonvulsants, antipsychotics, stimulants, and sedative hypnotics), or those who have a history of medication non-adherence. Patients with a history of more than three previous adequate (in the judgment of the screening psychiatrist) attempts at psychodynamic psychotherapy, which were considered unhelpful or unsuccessful (as reported by the patient), are excluded, as this history might reflect an inability to profit from/engage in psychodynamic treatment. Finally, patients with a severe personality disorder that would interfere with their ability to participate in treatment are excluded.

The psychotherapists for the study are faculty members in the Massachusetts General Hospital Outpatient Psychiatry Department, who self-identify as being psychodynamically oriented. All have at least 10 years of post-doctoral psychodynamic psychotherapy experience and, as a group, have an average of over 20 years of experience. An independent senior psychiatrist/psychoanalyst with experience in psychodynamic research and familiarity with the CCRT was included to oversee all of the treatments and provide supervision.

Symptom Relief

We administered several measures of psychological functioning at different times (Table 18.1 and Fig. 18.1) during the treatment to assess psychological changes over the course of the therapy. Some were patient rated and others were therapist rated.

Table 18.1 Psychological measures

Psychological measure	Description	Therapist or patient rated	Subscales/types of items
28-Item Hamilton Rating Scale for Depression (HAM-D [28, 29])	Scale consisting of 28 items that aims to quantify the degree of depression in patients who already have a diagnosis of major depression	Therapist	None
Beck Depression Inventory (BDI [30])	Scale consisting of 21 items that assesses the severity of affective, cognitive, and	Patient	Affective Cognitive Vegetative
The Clinical Global Impression Scales (CGI [31])	Scales used to measure symptom severity and treatment response	Therapist	CGI-severity CGI-improvement
Kellner's Symptoms Questionnaire (SQ [32])	A measure of symptoms of anxiety, depression, and hostility, as well as somatic symptoms	Patient	Depression, anxiety, somatic, anger, somatic wellness, content, relax, friendly
Cognitive/Physical Functioning Questionnaire (CPFQ [33])	Seven-item scale which measures various cognitive symptoms (e.g., inattentiveness and forgetfulness) and physical symptoms (e.g., fatigue and sleepiness)	Patient	Apathy, sedation, fatigue, inattentiveness, forgetfulness, word finding, mental slowing
Quality of Life, Enjoyment, and Satisfaction Questionnaire [22]	Measure of the quality of life and degree of enjoyment and satisfaction experienced by patients in various areas of functioning	Patient	Physical, feelings, work, house, school, leisure, social, general
Well-Being Scale [19]	Scale consisting of 54 items which measures six dimensions of psychological well-being taken from the literature	Patient	Positive relations with others Autonomy Environmental mastery Personal growth Purpose in life Self acceptance
Reflective Functioning Scale (RFS [21])	Scale which measures the patient's capacity to understand self and other as independently functioning	Therapist	Awareness of mental states Lack of explicit efforts to tease out mental states Recognition of developmental aspects of mental states

Recall that one of the primary goals of psychodynamic psychotherapy is *symptom relief*. The patients enrolled in our study were in the midst of a major depressive episode and entered therapy to obtain relief from their depressive symptoms. So, we employed a number of measures to assess whether there was a reduction in depressive symptoms over the course of the therapy. These included the HAM-D, the BDI, the CGI severity subscale, and the SQ Depression subscale. As predicted by previous research using the CCRT [17, 18], we found a reduction in depressive symptoms on the HAM-D in one patient (Fig. 18.2).

Anxiety, apathy, and anger are other symptoms that are commonly co-morbid in major depression (reference), and we looked at these symptoms using the CPFQ apathy subscale, the SQ anxiety subscale, and the SQ anger subscale.

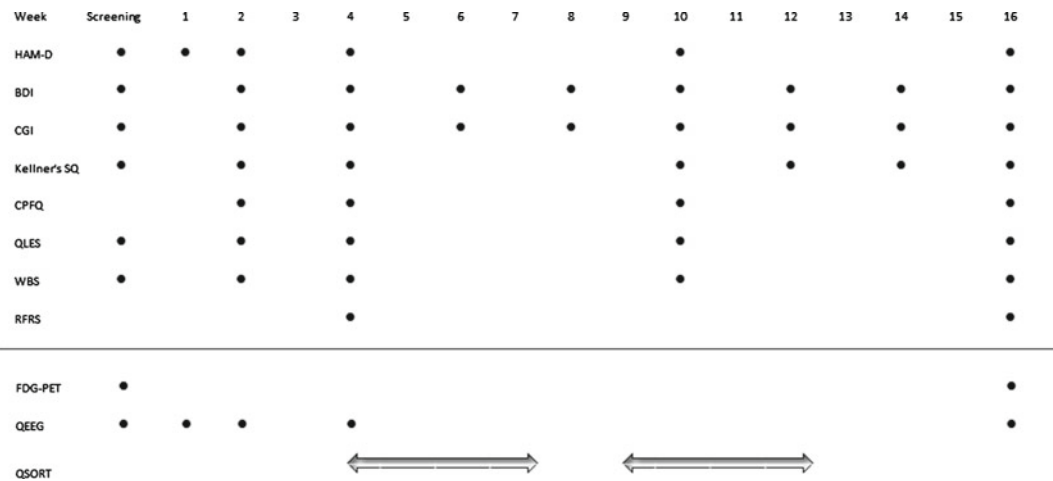


Fig. 18.1 Study timeline

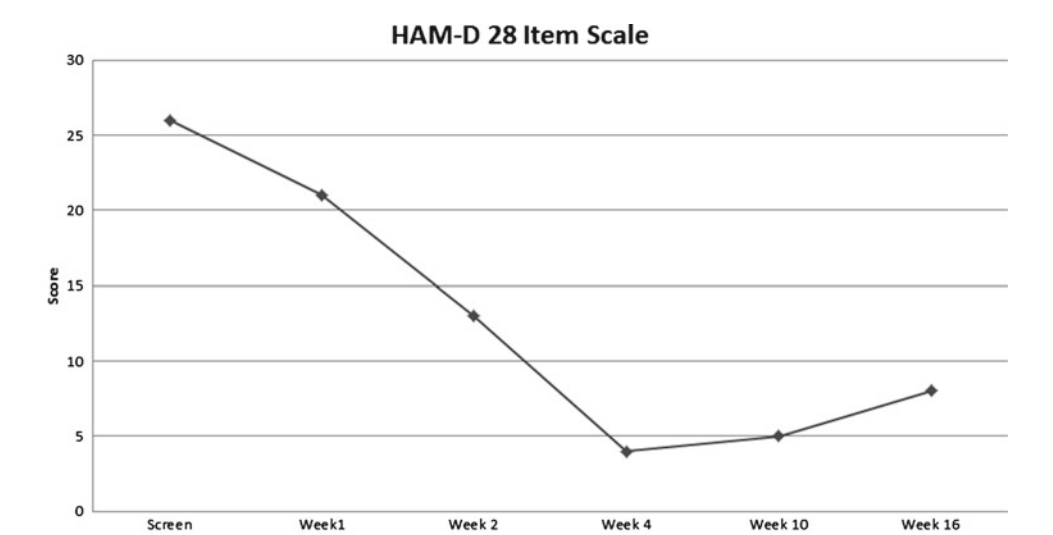


Fig. 18.2 Hamilton depression inventory 28 Item Scale: data from one patient

Agency, Identity, and Self-esteem

Now, let us consider some of the other goals of psychodynamic psychotherapy, in particular, the goals of helping the patient achieve an increased sense of agency, a better sense of identity, and improved self-esteem. Collectively, these goals aspire to help the patient develop a sense of personal psychological well-being. The individual who feels in control of her life, possesses a strong sense of self, a strong sense of purpose, and who truly accepts who she is, faults included, is an individual who is well prepared for the challenges that life brings. Ryff [19] has operationalized these components of personal psychological well-being in the subscales of the Well-Being Scale (WBS).

The autonomy subscale of the WBS includes questions that assess an individual's sense of agency, sense of self, individuation, and identity. The environmental mastery subscale measures an individual's sense of competence in managing their environment, including organizing tasks, taking advantage of opportunities, and tailoring the environment to suit one's needs. The sense of competence in managing one's environment is closely related to agency, specifically the sense that locus of agency is within oneself and not in one's environment. The self-acceptance subscale of the WBS measures the individual's ability to recognize and accept their positive as well as their negative qualities. In McWilliams' framework [3], self-acceptance corresponds to self-esteem.

The Capacity for Work

Another goal of psychodynamic psychotherapy outlined earlier is attaining or increasing the capacity for work. The capacity for work arises out of a balanced understanding of what is in one's power to change and speaks to having a sense of purpose or meaning in life. Ryff's WBS [19] contains two subscales, the personal growth subscale and the purpose in life scale which begins to address the goal of attaining or increasing the capacity for work.

The personal growth subscale of the WBS is a measure of an individual's sense of his or her capacity for growth and improvement, as well as a sense of realizing one's true potential.

The purpose in life subscale of the WBS measures an individual's sense of directedness and goals in life, a sense of meaning in life.

Interpersonal Understanding and the Capacity for Love

Recall that the capacity to love grows out of the ability to appreciate not only one's own complexities and shortcomings but those of others in the purpose of building and maintaining healthy relationships. It requires being able to reflect on what might be motivating others actions, namely their thoughts and feelings (i.e., mental states) as well as an awareness of the social and societal factors which affect others' thoughts and feelings. This capacity has been called the capacity for mentalization [20]. Levy et al.'s [21] Reflective Function Rating Scale (RFRS), derived from Fonagy's work, captures these essential elements. The RFRS consists of three subscales, one which assesses *awareness of the nature of mental states*, a second which assesses the failure or *lack of explicit efforts to tease out mental states underlying behavior*, and one which assesses *recognition of the developmental aspects of mental states*, which corresponds roughly to an appreciation of the social and societal factors affecting mental states. Interestingly, Ryff's WBS [19] also contains a subscale that assesses positive relations with others; the capacity for love in action.

Insight and the CCRT

In case the reader thinks we have forgotten that goal which is central to analytically oriented therapies, namely *insight*, we have not. While there is no scale by which we might measure insight, one indication of insight is the patient's contribution to their CCRT formulation and the work to examine and challenge the reasons for their expected responses from others. This can be assessed by examining the Psychotherapy Q-Sort during sessions 5–16. Also, arguably, some of the psychological measures that assess the ability to relate to other others (WBS – Positive Relations with Others

Subscale, the RFRS subscales, which assess the ability to reflect about one's own mental states and those of others, the QLES Social Subscale, etc.) provide an indirect measure of insight at work, especially given the CCRTs focus on interpersonal functioning.

Quality of Life

We are now left with discussing just two of the goals of psychodynamic psychotherapy outlined earlier: attaining or increasing *ego strength and cohesion*, and achieving *serenity*. Similar to insight, ego strength and cohesion might best be assessed by a close look at the patient's contributions to the work to examine and challenge the reasons for and content of the patient's expected responses from others. Do they persist in distorting realities or can they accept realities, and can they be thoughtful rather than impulsive?

Serenity is arguably the loftiest and the most difficult to assess of the goals of psychodynamic psychotherapy. In fact, one might say the ultimate goal of psychodynamic psychotherapy is *serenity*, which can only be achieved by progress in the other goals outlined. While we cannot measure serenity itself, which requires the test of time, we can assess a patient's quality of life and satisfaction with life, which arguably increases the chances of achieving *serenity*. Endicott's Quality of Life, Enjoyment, and Satisfaction Questionnaire [22], as the name of the questionnaire suggests, was developed with assessing a patient's quality of life, enjoyment, and satisfaction in mind. Importantly, research into those factors that contribute to a patient's sense of quality of life revealed that illness-specific symptoms explained only a small to modest percentage of the variance, and that factors such as personality dimensions (e.g., resilience), resources that allow access to enjoyable activities, greater social supports, and degree of life success or attainment of life goals contribute considerably to overall quality of life [23].

Assessing Neural Correlates of Change

An essential question is whether the changes in psychological functioning brought about by the brief course of psychodynamic psychotherapy in the patient described reflect changes in brain function. This is one of several reasons to investigate neural correlates of the psychological change brought about by psychodynamic psychotherapy. But, additionally, information about how psychodynamic psychotherapy affects the brain is potentially invaluable for patients and clinicians. It might be used to guide treatment choice, as information about baseline brain activity might be useful to guide us about those patients who stand to benefit most from psychodynamic psychotherapy as opposed to another type of therapy. It has the potential to provide a concrete, objective measure of improvement during the course of therapy. Finally, it reinforces the notion that psychotherapy has a biological substrate and places it in the same category as other "medical" treatments that induce measurable changes in physiology, biochemistry, or morphology. Empirical support for this notion could make a powerful contribution to combating the residual stigma associated with psychotherapy (and psychiatric treatment in general) that incurs hesitation in many potential patients, prevents the achievement of parity with other medical treatments, and nurtures an unfounded skepticism and mistrust within some elements of culture and society.

To examine neural changes brought about by the course of psychodynamic psychotherapy in our study, we used ^{18}F FDG PET. ^{18}F FDG PET is a nuclear medicine imaging technique which measures metabolic function, i.e., which brain areas are more active at a given time. We selected PET, as opposed to other modes of neuroimaging frequently used in the research literature such as functional

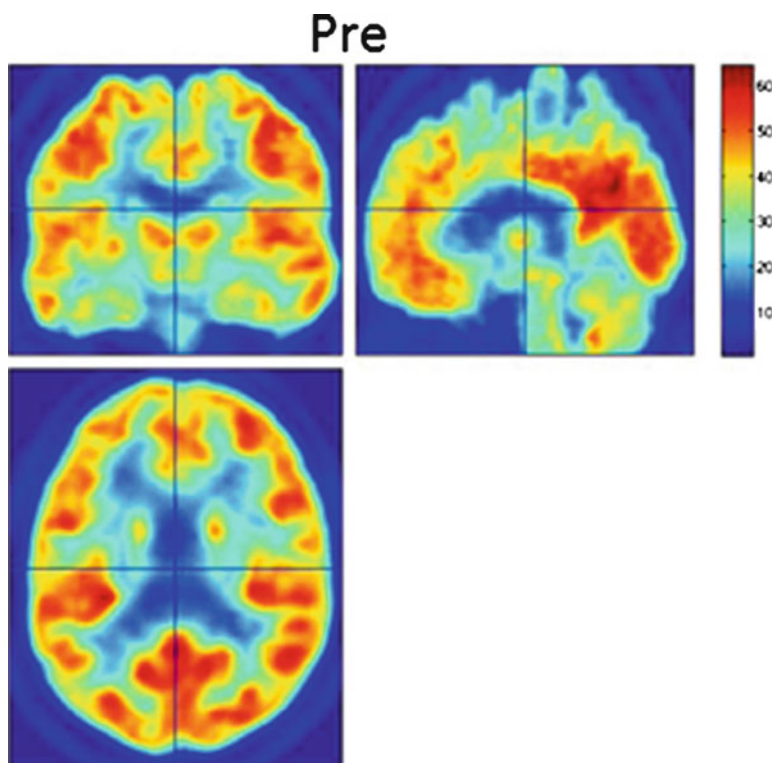


Fig. 18.3 ^{18}F FDG PET brain scan prior to starting psychotherapy (pre-treatment)

magnetic resonance imaging (fMRI), because of its established use as a clinical imaging modality, ease of administration, relative non-invasiveness, and relatively straightforward analysis.

In our study, a baseline resting state scan is performed just prior to initiation of psychotherapy. A follow-up resting state scan is performed within 2 weeks of the last psychotherapy session. Patients who terminate treatment before their week 10 psychotherapy appointment are not eligible to complete their second scan. Here, we present sample baseline data from a patient undergoing the pre-treatment scan (Fig. 18.3). The colors in the heat map correspond to the degree of brain activity, with warmer colors indicating more activity.

As more data are collected, we plan on carrying out a preliminary analysis that will identify regions-of-interest (ROI) by contrasting regional cerebral metabolism averaged among 15 patients (grouped as responders to treatment and non-responders to treatment) with that of ten previously acquired scans from healthy subjects matched for age and gender. Statistical parametric maps will be inspected to identify foci of significant differences between groups. These foci will be used for subsequent ROI analysis within the depression cohort. Based on previous studies of depression (Chaps. 10 and 11), it is anticipated that these ROIs will reflect between-group differences in pre-frontal and limbic regions. We will also be able to correlate changes in brain activity within these regions with changes in symptom scores, process variables (measured with the PQS), and measures of therapeutic alliance.

In addition to using ^{18}F FDG PET to look at resting state neural activity before and after the brief course of psychodynamic psychotherapy, we are also using Quantitative Electroencephalography (QEEG) to measure electrical patterns of activity at the surface of the scalp, which in turn reflect cortical electrical activity. In recent years, studies have shown differences in absolute and relative power of QEEG signals between responders and non-responders to antidepressant treatment [24, 25] and

demonstrated the utility of serial QEEG assessments early in treatment to predict eventual clinical response to SSRI antidepressants [26, 27]. We are interested in whether patterns found in QEEG measurements recorded early in the course of psychotherapy can predict with some useful level of accuracy the likelihood of response to a brief course of psychodynamic psychotherapy.

At the study's completion, we hope to correlate the neural changes with the psychological changes assessed by the different measures of psychological functioning detailed previously in this chapter, as well as with therapy process as assessed by the Psychotherapy Process Q-Set. This will serve to inform us about the relationship between the effects of psychodynamic psychotherapy on psychological functioning and its effects on the brain, which will in turn help shed insight on the mechanisms of change in psychodynamic psychotherapy.

Conclusion

In this chapter, we provided an overview of an ongoing study of the psychological and neural correlates of brief psychodynamic psychotherapy. The study represents a multidisciplinary effort drawing upon psychodynamic theory, psychology, clinical trials, functional neuroanatomy, neuroimaging, and neurophysiology, using many of the building blocks detailed in other chapters in this book. Our hope is that research efforts such as this will greatly enhance our understanding of how psychodynamic psychotherapy affects psychological and related neural function. Moreover, in this new era of individualized medicine, the use of baseline characteristics to predict response to specific treatments may help optimize treatment selection: for example, patients with certain patterns of brain physiology at the time of diagnosis may be expected to do better with one form of treatment or another, as has been demonstrated in studies comparing behavior therapy to pharmacotherapy for obsessive compulsive. Finally, we hope that, by providing a new biological context for psychodynamic psychotherapy using state-of-the-art tools from clinical neuroscience, we may reduce some of the barriers that prevent its use among the very patients who would benefit most from this time-honored form of treatment.

References

1. Gabbard G. Long-term psychodynamic psychotherapy. Washington, DC: American Psychiatric Publishing; 2004.
2. Roffman JL, Marci CD, Glick DM, Dougherty DD, Rauch SL. Neuroimaging and the functional neuroanatomy of psychotherapy. *Psychol Med*. 2005;35:1385–98.
3. McWilliams N. Psychoanalytic case formulation. New York: Guilford Press; 1999.
4. Freud S, Breuer J. Studies on hysteria. In: Strachey J, editor. The standard edition of the complete psychological works of Sigmund Freud, vol. 2. London: Hogarth; 1895. p. 1–305.
5. Book HE. How to practice brief psychodynamic psychotherapy: the core conflictual relationship theme method. Washington, DC: American Psychological Association; 2003.
6. Ablon JS, Jones EE. Validity of controlled clinical trials of psychotherapy: findings from the NIMH treatment of depression collaborative research program. *Am J Psychiatry*. 2002;159:775–83.
7. Hollon SD, DeRubeis RJ, Evans MD, Wiemer MJ, Garvey MJ, et al. Cognitive therapy and pharmacotherapy for depression. Singly and in combination. *Arch Gen Psychiatry*. 1992;49:774–81.
8. Jones EE, Pulos SM. Comparing the process in psychodynamic and cognitive-behavioral therapies. *J Consult Clin Psychol*. 1993;61:306–16.
9. Jones EE. Therapeutic action: a guide to psychoanalytic therapy. Northvale: Jason Aronson Inc.; 2000.
10. Ablon JS, Levy RA, Smith-Hansen L. Psychotherapy research: process, outcome and psychopathology, in preparation.
11. Luborsky L. Principles of psychoanalytic psychotherapy: a manual for supportive–expressive treatment. New York: Basic Books; 1984.

12. Diagnostic & statistical manual of mental disorders text revision (DSM-IV-TR). Washington, DC: American Psychological Association; 2000.
13. Cook IA, Leuchter AF, Morgan M, Witte E, Stubbeman WF, Abrams M, et al. Early changes in prefrontal activity characterize clinical responders to antidepressants. *Neuropsychopharm.* 2002;27(1):120–31.
14. Leuchter A, DeBroda D, Cook I, Morgan M, Abrams M, Siegman B, et al. Neurophysiological effects of antidepressant medication in normal and depressed subjects. Presented at the 2003 APA annual meeting, San Francisco.
15. Burnand Y, Andreoli A, Kolatte E, Venturini A, et al. Psychodynamic psychotherapy and clomipramine in the treatment of major depression. *Psychiatr Serv.* 2002;53:585–90.
16. Nemeroff CB, Heim CM, Thase ME, Klein DN, et al. Differential responses to psychotherapy versus pharmacotherapy in patients with chronic forms of major depression and childhood trauma. *Focus.* 2005;3:131–5.
17. Diguier L, Barber JP, Luborsky L. Three concomitants: personality disorders, psychiatric severity, and outcome of dynamic psychotherapy of major depression. *Am J Psychiatry.* 1993;150:1246–8.
18. Luborsky L, Diguier L, Cacciola J, Barber JP, Moras K, Schmidt K, et al. Factors in outcome of short-term dynamic psychotherapy for chronic vs. nonchronic major depression. *J Psychother Pract Res.* 1996;5:152–9.
19. Ryff CD. Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *J Pers Soc Psychol.* 1989;57(6):1069–81.
20. Fonagy P, Gergely G, Jurist E, Target M. Affect regulation, mentalization, and the development of the self. New York: Other Press; 2002.
21. Levy KN, Meehan KB, Hill L. The reflective function rating scale. Unpublished manuscript. University Park: Department of Psychology, Pennsylvania State University; 2005.
22. Endicott J, Nee J, Harrison W, Blumenthal R. Quality of life enjoyment and satisfaction questionnaire: a new measure. *Psychopharmacol Bull.* 1993;29(2):321–6.
23. Rappaport MH, Clary C, Fayyad R, Endicott J. Quality-of-life impairment in depressive and anxiety disorders. *Am J Psychiatry.* 2005;162:1171–8.
24. Ulrich G, Haug HJ, Fahndrich E. Acute vs chronic EEG effects in maprotiline- and in clomipramine-treated depressive inpatients and the prediction of therapeutic outcome. *J Affect Disord.* 1994;32(3):213–7.
25. Knott VJ, Telner JJ, Lapierre YD, Browne M, Horn ER. Quantitative EEG in the prediction of antidepressant response to imipramine. *J Affect Disord.* 1996;39(3):175–84.
26. Cook IA, Leuchter AF. Prefrontal changes and treatment response prediction in depression. *Semin Clin Neuropsychiatry.* 2001;6(2):113–20.
27. Cook IA, Leuchter AF, Witte E, Abrams M, Uijdehagge SH, Stubbeman W, et al. Neurophysiologic predictors of treatment response to fluoxetine in major depression. *Psychiatry Res.* 1999;85(3):263–73.
28. Hamilton M. A rating scale for depression. *J Neurol Neurosurg Psychiatry.* 1960;23:56–62.
29. Hamilton M. Development of a rating scale for primary depressive illness. *Br J Soc Clin Psychol.* 1967;6:278–96.
30. Beck AT, Steer RA. Beck depression inventory: manual. New York: Psychological Corporation; 1987.
31. Guy W, editors. ECDEU assessment manual for psychopharmacology, revised. DHEW Pub. No. (ADM)76–338. Rockville: National Institute of Mental Health; 1976.
32. Kellner R. A symptom questionnaire. *J Clin Psychiatry.* 1987;48:268–74.
33. Fava M, Graves LM, Benazzi F, Scalia MJ, Iosifescu DV, Alpert JE, et al. A cross-sectional study of the prevalence of cognitive and physical symptoms during long-term antidepressant treatment. *J Clin Psychiatry.* 2006;67(11):1754–9.

Chapter 19

The Neurobiological Foundations of Psychotherapy*

George I. Viamontes

Keywords Adaptive change • Emotions • Freud • Memory • Neurobiology • Psychotherapy • Thalamocorticostriatal circuits • Unconscious

Introduction

Psychotherapy is an interactive process that addresses maladaptive behaviors and mental states through the use of structured communication. Although psychotherapeutic systems and techniques have evolved independently of neurobiological science, there has been a tacit understanding, at least since the days of Freud, that psychotherapy produces its effects by acting on the brain. Modern technology has underscored the importance of this concept, as functional imaging reveals the neural activation patterns associated with behavioral dysfunction, and how these patterns can be modified through psychotherapy.

A fundamental neurobiological principle, namely the existence of species-specific brain architecture, underlies one of psychotherapy's most important properties, which is its generalizability across multiple individuals and disorders. The neural organization that characterizes the human species is the legacy of millions of years of natural selection. It confers upon each person a specialized set of functional capabilities and vulnerabilities. Fuster [1] used the term “phyletic memory” to define the basic neural attributes that are shared by all members of a species. Phyletic memory represents a legacy of success in adapting to the unique demands of the social and physical environments in which a species continuously evolves. It is the basis for human communication and order, and also represents the structural substrate on which psychotherapy operates.

Freud spent a lifetime attempting to define the common functional characteristics of the human mind and realized that any system of psychotherapy must begin with a description of the psychological phenomena that are common to all humans. Although Freud would have liked to link mind and brain, the technology of his time did not permit it. As a result, Freud conceptualized the workings of the mind independently of the brain and strictly on the basis of clinical observations and his interpretation of their meaning. His far-reaching vision of how the mind develops and functions evolved

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gradually, organized around an interconnected set of unifying principles that allowed him to make sense of the clinical phenomena manifested by his patients. Eventually, Freudian formulations, and treatment techniques were applied to a wide range of psychiatric disorders, albeit with mixed success. Freud himself believed that his methods were not well suited for the treatment of certain disorders, such as the psychoses. In theory, the effectiveness of psychodynamic psychotherapy should be highest in patients with a relatively intact set of species-specific neural circuits, since its organizing principles were synthesized from clinical work with patients of this type. The reasons for this practical limitation are important to consider.

Information in the brain is processed by collections of circuits whose organization is both genetically and experientially determined. Most of the information contained within the brain exists as some type of neuronal representation. Neurotransmitter levels, blood flow patterns, and other physical permutations can also contain information, but will not be considered here. Representations of information in neurons range from the transient, chemically based changes that support short-term memory, to more durable structural changes in synaptic connections (covered later in this chapter). Each person's repertoire of memories, values, and behavioral responses is contained within that individual's synaptic connections. Within the specialized pathways defined by these connections, both genetic factors and past experience determine how new information is processed in the context of the old.

Psychiatric disorders arise from interactions between genes and environment. Some of the most severe psychiatric illnesses, such as schizophrenia and bipolar disorder, for example, appear to have structural components that may not be amenable to correction through the types of inputs and interactions on which psychotherapy relies. As a result, it may not be productive to focus on experientially derived neural contents in the treatment of these types of disorders, since their primary cause appears to be a genetically based deficit in neural architecture. Despite these considerations, a modified version of the Freudian concept of "psychic determinism" is valid in this context. From a modern perspective, all behaviors, like Freud asserted, have potentially discoverable mental and neural origins. However, while in some cases, the etiology of a behavior is related to previous experiences, in others, it arises solely from genetically determined variations in brain structure.

The neurobiologically informed psychotherapist can leverage an understanding of both mind and brain to adjust interventions to the needs of each patient, maximizing function and adaptability wherever possible, while acknowledging that some aspects of mental dysfunction are beyond the scope of psychotherapy. This chapter will discuss the most important neural targets of psychotherapy and how successful psychotherapeutic treatment modulates the actions of the brain.

Neural Circuitry in the Context of Psychotherapy

General Considerations

Every human being has a core complex of evaluative and behavioral neural functions that promote avoidance of risk and acquisition of reward. Overlaid on these functions is an array of more advanced neural circuits that can temper the pursuit of reward on the basis of experience and learned rules. Basic and advanced circuits operate in parallel, and their behavioral influences often conflict. For example, the sights, smells, and easy access to palatable food at an "all you can eat" restaurant can be powerful inducers of unrestrained eating behavior. On the other hand, health concerns and other cognitive considerations ideally would temper the desire to eat and limit food consumption to an appropriate level. In the best of circumstances, a collaborative synthesis of competing directives is used to guide behavior. Unfortunately, this does not always occur. In fact, many of the behavioral problems that come to the attention of psychotherapists are related to poor modulation of core circuitry by the higher levels of the brain.

In general, volitional actions are driven by perceptions of risk and value. The ability to recognize certain classes of objects and experiences as “rewarding” and others as “punishing” is an important tool for survival. The neurobiological foundation for this ability is the possession of a genetically encoded array of sensory stimuli that are “hardwired” to “feel” either pleasant or unpleasant. This basic core of hardwired sensory phenomena forms the basis for the classification of all other experiences and is a major organizing principle for each individual’s subjective reality. Previously neutral objects and stimuli can acquire value as they become linked to primary sensory phenomena [5]. For example, babies innately like sweet substances and dislike bitter ones. In contrast, many adults come to “like” certain bitter substances, such as coffee and chocolate, because their distinctive flavor becomes associated with the memory of a pleasant internal state that overrides the innate distaste for bitterness. Eventually, every human develops an internal classification of food preferences that expands significantly beyond innately wired “likes and dislikes.” This expansion reflects sociocultural influences as well as genetic inputs and subjective experiences. In primates, basic information about primary and secondary reinforcers is processed in the amygdala and orbitofrontal cortex [5]. These regions also play a role in the creation of new secondary reinforcers. In addition, they modulate the autonomic and motivational circuits that generate the emotions and “gut feelings” that arise automatically whenever cues that signal potential reward or punishment are encountered [5]. In a sense, the amygdala and orbitofrontal cortex are the repository of all the rewarding and aversive experiences of a lifetime.

As humans classify environmental objects through experience, they also learn behaviors that obtain objects of value and avoid the rest. Eventually, long chains of causality are created that drive complex behavioral sequences. For example, a person may learn to work hard because work generates money, which in turn facilitates the acquisition of many pleasures. Throughout each person’s lifetime, a complex web of linkages is created that ideally defines adaptive behaviors within the individual’s milieu. The continuous process of forming and maintaining these linkages is influenced by development, environmental factors, and psychiatric illness. In order to succeed in modern sociocultural settings, the linkages that define adaptive actions must be intact, and cognitively driven behavioral sequences that transcend the simple pursuit of reward must be constantly implemented. This requires situational suppression of the hardwired motivation to pursue potential rewards whenever they become available. In this context, a number of functional circuits that are of special interest to the psychotherapist are discussed later in this chapter. These circuits are important because they participate in the motivation and execution of behavior and, as a result, are crucial targets for psychotherapeutic modulation. These subjects will be covered more extensively in Viamontes [6].

The Neurobiology of Emotions

Emotions are mind–body phenomena that reflect the subjective meaning of experiences, and prepare a person to act effectively within the perceived circumstances. Emotional disturbances are, of course, a primary focus of psychotherapy. Rolls [5] has proposed a powerful, yet concise view of emotions: “The definition of emotions is that [they] are states elicited by rewards and punishers, that is, by instrumental reinforcers.”

In other words, emotions are reactions to perceptions of possible risk or reward. Emotions involve special combinations of neurotransmitter, autonomic, and hormonal responses that prepare the brain and body to address what has been perceived. In addition, emotions bias behavior in a specific direction, depending on the nature of the event that triggered them. Each emotion generates a characteristic brain–body state, which gives it a unique experiential framework. Ideally, emotional states are adaptive because they can prepare the body for perceived challenges and motivate behavior that secures a good outcome. On the other hand, emotions can also be maladaptive if they are triggered inappropriately, since under such circumstances, they can inhibit the generation of effective action.

Rolls [5] has stated that the ability of emotions to motivate a general type of response without specifying an exact course of action is one of their most important attributes. While it is advantageous to transmit general information about risks and rewards in the genes, it would be impossible to specify an exact action within an organism's DNA for every possible encounter with potential rewards and punishers. In contrast, it is both feasible and adaptive to encode the motivation to perform general types of actions as a way of linking perception of rewards and punishers with appropriate responses.

Phillips et al. [7] have conceptualized a theoretical framework to explain the neural origin of emotions. They identified three stages in the generation of an emotional response. First, a stimulus is identified and evaluated. Second, an affective state, which can include neuroendocrine and autonomic activation, changes in facial expression, vocalizations, gestures, and specific behavioral responses, is produced in response to the stimulus. As these processes unfold, the individual becomes conscious of the emotional response. Third, the emotion is modulated by cognitive circuits, which consider perceived appropriateness in terms of internalized rules.

This conceptual model has been projected to an anatomical level in light of neuroimaging data [7]. In the anatomical model, actual emotional responses to neurally represented stimuli are generated by a ventral processing system with epicenters in the amygdala, insula, ventral striatum (including the nucleus accumbens), ventral regions of the anterior cingulate gyrus, and ventral prefrontal regions, including the orbitofrontal cortex.

The amygdala is an important early sensor of possible risk and reward. It also coordinates responses to objects and situations that elicit fear, functions in the circuitry that recognizes facial expressions, and modulates the brain's reward system [7]. The insula creates neural representations of a wide range of emotional and autonomic states. These can reach consciousness once represented. The insula participates in neural circuits that generate such diverse phenomena as sadness, pain, anticipatory anxiety, guilt, the affective components of substance withdrawal, and the recall of emotional states [7].

The ventral striatum, and in particular the nucleus accumbens, is an important component of the brain's reward system. It participates in circuits that identify objects of potential value and motivates the organism to pursue them. The anterior cingulate gyrus, through its autonomic and hypothalamic connections, plays an important role in the generation of affective states in response to cognitive representations, and in linking perceived objects with appropriate levels of motivational energy. It also participates in circuits that focus attention on activities likely to yield reward and helps to generate mood-appropriate affective states [7].

The medial orbitofrontal and ventromedial prefrontal cortices are important generators of the autonomic components of emotions. The orbitofrontal cortex receives a comprehensive representation of internal and external sensory perceptions. In addition, it receives projections that convey the amygdala's reactions to the same sensory stimuli. This information is integrated and evaluated, and the result is relayed to the ventromedial prefrontal cortex, which modulates autonomic tone. The orbitofrontal cortex also functions in the top-down modulation of the amygdala, and, together with the ventromedial prefrontal cortex, participates in fear extinction [8].

The dorsal emotional system, which includes the hippocampus, the dorsal anterior cingulate, and the dorsal regions of the prefrontal cortex [7], appears to function in modulating the progression of emotions with respect to contextual cues, memory, and internalized rules. In this context, an imaging study which examined whether rational reappraisal of emotions could result in attenuation of negative emotional states [9] found that reframing emotional events in unemotional terms could significantly reduce affective intensity. The neural correlates of this phenomenon began with activation of the dorsal and ventral regions of the left lateral prefrontal cortex, as well as the dorsomedial prefrontal cortex during the reappraisal procedure. Activation of the right anterior cingulate and right supramarginal gyrus was correlated with success in mitigating negative emotion. The specific neural correlates of successful emotional reappraisal involved increased activation of lateral and medial prefrontal cortices combined with decreased activation of the amygdala and medial orbitofrontal cortex [9].

Emotions play an important role in the integration of conscious and unconscious processes. More specifically, emotions provide a means for unconscious processes to influence conscious behavioral responses. Emotions evolved in parallel with consciousness, since the generation of perceptible body states is neither possible nor useful in organisms without consciousness. The behavior of organisms with limited consciousness is already controlled directly by unconscious mechanisms. Emotions, which strongly demand the attention of consciousness, arose to facilitate continued modulation of behavior by unconscious factors, even in the presence of advanced conscious processes. In humans, emotions can also be generated by conscious processes, even those that are purely intellectual. The many types of body states that can be induced by emotions, which include generalized arousal, preparation of the body for perceived challenges, and increased likelihood of certain types of behaviors, can provide significant adaptive value in the context of conscious actions. Conversely, strong emotions can also be maladaptive, and can hinder the implementation of rationally motivated behavior. Emotional dysfunctions often bring patients to psychotherapy and significantly affect the unfolding psychotherapeutic process.

The Neurobiology of Memory

Memory functions can be divided into two main categories: implicit and explicit (reviewed in [10]). Implicit memory includes the learning of habits and motor skills, various types of reflexive learning, such as operant conditioning, and fear conditioning, a process mediated by the amygdala that links fear responses to previously neutral objects. Explicit memory, which involves the recollection of locations, objects, and events, as well as their verbal descriptions, is mediated by the actions of the hippocampus.

The process of creating and recalling explicit memories can be divided into four distinct steps (reviewed in [10]):

1. Encoding, or the process by which the elements of a new memory are integrated into a coherent neural representation. Encoding binds together the multiple components of a memory, including visual, auditory, olfactory, tactile, and emotional elements, through convergence on a set of dedicated neurons. Encoding in the hippocampus appears to take place in the CA3 region, where single cells that respond to multiple types of inputs can be found [11]. Encoding requires compression of information, as multiple inputs converge onto a smaller number of encoding neurons.
2. Consolidation, or the stabilization of information for long-term retention. Consolidation requires the synthesis of proteins that modify neuronal connectivity. Memories are therefore stabilized through the translation of chemical representations into structural modifications. Consolidation is believed to involve the strengthening of the synaptic connections that bind together the various elements of a memory. Consolidation follows the principle introduced by Donald Hebb to describe how information might be stored in neural networks which states, in simple terms, “neurons that fire together wire together” (reviewed in [10]). Memories are consolidated and stored if they continue to be activated at least intermittently after they are first made.
3. Storage, or the process by which memories are retained over long periods of time. The major difference between consolidation and storage has to do with location. Consolidation of explicit memories takes place within the memory encoding regions of the hippocampal complex. For a time, these regions hold a record of the integrated memory and the “addresses” of the individual memory components (e.g., olfactory, visual, tactile) in the higher cortices. Eventually, if the memory merits permanent storage (through frequent reactivation and perceived importance), recurrent connections from hippocampal regions direct rewiring of higher cortices to represent the memory.

4. Retrieval, or the process by which encoded, consolidated, or stored memories are recalled and possibly recombined with other materials. To retrieve a memory, it is necessary to reactivate the network that represents it [1]. This can be accomplished in a number of ways:
 - Re-experiencing a sensory stimulus that is incorporated in the memory.
 - Re-experiencing another memory whose components overlap with the memory in question.
 - Re-experiencing an internal state or emotion that is incorporated in the memory.
 - Using words as symbolic “pointers” to one of the memory’s components.

Memory Representations in the Right and the Left Brain

The storage of memories in the hippocampus is not hemispherically symmetrical. The right hippocampus encodes and retrieves episodic, non-verbal aspects of memory, while the left hippocampus supports the creation of semantic, or verbal memories that involve the encoding of experience into the symbolic representations facilitated by language [10].

Left-brain memory representations are primarily symbolic, since they are based on language. This facilitates logical manipulations of the representations and permits the exploration of complex relationships among them, including intentionality, causality, meaning, and purpose. Right-brain memories, in contrast, are holistic and experiential; recalling them revisits how the experience “felt” in terms of emotions, arousal, autonomic tone, and hormonal release, although usually in a less intense manner. In some cases, the recalled right-brained memories can be uncomfortably realistic, and they are experienced as “flashbacks” and similar symptoms associated with post-traumatic stress disorder (PTSD). A functional imaging study compared brain activity in the recall of traumatic memories between individuals with and without PTSD [12]. Individuals without PTSD activated left brain regions as they recounted traumatic experiences. These included the left superior frontal gyrus, the left anterior cingulate gyrus, the left striatum, left parietal lobe, and left insula. In contrast, individuals with PTSD activated their right brains when they recounted traumatic memories. Specifically, the right posterior cingulate gyrus, the right caudate, right parietal lobe, and right occipital lobe were activated [12]. In these individuals, the right-sided representations had a distinct experiential rather than strictly verbal nature and actually included a visual component in the occipital lobe.

Neural Substrates of Memory

From an anatomical perspective, discrete networks of neural structures support the various types of memory. Implicit memories related to automatic motor sequences are thought to be stored as special programs in the basal ganglia [13]. Simple association of previously neutral objects with natural reinforcers or punishers is accomplished by the circuitry of the amygdala and orbitofrontal cortex [5]. The hippocampus and its associated structures facilitate the storage of spatial, episodic, and semantic memories. More specifically, the right hippocampus functions in the generation of episodic, non-verbal aspects of memory, including the characteristics of physical spaces, while the left hippocampus generates semantic, or verbal memories, that involve the encoding of experience into the powerful symbolic representations facilitated by language [10].

Anatomically, the hippocampus itself is divided into three regions, named cornu Ammonis (CA) 1, 2, and 3. The term “cornu Ammonis” refers to the hippocampus’ resemblance to the “horn of Ammon,” which is a ram’s horn. The hippocampal complex receives most of its inputs at three main regions, the parahippocampal, perirhinal, and entorhinal cortices. The parahippocampal and perirhinal cortices also project to the entorhinal cortex, which therefore contains the widest representation of

incoming information within the hippocampal complex. The inputs that converge on the entorhinal cortex include projections from the prefrontal cortex, cingulate gyrus, occipital lobe, superior and inferior temporal gyri, temporal pole, amygdala, and insula [14]. These projections deliver a comprehensive summary of experience, from properties of objects and their value, to perceived risk, associated emotions, and cognitive factors.

The perirhinal cortex is believed to be responsible for “recognition memory” (reviewed in [11]). It receives direct inputs from visual object areas in the inferior temporal cortex. It is also connected with the orbitofrontal cortex, to which it may provide object recognition information that can be used to drive motivational reactions to reinforcers and punishers.

Processed information from the perirhinal cortex projects to the entorhinal cortex as part of the larger information stream just described. From the entorhinal cortex, information flows into the hippocampus itself. Information first arrives at the dentate gyrus via the perforant pathway, the first of three hippocampal fiber arrays. The dentate gyrus contains sparsely connected neurons and is thought to function in the orthogonalization of informational patterns [11]. This process differentiates the arrays of neurons that represent individual data sets as much as possible to enhance later separability and minimize interference. From the dentate gyrus, the information is conveyed to the CA3 region of the hippocampus via the mossy fibers, the second of the main hippocampal fiber systems. CA3 also receives a sparse array of direct inputs from the entorhinal cortex. Encoding, or the binding together of all the elements that comprise a memory, is believed to be accomplished through the convergence of individual inputs from dentate gyrus neurons on a smaller number of “indexing” neurons in CA3, which are highly interconnected [15]. There is a significant amount of compression as information flows from the dentate gyrus into CA3. In the rat, there is almost an order of magnitude more neurons in the dentate gyrus than in CA3, and about 50 mossy fibers converge onto each CA3 neuron [11].

CA3 has also been proposed as the hippocampal component that “completes” previously encountered patterns when only parts of them are perceived [15]. This feature, which is based on the high interconnectivity of CA3 neurons, can have effects of interest to the psychotherapist, since automatic, maladaptive pattern completion could manifest itself as psychopathology. The high level of connection among CA3 neurons is thought to play a critical role in the binding of the multiple sensory, emotional, and cognitive elements that make up each individual memory [11].

From CA3, information flows through the third hippocampal fiber array, the Schaeffer collaterals, to CA1. This area of the hippocampus is believed to facilitate the encoding of spatial information that may be included in a memory [15]. Hippocampal information completes a recurrent loop as it flows from CA1 back to the entorhinal cortices via the subiculum. Information flows are somatotopically mapped, which allows the same entorhinal cells that originated a particular signal to receive the appropriate back projections [11]. From the entorhinal cortex, information spreads to the perirhinal and parahippocampal cortices, and eventually to many of the unimodal and polymodal cortices where the information originated [11].

Long-Term Potentiation

The consolidation and long-term storage of memories is believed to depend on gradual strengthening of the synaptic connections that define each encoded memory. The strengthening of these synaptic connections depends, in turn, on a process called long-term potentiation (LTP), which was originally described by Bliss and Lomo [16]. Whenever neurons in any of the three main hippocampal pathways (perforant pathway, mossy fibers, and Schaeffer collaterals) are stimulated, they become sensitized to subsequent stimulation, and the excitatory postsynaptic potentials in each pathway’s information-receiving neurons are increased. In intact animals, the sensitization, which is called long-term potentiation, can last for many days (reviewed in [10]).

Specifically, LTP induction within the hippocampus occurs in the following manner. In the perforant pathway from the entorhinal cortex to the dentate gyrus, activation of NMDA receptors in dentate gyrus cells with subsequent calcium influx plus retrograde excitatory transmission to presynaptic entorhinal cells combine to mediate LTP. In the mossy fiber pathway from dentate gyrus cells to CA3 cells, LTP is mediated by calcium influx into the presynaptic dentate gyrus cells, which is facilitated by repeated firing of these cells. LTP in the mossy fiber pathway is positively modulated by norepinephrine and is not NMDA dependent [10]. LTP induction in the Schaffer collateral pathway from CA3 to CA1 is mediated by NMDA receptor firing in CA1 cells, with subsequent calcium influx and excitatory retrograde transmission. Early phases of LTP increase the possibility of successful synaptic signal transmission without increasing the numbers of synapses or receptors. The activation sequences described previously therefore increase neurotransmission by making it more effective. Presynaptic neurons that have been activated, for example, will reliably release the maximum possible number of neurotransmitter vesicles at each synaptic event, and activated postsynaptic receptors become more sensitive to released neurotransmitter [10]. Later phases of LTP, in contrast, require protein synthesis and feature a greatly increased upper value for the possible strength of neurotransmission across the activated neurons. It is believed that this greatly enhanced level of signal transmission involves the increase of neurotransmitter release sites as well as an increase in postsynaptic receptors [10].

It is widely believed [11, 17] that encoded memories that continue to be triggered for prolonged periods (years) are eventually encoded in extrahippocampal sites. This process permits the recycling of hippocampal space by allowing weak memories to fade, while moving strong, frequently retrieved ones out of the hippocampus. Studies with non-human primates suggest that the transition from short- to long-term encoding of visual memory involves the creation of linkages in region BA 36 of the perirhinal cortex under the guidance of stored hippocampal patterns [17]. Next, through the action of back projections from the perirhinal cortex, linkages among individual memory elements are eventually created in the anterior inferior temporal cortex, which is an important area for visual object representation [17]. It has been hypothesized that this general scheme of interim memory linkage in the entorhinal and perirhinal cortices with subsequent transfer of the links to representational areas of the neocortex may be the general process by which long-term memory storage is accomplished [17].

Memory Processes and Psychopathology

The continuous projection of every modality of sensory and emotional information that is being represented in the brain onto the entorhinal cortex (reviewed in [11]) has interesting consequences. Since not all of the projected information may reach consciousness, it is theoretically possible to encode memories that contain unconscious components linked to conscious elements. Such a memory would theoretically be retrievable by representing either the conscious or unconscious components, since they would be bundled into a single memory representation. Reactivation may eventually allow some of the memory's unconscious components to become discoverable. In addition, each time a memory is reactivated, it is possible to link new components to it that were not part of the original encoding. It is even possible to create memories in the present that are attributed to the past, and this has been accomplished experimentally [18]. These mechanisms form the basis for the "recovery" of false memories.

The process of orthogonalization in the dentate gyrus, which allows the differentiation of memories which contain similar elements, gives rise to many interesting possibilities from the viewpoint of psychotherapy. Granule cells in the dentate gyrus are embedded in a matrix of inhibitory interneurons [11]. This arrangement ensures the sparseness of representations in this layer by permitting strongly activated neurons to inhibit less activated neighbors.

Theoretically, the number of available dentate gyrus cells should determine the precision with which memory patterns that contain similar elements can be encoded [19]. Experimental work has supported this hypothesis. Dupret et al. [20], for example, developed double transgenic mice whose neural precursor cells could be killed selectively through induction of the pro-apoptotic Bax protein. Mice with experimentally ablated adult-born dentate gyrus neurons had significant impairments in "...spatial relational memory, which supports a capacity for flexible, inferential memory expression. In contrast, less complex forms of spatial knowledge were unaltered." The authors concluded that their findings "...demonstrate that adult-born neurons are necessary for complex forms of hippocampus-mediated learning" [20]. The availability of adult-born neurons in the dentate gyrus, which appear to be critical for complex hippocampal-based learning, depends, in turn, on the level of dentate gyrus neurogenesis, which increases in enriched environments [21] and wanes in times of stress [22]. The enriched environment experiment mentioned earlier involved housing rats in "a large box (1.5×0.8×0.8 m) containing various toys, wooden blocks, climbing platforms, plastic tubes and small houses." The items in the box were rearranged daily to encourage exploration. A running wheel, which has been included in other similar experiments, was not used to eliminate the possible confounding influence of additional exercise.

The ability to support high memory discrimination in favorable times while promoting enhanced generalization in times of stress should have significant adaptive value, but also some drawbacks. The cessation of dentate gyrus neurogenesis and hippocampal shrinkage that result from chronic stress [23] should lead to faster responses to threatening stimuli by decreasing the complexity of encoded memories. On the other hand, as discriminative capabilities decrease, ever-increasing numbers of non-threatening stimuli could also activate specific threat reactions as a result of overgeneralization. Animals in the wild and soldiers in the field, for example, would react faster and differently to movements in the leaves than someone having a picnic in the park. When soldiers return from war, they have to make a potentially difficult readjustment to the higher complexity of life in peacetime, in which not every loud noise or sudden movement is likely to have rapid and deadly consequences.

Experiments with rats with dentate gyrus damage have confirmed that such lesions cause significant impairment in differentiating between closely spaced spatial cues [11]. In addition, genetically engineered mice with deficient dentate gyrus neurogenesis showed that it was easier to achieve contextual and cue-based fear conditioning in these animals [24]. These results provide experimental support for the hypothesis that dentate gyrus deficits inhibit the ability to represent complexity and, therefore, can lead to increased simplification and generalization. Such deficits would be expected to improve performance in simple discriminative tasks, while yielding poorer performance in more complicated problems. Limitations in dentate gyrus capacity have also been hypothesized to underlie the "black and white thinking," or overgeneralization, that characterizes borderline personality disorder [2], a condition that has been associated with hippocampal atrophy. A number of animal experiments [25] suggest that at least some of the behavioral effects of antidepressants may be mediated through enhanced neurogenesis in the dentate gyrus.

In view of the mechanisms described, memory formation represents far more than a simple method of information storage. It is, in fact, a method for wiring the higher cortices on the basis of important experiences. In this context, a commonly used animal model of schizophrenia involves damaging the hippocampus neonatally [26]. This procedure adversely affects subsequent organization of the prefrontal cortices and generates a state of hypofrontality that mimics many schizophrenic deficits. It has been hypothesized that the experiences that are used to direct cortical rewiring must have persisted within the hippocampal complex for several years [11], a requirement that would prevent relatively trivial organizing principles from being incorporated into the cortex. The hypothesis is based on reports of patients who have undergone bilateral temporal lobectomies for epilepsy. In these cases, no new hippocampal-based memories can be stored, and a relative retrograde gradient of memory impairment can be detected, in which only older memories are fully recalled, and more recent memories are lost to a degree that is inversely proportional to their age (reviewed in [10]).

From the perspective of psychotherapy, two critical points should be emphasized with respect to memory. First, memory systems provide continuous access to many levels of information acquired by the individual during his or her lifetime. However, memories can be modified continuously, and the details reported about a memory at an arbitrary time may differ considerably from the original experience. Second, and perhaps most importantly, the brain's memory system directs the creation of specialized processing circuits within the brain, as it binds the elements of memory into cohesive networks during the transition from consolidation to long-term storage. The identity of each individual and his or her individualized patterns of information processing are determined, to a large extent, by the memories that have been transferred to long-term storage.

The consolidation of memories is facilitated by emotional arousal. Memories that have a high emotional content are encoded and consolidated more efficiently than those that are emotionally neutral [27]. This requires the action of the basolateral amygdala, which can enhance memory processes by promoting the release of facilitatory neurochemicals such as norepinephrine and acetylcholine [27]. In pathological states such as depression, sustained activity of the amygdala can maintain a steady flow of negative emotions which can adversely influence memory systems [28].

The Default Mode of Brain Function

Mesulam [29] introduced the concept of the “default mode of brain function” to describe behavior that is driven by basic rather than higher cortical circuits. It is important to distinguish Mesulam's concept, which is based on evolutionary considerations, from the more recent conceptualization of the brain's “default network” [30], which refers to “...a specific, anatomically defined brain system preferentially active when individuals are not focused on the external environment” [30]. The default network is active “...when individuals are engaged in internally focused tasks including autobiographical memory retrieval, envisioning the future, and conceiving the perspectives of others” [30]. The putative components of the brain's default network include the ventral medial prefrontal cortex, the posterior cingulate/retrosplenial cortex, the inferior parietal lobule, the lateral temporal cortex, the dorsal medial prefrontal cortex, and the hippocampal formation [30]. As discussed elsewhere in this chapter, the hippocampal formation and lateral temporal cortex support explicit and spatial memory functions, while the dorsal medial prefrontal cortex supports executive functions, reasoning, problem solving, and contemplation of the future. In addition, the medial prefrontal region facilitates the use of memory information for the construction of mental simulations involving the self, and the posterior cingulate is an integrative area that has been found to be active when conceiving other peoples' thoughts (reviewed in [30]). The inferior parietal lobule represents the final node in the default network and is believed to play a role in spatial attention, multimodal sensory integration, and oculomotor control [31].

In the context of psychotherapy, some of the most important hypothesized functions of the default network include support of internal mentation, including the construction of dynamic simulations that are based on memories and involve the self, thinking about the future, and imagining possible alternatives to present circumstances. Alternatively, it has also been hypothesized that the default network may support surveillance of the external environment for unexpected events when focused attention is not directed externally [30]. The concept of the default network is an evolving conceptualization of the processes that occur within the brain when attention is not focused on external objects, and it has important implications with respect to psychotherapy, since its postulated functions can be involved in both the development of psychiatric illness and in the psychotherapeutic process itself.

Returning to Mesulam's conceptualization of the default *mode* of brain function, it is clear that his functional parameters describe the actions of the most primitive parts of the human brain,

without the benefit of the inhibitory and reflective overlays provided by the prefrontal cortices. These primitive functions can meet basic survival needs through simple stimulus–response associations, but cannot support the complex social interactions and problem solving that are required for success in modern sociocultural settings.

From a simple biological perspective, adaptive behavior has four major components: homeostasis, acquisition and conservation of energy, avoidance of injury, and facilitation of reproduction. To accomplish these tasks, the brain integrates data from internal and external sensors, modulates bodily processes, and coordinates the pursuit of resources in concert with risk assessment and internal needs. As Mesulam emphasizes, the brain’s default mode is focused on the here and now and has limited capacity to consider context, projected repercussions, or visions of the future. The default mode of brain function is driven almost exclusively by internal appetitive urges and by salient external stimuli. In other words, the major drivers of default brain function include the brain’s reward circuits, as well as networks that control physiological functions such as eating, drinking, and sleeping, and the amygdalar–orbitofrontal circuits, which can detect both potential risk and reward. These circuits influence behavior by focusing attention on objects of interest and generating appropriate emotional states. Core motivational circuits require minimal information processing in the interval from stimulus to response and are efficient at the cost of limited functionality, heightened impulsivity, and low capacity for addressing novelty or complexity.

Analyses of normal brain development and the deficits of brain-injured patients have shown that the default brain function that Mesulam describes is at the core of every human being. A lifetime of training and experience, however, creates many “overlays” that modulate the actions of the default brain and define behavioral patterns with expanded adaptive value. In humans, the overlays that facilitate social and occupational functioning, creativity, problem solving, and future orientation depend on the function of the prefrontal cortex.

The development of advanced brains that can transcend appetitive urges and satisfy more complex demands was motivated by significant evolutionary pressures. The unrestrained pursuit of salient stimuli to serve internal urges is not adaptive in a world filled with danger. In addition, the ability to postpone gratification on the basis of context is essential to the development of social groups. For example, the lowest animals in a social hierarchy must wait to eat until more dominant members of the social group are sated. To make such advanced behaviors possible, special circuits evolved to modulate the internal urges and narrow external focus that are induced by the reward system. These circuits, whose major components are located in the prefrontal cortex, promote the pursuit of reward in a manner that is consistent with contextual considerations, learned rules, and a vision of the future [29]. Clinical work with brain-injured patients, animal experimentation, and functional brain imaging has defined both the general circuits that drive default brain function and those of the overlays that support higher levels of complexity and adaptability.

Adaptive Circuits of the Prefrontal Cortex: Ego, Superego, and Id

The term prefrontal cortex refers to the region of the brain directly in front of the premotor and motor strips. In humans, the prefrontal cortex permits the consideration of an expanded set of variables before the initiation of actions [29]. It coordinates adaptable, goal-directed behavior that considers internal and external circumstances, memory, applicable rules, and projected consequences.

Functional and anatomical considerations have demonstrated three distinct circuits in the prefrontal cortex that modulate complex behavior. The oculomotor circuit, which controls automatic eye movements, is a fourth prefrontal network that will not be discussed here. All the prefrontal circuits have nodes in the thalamus, cortex, basal ganglia, and globus pallidus/substantia nigra pars reticulata [32, 33]. The circuits are somatotopically mapped, which defines numerous independent

“channels” through each circuit component [32]. Under normal circumstances, thalamic circuitry is tonically inhibited by the globus pallidus. This inhibition can be removed for selected channels through the action of the basal ganglia, which can suppress default pallidal inhibition. Self-excitatory loops that sustain representations of interest in the brain can therefore be activated selectively. Because of their unique components, these circuits are given the general name of thalamocortico-striatal circuits.

The first thalamocortico-striatal circuit passes through the dorsomedial thalamus, the cingulate gyrus, the ventromedial caudate, and the nucleus accumbens. This circuit modulates the function of the rostromedial and ventral globus pallidus, which under normal circumstances continuously inhibit the dorsomedial thalamus [32]. When the circuit is activated, it relieves the inhibition of specific thalamic channels, enhancing selected cortical representations. This circuit is primarily involved in the motivation of goal-directed actions. The cingulate gyrus is a heterogeneous area with specific processing modules for emotion, cognition, sensation, and movement [34]. Important functions of the cingulate include the motivation of appropriate responses to internal and external stimuli, emotional-cognitive integration, “attention for action,” motor preparation, and conflict monitoring [34].

The cingulate carries out these functions by triggering body states that focus attention on internal and external demands and motivate appropriate action. It generates emotional motivation through its projections to autonomic, visceromotor, and endocrine systems [35], and is an important component of reward circuitry through its connections with the nucleus accumbens. The cingulate receives cognitive data from the dorsolateral prefrontal cortex [36] and facilitates emotional-cognitive integration by generating emotional states appropriate to cognitive contents [35]. This is an important function that can provide the motivation for actions that are driven by abstract representations, such as postponing pleasurable activities to study for an exam. Conversely, the cingulate gyrus, which has rich connections to other limbic structures, conveys emotional information to the dorsolateral prefrontal cortex for cognitive processing. Damage to the cingulate gyrus can result in a state of apathy in which responses to internal and external stimuli are significantly diminished [32]. At the extreme, severe cingulate damage results in “akinetic mutism,” a state with little spontaneous movement or speech [32].

The cingulate can organize “attention for action” by modulating arousal, motivation, autonomic tone, and attentional focus to drive behavioral responses that address the most salient internal or external stimuli [34]. Cingulate gyrus-nucleus accumbens circuitry figures prominently in addictive states. The cingulate gyrus is also thought to generate the autonomic tone necessary to support many types of movements, and it signals behavioral conflicts by increasing arousal and autonomic tone [35].

The second thalamocortico-striatal circuit passes through the ventral anterior and dorsomedial thalamus, lateral orbitofrontal cortex, ventromedial caudate, and dorsomedial globus pallidus and substantia nigra pars reticulata [32]. The latter two structures tonically inhibit the thalamus, and this circuit, when activated, can relieve the inhibition of selected thalamic channels. The lateral orbitofrontal circuit modulates the pursuit of reward by adding considerations of risk, context, and potential consequences to the behavioral equation. These are critical elements in the generation of adaptive behavior in occupational and social settings. The lateral orbitofrontal cortex can provide motivational forces that are based on higher-level principles and which can counterbalance the attraction of potential rewards whose pursuit would be inappropriate in the current setting.

The medial orbitofrontal cortex is reciprocally connected to the amygdala, and both act in concert to generate emotional states relevant to the pursuit of reward and avoidance of risk. Both orbitofrontal cortex and amygdala receive a rich set of inputs from all five sensory cortices, as well as from the insula. These define comprehensive views of both internal and external milieus. The inputs come primarily from downstream regions of the unimodal cortices, and therefore the information is probably at the whole object rather than the individual feature level [36]. In addition, sensory inputs are relatively blended, and provide multidimensional views of the environment. The amygdalar projections target specific sites in the orbitofrontal cortex that receive equivalent sensory inputs, and this arrangement may allow the orbitofrontal cortex to extract the emotional significance of sensory

events [36]. Both amygdala and orbitofrontal cortex ignore neutral sensory inputs with no implications of risk or reward and stop responding to any inputs that lose their motivational value [36].

Barbas et al. [36] have elucidated the layout of orbitofrontal–amygdalar circuitry through experimental work with non-human primates. The amygdala can exert both inhibitory and stimulatory influences on hypothalamic autonomic nuclei. The central nucleus of the amygdala normally inhibits the hypothalamic nuclei, while the basolateral nucleus stimulates it. The orbitofrontal cortex can suppress autonomic centers through stimulation of the amygdala’s central nucleus [36]. Activation of this nucleus causes autonomic inhibition. The opposite result, autonomic activation, can be achieved by the orbitofrontal cortex through stimulation of the intercalated masses of the amygdala. This diminishes the default inhibition of hypothalamic nuclei by the amygdala’s central nucleus [36].

Functionally, the orbitofrontal cortex induces anticipatory body states that promote reward seeking, as well as aversive body states that reduce the likelihood of risky actions [32]. The orbitofrontal cortex probably evolved to prevent injury in the pursuit of reward, to facilitate behavioral restraint by animals at lower levels of the social hierarchy, to promote the preferential pursuit of low-risk rather than high-risk rewards, and to inhibit pursuit of contextually inappropriate rewards, such as seeking food when sated. Humans with orbitofrontal cortex damage usually demonstrate personality changes that include high impulsivity, social inappropriateness, explosive behavior, disregard for rules and consequences, and the inability to use aversive emotions to inhibit risky behavior [32].

The third behavioral circuit of the prefrontal cortex is the dorsolateral prefrontal circuit, which modulates executive functions. This circuit passes through the ventral anterior and dorsomedial nuclei of the thalamus, the dorsolateral prefrontal cortex, the dorsolateral caudate, and the dorsomedial globus pallidus and substantia nigra pars reticulata. In similar fashion to the other two circuits, the dorsolateral prefrontal circuit can relieve tonic inhibition of selected thalamic channels.

The dorsolateral prefrontal circuit is essential for many of the intellectual functions that are most valued by humans. These include organization, problem solving, working memory and memory retrieval, self-direction, the ability to address novelty, and the use of language to guide behavior [32]. Without the dorsolateral prefrontal cortex, the ability to problem-solve that underlies the highest levels of human achievement completely vanishes. Behavioral organization becomes very coarse, and the ability to think abstractly disappears. The function of this cortex is highly correlated with standard measures of intelligence, and, in its absence, a default mode of brain function that relies on habits becomes apparent. Individuals with dorsolateral prefrontal damage become uneasy in novel settings and situations and prefer to live day to day in a repetitive series of well-rehearsed routines. Any deviation from the familiar can cause great distress, since the individual is not likely to succeed in situations that demand analysis, creativity, or self-direction [32].

The dorsolateral prefrontal cortex, like the orbitofrontal cortex, receives a variety of sensory inputs, although these are primarily from visual, auditory, and somatosensory cortices [36]. The frontal eye fields receive low-level visual information with a degree of detail that rivals what is found in the visual unimodal cortex [36]. Sensory information is less integrated in the dorsolateral cortex than in the orbitofrontal cortex, possibly facilitating more detailed analysis of specific stimuli [36].

In summary, individuals with damage to the dorsolateral prefrontal cortex have difficulty organizing behavior to meet internal or external demands and perseverate in their thoughts and speech. Decision-making is impaired, and there is a strong tendency to be drawn toward objects and situations with high salience, even if the interaction is contextually inappropriate. These individuals often engage in utilization behavior, which is the indiscriminate handling of any salient object encountered. They have significant difficulty with problem solving and are unable to address novelty [32].

Sigmund Freud defined ego, superego, and id to separate three functional components of the mind whose interactions, in his estimation, were central drivers of human behavior. Whether or not one agrees with Freud’s theoretical constructs, the neurobiology that motivated his basic conceptualizations is apparent. The continuous tension between unconscious appetitive urges and more advanced control circuits that characterizes Freud’s vision has a definable origin in neural circuitry.

The dorsolateral prefrontal circuit strongly resembles the Freudian ego. It facilitates executive functions such as integration of perceptual information, problem solving, and decision-making [32, 33]. Imaging studies have also shown that the dorsolateral prefrontal cortex, possibly in conjunction with the cingulate gyrus, plays a key role in the suppression of unwanted memories [37].

The manifestations of the id are in great part embodied in the cingulate gyrus-nucleus accumbens circuitry. This circuit, which receives modulation from the amygdala, amplifies signals that suggest the attainability of reward and generates body states that motivate pursuit of potential pleasures. In the presence of remembered cues, this circuit can generate overwhelming motivational pressure to engage in reward-producing behavior, as is the case in chemical dependence.

The functions of the superego are implemented by the lateral orbitofrontal circuitry, combined with the risk-avoidance function provided by medial orbitofrontal-amygdalar circuitry. The lateral orbitofrontal network evolved to temper the pursuit of pleasure with considerations of context and risk. To accomplish this task, orbitofrontal-amygdalar circuits project to autonomic centers and can generate body states conducive to disengagement and withdrawal. The actions of these circuits set limits on risk-taking and can give rise to visceral feelings that signal potential punishment or embarrassment.

As this brief review of the prefrontal circuits indicates, it is the specialized capabilities of these neural networks that make humans unique. It is possible to live without the prefrontal cortices, but it is impossible to succeed in any but the simplest endeavors without them. Psychiatric patients show various degrees of prefrontal dysfunction. In some, the dysfunctions are transient, while in others it is permanent. It is important for the psychotherapist to assess the functionality of prefrontal circuitry through observation and self-descriptions of patient behavior.

The prefrontal cortices facilitate all the higher social and intellectual functions. Without these cortices, human behavior coarsens, and focuses on obtaining reward in the here and now, without regard for past and future, and with little consideration for context or social propriety. As the study of patients with frontal lobe injuries indicates, the evolutionary addition of the prefrontal cortex and its advanced, adaptive circuits did not replace default mode functions, but merely overlaid them. At any moment, special circumstances or psychiatric illness can lay bare the brain's functional core, releasing behavioral responses that may be useful in emergent circumstances but will be maladaptive in normal sociocultural settings.

While the changes required to transcend default mode are being implemented, the developing brains of children are vulnerable to abuse or neglect. First, the traumatic circumstances themselves can lead to structural changes as the child's brain seeks to adapt to trauma [38]. Such changes are likely to be maladaptive when the child is eventually re-integrated into a normal setting. In addition, the frontal cortical overlays that are essential for transcending the inflexibility and impulsivity of default brain mode [29] may never develop. An essential component of these overlays is the incorporation of a variety of abstract rules to govern behavior, and these have to be taught. Abused and neglected children are also likely to develop deficits in their social cognition circuitry, with serious functional consequences in complex social settings.

The Unconscious

Brain imaging technology has not only confirmed the existence of unconscious mental processes, but has made it possible to begin to map the anatomical substrates on which unconscious processes unfold. Viamontes and Beitman [39] have proposed a provisional, five-tiered classification for unconscious processes that will facilitate the development of explicit correlations between anatomy and function. Level 1 processes organize homeostatic functions, automatic actions, and stereotypic behaviors. Level 2 processes modulate the intensity of engagement with the environment and its

objects. Level 3 processes govern interactions with primary rewards and punishers, which are encoded in the genes. Level 4 processes define unconscious reactions to secondary rewards and punishers, which have been learned. Level 5 processes are strictly interactive and control reactions to the appearance, movement, verbal outputs, and facial expressions of other persons.

Level 1 unconscious processes take place within the brainstem, basal forebrain, and hypothalamus [40]. Most of the body's homeostatic processes are unconscious. This is highly adaptive, since homeostasis is accomplished rapidly, accurately, and without taxing the resources devoted to conscious endeavors. In addition to a variety of psychiatrically trivial homeostatic processes, the brainstem, basal forebrain, and hypothalamus also support a number of body states involved in psychopathology. The outputs of these regions impact the physical state of the organism and include the actions of the well-known hypothalamic–pituitary–adrenal axis. These systems control such critical functions as heart rate, respiration, arousal, and autonomic tone. The functional pathways that coordinate the main outputs of level 1 unconscious processes are also used as outputs by a variety of other circuits, including the amygdala, the orbitofrontal cortex, the ventromedial prefrontal cortex, and the subgenual cingulate [36]. Inappropriate activation of level 1 pathways can cause pathological states of anxiety, anger, and fear.

Level 2 processes control the intensity of environmental interactions. They include the action of arousal and sleep centers in the brainstem, as well as the status of serotonin, norepinephrine, acetylcholine, and dopamine receptors throughout the brain, combined with the dynamic modulation of corresponding neurotransmitters. In addition, type 2 processes include such specialized reactions as the sickness response, which is mediated by cytokines, and a variety of systems for brain energy modulation. The latter are exemplified by the adenosine system, which produces lethargy when the brain has used a large amount of ATP. Caffeine rapidly blocks brain adenosine receptors after ingestion, a phenomenon that underlies the popularity of coffee.

Level 3 unconscious processes organize reactions to primary, or genetically encoded rewards and punishers [5]. The major nodes in the network that mediates these responses are the amygdala and the medial orbitofrontal cortex [5]. Both regions receive a rich selection of sensory inputs, share numerous reciprocal connections, and jointly modulate hypothalamic autonomic centers [36]. Both the amygdala and medial orbitofrontal cortex contain neurons that respond specifically to natural rewards and punishers [5]. In a sense, they act as a coupler that ties recognition of the primary reinforcer to the somatic state that has been genetically preprogrammed as a response. Primary reinforcers are limited to certain tastes and smells, pleasant touch, and possibly selected visual stimuli such as smiling human faces [5]. Human babies, for example, like sweet tastes from birth and do not have to learn this response [14]. Primary punishers that are genetically pre-wired include unpleasant tastes and odors, painful somatosensory stimuli, and possibly loud noises and angry or frightened human faces [5].

Encountering a positive primary reinforcer activates a genetically preprogrammed body state that increases the probability of engaging and eventually acquiring the reinforcer. This body state can include neurotransmitter and hormone release, the deployment of stereotypic movement sequences (e.g., suckling reflexes in a newborn), and autonomic arousal. In a similar manner, the amygdala and orbitofrontal cortex mediate rapid reactions to avoid primary punishers. For example, a common reaction to an unexpectedly bitter taste would be to spit the substance out, a stereotyped behavior that might prevent accidental poisoning. The basic states that are induced in encounters with primary rewards and punishers are the foundation of emotions [5].

The neural mechanisms for responding to learned reinforcers and punishers, or level 4 processes, are particularly important from a clinical perspective. Many categories of psychopathology involve the learning of inappropriate responses to previously neutral stimuli. In addition to mediating responses to primary reinforcers, the amygdala and orbitofrontal cortex can also mediate responses to simple objects that have become associated with intrinsic rewards or punishers. However, humans react not only to objects, but to verbal and cognitive content, as well as to imagined events.

The hippocampus and associated structures are important in organizing responses to complex stimuli that require remembered information and transcend the simple perception of objects.

Bechara et al. [41] have hypothesized that the brain contains two main systems for responding to reinforcers in the environment: an impulsive system that generates somatic states in reaction to primary reinforcers and a reflective system that generates similar states from secondary reinforcers. An important difference between the two systems is that the first one generates somatic states directly via amygdalar activation of autonomic centers in the hypothalamus and brainstem, whereas the second uses pathways through the ventromedial prefrontal cortex (including the orbitofrontal cortex and subgenual cingulate) to activate the same autonomic centers. The latter pathway is able to engage high-level cognitive circuits before it generates an output.

The ventromedial prefrontal cortex is an integrative area that can access memories of previous instances of simultaneous firing in sensory and limbic structures. If a sensory pattern is repeated, its remembered limbic correlate is triggered automatically to recreate the specific somatic state that has been associated experientially with the perceived object [41]. Secondary reinforcers, therefore, are created during learning by attaching the somatic state pattern that normally accompanies a primary reinforcer to a previously neutral object.

In normal interactions with the environment, encounters with reinforcers induce parallel processing in rapidly responding, unconscious systems such as the amygdala, as well as in slower, more future-oriented areas such as the ventromedial prefrontal cortex. The system that is amplified most intensely in any given situation will control behavior. Adaptive functioning in social settings demands attenuation of the impulsive tendencies that arise when perceived reinforcers are coupled with motivational body states and the tempering of these primitive impulses with considerations of the future. Impulse control is a complex process that involves, in part, comparing the somatic state generated by exposure to a reinforcer with a second somatic state generated by neural simulation of the contemplated action with respect to the reinforcer. This internal simulation has been called an “as-if-body-loop” by Damasio [42] and Bechara et al. [41]. The tempering of initial impulses by the simulation of as-if-body-loops is essential for social organization, and it also inhibits the pursuit of potential rewards associated with high risk. Bechara further refines the definition of impulse control by distinguishing between motor impulse control, in which impulsive movements are inhibited, and perceptual impulse control, which facilitates contextually appropriate attentional shifts. Studies of motor impulse control have demonstrated that the critical region that inhibits impulsive motor reactions is the posterior region of the ventromedial prefrontal cortex, including the anterior cingulate. Perceptual impulse control, which allows attentional shifting on command, is provided by the lateral orbitofrontal and dorsolateral prefrontal cortical regions [41]. If unconsciously generated impulses are successfully inhibited, decision-making with consideration of many variables, including future consequences, takes place in the anterior regions of the ventromedial prefrontal cortex, specifically within the frontal pole and Brodmann Area 10 [41].

Type 5 unconscious processes, which mediate social functioning, have significant impact on behavior and are an important factor in psychopathology. In addition, an understanding of these processes is of critical importance for the psychotherapist. Living in social groups has been a highly adaptive strategy for the human species, and millions of years of natural selection have refined the tools necessary for success in the social setting.

Brothers [43] defined social cognition as “...the processing of any information which culminates in the accurate perception of the dispositions and intentions of other individuals.” Social cognition has a number of components. First, human expressions are genetically encoded; therefore, it is reasonable to assume that the ability to interpret facial expressions is genetically encoded also and does not have to be learned. In addition to preprogrammed recognition networks, humans also have the ability to model the movements of others in their own brains to determine meaning. Finally, the ability to reason abstractly allows humans to make “theory of mind” interpretations, in which an observer attempts to guess the mental contents of another person.

Adolphs [44] reviewed the basic processing sequence involved in social cognition, and the following account is based on that review. The coarsest level of visual perceptual processing, which directs ocular saccades, takes place in the superior colliculus and associated regions. The structural processing of faces appears to be accomplished in the fusiform face area in the human extrastriate cortex. This region is selectively activated when humans view faces [45]. The fusiform face area is essential for determining identity from facial features and for subsequently linking known faces with pertinent memories.

One of the front line processors of observed facial emotions is the amygdala. The amygdala appears to contain pre-wired programs for the recognition of negative facial emotions, especially fear [46]. In addition to the amygdala, the orbitofrontal cortex, which is richly interconnected with the amygdala, plays a role in facial emotion recognition and has been shown to react to angry faces [47]. Faces which are judged to be attractive activate the ventral striatum and orbitofrontal cortex [44]. Evaluation of facial expression and inference of the observed person's motivation is therefore carried out in the amygdala, orbitofrontal cortex, and ventral striatum. The latter regions are also able to generate autonomic responses in the observer as the emotions of others are evaluated. This can prepare the observer to react to the perceived emotions. Several cortical regions in the right hemisphere have also been implicated, through lesion studies, in the recognition of emotions [44]. They include the S-I somatosensory cortex (Brodmann areas 1–3), the insula, and the left frontal operculum (Broca's area, or Brodmann areas 44 and 45).

Additional information about the recognition of gestures, as well as inferences about goal directedness and mental state attribution, is developed through processing in the superior temporal sulcus [48, 49]. The mirror neuron areas in the frontal operculum (Brodmann Area 44) and in the anterior part of the posterior parietal cortex provide the ability to infer the meaning of actions by modeling them in the observer's brain. The cingulate gyrus, hippocampus, and basal forebrain modulate attention and engagement and facilitate the recruitment of memories. Finally, the ventromedial prefrontal cortex, including the orbitofrontal cortex and anterior cingulate, are essential for making social and moral judgments and for generating appropriate somatic states [44].

The Psychotherapeutic Process

The Therapeutic Alliance

The working alliance between therapist and patient is a critical determinant of psychotherapeutic success [50]. During therapy, personal interactions between participants activate cognitive and emotional circuits, and therapist and patient will experience many spontaneous reactions to one another as therapy unfolds. One of the most important elements of the therapeutic alliance is empathy. Several studies have demonstrated a positive correlation between patient-perceived therapist empathy and therapeutic outcome (reviewed in [51]).

A study of the physiologic correlates of perceived therapist empathy has been published [51]. The experimental design involved simultaneous measurement of skin conductance, which is a measure of sympathetic arousal, in 20 therapist–patient pairs during psychodynamic psychotherapy sessions.

To clarify the significance of the skin conductance measurements, patients completed the Barret-Lennard Relationship Inventory Empathic Understanding Sub-Scale, a 16-item instrument that evaluates patient perceptions of therapist empathy [52]. The results were consistent with the hypothesis that shared episodes of autonomic activation, as identified by simultaneous increases in skin conductance of both patient and therapist, correlated significantly with perceived therapist empathy.

An important feature of empathy is that it is a mutual acknowledgement of a shared moment of emotional understanding. Someone is empathic if he “knows” how I feel. Carr et al. [53] described

the putative neural circuits by which humans are able to understand emotional expressions in others and develop empathy, which is in essence a sharing of emotion. Functional brain imaging was obtained while subjects either observed or imitated emotional expressions in pictures of human faces. Similar neural circuits were activated during both observation and imitation of emotion, with stronger activation during imitation. Specifically, increased activation was observed in premotor and frontotemporal areas, in the amygdala, in the anterior insula, in the face region of the pre-supplementary motor area, in the rostral cingulate face area, in the frontal operculum, and in the superior temporal sulcus. Additionally, during the imitation of observed emotions, the mouth region of the primary motor cortex was activated.

Activation of the amygdala during emotion observation and imitation is consistent with its postulated role in the assessment of emotional expression in the faces of others. The superior temporal sulcus has been shown in a number of studies to be active during action representation (reviewed in [49]). The premotor cortex, rostral cingulate, and pre-supplementary motor area, together with the frontal operculum and frontotemporal area, appear to be parts of complex circuitry that facilitate the understanding of observed actions and emotions by representing them in the observer's own brain. The observer is able to understand what is observed by "trying it out" in his or her own brain. The frontal insula, which is activated during both the observation and the imitation of emotions, is believed to provide a link between action representation systems and the emotional content of the limbic system [53]. In addition, the insula represents the observer's own changing body state as observed emotions and actions are internally represented. The regions that are activated during emotional observation and imitation show considerable overlap with the mirror neuron system originally described by Rizzolatti et al. [54], which facilitates an understanding of bodily actions. As the therapist works toward engagement, a key task is to be able to "model" the patient's situation internally, within the therapist's own neural circuits.

Another important neurobiological phenomenon with relevance to formation of the therapeutic alliance has been described. Release of oxytocin during interpersonal exchanges appears to play an important role in the establishment of stable relationships, since it promotes a feeling of trust and enhances the ability to accurately interpret the emotional signals of others [55]. Exogenous oxytocin, which can be delivered as a nasal spray, has been tried as an adjunct to exposure therapy in the treatment of social anxiety disorder [56]. In a limited, double-blind experiment, administration of oxytocin improved mental representations of self following exposure therapy, but did not affect overall therapy outcomes [56].

Successful therapeutic engagement, which includes the development of trust in the therapist as well as a lessening of the patient's inhibitions with respect to self-disclosure, is an important prelude to the subsequent aspects of psychotherapy. In some situations, an alliance is formed almost instantly. In other cases, it requires arduous therapeutic work. In the most difficult cases, or in cases in which therapist and patient are incompatible, a therapeutic alliance may never form at all. Ideally, engagement culminates in the development of a therapeutic alliance, and, with this important foundation in place, the psychotherapeutic process can unfold in a favorable environment.

Neural Substrates of Adaptive Change

Until recently, psychotherapy has not been correlated with specific neural changes, because the technology that could define such a linkage was not available. Instead, psychotherapeutic processes have been validated according to impact on subjectively experienced internal states as well as behavior, which are indirect manifestations of neural changes. The modern conceptualization of psychotherapeutic action, however, asserts that in order to affect internal states and behavior, psychotherapeutic interventions first have to change neural contents, connections, or the amplification

of specific brain circuits through top-down manipulations. These alterations in the brain's structure and function are in turn the physical substrate that underlies behavioral improvements.

The primary tools with which a therapist precipitates adaptive change in the brain are words. At first, this might be difficult to conceptualize. However, words are wielded routinely by psychotherapeutic experts as refined tools that can probe and adjust brain organization, albeit indirectly. In a sense, words are special pointers that can refer not only to all the objects and events encoded within the brain, but also to their subjective value, and to all the connections within which they have become entangled during an individual's lifetime.

Theoretically, in order to treat a patient, a therapist must first create a "virtual" model of the patient's cognitive and affective organization within his or her own brain. This involves not only cognitive and symbolic analysis of facts learned from the patient, but also "trying out" some of the patient's emotional expressions and actions in order to understand them. This occurs automatically as the therapist observes the patient's actions and emotional expressions and they are replayed within his or her own neural circuits. As the virtual representation of the patient's mind is refined, strategies for changing its organization through the use of language can be formulated according to the practical rules of the therapist's theoretical school. At present, most therapists' understanding of their patients' psychic structures cannot be articulated in neurobiological terms due to a lack of the necessary studies. However, the data that will make this possible are already accumulating.

Neurobiology supports the concept that the problems facing patients are specifically rooted in subjective reality, and not necessarily in objectively verifiable circumstances. The substrate that the brain uses for evaluation is not the external world, or even its direct physical properties. Instead, the brain internalizes peripheral sensory data, and edits them according to internal rules, using subjective content to fill "gaps" and resolve discrepancies. The "meaning" of this composite map is defined by existing feature detectors and their connections, by cognitive and emotional processing, and by prevailing internal states. Representation is the first level of information processing at which malfunctions can cause psychopathology. Brains that have developed under conditions of neglect or abuse may not possess adequate numbers or types of feature detectors, since exposure to sociocultural information may have been inadequate, and chronic stress is associated with brain simplification, including loss of cells and neuronal dearborization [23]. Such modifications can save energy and decrease response time at the cost of diminished powers of discrimination. In this context, the psychotherapist should be aware that basic experiential concepts such as empathy, happiness, and love might not be adequately represented in a patient's brain. Without such representation, the words that name these concepts have no meaning, and the body states that normally accompany these experiences will not be elicited.

Memory symptoms are common among individuals in psychotherapy. Fuster's [1] concept of phyletic memory can be extended by adding to it sociocultural and idiosyncratic memories [2], which are acquired through the individual's cultural activities and personal experience. Individuals with faulty phyletic memory have serious problems that may be difficult to treat, since they have deficiencies in basic representational or processing capabilities. Individuals with dysfunctional sociocultural memories may never have assimilated the basic knowledge and behavioral rules that are necessary for success in occupational and social settings. Dysfunctional idiosyncratic memories, especially when based on traumatic experiences, can cause significant behavioral problems because their conscious or unconscious recollection can result in explosive emotional amplification. In addition, such memories can contain associational patterns that precipitate interpersonal difficulties. Finally, it is also possible that excessive compression of memories, or the filtering out of many of the details that normally differentiate experiences, can lead to "black or white" thinking, which engenders numerous perceptual and social problems [2].

The prefrontal circuits described earlier, which support adaptive behavior by making it possible to consider many variables before responding to a stimulus, are important targets for the psychotherapist. First, dorsolateral prefrontal circuitry must be enlisted in order to use words as tools for

shaping behavior. This circuit is also responsible for executive functions, including organization, problem solving, abstract thinking, creativity, strategic planning, and future orientation. Many common psychotherapeutic problems are rooted in suboptimal function within this circuit.

The generation of motivational and emotional states appropriate to context is an important function of the cingulate gyrus [35]. The amygdala and orbitofrontal cortex, by virtue of their connections to hypothalamic autonomic centers and other subcortical targets, are also able to generate emotional body states. One of the most common conditions for which individuals seek psychotherapy is emotional dysregulation. Imaging studies have shown that orbitofrontal and amygdalar circuits can be modulated through conscious cognitive processes, such as would occur during psychotherapeutic interactions [9].

The lateral orbitofrontal circuit is responsible for tempering the unbridled pursuit of reward or salience. Deficits in this circuit can present as impulsivity, social inappropriateness, lack of empathy, lack of respect for social conventions, and little response to the threat of personal risk, embarrassment, or punishment.

The psychotherapist who seeks to bring about adaptive change needs to be fully aware of the power of verbal tools, which can mobilize neural contents and activate critical circuits in the patient's brain. To facilitate change, the words of psychotherapy must first point accurately, in terms that the patient can understand, to the representational, memory, or processing deficits that are maladaptive. It may take time to arrive at this point, with therapist and patient working together to define the elements that need changing. As the psychotherapeutic process unfolds, the psychotherapist can modify the patient's maladaptive representations, increasing their verbal accessibility and complexity, while lessening emotionality and generalization. Eventually, the patient can learn to recruit the versatile prefrontal circuits for the purpose of optimizing behavior. It is this circuitry that can help fulfill occupational and interpersonal expectations and that can gradually lessen the impact of maladaptive emotional responses. With the optimization of information processing that accompanies positive psychotherapeutic change, the patient will be better prepared to cope with external challenges, and to maintain stable internal states that are both adaptive and personally satisfying.

Psychotherapy is, by nature, a top-down process. In other words, it relies on higher levels of communication, including verbal and emotional expressions, to access and modify neural circuitry. Over time, the targeted communications of psychotherapy can modify dysfunctional neural representations and their emotional connections. By applying psychotherapeutic principles in a systematic manner, a skilled therapist can reshape the patient's internal representations and their subjective meaning, decreasing impulsivity and emotional amplification, increasing the number of variables considered in behavioral decisions, and eventually leading to more adaptive behavior.

References

1. Fuster JM. *Cortex and mind*. Oxford: Oxford University Press; 2003. p. 49–50.
2. Viamontes GI, Beitman BD. Neural substrates of psychotherapeutic change. Part II: Beyond default mode. *Psychiatr Ann*. 2006;36(4):238–46.
3. Viamontes GI, Beitman BD. Mapping the unconscious in the brain. *Psychiatr Ann*. 2007;37(4):243–58.
4. Viamontes GI, Beitman BD. Neural substrates of psychotherapeutic change. Part I: The default brain. *Psychiatr Ann*. 2006;36(4):225–36.
5. Rolls ET. *Emotion explained*. Oxford: Oxford University Press; 2005.
6. Viamontes GI. *The Neurobiology of the Self*. New York: WW Norton, Inc., in preparation.
7. Phillips ML, Drevets WS, Rauch SL, et al. Neurobiology of emotion perception I: the neural basis of normal emotion perception. *Biol Psychiatry*. 2003;54:504–14.
8. Milad MR, Rauch SL. The orbitofrontal cortex and anxiety disorders. In: Zald DH, Rauch SL, editors. *The orbitofrontal cortex*. Oxford: Oxford University Press; 2006. p. 523–43 [Chapter 20].

9. Ochsner KN, Bunge SA, Gross JJ, Gabrieli JDE. Rethinking feelings: an fMRI study of the cognitive regulation of emotion. *J Cogn Neurosci*. 2002;14(8):1215–29.
10. Kandel ER, Kupfermann I, Iversen S. Learning and memory. In: Kandel ER, Schwartz JH, Jessell TM, editors. *Principles of neural science*. 4th ed. New York: McGraw-Hill; 2000. p. 1227–46 [Chapter 62].
11. Rolls ET. Memory, attention, and decision-making. Oxford: Oxford University Press; 2008.
12. Launius RA, Williamson PC, Densmore M, Boksman K, Neufeld RW, Gati JS, et al. The nature of traumatic memories: a 4-T fMRI functional connectivity analysis. *Am J Psychiatry*. 2004;161:36–44.
13. Graybiel AM. The basal ganglia and chunking of action repertoires. *Neurobiol Learn Mem*. 1998;70:119–36.
14. Berridge KC, Winkelman P. What is an unconscious emotion? (The case for unconscious “liking”). *Cogn Emotion*. 2003;17(2):181–211.
15. Miyashita Y. Cognitive memory: cellular and network machineries and their top-down control. *Science*. 2004;306(5695):435–40.
16. Bliss TVP, Lomo T. Long-lasting potentiation of synaptic transmission in the dentate gyrus of the anesthetized rabbit following stimulation of the perforant path. *J Physiol (London)*. 1973;232:331–56.
17. Miyashita Y, Kameyama M, Hasegawa I, Fukushima T. Consolidation of visual associative long-term memory in the temporal cortex of primates. *Neurobiol Learn Mem*. 1998;1:197–211.
18. Bernstein DM, Laney C, Morris EK, Loftus EF. False memories about food can lead to food avoidance. *Cognition*. 2005;23(1):11–34.
19. Treves A, Tashiro A, Witter MP, Moser EI. What is the mammalian dentate gyrus good for? *Neuroscience*. 2008;154:1155–72.
20. Dupret D, Revest JM, Koehl M, et al. Spatial relational memory requires hippocampal adult neurogenesis. *PLoS One*. 2008. doi:10.371/journal.pone.0001959.
21. Bruel-Jungerman E, Laroche S, Rampon C. New neurons in the dentate gyrus are involved in the expression of enhanced long-term potentiation following environmental enrichment. *Eur J Neurosci*. 2005;21:513–21.
22. Gould E, Tanapat P, McEwen B, Flugge G, Fuchs E. Proliferation of granule cell precursors in the dentate gyrus of adult monkeys is diminished by stress. *Proc Natl Acad Sci USA*. 1998;95:3168–71.
23. Sapolsky RM. Stress, the aging brain, and the mechanisms of neuron death. Cambridge: MIT Press; 2002.
24. McGuire SE, Davis RL. Presenilin-1 and memories of the forebrain. *Neuron*. 2001;32:763–5.
25. Santarelli L, Saxe M, Gross C, et al. Requirements of hippocampal neurogenesis for the behavioral effects of antidepressants. *Science*. 2003;301(56534):805–9.
26. Lipska BK, Weinberger DR. A neurodevelopmental model of schizophrenia: neonatal disconnection of the hippocampus. *Neurotox Res*. 2002;4(5–6):469–75.
27. Pare D. Role of the basolateral amygdala in memory consolidation. *Prog Neurobiol*. 2003;70:409–20.
28. Siegle GJ, Steinhauer SR, Thase ME, Stenger VA, Carter CS. Can’t shake that feeling: event-related fMRI assessment of sustained amygdala activity in response to emotional information in depressed individuals. *Biol Psychiatry*. 2002;51:693–707.
29. Mesulam MM. The human frontal lobes: transcending the default mode through contingent encoding. In: Stuss DT, Knight RT, editors. *Principles of frontal lobe function*. New York: Oxford University Press; 2000. p. 8–30.
30. Buckner RL, Andrews-Hanna JR, Schacter DL. The brain’s default network anatomy, function, and relevance to disease. *Ann N Y Acad Sci*. 2008;1124:1–38.
31. Clower DM, Robert A, West RA, Lynch JC, Strick PL. The inferior parietal lobule is the target of output from the superior colliculus, hippocampus, and cerebellum. *J Neurosci*. 2001;21(16):6283–91.
32. Mega MS, Cummings JL. Frontal subcortical circuits: anatomy and function. In: Salloway SP, Malloy PF, Cummings JL, editors. *The neuropsychiatry of limbic and subcortical disorders*. Washington, DC: American Psychiatric Publishing; 2001. p. 15–36.
33. Burruss JW, Hurley RA, Taber KN, et al. Functional neuroanatomy of the frontal lobe circuits. *Radiology*. 2000;214(1):227–30.
34. Bush G, Luu P, Posner MI. Cognitive and emotional influences in anterior cingulate cortex. *Trends Cogn Sci*. 2000;4(6):215–22.
35. Critchley HD, Mathias CJ, Josephs O, O’Doherty J, Zanini J, Dewar BK, et al. Human cingulate cortex and autonomic control: converging neuroimaging and clinical evidence. *Brain*. 2003;126:2139–52.
36. Barbas H, Saha S, Rempel-Clower N, Ghashghaei T. Serial pathways from primate prefrontal cortex to autonomic areas may influence emotional expression. *BMC Neurosci*. 2003;4:25–37.
37. Anderson MC, Ochsner KN, Kuhl B, Cooper J, Robertson E, Gabrieli SW, et al. Neural systems underlying the suppression of unwanted memories. *Science*. 2004;303:232–5.
38. Palaszynski KM, Nemeroff CB. The medical consequences of child abuse and neglect. *Psychiatr Ann*. 2009;39(12):1004–9.
39. Viamontes GI, Beitman BD. The neurobiology of the unconscious. *Psychiatr Ann*. 2007;37(4):222–4.
40. Parvizi J, Damasio A. Consciousness and the brainstem. In: Dehaene S, editor. *The cognitive neuroscience of consciousness*. Cambridge: MIT Press; 2001. p. 135–59 [Chapter 5].

41. Bechara A, Noel S, Crone EA. Loss of willpower: abnormal neural mechanisms of impulse control and decision-making in addiction. In: Wiers RW, Stacy AW, editors. *Handbook of implicit cognition and addiction*. Thousand Oaks: Sage Publications, Inc.; 2006. p. 215–32 [Chapter 15].
42. Damasio AR. *The feeling of what happens: body and emotion in the making of consciousness*. New York: Harcourt Brace; 1999.
43. Brothers L. The social brain: a project for integrating primate behavior and neurophysiology in a new domain. *Concept Neurosci*. 1999;1:27–51.
44. Adolphs R. Cognitive neuroscience of human social behavior. *Nat Rev Neurosci*. 2000;4(3):165–78.
45. Kanwisher N, McDermott J, Chun MM. The fusiform face area: a module in the human extrastriate cortex specialized for face perception. *J Neurosci*. 1997;17:4302–11.
46. Davis M, Whalen PJ. The amygdala: vigilance and emotion. *Mol Psychiatry*. 2001;6:13–34.
47. Blair RJ, Morris JS, Frith CD, Perrett DI, Dolan RJ. Dissociable neural responses to facial expressions of sadness and anger. *Brain*. 1999;122:883–93.
48. Saxe R, Kanwisher N. People thinking about thinking people: the role of the temporoparietal junction in “theory of mind”. *Neuroimage*. 2002;19:1835–42.
49. Saxe R, Xiao DK, Kovacs G, Perrett DI, Kanwisher N. A region of right posterior superior temporal sulcus responds to observed intentional actions. *Neuropsychologia*. 2004;42:1435–46.
50. Wampold BE. *The great psychotherapy debate: models, methods, and findings*. Mahwah: Erlbaum; 2001.
51. Marci CD, Ham J, Moran E, Orr SP. Physiologic correlates of perceived therapist empathy and social-emotional process during psychotherapy. *J Nerv Ment Dis*. 2007;195(2):103–11.
52. Barrett-Lennard G. Dimensions of the client’s experience of his therapist associated with personality change. *Genet Psychol Monogr*. 1962;76:43.
53. Carr L, Iacoboni M, Dubeau M-C, Mazziotta JC, Lenzi GL. Neural mechanisms of empathy in humans: a relay from neural systems for imitation to limbic areas. *Proc Natl Acad Sci USA*. 2003;100(9):5497–502.
54. Rizzolatti G, Fadiga L, Gallese V, Fogassi L. Premotor cortex and the recognition of motor actions. *Cogn Brain Res*. 1996;3:131–41.
55. Domes G, Heinrichs M, Glascher J, Buchel C, Braus DF, Herpertz SC. Oxytocin attenuates amygdala responses to emotional faces regardless of valence. *Biol Psychiatry*. 2007;62:1187–90.
56. Guastella AJ, Howard AL, Dadds MR, Mitchell P, Carson DS. A randomized controlled trial of intranasal oxytocin as an adjunct to exposure therapy for social anxiety disorder. *Psychoneuroendocrinology*. 2009;34:917–23.

Part III
Theory, Technique, and Process

Chapter 20

Commentary: The Coming of Age of Psychoanalytic Treatment Research

Patrick Luyten

Keywords Psychotherapy • Psychoanalytic • Psychodynamic • Outcome Research • Process-Outcome Research

There was a time when psychoanalytic clinicians, perhaps appropriately, could neglect findings of psychoanalytic treatment research. The chapters in this section clearly attest to the fact that those days are long gone. Indeed, as is demonstrated by each of these chapters, psychoanalytic treatment research not only may *inform* clinical practice, but also has the potential to *change* psychoanalytic practice. In fact, there is no point in denying that psychoanalytic practice *has* already changed under the influence of research findings, both explicitly and implicitly, and will continue to be changed by research.

Explicit Influences of Psychotherapy Research on Psychoanalytic Practice

The influence of research findings on psychoanalytic practice is manifold. For instance, as discussed in detail by Ken Levy and colleagues in their chapter (Chap. 24), a variety of psychoanalytically based treatments for both children and adolescents and adults have been influenced by attachment research. Transference-focused psychotherapy [1] and mentalization-based treatment [2] for borderline personality disorder are but two well-known examples.

However, the influence of attachment research – and psychotherapy research more generally – is not limited to these specific treatments. Indeed, Levy and colleagues convincingly argue that attachment theory and research may not only provide a guiding framework for psychotherapy, but may also inform the focus of treatment and may even be used to assess therapeutic outcome, regardless of the type of treatment. I believe many psychoanalytically trained clinicians would agree and use attachment-related concepts in their daily clinical practice. More generally, and further back in time, various psychodynamic treatments, including supportive-expressive therapy [3] and a range of brief dynamic treatments that were developed in the 1970s and the 1980s [4], have been strongly influenced and shaped by research findings and gave rise to a tradition that promoted a vivid exchange between clinical practice and empirical research. Again, it is very hard to deny the influence these ideas have had on psychoanalytic thought and practice.

And who would deny the influence of psychotherapy research on the way psychoanalytic treatments are conducted nowadays? In this context, Hilsenroth and colleagues (Chap. 22), in a very

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lucid, open and clinician-friendly style that perhaps is the most convincing demonstration yet of how research findings can be translated for clinicians, outline a number of detailed research-based recommendations that may foster the development of a positive therapeutic alliance. Both explicitly and as I will argue further below, also implicitly, over the last decades, these findings have permeated the hearts and minds of psychoanalysts and psychoanalytic therapists. For instance, a recent list of meta-competences that psychoanalytic therapists typically possess [5] shows considerable overlap with the recommendations by Hilsenroth and colleagues concerning aspects of a therapeutic stance that fosters a positive alliance. These meta-competences and attitudes differ in many ways from more “orthodox” analytic competences and attitudes as described in traditional handbooks and – I fear – still taught in some psychoanalytic societies. Yet, as also shown by studies using the Psychotherapy Process Q-set summarized in the chapter by Smith-Hansen, Ablon, R. Levy and colleagues (Chap. 23), many psychoanalytic practitioners adopt much more flexible attitudes in their daily clinical work, in line with systematic research findings. Likewise, studies on “master therapists” show that good therapists tend to be much more flexible in their attitudes and to use a variety of techniques depending on the specific needs of the patient [6]. In an interesting study of 65 analysts, similar findings emerged [7]. Gabbard and Ogden describe this process in “On Becoming a Psychoanalyst” in terms of “a painstaking effort to shed, over time, the shackles of orthodoxy, tradition and one’s own unconscious irrational prohibitions” [8]. Fonagy [9] argues in this context that therapists should be able to liberate themselves of the “superstitious” aspects of the analytic frame.

Importantly, Hilsenroth and colleagues (Chap. 22) also discuss in this context the kinds of interventions and therapist attitudes that are likely to undermine the development of the therapeutic alliance. Perhaps, research concerning these latter interventions and attitudes is even more informative than studies concerning attitudes and characteristics that are associated with positive alliance, as these research findings point to a set of common factors that all effective therapists seem to share, but that are very hard to capture and describe. Freud [10], in his *Studies on Hysteria*, described these characteristics as follows: “One tries to do something for the patient in human terms, as far as is allowed by the capacity of one’s own personality and the degree of sympathy that one can find for the case in question” (p. 284). However, he quickly hastened to add: “This is probably the point at which it ceases to be possible to express psychotherapeutic activity in formulas” (p. 284). Indeed, the chapter by Hilsenroth and colleagues illustrates how difficult it is to describe these therapist characteristics beyond a simple listing of characteristics and attitudes. Freud’s description of doing something “human” out of “sympathy” for someone else seems to capture the essence, however, of such an attitude.

However, although psychoanalytic practice undeniably has changed under the influence of research, there is much that remains to be learned from research findings. As illustrated in the remarkably synthetic chapter by Smith-Hansen et al. (Chap. 23), for instance, both group and single-case studies with the Psychotherapy Process Q-set, developed by the late Enrico Jones, show that the “effective ingredients” of psychoanalytic treatments are not always the ones we theoretically presume to be effective and that are emphasized in psychoanalytic training and handbooks. This echoes Peter Fonagy’s view that psychoanalytic treatments may possess many aspects that are based on superstition [9]. Much as Skinner’s “superstitious” pigeons thought they could influence their environment by exhibiting certain behaviors, psychoanalytic therapists may continue to use some techniques or interventions because they once perceived them to be effective, while in reality they are not. Likewise, studies with the Psychotherapy Process Q-set show that the predominant techniques used in (psychoanalytic) treatments do not necessarily explain most of the variance in treatment outcome. Moreover, the emphasis by Smith-Hansen, Ablon, R. Levy and colleagues (Chap. 23) on the importance of the *co-creation* of the treatment process by both patient and therapist parallels the call by Luyten, Blatt, and Mayes (Chap. 21) to study the therapeutic dyad, rather than assuming that (psychoanalytic) therapy involves a therapist *doing something to* a patient.

It is clear, moreover, that research with the Psychotherapy Process Q-set allows researchers to enter into the “very private world of dyadic meaning” [11]. Hence, far from being reductionist and

being unable to bridge the nomothetic-idiographic gap, the chapter by Smith-Hansen, Ablon, R. Levy and colleagues (Chap. 23) shows that current psychoanalytic research is able to study what many psychoanalytic clinicians believe to be impossible, i.e., the typical meaning and interactional structures that emerge during the analytic process [12, 13].

In this context, in their chapter (Chap. 26), Hoglend and Gabbard advance perhaps the most provocative argument in this volume. Indeed, based on a review of the existing research literature, including an elegant dismantling study [14], they question the centrality and even the use of transference interpretations in psychoanalytic therapy. Although this position is congruent with some clinical writings, it challenges what many presume to be typical of psychoanalytic treatment. Yet, on closer reading, Hoglend and Gabbard actually suggest a tailor-made approach in that in some patients, and in some stages of treatment, transference interpretations may be productive, provided however that they are given with low frequency. Particularly in patients with relatively low levels of personality organization, low levels of transference interpretations might facilitate the therapeutic process. Yet, high levels of transference interpretations are clearly counterproductive, and “simple” interpersonal interpretations, without reference to the therapist, are clearly as productive if not more productive in most patients under most circumstances. These suggestions parallel the growing realization of the interpersonal nature of treatment process. From this perspective, not addressing transference reactions that hinder the therapeutic process may hamper treatment, but addressing transference too much or too intensely may be equally, if not more, harmful. According to their research, in patients with higher levels of personality organization, in particular, whether one uses transference interpretations or not does not seem to matter.

Yet, although many clinicians will be able to relate to these findings, more research is clearly needed, and it may be premature to generalize these findings. After all, they are only based on a very small number of studies, many of which have important methodological flaws. Indeed, taking research findings seriously also means being appropriately critical in interpreting these findings. In this context, I was struck by two issues. One is the great emphasis in the various chapters in this section, and particularly in the chapters by Hoglend and Gabbard (Chap. 26) and by Hilsenroth and collaborators (Chap. 22), on congruence, compatibility, and mutuality in the therapeutic relationship. To put it somewhat overly schematically: Research summarized in these chapters seems to suggest that as a therapist, one should always make sure that the therapeutic relationship is essentially positive and that interventions do not disturb this relationship too much. Although I am fully aware that I am oversimplifying, I could not help being reminded that psychoanalytic therapy, and particularly the long-term variants, also entails experiences of incompatibility, incongruence, and misunderstanding between therapist and patient. Indeed, as outlined by Blatt and Behrends [15], incompatibility and incongruence between therapist and patient may be as important to further the therapeutic process, much as in normal psychological development experiences of incompatibility are the *primum movens* of many developmental processes [16]. Such experiences, by necessity, disturb the therapeutic relationship, but may be needed to further the therapeutic process, depending of course on whether they occur in a context in which this can be borne by both the patient and the therapist. This is also suggested by research findings reviewed by K. Levy and colleagues (Chap. 24), showing that therapist–patient dyads with incongruent attachment styles seem to lead to most positive outcomes because in these cases, the therapist is better able to challenge the dominant attachment style of the patient. Similarly, Safran and colleagues have shown that particularly for some patients, rupture–repair cycles are part and parcel of the therapeutic process [17]. Moreover, in long-term psychoanalytic treatment and psychoanalysis in particular, it may be necessary to allow negative transference to develop over several weeks to months, before addressing the underlying issues. Prematurely “repairing” such negative transference in an attempt to restore the therapeutic alliance, may hamper, rather than facilitate, the therapeutic process, as it may prevent the discussion and working through of salient issues. Analyses by Thomä and Kächele of the so-called specimen case Amalia X provide a detailed illustration of these issues [12]. Further research is clearly needed concerning this issue, and particularly in what kind of treatments with which kind of patients different

interventions may be indicated with regard to the therapeutic alliance. It is highly likely, however, that such disruptions of the therapeutic alliance facilitate the therapeutic process only when they happen in the broader context of a relationship with an empathic, warm, and, as noted, “human” therapist. This, in fact, may point to an empirically based and therefore also quantifiable distinction between the therapeutic alliance (which may be more “reality based”) and the transference relationship (which may be more based on distortions of the therapeutic relationship).

This leads me to a second issue that struck me while reading the chapters in this section, which also brings us closer again to research findings (after all, this is a volume dedicated to research!). The chapters in this section all suggest, as noted, that a “traditional” or “orthodox” analytic stance is not only practiced less by contemporary psychoanalytic therapists, but that it may also be counterproductive. This is congruent with findings in the famous Stockholm Outcome of Psychoanalysis and Psychotherapy (STOPP) study that compared long-term psychoanalytic treatment with psychoanalysis [18]. In this study, outcomes of patients in long-term psychoanalytic therapy were better when they had therapists that endorsed less orthodox attitudes compared to patients that had analysts with a more orthodox stance (e.g., greater emphasis on neutrality, little or no self-disclosure). Yet, in psychoanalysis, both patients with less and more “orthodox” therapists did equally well. Indeed, the wide divergence of analytic attitudes in successful *analytic* cases is also illustrated by research with the Psychotherapy Process Q-set research summarized by Smith-Hansen, Ablon, R. Levy and colleagues in their chapter (Chap. 23). This raises interesting questions concerning similarities and differences between the therapeutic stance and techniques in psychoanalysis and long-term psychoanalytic therapy [19]. The methods and theoretical approaches summarized in the chapters in this section could make a significant contribution to this debate.

Implicit Influences of Research on Psychoanalytic Practice

More than You’ll Ever Know!

Not only have research findings changed psychoanalytic practice in many explicit ways, but also in many more subtle, implicit, and often unconscious ways. As the psychoanalyst Lewis Aron has convincingly argued, research findings have implicitly influenced psychoanalytic practice in many ways [20]. For instance, as already noted, psychoanalytic practice has become more interpersonal and intersubjective, which undeniably has been influenced by infant and attachment research. Moreover, most psychoanalysts have largely abandoned traditional conceptions of psychoanalytic treatment and its therapeutic action, perhaps with the exception of those that have closed themselves off – sometimes almost totally – from other branches of science. This precisely proves the point of the implicit influence of research on psychoanalysis. Again, the chapters by K. Levy and colleagues (Chap. 24) and Hilsenroth and collaborators (Chap. 19) illustrate these trends. Likewise, I wonder, for instance, how research findings would look should Smith-Hansen, Ablon, R. Levy and colleagues (Chap. 23) have studied psychoanalytic practice in the 1930s, the 1940s, or even perhaps the 1970s, using the Psychotherapy Process Q-sort. A view into some more orthodox psychoanalytic circles would have been interesting and revealing as well. I strongly believe that they would find much less emphasis on interpersonal and attachment issues, perhaps even on affect.

Clearly, changes in analytic practice have also been influenced by other factors, and perhaps the greatest influence has come from societal changes. It is hard to tell, however, as Arons points out, what has come first: studies on intersubjectivity and interpersonal factors, or societal changes that promoted such studies; most likely, they have reciprocally reinforced each other [20]. Moreover, the scope of psychoanalysis has broadened dramatically, and one should not forget that some of the

pioneers in psychoanalysis already questioned what they saw as “traditional” psychoanalytic technique. However, it is difficult to deny that when one reads traditional handbooks and case studies, with important exceptions, there is a difference in technique and theory. And the changes in theory have clearly influenced technique, as there is little reason to assume that they are relatively independent. In a simple but elegant study, Fonagy [21], for instance, demonstrated the massive decline in words referring to sexuality in the psychoanalytic literature, and one cannot help but wonder what influences this has had on the kinds of issues psychoanalysts focus on in their clinical practice.

Common Processes and Parallels Between the Therapeutic Process and Normal Developmental Processes

A final common theme that appears to emerge from chapters in this section has to do with the increasing realization of the importance of common factors across various therapeutic orientations, including psychoanalytic treatments. For a long time, psychoanalysts seem to have had a tendency to downplay the importance of these factors. Freud’s struggle with the issue of suggestion [22] and his often misunderstood discussion of the yields of the “pure gold of analysis” and the “copper of direct suggestion” [23] has definitely set the stage for such an attitude. However, psychoanalysis appears to be finally coming to terms with the role of common factors. Perhaps not coincidentally, this is paralleled by an increasing interpersonal focus and a growing focus on conscious and preconscious thoughts and feelings rather than deeply unconscious themes. Again, the influence of attachment research and infant research in particular seems to be obvious in this context. On the other hand, these trends may also be related to the broadening scope of psychoanalysis and the growing emphasis on relatively brief treatments, which necessitate a more interpersonal focus.

Yet, an even more powerful trend may be underlying these changes in analytic practice and research, i.e., the increasing realization of parallels between the therapeutic process and developmental processes. With the growing realization of the intersubjective and interpersonal nature of human development – which opposes in many ways more traditional drive-based accounts – our understanding of the therapeutic process also appears to have become more interpersonal [24]. Both the chapters by K. Levy and colleagues (Chap. 24) and Luyten and colleagues (Chap. 21) are a good case in point, as both explicitly draw such parallels and suggest that developmental theories may provide a broad, encompassing theoretical framework to study the therapeutic process. Such views indeed open up many interesting new vistas, particularly as our understanding of the (neurobiological) underpinnings of attachment and relationships in relation to the development of the capacity to perceive ourselves and others in terms of mental states (“mentalization”) is becoming increasingly clear [24, 25].

What’s Next? Implications for Psychoanalytic Research and Training

One, and perhaps the most important, indication of the maturity of a science is its ability to leave behind – even long cherished – theories and assumptions. In this respect, the chapters in this volume can be taken as evidence for the growth of psychoanalytic research as a scientific enterprise.

Yet, this does not make it any easier for clinicians. Not only because many clinicians lack the tools and knowledge to critically interpret research findings, but even when they do have this knowledge and such skills, the question remains how clinicians can translate these findings to their clinical practice. Thus, psychoanalytic researchers are faced with the quite daunting task of doing such translational work. All the chapters in this section, but particularly the one by Hilsenroth and colleagues (Chap. 22), do an excellent job in this respect.

Yet, much more work is needed to change clinicians from interested bystanders into active consumers and users of research. Efforts in this context should not only come from researchers, however. Psychoanalytic societies and training institutes should include a clear research focus in their programs and should foster explicit efforts to facilitate the translation of research findings to clinical practice. This ideally involves collaborative work among clinicians and researchers [13, 26]. Otherwise, valuable clinical insights are threatened to be lost in an attempt to objectify and quantify the clinical process. Similarly, without an emphasis on research, psychoanalytic training programs may become safe havens for orthodoxy, rigidity, and stagnation. Yet, unfortunately, currently, few psychoanalytic training programs include an emphasis on research, and both researchers and clinicians can be held responsible for this. This is all the more reason for clinicians and researchers to join forces and, even better, to promote a scientist–practitioner model within psychoanalysis. Moreover, in an era in which the current scientific and political climate pushes us to adopt a number of assumptions and methods that do not always do justice to psychoanalytic treatment, research could play a crucial role in turning the tables. For instance, the DSM V Axis II Task Force has reintroduced psychoanalytic notions concerning the importance of disturbances in representations of self and other in the classification of personality disorders [27]. This is likely to have a dramatic impact on the assessment of therapeutic outcome in the near future, moving away from easily observable indicators of therapeutic outcome toward more underlying representational features. Psychoanalytic researchers, as illustrated by the chapters in this section, have developed systematic assessment methods to capture these dimensions. Both researchers and psychoanalytic organizations have a clear responsibility in this context to disseminate their findings to the wider scientific community.

They also have a clear responsibility to further promote psychoanalytic treatment research. Indeed, we are far from understanding the multiple complex interactions among therapist characteristics, interventions, techniques, and patient characteristics. Yet, such knowledge may not only change but even revolutionize psychoanalytic training and practice, and therefore more research attention is needed to address these complex interactions.

However, even then, it is likely that a gap will always remain between psychoanalytic treatment research and what is characteristic of psychoanalytic practice. The psychoanalyst Zvi Lothane, for example, in his typically eloquent style, describes how he once “caught” one of his patients rubbing a chair in the waiting room on which he just had spilled coffee. Initially, the patient reacted with much hostility and externalization. Yet, this event later turned out to be a major turning point in treatment, because it led the patient to realize this was his typical way of dealing with his aggression, and how this was related to his childhood and adolescence. Much of this working through occurred in the transference because, based on a discussion of the incident with the spilled coffee, he started to realize that he feared the analyst’s reaction in much the same way as he feared his father’s reaction, and had behaved for a very long time in exactly the same ambivalent way to his analyst as to his father in the past. Do such transference interpretations, often as a consequence of real events happening between therapist and patient, matter more than research findings currently appear to suggest? Or do they matter more in psychoanalysis as opposed to long-term and brief dynamic psychotherapy? Are such events really important as suggested by narratives of clinicians and research on sudden gains [28]? Perhaps, they are of little relevance, and they may simply be a small chain in the many events that lead to change. However, as a therapist, I often have the feeling that it is these “moments of meeting” that capture what (psychoanalytic) psychotherapy is about. Such moments are expressed in a brief exchange, for instance, when opening the door for the patient after a session, that communicates a mutual understanding, or a feeling of emerging understanding and mutuality that is hard to capture, but is definitely there. As many important things in life, such as love and friendship, these phenomena continue to elude us. However, the chapters in this section unmistakably show that we are able to capture indicators and proxies of such processes and current developments, as testified by these chapters, and that these promise to bring us closer to what constitutes and defines the psychoanalytic process. This is no mean achievement, and for me, personally, that is enough for now.

References

1. Clarkin JF, Kernberg OF, Yeomans F. Transference-focused psychotherapy for borderline personality disorder patients. New York: Guilford Press; 1999.
2. Bateman AW, Fonagy P. Mentalization based treatment for borderline personality disorder: a practical guide. Oxford: Oxford University Press; 2006.
3. Luborsky L. Principles of psychoanalytic psychotherapy: a manual for supportive-expressive (SE) treatment. New York: Basic Books; 1984.
4. Abbass AA, Hancock JT, Henderson J, Kisely SR. Short-term psychodynamic psychotherapies for common mental disorders. *Cochrane Database Syst Rev*. 2006;18(4):CD004687.
5. Lemma A, Roth AD, Pilling S. The competences required to deliver effective psychoanalytic/psychodynamic therapy. London: UCL Research Department of Clinical, Educational and Health Psychology; 2009.
6. Goldfried MR, Raue PJ, Castonguay LG. The therapeutic focus in significant sessions of master therapists: a comparison of cognitive-behavioral and psychodynamic-interpersonal interventions. *J Consult Clin Psychol*. 1988;66:803–10.
7. Hamilton VJ. The analyst's preconscious. Hillsdale: The Analytic Press; 1996.
8. Gabbard GO, Ogden TH. On becoming a psychoanalyst. *Int J Psychoanal*. 2009;90(2):311–27.
9. Fonagy P. The changing shape of clinical practice: driven by science or by pragmatics? *Psychoanal Psychother*. 2019;24(1):22–43.
10. Freud S, Breuer J. Studies on hysteria. In: Strachey J, editor. The standard edition of the complete psychological works of Sigmund Freud, vol. 2. London: Hogarth Press; 1895. p. 1–305.
11. Levy RA, Ablon JS, Ackerman JA, Seybert C. The psychotherapy process Q-set and Amalia X, session 152. In: Albani C, Ablon JS, Levy RA, Mertens W, Kächele H, editors. Der "Psychotherapie Prozess Q-Set" von Enrico E. Jones. Deutsche Version und Anwendungen. Ulm: Ulmer Textban, 2008. p. 7–41.
12. Kächele H, Schachter J, Thomä H. From psychoanalytic narrative to empirical single case research. Implications for psychoanalytic practice. New York/London: Routledge; 2009.
13. Luyten P, Blatt SJ, Corveleyn J. Minding the gap between positivism and hermeneutics in psychoanalytic research. *J Am Psychoanal Assoc*. 2006;54(2):571–610.
14. Hoglend P, Amlo S, Marble A, Bogwald KP, Sorbye O, Sjaastad MC, et al. Analysis of the patient-therapist relationship in dynamic psychotherapy: an experimental study of transference interpretations. *Am J Psychiatry*. 2006;163(10):1739–46.
15. Blatt SJ, Behrends RS. Internalization, separation-individuation, and the nature of therapeutic action. *Int J Psychoanal*. 1987;68:279–97.
16. Blatt SJ, Luyten P. A structural-developmental psychodynamic approach to psychopathology: two polarities of experience across the life span. *Dev Psychopathol*. 2009;21(3):793–814.
17. Safran JD, Muran JC, Samstag LW, Steven C. Repairing alliance ruptures. In: Norcross JC, editor. Psychotherapy relationships that work. Oxford: Oxford University Press; 2002. p. 235–54.
18. Grant J, Sandell R. Close family or mere neighbors? Some empirical data on the differences between psychoanalysis and psychotherapy. In: Kächele H, Renlund C, Richardson P, editors. Research on psychoanalytic psychotherapy with adults. London: Karnac; 2004. p. 81–108.
19. Kächele H. Distinguishing psychoanalysis from psychotherapy. *Int J Psychoanal*. 2010;91(1):35–43.
20. Safran JD. Interview with Lewis Aron. *Psychoanal Psychol*. 2009;6(2):99–116.
21. Fonagy P. A genuinely developmental theory of sexual enjoyment and its implications for psychoanalytic technique. *J Am Psychoanal Assoc*. 2008;56(1):11–36.
22. Freud S. Introductory lectures on psycho-analysis. In: Strachey J, editor. The standard edition of the complete psychological works of Sigmund Freud, vol. 15, 16. London: Hogarth Press; 1916. p. 13–477.
23. Freud S. Lines of advance in psycho-analytic therapy. In: Strachey J, editor. The standard edition of the complete psychological works of Sigmund Freud, vol. 17. London: Hogarth; 1919. p. 157–68.
24. Fonagy P, Luyten P. A developmental, mentalization-based approach to the understanding and treatment of borderline personality disorder. *Dev Psychopathol*. 2009;21(4):1355–81.
25. Luyten, P., & Blatt, S. J. (2011). Integrating theory-driven and empirically-derived models of personality development and psychopathology: A proposal for DSM-V. *Clinical Psychology Review*, 31, 52–68.
26. Westen D, Novotny CM, Thompson-Brenner H. The empirical status of empirically supported psychotherapies: assumptions, findings, and reporting in controlled clinical trials. *Psychol Bull*. 2004;130(4):631–63.
27. Skodol AE, Bender DS. The future of personality disorders in DSM-V? *Am J Psychiatry*. 2009;166(4):388–91.
28. Stiles WB, Leach C, Barkham M, Lucock M, Iveson S, Shapiro DA, et al. Early sudden gains in psychotherapy under routine clinic conditions: practice-based evidence. *J Consult Clin Psychol*. 2003;71(1):14–21.

Chapter 21

Process and Outcome in Psychoanalytic Psychotherapy Research: The Need for a (Relatively) New Paradigm

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Keywords Outcome Research • Process–Outcome Research • Psychoanalytic • Psychodynamic • Psychotherapy Research

Introduction

This chapter reviews key assumptions underlying contemporary research on process–outcome relationships in psychoanalytic treatments. This review shows that this body of research, with important exceptions, implicitly or explicitly, is based on a number of assumptions borrowed from pharmaceutical trials that do insufficient justice to the typical processes involved in psychodynamic treatments and in psychotherapy more generally [1].

We argue that psychodynamic treatment research should move beyond this approach and develop a more encompassing paradigm to investigate the relationship between process and outcome in psychoanalytic treatments. In particular, we propose a developmentally informed, dynamic interaction [2] or action-theory [3, 4] approach based on the assumption that the typical processes occurring in psychodynamic treatment involve the reactivation of the normal dialectical interaction between issues of relatedness and self-definition [5]. Stated otherwise, we propose that sustained and consolidated progress in psychodynamic treatment involves the reactivation of the normal synergistic developmental process in which interpersonal experiences in the therapeutic relationship contribute to constructive revisions in the sense of self that lead to more mature expressions of interpersonal relatedness that in turn contribute to further refinements in the sense of self. This reactivation occurs in the context of experiences of compatibility and incompatibility in the therapeutic relationship at

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various developmental levels [6] and is expressed in changes in representations of self and others, fostered by the development of metareflective or metacognitive abilities, leading to so-called broaden and build cycles [7]. We argue that these cycles are associated with a greater sense of internal freedom, increased security of inner mental exploration of complex feelings and thoughts including hopes and apprehensions, enhanced adaptive capacities, more differentiated and integrated relationships, and, more generally, an increased belief in and an ability to use inner resources. Moreover, it is argued that this could be the “final common pathway” underlying successful treatments regardless of theoretical orientation. Throughout this chapter, we will illustrate these issues with examples drawn from our own research as well as that of others. We also discuss the implications of these views for psychoanalytic research and training.

Psychoanalytic Treatment Research: Where We Are and Where We May Need to Go

Over the last decades, there has been a steady increase in studies that have investigated the efficacy and effectiveness of psychoanalytic treatments, as testified by several chapters in this volume. Together, these studies have provided considerable evidence for the efficacy and effectiveness of brief psychodynamic treatment and specific forms of long-term psychodynamic treatments with a wide variety of disorders [8–12]. Moreover, a recent meta-analysis also provides evidence for the effectiveness of psychoanalysis [13]. Yet, at the same time, it is clear that more studies are needed to investigate the efficacy of psychodynamic therapies [14].

The field has also witnessed a continuing, albeit somewhat more modest, interest in process–outcome research. Yet, this research has, with some important exceptions, almost exclusively focused on process–outcome relationships in brief psychodynamic treatments. This should come as no surprise. The methodological problems associated with process–outcome research are immense because of the complexity of the therapeutic process and the many factors involved in outcome. Hence, even in relatively brief interventions, it has proven quite difficult to provide convincing evidence for causal relationships between particular interventions and outcome [15]. This is even more difficult in long-term treatment in which the mechanisms of change remain largely elusive. Yet, many clinicians are precisely interested in the mechanisms of change in long-term psychodynamic treatments. Indeed, many psychodynamic clinicians (for a review [16]) argue that existing outcome and process–outcome research of psychoanalytic treatments has mainly focused on brief treatments, largely based on a relatively uncritical acceptance of a simple medical model. Hence, this body of research would do little justice to psychoanalytic concepts of process and outcome, and subsequently be largely irrelevant for clinical practice.

This growing criticism by clinicians is echoed by researchers expressing increasing dissatisfaction with psychotherapy research more generally. The field of psychotherapy research indeed currently witnesses a lively interest in the mechanisms of therapeutic change, regardless of “brand names” [17] and in the question “what works for whom” under what conditions [18]. Kazdin [19], for instance, has been instrumental in promoting a shift in psychotherapy research from outcome to understanding the processes of change, and together with Kraemer et al. [20] has provided researchers with a conceptual framework distinguishing between moderators, mediators, and proxies of change.

In this context, there also has been a strong call for more theory-driven research efforts in psychotherapy research [21]. It was Cronbach (e.g. [22]), very early in the history of psychotherapy research, who urged investigators to include differentiations among patients in their research design, based on the assumption that different types of patients may be differentially responsive to different forms of treatment (i.e., patient–treatment interactions) and different types of patients may respond to treatment in very different ways (i.e., patient–outcome interactions). However, Cronbach cautioned that

the introduction of patient dimensions into research designs should be based on theoretically sound and empirically supported differentiations or else investigators run the risk of entering into a “hall of mirrors” when examining these interactions. In this chapter, we apply these ideas to extant psychodynamic treatment research, with a special focus on long-term psychoanalytic treatments.

Psychoanalytic Treatment Research: To What Extent Have We Embraced a “Fremdkörper?”

In one of his very first attempts to conceptualize the formation of hysterical symptoms, Freud argued that hysteria involves a defense against unacceptable representations that have been excluded from consciousness [23] but continue to influence the individual as a sort of *Fremdkörper*, a foreign body. Similarly, although psychoanalytic process and outcome research has undeniably resulted in considerable advances in our understanding of the therapeutic process, the field may have avoided a critical examination of its often implicit assumptions – assumptions that may continue to influence our thinking as a *Fremdkörper*, a set of assumptions of which we are hardly aware but that run counter to other key assumptions of psychodynamic approaches.

More specifically, the bulk of process–outcome research of psychoanalytic treatments has relied heavily on mainstream assumptions of process–outcome research:

1. A focus on relatively accessible and observable features such as symptom improvement, mostly assessed through self-report questionnaires.
2. A reliance on relatively simple linear models to model process–outcome relationships (e.g., aggregating therapists’ use of specific interventions such as transference interpretations (TIs) and relating such aggregate measures to outcome across sessions using linear statistical models).
3. Likewise, it is often assumed that the different factors explaining therapeutic outcome interact in linear, additive ways. For instance, it is commonly assumed that specific interventions only explain about 15% of the variance in outcome [24]. The remainder of the variance would be explained by common factors (30%) (e.g., providing support), expectancy and placebo effects (15%), and extra-therapeutic effects (35–40%) (e.g., spontaneous remission, positive events or changes). This assumption is reinforced by what Stiles and Shapiro [1] have called the “abuse of the drug metaphor,” i.e., the assumption that psychotherapy consists of supplying “active ingredients” (e.g., interpretations) by the therapist to the patient, and that the more these active ingredients are supplied, the more effective a treatment.

However, these assumptions fail to do justice to our understanding of the complexities of the psychoanalytic process. First, while symptom improvement is important, psychoanalytic treatments, and particularly long-term psychoanalytic treatments, also aim at more fundamental changes [12]. These changes, as we will discuss in detail in the text that follows, are often much more difficult to assess. Importantly, as both Fonagy [25] and Shedler [12] have recently argued, perhaps this has resulted in research looking in the wrong places for evidence of change. This focus on symptom reduction may also be in part responsible for findings concerning the so-called dodo bird verdict, i.e., that all bona fide treatments are about equally effective (B21). Although many treatments may indeed lead to similar changes in terms of symptoms and other readily observable measures (e.g., interpersonal functioning, feelings of well-being), this may be less the case for more fundamental changes, such as enhanced adaptive capacities to deal with adversity [26], or increased trust in one’s own abilities and talents [12].

Second, both clinical experiences and research findings question whether therapeutic change, particularly in long-term psychoanalytic treatments, occurs in a linear fashion. For example, one of the key assumptions of long-term psychoanalytic treatments is that change does not follow a purely linear process. Similarly, the emphasis on patients’ engaging in self-reflection and delaying action in

order to reach understanding is also inherently a nonlinear process. Indeed, the emphasis in psychoanalytic treatments on free association, coupled with an attitude of technical neutrality and free floating attention in the psychoanalytic therapist, suggests an essentially nonlinear process. Yet, much of the psychoanalytic psychotherapy research is based on the implicit or explicit assumption that the treatment process consists of a clear beginning, middle phase, and end, and that change occurs not only gradually, but also linearly, reaching an asymptotic point. These assumptions are typical of mainstream psychotherapy research on brief treatments, which in turn derive from assumptions underlying pharmaceutical trials [1]. Yet, even the literature on brief treatments has shown the importance of “sudden gains” in a variety of treatments in both randomized trials and naturalistic studies [27–29], and of so-called critical moments. This is congruent with testimonies of both patients and therapists that suggest that treatment is far from a linear process [30].

In sum, particularly for long-term (psychodynamic) treatments, several assumptions underlying much of contemporary psychotherapy research seem to have limited relevance. Hence, a broader and perhaps different paradigm is needed specifically for psychodynamic treatment research, one that does more justice to what we know about psychotherapy in general, and psychoanalytic therapy in particular. Above all, a paradigm is needed that is better suited to investigate, in more detail, processes that occur in long-term psychoanalytic treatments. In the remainder of this chapter, we review research relevant to these assumptions and draw implications for future treatment research.

What Kind of Changes Should Be Assessed?

There can be no doubt that some of the changes currently assessed in mainstream psychotherapy research are not limited to symptom relief and are not superficial or irrelevant. However, precious little is known about the processes underlying such changes and the mechanisms responsible for sustained therapeutic change. In addition, the goals for long-term psychoanalytic treatments and psychoanalysis are fundamentally different from brief treatments, namely a profound change in personality and personality organization in addition to symptom relief.

One important problem is the conceptualization and assessment of these more basic changes by various psychoanalytic traditions, ranging from changes in ego, id, and superego in traditional psychoanalytic formations [31], changes in the differentiation, articulation, and integration in object representations in object relations approaches [6, 32], changes in the individual’s position with regards to the desire of the Other in Lacanian approaches to, more recently, changes in states of mind with regard to attachment experiences [32] and the ability for reflective functioning or mentalizing [33]. A common denominator perhaps of these theories is that psychoanalytic treatments aim at what has been called internalization of the analytic function, leading to greater inner freedom and creativity, self-reflectiveness and the ability to proceed with analysis after the end of treatment, leading to sustained efficacy underpinned by increased adaptive capacities to deal with stressors [21]. However, a major question is how to assess systematically these more fundamental changes and which of these areas is fundamental to the others?

A number of meta-analyses as well as detailed case studies may lead the way. Meta-analyses indeed suggest that long-term psychoanalytic treatment [11], psychoanalysis [13], and intensive psychoanalytic treatment for personality disorders [32, 34, 35] are associated with sustained and perhaps even continuing improvement after the end of treatment. Moreover, some evidence suggests that long-term psychoanalytic treatments are associated with more profound structural personality changes as assessed by improvements in levels of object representations and defense mechanisms [36]. Systematic case studies are congruent with these findings [37].

Yet, few studies have directly shown a relationship between such more profound changes in personality and the enduring effects of psychoanalytic treatment [38, 39]. Despite this, both group and

single case studies converge to suggest that such changes indeed are congruent with object relational approaches – changes in feelings of “felt safety” [35], more differentiated and integrated representations of self and others [40], less use of primitive defense mechanisms, and higher levels of identity integration have been found in studies [36]. Similarly, research suggests that patients, after long-term psychoanalytic treatment, are characterized by (a) an increased capacity for self-analysis, (b) the ability to experiment with new behaviors, particularly in interpersonal relationships, (c) finding pleasure in new challenges, (d) greater tolerance for negative affect, (e) greater insight into how the past may determine the present, and (f) the use of self-calming and self-supportive strategies, among which is the use of the representation of the therapist (and by association the treatment process) as a supportive good internal object [12, 37, 41].

These findings are congruent with traditional psychoanalytic assumptions about the internalization of the analytic function, but also with attachment and mentalization-based approaches that view the development of a “security of internal mental exploration” [33], which is closely associated with the ability for relationship recruiting and resilience in the face of adversity [42], as a key outcome of successful treatment. Hence, successful treatment is thought to result in “earned secure attachment” [43], characterized by the ability to reflect in a coherent way about one’s past [44, 45]. In a related language, a common mechanism across treatments may be enhanced emotional regulatory capacities in the face of stress and negative affect which in turn maintains more effective self-reflective abilities and decision making during stressful times [46].

Yet, the question remains whether there is a causal relation between specific psychoanalytic techniques and these outcomes and the extent to which these outcomes are unique for psychoanalytic treatments or are also characteristic of other successful treatments. Although much more research is needed, some findings identify at least one common mechanism underlying effective treatments involving the enhancement of adaptive capacities or resilience in dealing with stress. In the National Institute of Mental Health Treatment of Depression Collaborative Research Program, for instance, both cognitive behavioral therapy (CBT) and interpersonal therapy (IPT) were associated with enhanced adaptive capacities in dealing with stress [26, 47]. Moreover, based on complex linear modeling, Hawley et al. found that reduction in symptoms and increases in adaptive capacity in brief treatment for depression were significantly mediated by a reduction in a central maladaptive personality dimension – self-critical perfectionism [48].

Hence, despite variations in techniques across different treatments, it seems that effective treatment is associated with relatively similar outcomes, perhaps to varying degrees and through different routes. In this respect, many roads may lead to Rome. This should not surprise us, as different treatments – through similar or different pathways – have an effect on similar psychological processes including changes in the representation of self and significant others [21], and similar neurobiological systems and the brain in particular, either by altering top-down regulation of subcortical stress response systems or by changing bottom-up processes including reactivity to stressful conditions, or both [42].

An important question in this regard is whether the effects of long-term psychoanalytic treatments and psychoanalysis are qualitatively different, as is sometimes claimed in the psychoanalytic literature. The few studies in this regard point primarily to quantitative differences, and studies have also failed to identify different rates of change in both types of treatments [49, 50]. Stated otherwise, psychoanalysis may perhaps be associated with greater change, but perhaps only because of the higher frequency, longer duration, and potentially the interaction between duration and frequency.

Hence, it might be possible that successful psychotherapy – regardless of brand name – is associated with personality changes involving a reactivation of the normal developmental dialectical interaction between issues of relatedness and self-definition [51], expressed in increased capacities for self-reflection [52] and self-analysis, the adoption of new behavior, and the use of self-supporting and self-calming strategies (or more effective emotional regulatory) [41], underpinned by changes in stress and affect regulation. These capacities not only lead to enhanced adaptive capacities when

dealing with stress, but also to so-called broaden and build cycles [7]. Experiences of self-efficacy lead not only to more confidence (“build”) in one’s own abilities and resources (reactivating issues concerning self-definition), as well as increased ability to interact with others in more differentiated and adaptive ways (reactivating issues concerning relatedness), but such experiences also lead one to broaden one’s horizon in terms of experiences that foster both self-definition and relatedness [33].

Importantly, from this perspective, successful treatment thus can be considered to set in motion a process of change that starts during treatment but, crucially, is thought to continue after treatment. Moreover, different treatments may be able to activate such a process through different routes. For instance, challenging dysfunctional assumptions about the self and others in CBT may equally activate this process as the repeated exploration and interpretation of relationship patterns in psychoanalytic treatments, as both may result not only in changes in patients’ representations of self and others, but also in an increased ability to reflect on one’s own self and others, leading to broaden and build cycles.

The extent to which such a change process is set in motion may differ considerably between different treatments. Techniques used in long-term psychoanalytic treatments seem particularly apt to foster such a process with their often explicit focus on understanding patterns of behavior and emotional states in relationships. Yet, psychoanalytic treatments may also contain interventions and aspects that do not contribute to such a process, but should rather be seen as “superstitious behavior” that is unrelated to outcome, but is repeated simply because it is believed to be associated with outcome [25]. Moreover, psychoanalytic treatments, as discussed in more detail below, may also contain elements that hamper such a process, and thus are iatrogenic.

It is interesting to compare this view with different accounts of change within psychoanalytic treatments, which range from an emphasis on a “corrective emotional experience” [53] to seeing psychoanalytic treatment as involving a process of “transmuting internalizations” [54]. From our perspective, an even broader view seems more appropriate, which conceptualizes psychotherapeutic change in terms of a series of experienced compatibilities and incompatibilities in the therapeutic relationship, of frustration and gratification both inside as well as outside the therapeutic relationship [6], leading to a reactivation of the dialectic interaction between issues of relatedness and autonomy [21], underpinned by an increase in reflective functioning [33, 42]. This view encompasses the idea of “corrective emotional experience,” and points to the central role of the therapeutic relationship in treatment, but also to the role of transmuting experiences as well as the ability for self-reflection and self-analysis, leading to a reactivation of the normal dialectic between issues of relatedness and self-definition; a dialectic that seems fundamentally impaired in psychopathology [51] because of the individual’s attempts to defensively adapt to disruptions of this normal dialectic developmental process [55].

This view also allows one to understand findings concerning continuing post-treatment improvement in psychoanalytic treatment. Such continuing improvement may be the expected consequence of the “broaden and build” cycle that is activated as a result of the reactivation of this normal dialectic between relatedness and self-definition, instead of continuing the maladaptive interpersonal cycles typically associated with psychopathology.

Therefore, in addition to the importance of dealing with negative self-representations in the treatment process [21], working through dependency issues toward the therapist (or therapeutic setting) could play a key role in explaining the long-term effects of (psychodynamic) treatment as dependency might counteract the continuation of the analytic process after the end of treatment. In this respect, the therapeutic relationship can be seen not only as the vehicle of change, but potentially also as having iatrogenic effects. As Fonagy and Target [56] have pointed out, with some patients, decreasing the treatment frequency and fostering independence more generally might foster long-term changes and at the same time prevent malignant dependency which can occur in long-term psychoanalytic treatment. Indeed, whereas in Freud’s days, psychoanalytic treatments were relatively short by our standards, it seems that they have become longer and longer. It is not clear, however, whether this rather dramatic increase in the length of treatment has been paralleled by better

outcomes, and little is currently known about the optimal treatment length and factors influencing this. One implication, however, of these views is that psychoanalytic treatment may relatively neglect the transferring of insight and knowledge gained in treatment to situations and relationships outside the treatment setting. Traditionally, this is seen as violating analytic neutrality, but as treatment progresses, this attitude may hamper the treatment process rather than facilitate it. Thus, while perhaps in the early phases, technical neutrality may be productive, in the later phases of treatment, it may become counterproductive. At this moment, we simply do not know, and, as noted, perhaps psychoanalytic therapists are involved in “superstitious behavior” [25] when they closely stick to technical neutrality throughout treatment, because it is reinforced by progress in the early stages, thus leading to the superstitious conviction that this stance will always be helpful. It is important to note, in this context, that in actual practice, many psychodynamic therapists seem to behave differently than theoretical descriptions of analytic neutrality might suggest, and with very good reasons to do so [57].

Furthermore, despite the fact that treatment length could possibly be an artifact, research generally suggests a positive relationship between the length of treatment and outcome – longer treatment tends to lead to better outcome [11]. Brief therapies may therefore lead to changes in the long run to the extent that they are able to reactivate the normal dialectic between relatedness and self-definition. Generally, however, brief treatments are associated with relatively high relapse rates, most probably because they do not set in motion the reactivation of this fundamental dialectic developmental interaction [2]. Stated otherwise, in a considerable group of patients, brief treatments may only be associated with a deactivation of maladaptive representations of self and others, but do not activate a more fundamental developmental process that leads to changes in representations of self and significant others, and in significant and sustained changes in the metacognitive ability to reflect on the self and others. It may well be that reactivating a developmental process simply requires more time akin to the additional time required in physical therapy for an injured athlete to regain their full motor skills which is often much later than the time they have regained a full range of motion or painless day-to-day activity.

To summarize, we argue that clinical experience and research findings suggest a fundamental parallel between normal developmental processes and therapeutic processes. This leads to a view that psychoanalytic treatments – and perhaps all effective treatments – involve the reactivation of the normal dialectical interaction between relatedness and self-definition, and to increases in the capacity for reflective functioning, leading to enhanced adaptive capacities to deal with stress.

Linear and Nonlinear Processes in Psychoanalytic Treatments

We began our discussion with the argument that the linear perspective does not do justice to much of the change observed in psychotherapy either in formal outcome studies or in clinical reports. At the same time, much of psychotherapy research is based on the assumption that change in psychotherapy and (long-term) psychoanalytic treatment is linear. This assumption actually ignores the many examples of sudden gains and critical moments reported in the theoretical, clinical, and empirical literature [27–29], as well as regression phenomena [35] and so-called sleeper effects [49]. More specifically, while some changes appear to be gradual, sudden gains happen in most treatments, and clinicians testify to the importance of such experiences [30]. These changes, however, may often go unnoticed in multi-wave process–outcome studies that are designed on a linear model of change, that is, the assessment points may miss the change or detect worsening that often precedes improvement. For example, recent research has noted the importance of regression phenomena in long-term treatments – with some patients showing marked decreases in levels of reflective functioning prior to improvements [39]. Sandell and colleagues, in turn, found that differences between psychoanalysis and psychoanalytic therapy emerged only years after treatment termination [49].

These observations of nonlinear change contrast markedly with a linear model of the relationship between therapeutic alliance, therapist interventions, and process and outcome, so dominant in the literature. From a related domain of research, available evidence suggests that various attachment styles are associated with different therapeutic processes (Chap. 21). Kanninen et al. [58], for example, found no linear relationship between patients' attachment status and early alliance, but did find that patients with preoccupied attachment showed a decline in the quality of the therapeutic alliance toward the middle of the treatment, followed by sharp increases toward the end of therapy [58]. Eames and Roth similarly found that ruptures in the working alliance are very common in preoccupied patients; whereas in patients who are dismissing, relatively stable alliances from the beginning to the middle of treatment were observed [59]. These data suggest that patient characteristics relating to how an individual experiences significant relationships may impact, indeed define, the pattern of change in a therapy and that individual patients show individual growth or change trajectories.

This latter speculation fits with the experience of many therapists. That is to say, most of us have experienced that the treatment process is characterized by "sloppiness" [60], and it is often only in hindsight that some clear structure, sequence, and progression can be discerned. Importantly, research has shown that despite that predominant use of linear models, many developmental psychological processes are nonlinear, and it is hard to imagine why change processes in psychotherapy should not also be nonlinear. Similarly, evidence suggests that for some patients, a "tear-and-repair" pattern in alliance building is associated with good treatment outcome [61], which clearly violates the assumption of a linear relationship between process and outcome.

It is important to note that this view does not exclude the existence of linear processes. As we suggest earlier, the trajectory of change is likely individually variable and some patients may follow clear linear patterns. Indeed, research based on linear models has advanced our knowledge of the therapeutic process, and it is highly likely that part of the therapeutic process can be captured using linear models. Yet, nonlinear trends can be overlooked by having too few assessment points, as well as the use of measures that are not sensitive enough to pick up subtle, yet important changes.

Moreover, the reliance on linear models may lead to spurious correlations and incorrect assumptions about the nature of therapeutic change. A good example of the danger of finding spurious correlations is provided by research on TIs. Interpretations are often considered to be the cornerstone of psychoanalytic technique, as they are assumed to play a key role in fostering insight. Congruent with this assumption, studies have shown that psychoanalytic treatments typically are associated with increased insight, particularly insight into characteristic relational patterns [57]. And although other forms of treatment, such as CBT, are also associated with increased insight, studies suggest that psychoanalytic treatments are particularly associated with such increases [57]. Indeed, in (long-term) psychoanalytic treatments, the repeated activation, exploration, and interpretation of typical patterns of thinking and feeling is central. In this context, the importance of TIs is often emphasized. Yet, despite the centrality of this issue, only about ten studies have investigated the relationship between TIs and outcome [62]. These studies have shown that psychoanalytic treatments show considerable variability in the number of TIs per session, ranging from 5% to more than 50% of all interpretative interventions [62, 63]. Yet, despite this variability, existing research converges to suggest that there is a negative relationship between a high frequency of TIs and both the therapeutic relationship and outcome in both brief and long-term psychoanalytic treatment, even in patients with high levels of personality organization. The study by Hoglend et al. [64, 65] deserves special attention in this context, as it is the only existing dismantling study of TIs (Chap. 23). In this study, the efficacy of long-term psychoanalytic treatment with and without TIs was investigated in a sample of 100 patients with mixed depressive and anxiety disorders. Remarkably, this study found no differences in the efficacy of both treatments both at treatment termination and at 3-year follow-up, except in patients with low levels of personality organization (i.e., patients with low levels of object relations). These latter patients responded better to treatment with a low frequency of TIs (0–3 per session) compared to treatment without TIs. Moreover, Hoglend et al. showed that in patients with

low levels of personality organization, increases in insight mediated the relationship between TIs and improvements in relational functioning [66]. This mediation effect was considerable, as changes in insight as a consequence of TIs explained 60% of improvements in relational functioning. Hence, in patients with low levels of personality organization, TIs seem to be a “high-risk/high gain” phenomenon, as studies on the one hand suggest that TIs may lead to increased insight and changes in relationships [66] and personality organization [36]. But, on the other hand, TIs are also associated with increased defensiveness and disturbances of the therapeutic relationship and the therapeutic process [67] and in patients with normal personality organization apparently made no difference in treatment outcome.

These studies of TI are one step toward adopting more complex mediational or nonlinear models of therapeutic change. Yet, despite their attention to the complexity of the factors involved, including the accuracy of interpretations, these studies may have overlooked a crucial factor, namely the central role of patient–therapist interactions. Because these studies fail to include an interactional perspective, they typically do not take into account both therapist and patient responsiveness [63, 68]. As noted, this neglect is largely based on a rather uncritical acceptance of the drug metaphor in (psychoanalytic) psychotherapy research, which holds that psychotherapy can be conceptualized in terms of a therapist supplying specific interventions to a patient, which is essentially considered to be a passive recipient of these interventions.

A dynamic interactionism or action-theory approach, however, may be much better suited to study the process of treatment, arguing that the therapeutic process is a series of unfolding interactions, both at conscious and unconscious levels, between two individuals, with moments of experienced compatibilities and incompatibilities, moments of meeting, understanding, and mutuality versus moments of separation and misunderstanding [6]. In this context, Jones used the notion of “positive and negative interaction structures” [69]. Thus, the unit of analysis in these studies should be the therapeutic dyad. Importantly, this view entails a very different conceptualization of patient–therapist exchanges and their influence on the therapeutic process. Rather than investigating patient–therapist interactions which implicitly suggests that there are two individuals interacting with each other as individuals, this approach argues that it may be more fruitful to consider patients and therapists as *dyads moving across time*. In this way of thinking, the dyad is functionally different than either individual studied alone and indeed functions as a “dyadic individual” with its own behavior and response. Thus, rather than investigating the influence of the use of specific therapist interventions on outcome, studies should examine outcome across therapist–patient dyads. Multi-level models in particular are ideally suited to capture the various sources of variance involved, but are rarely used in psychotherapy research. Moreover, interpersonal models have been developed and validated that are able to model and test various interpersonal processes in dyads [70, 71]. Not modeling the variance associated with specific dyads and the specific processes nested within patient–therapist dyads leads to the neglect of important and perhaps crucial information.

For instance, studies clearly suggest that therapists have the tendency to respond to disturbances in the therapeutic relationship by making more TIs, which typically do not lead to repair of the therapeutic relationship [62, 68]. Similarly, when patients are more defensive, therapists might be drawn into using more TIs [62], which may lead to a vicious interpersonal cycle that is a self-fulfilling prophecy leading to therapeutic stalemates and perhaps even increased dropout [63]. This should be studied on the level of the patient–therapist dyad, as it is a process that unfolds within that relationship. Conversely, if patients are very responsive to interpretations, therapists may decrease the number of interpretations they make, as the patient progresses without the need for further interpretations.

Aggregating scores across therapists (and/or patients) is likely to fail to capture such an unfolding process nested within a specific dyad. By contrast, in patients that show little progress, as noted, therapists seem to be pulled into making more interpretations, often leading to further disruptions of the therapeutic alliance. From our perspective, such TIs often only serve to distance the patient from the therapist, and may be easily experienced as an *incompatibility* which does not convey at

the same time a sense of understanding and mutuality [6]. Congruent with this assumption, there has been a longstanding emphasis on timing and phrasing of interpretations in the psychoanalytic literature. Coady [72], for instance, found that in patients with poor outcome, interpretations contained more disaffiliative comments [72]. Moreover, particularly when arousal levels are high, patients may revert to a psychic equivalence or teleological model of thinking, in which TIs are experienced as a personal attack, insult, rejection, and even re-traumatization [33]. There is a loss of the “as-if” character of such interpretations, primarily because there is often complete loss of compatibility and mutuality. Indeed, under conditions of heightened arousal, individuals are less able to effectively process and reflect on incoming information, a prefrontal cortical function, and are functionally using more automatic or threat discrimination [33, 46]. This reallocation of cortical resources and function means that, at high arousal levels, the very moment when TIs may increase, patients (and perhaps therapists as well) are no able to effectively process and understand the incoming information.

Likewise, incorrect assumptions regarding the therapeutic process may result from a lack of sensitivity of the design or measures to capture more subtle and possibly nonlinear processes. For example, it is not uncommon for treatment studies to have time lags between assessment points spanning several months, which may miss some important processes. Moreover, a lack of extended follow-up assessments, which are typical of many studies, may miss important “sleeper effects.” In randomized trials of MBT for borderline personality disorder, for instance, differences between MBT and treatment as usual emerged only late in the treatment process [73] and were particularly pronounced at 8-year follow-up [34]. Moreover, congruent with the principles outlined in this chapter, Bateman and Fonagy not only found that MBT led to sustained changes 5 years after discharge in core features of borderline personality disorder, such as parasuicidal behavior, but also to much broader changes, including sustained improvement in global functioning and vocational status [34]. Hence, patients in MBT seemed to have been better able to negotiate crucial developmental life tasks than patients in the control condition.

Perhaps, these effects are partly due to the finding that many patients, even after extended psychoanalytic treatment, seek further treatment. They also often stay in contact with their analyst and even periodically return for a few visits or a short period of treatment. These post-analytic periods of contact are rarely discussed in the clinical literature and much less included in assessments of outcome or in interviews with patients post-treatment. For instance, in one of our studies, we found that patients continued to improve after treatment termination in a naturalistic study of psychoanalytic hospitalization-based treatment for personality disorders at 5-year follow-up [39]. Yet, almost all patients had sought additional individual treatment after treatment termination. Critics often point out that such additional treatment seeking reflects limited response to treatment. Although this is to some extent true, from the perspective outlined in this chapter, this may be seen as reflecting important improvements in these patients’ ability to relate to others (i.e., a therapist), and in their ability to rely on others in times of need. Indeed, before treatment, most of these patients were unable to enter into stable relationships, particularly not with therapists.

“Sleeper effects” have also been found in a naturalistic study comparing psychoanalysis versus psychoanalytic psychotherapy, in which differences between these two treatments only emerged years after treatment termination [49]. Moreover, a detailed qualitative study indeed showed subtle differences both in terms of therapist attitudes and interventions, as well as changes in patients in both treatments [41]. Hence, only long-term follow-up studies, and particularly detailed qualitative investigations, are able to pick up such subtle, yet important and often nonlinear, effects of treatments. Similarly, a number of single case studies have documented such complex changes associated with psychoanalytic treatment [37, 74]. As many studies lack long-term follow-up and/or detailed assessment of change processes, one can only speculate about the extent to which these studies have missed important and perhaps even essential features of the changes typical of psychoanalytic treatments. Clearly, future research should address these issues, and future studies should

routinely include broader measures of outcome and more detailed assessments of the process of change typical of psychoanalytic treatments.

These findings also have important implications for training. An important factor in psychoanalytic treatment is the use of countertransference as an important source of information about the patient's dynamics. Congruent with these assumptions, research suggests that the recognition of countertransference reactions, in combination with the ability to link these to the dynamics of the patient, is associated with good analytic process [75]. Hence, research findings provide ample evidence for a focus on the ability to recognize what is "pulled for" by patients, to prevent vicious maladaptive interpersonal cycles as well as the defensive use of interventions, including TIs (e.g., being pulled into making TIs).

How to Model the Interaction Between Therapeutic Factors?

Mainstream psychotherapy research appears to have largely settled for the view that treatment effects are only in part due to the use of specific techniques. Research has indeed pointed out that other factors account for a large portion of the variance in treatment outcome, with estimates ranging from 15% of the variance in outcome predicted by specific techniques [24], 30% by common factors (e.g., providing support and empathic understanding), 15% by expectancy and placebo effects, and 35–40% by extra-therapeutic effects (e.g., spontaneous remission, positive events or changes).

Although mainstream approaches assume that these factors interact, they essentially consider these factors as independent and additive. This clearly is not the case and is erroneously based on assumptions from pharmaceutical trials, i.e., the assumption that psychotherapy consists of supplying "active ingredients" (e.g., interpretations) by the therapist to patients that are essentially passive [1].

From a more relational and dynamic interactionism perspective, by contrast, these factors are seen as interrelated factors that interact in non-additive, and often nonlinear, mutually reinforcing or mutually deteriorating ways. From this perspective, treatment can be described in terms of the activation of prototypical representations of self and others, and ways of thinking about the self and others, in the context of the therapeutic relationship, i.e., a relationship with a significant other that provides both care and support while exploring, interpreting, and working through typical ways of thinking and feeling about the self and others. Moreover, it is through this exploration in the therapeutic relationship in the context of experiences of compatibility and incompatibility that changes in representations of self and others (and importantly self in relation to others) can be achieved. This increasing ability to make sense of one's own mind and that of others (most notably initially the therapist's mind and that of significant others) can then be increasingly transferred to ways of thinking and feeling outside the treatment setting. Hence, this leads to the view that the goals of treatment are changes in person–environment transactions [3], which first tend to occur within the therapeutic relationship and are then exported to outside the treatment setting. This process essentially parallels normal developmental processes, and in particular how in normal development, attachment, attachment representations, and the ability to represent internal mental states in self and others develop in the context of relationships with attachment figures [33, 76].

In the study of brief outpatient treatment of depression, Shahar et al., for instance, found that patients' pre-treatment levels of self-critical perfectionism not only negatively impacted on their ability to form a therapeutic alliance, but also on their ability to maintain a supportive interpersonal context external to the treatment process [77]. Hence, the examination of these interpersonal processes should be central in psychotherapy research, and how they result in changes in the representation of self and others and in reflective functioning as well as other changes in person–environment transactions external to the treatment process. In this context, there is some suggestion that at least with some patients, changes first occur in the representation of the therapist, followed by changes in representation of self, leading to new ways viewing oneself as well as others [78, 79].

These views are also congruent with findings concerning person–environment interactions more generally which play a key role in both normal and disrupted development [2]. More specifically, research findings suggest that individuals, mostly unwittingly, create in part their own (maladaptive) environments. These findings are of key relevance for psychoanalytic psychotherapy researchers because they are congruent with the concept of transference, and with interpersonal models that argue that specific (interpersonal) behaviors pull for specific behaviors in relationships, including the therapeutic relationship (e.g., dominance pulls for submissiveness) [70]. Of particular interest in this context are findings of gene–environment interactions. For instance, although still controversial to some extent, there is increasing evidence that a polymorphism of the 5HTT gene may be associated with increased stress sensitivity, resulting in increased vulnerability to depression [80] and a variety of other stress-related disorders, including functional somatic disorders such as chronic fatigue syndrome and fibromyalgia, which may explain in part the high co-morbidity among depression, pain, and fatigue [45]. These findings suggest that some individuals may be specifically responsive to environmental factors in triggering vulnerability, but perhaps also for more positive environmental factors, including psychotherapy. For instance, a study by Kaufman et al. suggests that social support may suppress the relationship between the 5HTT polymorphism and depression [81]. Bakermans-Kranenburg et al. showed that cortisol responses, as an indication of stress reactivity, in an attachment-based intervention in toddlers (age 1–3 years) screened for externalizing behavior, were moderated by a polymorphism of the dopamine DRD4 receptor gene, which is implicated in attachment behavior [82]. Conversely, a haplotype in the corticotropin-releasing hormone receptor 1 gene (CRHR1) may protect individuals who have experienced early adversity against later psychopathology because CRHR1 plays a central role in emotional memory consolidation, and those individuals with two copies of the TAT haplotype may have relatively unemotional cognitive processing of early adverse experiences, protecting them against later vulnerability for depression [83].

Hence, the dynamic interactionism perspective taken in this chapter appears to be much more in line with developmental research and with recent findings in cognitive and affective neuroscience concerning person–environment interactions than assumptions about linear and additive interactions that still dominate much of psychotherapy research. Moreover, this view opens up exciting perspectives because it allows the exploration of similarities between normal and pathological developmental processes at both the psychosocial and neurobiological level [84].

Conclusions

In this chapter, a dynamic interactionism or action-theory perspective on the psychotherapy process is proposed. From this perspective, the focus in psychotherapy research should be the interaction between the patient and the therapist moving across time, which leads to the view that psychotherapeutic change is probably not a linear process, but a process characterized by sudden gains, regression, and other nonlinear processes. These interactive processes are assumed to lead to two types of related changes, i.e., internal changes (i.e., an increased ability to make sense of one's own mind and that of others, first in the context of therapeutic relationship but subsequently generalized to other contexts), paralleled and/or followed by external changes, i.e., changes in person–environment transactions as expressed in broaden and build cycles.

This view not only has important implications for future psychoanalytic psychotherapy research, but for psychoanalytic training as well, as it argues for a fundamental parallel between processes involved in normal and disrupted psychological development, and the therapeutic process.

References

1. Stiles WB, Shapiro DA. Abuse of the drug metaphor in psychotherapy process–outcome research. *Clin Psychol Rev.* 1989;9(4):521–543.
2. Luyten P, Blatt SJ, Van Houdenhove B, Corveleyn J. Depression research and treatment: are we skating to where the puck is going to be? *Clin Psychol Rev.* 2006;26(8):985–999.
3. Shahar G. Clinical action: introduction to the special section on the action perspective in clinical psychology. *J Clin Psychol.* 2006;62(9):1053–1064.
4. Shahar G, Priel B. Active vulnerability, adolescent distress, and the mediating/suppressing role of life events. *Pers Indiv Differ.* 2003;35(1):199–218.
5. Blatt SJ. Polarities of experience: relatedness and self definition in personality development, psychopathology, and the therapeutic process. Washington, DC: American Psychological Association; 2008.
6. Blatt SJ, Behrends RS. Internalization, separation-individuation, and the nature of therapeutic action. *Int J Psychoanal.* 1987;68:279–297.
7. Fredrickson BL. The role of positive emotions in positive psychology. The broaden-and-build theory of positive emotions. *Am Psychol.* 2001;56(3):218–226.
8. Abbass AA, Hancock JT, Henderson J, Kisely SR. Short-term psychodynamic psychotherapies for common mental disorders. *Cochrane Database Syst Rev.* 2006;18(4):CD004687.
9. Driessen E, Cuijpers P, de Maat SCM, Abbass AA, de Jonghe F, Dekker JJM. The efficacy of short-term psychodynamic psychotherapy for depression: a meta-analysis. *Clin Psychol Rev.* 2010;30(1):25–36.
10. Fonagy P, Roth A, Higgitt A. Psychodynamic psychotherapies: evidence-based practice and clinical wisdom. *Bull Menninger Clin.* 2005;69(1):1–58.
11. Leichsenring F, Rabung S. Effectiveness of long-term psychodynamic psychotherapy: a meta-analysis. *J Am Med Assoc.* 2008;300(13):1551–1565.
12. Shedler J. The efficacy of psychodynamic psychotherapy. *Am Psychol.* 2010;65(2):98–109.
13. de Maat S, De Jonghe F, de Kraker R, Leichsenring F, Abbass A, Luyten P, et al. The effectiveness of psychoanalysis: a comparison between psychoanalysis (PA) and long-term psychoanalytic psychotherapy (LTPP), submitted for publication.
14. Bhar SS, Thombs BD, Pignotti M, Bassel M, Jewett L, Coyne JC, et al. Is longer-term psychodynamic psychotherapy more effective than shorter-term therapies? Review and critique of the evidence. *Psychother Psychosom.* 2010;79(4):208–216.
15. Westen D, Novotny CM, Thompson-Brenner H. The empirical status of empirically supported psychotherapies: assumptions, findings, and reporting in controlled clinical trials. *Psychol Bull.* 2004;130(4):631–663.
16. Luyten P, Blatt SJ, Corveleyn J. Minding the gap between positivism and hermeneutics in psychoanalytic research. *J Am Psychoanal Assoc.* 2006;54(2):571–610.
17. Ablon JS, Levy R, Katzenstein T. Beyond brand names of psychotherapy: identifying empirically supported change processes. *Psychother Theor Res Pract.* 2006;43(2):216–231.
18. Roth A, Fonagy P. What works for whom? A critical review of psychotherapy research. 2nd ed. New York: Guilford Press; 2004.
19. Kazdin AE. Mediators and mechanisms of change in psychotherapy research. *Annu Rev Clin Psychol.* 2007;3:1–27.
20. Kraemer HC, Stice E, Kazdin A, Offord D, Kupfer D. How do risk factors work together? Mediators, moderators, and independent, overlapping, and proxy risk factors. *Am J Psychiatry.* 2001;158(6):848–856.
21. Blatt SJ, Zuroff DC, Hawley LL, Auerbach JS. Predictors of sustained therapeutic change. *Psychother Res.* 2010;20:37–54.
22. Cronbach LJ. Correlation between persons as a research tool. In: Mowrer H, editor. *Psychotherapy: theory and research.* New York: Ronald Press; 1953. p. 376–389.
23. Freud S. The neuro-psychoses of defence. In: Strachey J, editor. *The standard edition of the complete psychological works of Sigmund Freud*, vol. 3. London: Hogarth Press; 1894. p. 43.
24. Lambert MJ, Barley DE. Research summary on the therapeutic relationship and psychotherapy outcome. In: Norcross JC, editor. *Psychotherapy relationships that work.* Oxford: Oxford University Press; 2002. p. 17–32.
25. Fonagy P. The changing shape of clinical practice: driven by science or by pragmatics? *Psychoanal Psychother.* 2010;24(1):22–43.
26. Zuroff DC, Blatt SJ. The therapeutic relationship in the brief treatment of depression: contributions to clinical improvement and enhanced adaptive capacities. *J Consult Clin Psychol.* 2006;74(1):130–140.
27. Stiles WB, Leach C, Barkham M, Lucock M, Iveson S, Shapiro DA, et al. Early sudden gains in psychotherapy under routine clinic conditions: practice-based evidence. *J Consult Clin Psychol.* 2003;71(1):14–21.
28. Tang TZ, DeRubeis RJ, Hollon SD, Amsterdam J, Shelton R. Sudden gains in cognitive therapy of depression and depression relapse/recurrence. *J Consult Clin Psychol.* 2007;75(3):404–408.

29. Tang TZ, Luborsky L, Andrusyna T. Sudden gains in recovering from depression: are they also found in psychotherapies other than cognitive-behavioral therapy? *J Consult Clin Psychol.* 2002;70(2):444–447.
30. Lothane Z. Dramatology in life, disorder, and psychoanalytic therapy: a further contribution to interpersonal psychoanalysis. *Int Forum Psychoanal.* 2009;18:135–148.
31. Freud S. The ego and the id. In: Strachey J, editor. The standard edition of the complete psychological works of Sigmund Freud, vol. 19. London: Hogarth Press; 1923. p. 1–59.
32. Levy KN, Clarkin JF, Yeomans FE, Scott LN, Wasserman RH, Kernberg OF. The mechanisms of change in the treatment of borderline personality disorder with transference focused psychotherapy. *J Clin Psychol.* 2006;62(4):481–501.
33. Fonagy P, Luyten P. A developmental, mentalization-based approach to the understanding and treatment of borderline personality disorder. *Dev Psychopathol.* 2009;21(4):1355–1381.
34. Bateman A, Fonagy P. 8-Year follow-up of patients treated for borderline personality disorder: mentalization-based treatment versus treatment as usual. *Am J Psychiatry.* 2008;165(5):631–638.
35. Vermote R, Lowyck B, Luyten P, Vertommen H, Corveleyn J, Verhaes Y, et al. Process and outcome in psychodynamic hospitalization-based treatment for patients with a personality disorder. *J Nerv Ment Dis.* 2010;198(2):110–115.
36. Koelen J, Luyten P, Eurelings-Bontekoe EH, Diguier L, Vermote R, Lowyck B, et al. The impact of personality organisation on treatment response and the therapeutic process, submitted for publication.
37. Kächele H, Schachter J, Thomä H. From psychoanalytic narrative to empirical single case research: implications for psychoanalytic practice. New York/London: Routledge; 2009.
38. Luyten P, Lowyck B, Vermote R. The Relationship Between Interpersonal Problems and Outcome in Psychodynamic Hospitalization-Based Treatment for Personality Disorders: A 12-month Follow-Up Study. *Psychoanalytic Psychotherapy.* 2010;24(4):417–436.
39. Vermote R, Lowyck B, Luyten P, Verhaest Y, Vertommen H, Vandeneede, B. et al. Patterns of Inner Change and Their Relation with Patient Characteristics and Outcome in a Psychoanalytic Hospitalization-Based Treatment for Personality Disordered Patients. *Clinical Psychology & Psychotherapy.* 2011;18(4):303–313.
40. Blatt SJ. Experiences of depression: theoretical, clinical and research perspectives. Washington, DC: American Psychological Association; 2004.
41. Falkenstrom F, Grant J, Broberg J, Sandell R. Self-analysis and post-termination improvement after psychoanalysis and long-term psychotherapy. *J Am Psychoanal Assoc.* 2007;55(2):629–674.
42. Luyten P, Fonagy P, Lemma A, Target M. Depression. In A. Bateman P. Fonagy (Eds.), *Handbook of Mentalizing in mental health practice* (pp. 385–417). Washington, DC: American Psychiatric Association; 2012.
43. Roisman GI, Padron E, Sroufe LA, Egeland B. Earned secure attachment in retrospect and prospect. *Child Dev.* 2002;73:1204–1219.
44. Luyten P, Fonagy P, Mayes LC, Vermote R, Lowyck B, Bateman A, et al. Broadening the scope of the mentalization-based approach to psychopathology, submitted for publication.
45. Luyten P, Vliegen N, Van Houdenhove B, Blatt SJ. Equifinality, multifinality, and the rediscovery of the importance of early experiences: pathways from early adversity to psychiatric and (functional) somatic disorders. *Psychoanal Study Child.* 2008;63:27–60.
46. Luyten P, Mayes LC, Fonagy P, van Houdenhove B. The interpersonal regulation of stress: a developmental framework, submitted for publication.
47. Zuroff DC, Blatt SJ. When brief treatment is over: enhanced adaptive capacities and stress reactivity after termination. *Psychother Res.* 2003;13:99–115.
48. Hawley LL, Ho M-HR, Zuroff DC, Blatt SJ. The relationship of perfectionism, depression, and therapeutic alliance during treatment for depression: latent difference score analysis. *J Consult Clin Psychol.* 2006;74(5): 930–942.
49. Grant J, Sandell R. Close family or mere neighbors? Some empirical data on the differences between psychoanalysis and psychotherapy. In: Richardson P, Kächele H, Renlund C, editors. *Research on psychoanalytic psychotherapy with adults.* London: Karnac; 2004. p. 81–108.
50. Kächele H. Distinguishing psychoanalysis from psychotherapy. *Int J Psychoanal.* 2010;91(1):35–43.
51. Blatt SJ, Luyten P. A structural-developmental psychodynamic approach to psychopathology: two polarities of experience across the life span. *Dev Psychopathol.* 2009;21(3):793–814.
52. Allen J, Fonagy P, Bateman A. *Mentalizing in clinical practice.* Washington: American Psychiatric Press; 2008.
53. Alexander F, French TM. *Psychoanalytic therapy: principles and application.* New York: Ronald Press; 1946.
54. Kohut H. *The restoration of the self.* New York: International Universities Press; 1977.
55. Blatt SJ, Luyten P. Reactivating the psychodynamic approach to classify psychopathology. In: Millon T, Krueger RF, Simonsen E, editors. *Contemporary directions in psychopathology: scientific foundations of the DSM-V and ICD-11.* New York: Guilford Press; 2010. p. 483–514.
56. Fonagy P, Target M. Attachment, trauma, and psychoanalysis: where psychoanalysis meets neuroscience. In: Jurist EJ, Slade A, Bergner S, editors. *Mind to mind: infant research, neuroscience, and psychoanalysis.* New York: Other Press; 2008. p. 15–49.

57. Connolly Gibbons MB, Crits-Christoph P, Barber JP, Stirman SW, Gallop R, Goldstein LA, et al. Unique and common mechanisms of change across cognitive and dynamic psychotherapies. *J Consult Clin Psychol*. 2009;77(5):801–813.
58. Kanninen K, Salo J, Punamäki RL. Attachment patterns and working alliance in trauma therapy for victims of political violence. *Psychother Res*. 2000;10(4):435–449.
59. Eames V, Roth A. Patient attachment orientation and the early working alliance – a study of patient and therapist reports of alliance quality and ruptures. *Psychother Res*. 2000;10(4):421–434.
60. The Boston Change Process Study Group. The “something more” than interpretation revisited: sloppiness and co-creativity in the psychoanalytic encounter. *J Am Psychoanal Assoc*. 2005;53(3):693–729.
61. Safran JD, Muran JC, Samstag LW, Steven C. Repairing alliance ruptures. In: Norcross JC, editor. *Psychotherapy relationships that work*. Oxford: Oxford University Press; 2002. p. 235–254.
62. Hoglend P. Analysis of transference in psychodynamic psychotherapy. *Can J Psychoanal*. 2004;12:279–300.
63. Crits-Christoph P, Connolly Gibbons MB. Relational interpretations. In: Norcross JC, editor. *Psychotherapy relationships that work*. Oxford: Oxford University Press; 2002. p. 285–300.
64. Hoglend P, Amlo S, Marble A, Bogwald KP, Sorbye O, Sjaastad MC, et al. Analysis of the patient–therapist relationship in dynamic psychotherapy: an experimental study of transference interpretations. *Am J Psychiatry*. 2006;163(10):1739–1746.
65. Hoglend P, Bogwald K-P, Amlo S, Marble A, Ulberg R, Sjaastad MC, et al. Transference interpretations in dynamic psychotherapy: do they really yield sustained effects? *Am J Psychiatry*. 2008;165(6):763–771.
66. Johansson P, Hoglend P, Ulberg R, Bogwald KP, Amlo S, Marble A, et al. The mediating role of insight for long-term improvements in psychodynamic therapy. *Journal of Consulting & Clinical Psychology*. 2010;78(3):438–448.
67. McCullough L, Winston A, Farber BA, Porter F, Pollack J, Laikin M, et al. The relationship of patient-therapist interaction to outcome in brief psychotherapy. *Psychotherapy*. 1991;28:525–533.
68. Henry WP, Strupp HH, Schach TE, Gaston L. Psychodynamic approaches. In: Bergin AE, Garfield L, editors. *Handbook of psychotherapy and behavior change*. 4th ed. New York: Wiley; 1994. p. 467–508.
69. Ablon JS, Jones E. On analytic process. *J Am Psychoanal Assoc*. 2005;53(2):541–568.
70. Horowitz LM, Wilson KR, Turan B, Zolotsev P, Constantino MJ, Henderson L. How interpersonal motives clarify the meaning of interpersonal behavior: a revised circumplex model. *Pers Soc Psychol Rev*. 2006;10(1):67–86.
71. Moskowitz DS, Zuroff DC. Flux, pulse, and spin: dynamic additions to the personality lexicon. *J Pers Soc Psychol*. 2004;86(6):880–893.
72. Coady N. The association between complex types of therapist interventions and outcomes in psychodynamic psychotherapy. *Res Social Work Prac*. 1991;1:257–277.
73. Bateman A, Fonagy P. Randomized controlled trial of outpatient mentalization-based treatment versus structured clinical management for borderline personality disorder. *Am J Psychiatry*. 2009;166(12):1355–1364.
74. Lingardi V, Shedler J, Gazzillo F. Assessing personality change in psychotherapy with the SWAP-200: a case study. *J Pers Assess*. 2006;86:23–32.
75. Gelso CJ, Hayes JA. The management of counter transference. In: Norcross JC, editor. *Psychotherapy relationships that work*. Oxford: Oxford University Press; 2002. p. 267–283.
76. Fonagy P, Gergely G, Target M. The parent–infant dyad and the construction of the subjective self. *J Child Psychol Psychiatry*. 2007;48(3/4):288–328.
77. Shahar G, Blatt SJ, Zuroff DC, Krupnick J, Sotsky SM. Perfectionism impedes social relations and response to brief treatment for depression. *J Soc Clin Psychol*. 2004;23:140–154.
78. Auerbach JS, Blatt SJ. Self-reflexivity, intersubjectivity, and therapeutic change. *Psychoanal Psychol*. 2001;18:427–450.
79. Harpaz-Rotem I, Blatt SJ. A pathway to therapeutic change: changes in self-representation in the treatment of adolescents and young adults. *Psychiatr Interpers Biol Process*. 2009;72:32–49.
80. Risch N, Herrell R, Lehner T, Liang K-Y, Eaves L, Hoh J, et al. Interaction between the serotonin transporter gene (5-HTTLPR), stressful life events, and risk of depression: a meta-analysis. *JAMA*. 2009;301(23):2462–2471.
81. Kaufman J, Yang B-Z, Douglas-Palumberi H, Houshyar S, Lipschitz D, Krystal JH. Social support and serotonin transporter gene moderate depression in maltreated children. *Proc Natl Acad Sci USA*. 2004;101:17316–17321.
82. Bakermans-Kranenburg MJ, Van Ijzendoorn MH, Mesman J, Alink LRA, Juffer F. Effects of an attachment-based intervention on daily cortisol moderated by dopamine receptor D4: a randomized control trial on 1- to 3-year-olds screened for externalizing behavior. *Dev Psychopathol*. 2008;20:805–820.
83. Polanczyk G, Caspi A, Williams B, Price TS, Danese A, Sugden K, et al. Protective effect of CRHR1 gene variants on the development of adult depression following childhood maltreatment: replication and extension. *Arch Gen Psychiatry*. 2009;66(9):978–985.
84. Luyten P, Blatt SJ. Integrating theory-driven and empirically-derived models of personality development and psychopathology: A proposal for DSM-V. *Clinical Psychology Review*. 2011;31:52–68.

Chapter 22

How to Make Practical Use of Therapeutic Alliance Research in Your Clinical Work

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Keywords Patient Characteristics • Psychological Assessment • Rupture • Technique • Therapeutic alliance • Therapist Characteristics

One primary purpose for psychotherapy research is linking empirically based findings to applied treatment interventions. This use of research can potentially define optimal strategies and techniques that can help guide psychotherapy practice in the field. While caution is warranted considering the varied methodological attributes and findings across different studies, clinicians may be informed by the preponderance of extant data. Extensive prior research has consistently found a significant relationship between therapeutic alliance with therapy process and outcome [1–4]. Moreover, alliance has been found to be one of the most robust predictors of positive psychotherapy outcome regardless of the type of therapy utilized or whether assessed by therapist, client, or independent observer [1]. Thus, alliance research has the potential to significantly inform the treatment approach for a wide range of practicing therapists. With this in mind, the aim of this chapter is to review and summarize the contemporary research on the relationship between specific therapist attributes and interventions on the therapeutic alliance. The synthesized research is inclusive and incorporates varied models of psychotherapy, including humanistic, experiential, cognitive-behavioral, supportive–expressive, interpersonal, motivation-enhancing, relational, and other prevalent psychotherapy orientations. We will first summarize techniques that have been found to significantly enhance the alliance during specific, initial phases of psychotherapy and then move to therapist activities and characteristics that have been found to positively or negatively affect the alliance across treatment. Finally, we will discuss how these therapist activities and characteristics related to alliance may be related to both the initiation and resolution of treatment ruptures.

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Pre-Therapy Assessment

Emerging research suggests that psychological assessment procedures, when conducted with personalized, collaborative, and involved test feedback, have positive and clinically meaningful effects on both therapeutic alliance as well as treatment outcome [5–10]. One model that seeks to integrate aspects of patient–clinician interactions, more commonly found in the course of psychotherapy into the assessment phase of treatment, is a Therapeutic Model of Assessment (TMA [11–15]). This process incorporates a number of specific therapist activities and strategies that have demonstrated promise in fostering positive working alliances. Specifically, in a TMA, “the assessors are committed to:

- (a) Developing and maintaining empathic connections with clients.
- (b) Working collaboratively with clients to define individualized assessment goals (e.g., ‘What’s most important to you right now?’, ‘At the end of therapy what would you most like to be different or have changed?’, ‘How will you know at the end of our work together if treatment has been effective?’).
- (c) Sharing and exploring assessment results with clients” ([11, p. 378]; [12]).

By expanding the focus of assessment, both patient and clinician gain knowledge about treatment issues that, in turn, provide the opportunity for a more involved, empathic interaction and collaboration during the assessment phase of treatment (e.g., “We’ve covered a lot of ground today and I’ve asked a lot of questions, but is there something that we haven’t touched on yet that you think is vitally important to knowing you as a person?”).

Alliance developed during an assessment phase utilizing a TMA has been found to be superior to traditional information gathering (IG) models of assessment [15–17]. A number of specific interventions and techniques are highlighted in the TMA approach, such as the development of a Core Conflictual Relational Theme (CCRT [18–20]). The CCRT is a statement of the patient’s wish (W), an expected, imagined, or actual response from another (RO), and a subsequent response from the self (RS). The RS includes both the actions/behaviors and the feelings/affect associated with this response. One practical example of a CCRT interpretation developed in the session process with a depressed patient was: “In that moment you described wanting a deeper connection and more support from your mother, but instead experienced her as rejecting and neglectful toward you. This led you to withdraw from her, feeling sad, hopeless that she will ever be concerned about your needs and also...even ‘a little angry’ (emphasis on the patient’s words).” An initial CCRT interpretation is given during the assessment feedback session, and the exploration of these relational themes helps the clinician focus on collaboration and alliance building. A TMA also guides a clinician to discuss factors that contribute to the clinician–patient interaction throughout the assessment process (e.g., “You know we’ve talked a lot about the issue of ____ today, and I wonder how that might play out in here between the two of us?”). An additional TMA strategy is that “clients should first be given feedback that closely matches their own preconceptions and then be presented with information that is progressively more discrepant from their self-concepts” ([11, p. 380]; [12]).

Another specific TMA intervention that promotes a great deal of exploration and collaboration between patient and clinician is the utilization of a Socialization Interview (SI [19]) on what to expect in psychodynamic psychotherapy. The SI outlines the patient’s and clinician’s role during formal treatment while enhancing the patient’s understanding of psychotherapy as well as the relational focus of the therapeutic process. Related to a more structured and collaborative feedback process, Yeomans et al. [21] examined factors related to premature treatment termination of borderline patients and found that both therapeutic alliance and the development of a treatment contract to be significantly related to length of treatment. The specific findings of Yeomans et al. ([21]; also see [8, 14]) are particularly relevant to the current review and consistent with an explicit, collaborative discussion of treatment goals, expectations, and structure in the TMA and SI.

While possessing the distinctive features of a traditional assessment process, a TMA also integrates therapeutic elements such as responding to acute stressors that may have developed since the last meeting (e.g., “Last time we spoke about several things that seemed rather intense and I wonder if any of those thoughts or feelings have come up for you since then?”), clarifying sources of distress and cyclical relational themes (e.g., “When is the first time you remember feeling that way?”, “The last time?”, “When has it been the hardest”, “When has it been the most bearable?”), allowing the patient to initiate the discussion of salient issues (e.g., “What is most meaningful about that for you?”), facilitating client affect and experience (e.g., “Can you describe how you feel right now?”, “Where do you experience that most in your body?”), exploring uncomfortable feelings (e.g., “What’s it like,...how do you feel, to hear yourself say that?”), as well as in-session process and affect (e.g., “What’s it like share this out loud, in here with me?”).

The TMA approach as a whole has been shown to foster positive alliances in a number of studies (as well as demonstrate superiority to traditional IG models in this regard). In addition, certain techniques and interventions inherent within it have also been supported in alternate contemporary psychotherapy studies on early psychotherapy process. Specifically, adopting a collaborative stance toward the patient [22, 23], such as by exploring the clients perspective of their disorder and developing individual treatment goals and tasks [15, 16, 23] in an interactive rather than one-sided manner [22] in order to foster more involved, depth-oriented interviews [15, 16, 22], has been shown to improve early alliances. Interventions such as clarifying sources of distress and maintaining an active focus on treatment related topics [24] have also demonstrated their utility in fostering positive early working relationships. In addition, providing the client with new understanding and insight [24], exploring in-vivo process and affect by adaptively exploring in-session experiences [23, 24], and offering psychoeducation on symptoms and the treatment process [6, 23] have also shown potential in significantly improving nascent therapeutic relationships.

The findings just summarized underscore that it is “never too early” for clinicians to attempt to adopt these attitudes and interventions [15, 16, 24]. A unique and important feature of an assessment phase is that it has the potential to allow clinician and client to review and explore the meaning of assessment results *together*. Not only does this deepen a clients understanding of him/herself, it is also found to promote a collaborative, empowering, and empathic connection. These findings combine to suggest that alliance-fostering techniques during assessment closely resemble the actual process of psychotherapy, and this more relational therapeutic stance does appear to be superior to traditional IG approaches to assessment, at least with regard to therapeutic alliance. The therapist’s ability to form a relationship with the patient during this stage may enhance the patient’s perception of being understood and aid in feeling more connected to the treatment process. A greater feeling of connection to the treatment process may also provide even more opportunity for patient improvement throughout psychotherapy. Accordingly, empirical findings also strongly suggest that the effects of patient and therapist-rated alliance developed during a pre-therapy assessment persist across the course of treatment [15, 24].

Initial Interviews and Alliance

Prior to the initiation of formal psychotherapy, a client may be involved in the treatment process via single session pre-treatment intakes, motivation enhancing meetings, screening interviews, or multi-session consultations. There is some empirical evidence that certain clinician attitudes and behaviors shown during a pre-therapy consultation or interview can be beneficial in promoting positive ensuing client–clinician therapeutic connections. Significant relationships have been found between pre-therapy alliance and therapist activities that convey warmth, respect, and potency [25]. Interventions such as adopting a collaborative stance toward the client [15–17, 26], actively exploring issues [25, 26],

using clear, concrete, experience-near language [26], providing the client with new understanding and insight [25], and collaboratively developing individual treatment goals and tasks [26] have been shown to also increase alliance levels between clinician and client during this initial phase of clinical contact. These clinician attributes and activities conducted during pre-treatment sessions as a precursor to Cognitive-Behavioral Therapy (CBT) have demonstrated positive treatment effects. Specifically, a Motivational Interviewing pre-treatment (MIPT) intervention, incorporating attitudes and behaviors that promote collaboration, empathy, respect, support of self-efficacy, providing new understanding (developing discrepancies between patient problems and values), reflectively supporting patient statements that favor change, and “rolling with resistance” has been shown to significantly improve subsequent treatment engagement, homework compliance, as well as more action-oriented therapies [27–31]. This increased engagement in subsequent CBT following a MIPT has been demonstrated in studies that investigate clinician [27–31] as well as patient perspectives [29]. In addition, a recent study by Crits-Cristoph et al. [32] provides additional evidence that motivation-enhancing pre-treatment interventions can have a significant impact on alliance levels for patients with substance abuse and dependence diagnoses. Specifically, this study compared the alliance fostering potential of three sessions of motivation enhancing therapy (MET) with counseling as usual (CAU) for patients subsequently entering formal group psychotherapy. The findings were that for both MET and CAU randomized groups, increased use of MET fundamental techniques (fostering collaboration, positive affirmations, use of open-ended questions, use of reflective statements, and general motivational interviewing style) and MET advanced techniques (problem discussion and feedback, exploring pros/cons/ambivalence, heightening discrepancies, enhancing motivation for change, and discussing a plan for change) during treatment sessions were associated with higher levels of alliance. These clinician activities and attitudes are quite similar to the findings presented earlier regarding psychological assessment and again highlight the benefit of a respectful, supportive, active, and collaborative pre-treatment process.

First Session and Alliance

Considering initial alliance development, it is thought that the first few psychotherapy sessions are quite important. Much of contemporary psychotherapy research has focused on the third session, but the initial psychotherapy session can also be considered critical in the development of positive alliances [1, 33, 34]. Considering the current focus of this chapter, what specific interventions can a clinician engage in during the first psychotherapy session to improve alliance levels?

Keeping in mind that approximately 40–50% of patients terminate therapy prematurely [35–37], psychotherapy process in initial sessions is an important area for clinicians to consider. The extant research indicates that a therapists’ application of techniques that convey trust, appreciation [38], warmth [38, 39], and understanding [40] will likely increase opportunities to improve alliance levels in an initial session. In addition, specific interventions leading to higher alliances and patient continuation in psychotherapy include speaking with emotional as well as cognitive content [39], attending to the patient’s unique experience [41, 42], fostering patient motivation for change [41], maintaining an active focus on treatment-related topics [39], exploring in-session process and affect in a nondefensive and nonjudgmental manner [38], presenting the treatment model [42], and identifying new clinical issues to foster deeper levels of understanding and insight [40].

Tryon in particular has conducted a number of studies specifically investigating client engagement in an initial psychotherapy session [40, 43, 44]. The major findings for this series of studies were that therapists who are more empathic and understanding have impactful (depth oriented, special, powerful) and longer first sessions that were significantly more likely to successfully engage their clients for a second session. She also found that fostering depth, new understanding, and insight

in patients were also conducive for positive client–clinician relationships. The beneficial effects of longer interviews may be partly due to the fact that longer sessions presumably have more verbal content and offer more opportunities to deepen the therapeutic relationship and the client’s understanding of themselves. Therapist-rated depth of early sessions was again found to be positively correlated with therapeutic alliance [45, 46] as measured by the Working Alliance Inventory (WAI [47]). Mallinckrodt [45] also found both patient-rated depth and smoothness of first sessions to be positively correlated with the WAI during the early phase of treatment.

Summary of Clinician Activities and Characteristics Related to Alliance During Early Phases of Psychotherapy

The therapeutic alliance has been found to form relatively early in psychological treatment and is predictive of later positive psychotherapy outcomes [1, 2, 4, 33, 48, 49]. This underscores the importance of psychotherapists’ active attempts to foster positive working relationships as early as possible in treatment. The studies included thus far suggest that certain therapist’s attitudes and therapeutic techniques, not tied to any particular psychotherapy orientation, have been found to positively influence the development and maintenance of an initial, positive working alliance. Table 22.1 summarizes these findings in a convenient format.

Specific therapist interventions that have been found to improve initial alliances can be summarized within three major categories. These categories are Treatment Frame, Session Focus, and Feedback. In addition, we would offer the interventions in Table 22.1 as a practical outline for clinicians to organize a psychological assessment or intake interview. Within the treatment frame, it is important to conduct longer, more involved, depth-oriented interviews; to adopt a collaborative stance toward the patient, speak with emotional and cognitive content, utilize open-ended and reflective queries; and to use clear, concrete, experience-near language in order to offer clinicians an initial therapeutic structure with significant alliance-fostering potential. An example of a collabora-

Table 22.1 Summary of clinician activities found to be significantly related to positive therapeutic alliance during the initial interview and psychological assessment

Frame

Conduct longer, more involved, depth-oriented interviews
Adopt a collaborative stance toward client
Speak with emotional and cognitive content
Use clear, concrete, experience-near language
Utilize open-ended and reflective queries

Focus

Allow client to initiate discussion of salient issues
Actively explore these issues
Clarify sources of distress or discrepancy
Identify cyclical relational themes
Facilitate client affect and experience
Explore uncomfortable feelings
Explore in-session process and affect
Maintain active focus on these related topics

Feedback

Review and explore meaning of assessment results
Provide client new understanding and insight
Offer psychoeducation on symptoms and treatment process
Collaboratively develop individual treatment goals and tasks
Foster motivation for change

Adapted from [10]

tive, involved, and emotionally forthcoming early clinical interaction utilizing experience-near language is as follows:

Therapist: Take your time...I'd really like to get a feel for what your biggest struggles are. You know, it's normal for people to be a little nervous the first time they speak to someone new about such personal issues.

Patient: Nervous?...I'm not nervous...why would you say that? Maybe you're nervous?

Therapist: Well, you're right, that is part of what I'm feeling. When I meet people for the first time I usually do feel some nervousness about how things will go, and also an interested excitement about getting to know them better and the kind of work we might do together. So you might have picked up on that, what do you think? Do you feel some overall nervous energy in here?

Patient: Yeah, that's what I said. Maybe I'm a tiny bit nervous, but as you said, that makes sense right?

Therapist: Sure, sure it does (moving to attempts at fostering depth). And I'm curious, from what you've told me, it seems that you might feel more nervous when you get the impression people are boxing you in or judging you?

The treatment focus interventions are the most numerous and include directions for psychotherapy attention and discourse that have been found to increase alliance levels. Focus interventions include allowing the client to initiate the discussion of salient issues, focusing on discrepancies in clients value systems, clarifying sources of distress and discrepancy, highlighting cyclical relational themes, exploring uncomfortable feelings, facilitating client affect and experience, exploring in-session process and affect, identifying new clinical concerns, and maintaining an active focus on these issues. An overarching intent of these focus interventions is the active fostering of in-session emotional experiencing. While these affects generally stem from past or present sources of distress, clinicians should vigorously encourage the patient to bring them "into the room" by empathically encouraging affective experiencing in early sessions. The following interaction provides an example of a therapist intervention that aids in fostering a patient's emotional experience that may be uncomfortable or threatening:

Therapist: What's it like for us to talk about this in here?

Patient: (loudly) No problem at all.

Therapist: Well, I noticed that your voice changed a bit when we were talking about it, and I wonder what you are feeling right now?

Patient: Whatever, I'm feeling nothing. I'm just trying to explain to you what's going on with me and my daughter. I'm just trying to get this all out, it's complicated.

Therapist: Yes, it is and you're making a great effort to help me understand what exactly took place. At the same time, I often find that when someone's voice gets louder like that, then maybe they're describing something that can be uncomfortable. In "trying to get this all out" you could be feeling lots of different things or a few complicated things intensely? In order to make these complicated feelings more clear it might help to try and focus in on exactly what you're experiencing right now, in this moment.

An example of utilizing a cyclical relational theme in an interpretive manner to foster an affective response is as follows:

Patient: You won't believe what my boss did the other day! I handed him my assignment and he snatched it out of my hand, huffed, and turned away. I just couldn't believe it considering how much work I had put into it.

Therapist: I imagine that your boss's statement may have been particularly hurtful, especially given your history of being criticized by important people in your life. Perhaps some of that

anger can also protect you from the disappointment of being constantly criticized by others whom you turn to for support.

Patient: When I'm not mad at him I do feel sad and worthless. When I am angry at him, I share that with coworkers and get some support, but it's embarrassing to talk about how he makes me feel pathetic. It's a little easier in here though.

Third, feedback interventions are those in which the therapist offers specific information to the patient. Reviewing and exploring the meaning of assessment results, providing the client new understanding and insight, offering psychoeducation on symptoms and the treatment process, fostering heightened motivation for change, and collaboratively developing individual treatment goals and tasks have all been found to improve the working alliance between client and clinician during psychological assessment and initial sessions. Therefore, it is also important to recognize that even within a single-session intake interview or consultation, the clinician should make an effort to provide client feedback at the end of this session. An example of this exploration, insight, and collaboration in feedback on assessment results is as follows:

Therapist: You know as we talk more and more about the meaning of your depression, I'm really struck by the aspects of hopelessness and confusion that seem very prominent in your description of sadness. It reminds me of your response on the inkblot test (Card VI), the one where you saw a car driving through a dark scary forest at night. And later said you had no idea who was driving it, where it was going to, or coming from.

Patient: Yeah, I've thought about that one too. I feel like I'm in the backseat, lying on the floor, it's pitch black and I can't see anything, I don't know whose driving the damn car or where we're going! I think that's exactly what needs to change in order for me to not feel as depressed.

Therapist: Then I imagine it's going to be important for us to come back to this image and your experiences associated with it as we continue our work together.

Patient: You're right (tearing up), I want to get out of the backseat, and I know I need to understand how I got there in the first place in order to do that.

In fact, this assessment-derived treatment metaphor was frequently explored and used throughout the course of the psychotherapy by both parties and on several occasions spontaneously by the patient, including one day when she arrived in a session and announced "I did some things this weekend that leave me feeling like I'm finally driving the car. I'm still not 100% sure where this road is taking me, but now I can at least start to enjoy the ride."

Finally, specific therapist attitudes that convey empathy, support, exploration, activity, confident collaboration, appreciation, trust, warmth, attunement, potency, competence, respect, attentive, engaged listening, and appearing to understand the patient in a nonjudgmental and welcoming fashion have also been found to significantly improve alliances with patients in pre-therapy and initial sessions of psychotherapy.

In regard to specific therapist activities and characteristics found in this review, it appears that the same beneficial elements recommended for increasing alliance during the assessment and intake are quite similar to those observed across psychotherapy (see [50, 51]). In fact, when examining the alliance enhancing techniques observed during psychological assessment listed in the "Focus" section of Table 22.1, we are hard pressed to imagine any effective psychotherapy session that would not also include these elements. That is, we believe these interventions found to be central regarding positive alliance during the assessment process may also provide an excellent template for the focus of psychotherapy sessions as well. These positive interventions are relatively consistent, and it appears that the earlier these interactions take place, the better. Overarching themes inherent in therapist interventions found to contribute positively to the alliance can generally be seen as supportive, experiential-affective, active, engaged, explorative, and collaborative in nature. The empirical evidence has demonstrated that these initial patient-therapist interactions (whether conducted during

pre-therapy intakes, assessments, or first sessions) have the potential to significantly influence the ensuing treatment process, even capable of impacting later outcome. Certain initial clinician attitudes, techniques, and activities have indeed been shown to be more successful in promoting these positive alliances than others (Table 22.1).

Therapist Variables That Contribute Positively to the Alliance over the Course of Therapy

Personal Attributes

Certain clinician personal attributes, characteristics, or attitudes have been found to significantly and positively impact the working alliance throughout the course of treatment (Table 22.2; also see [51]). Significant relationships have been found between alliance and therapist's attributes such as conveying a sense of being trustworthy [47, 52], affirming [53, 54], flexible [55], egalitarian [54], interested, alert, relaxed, confident [56, 57], warm [25, 54], empathic [52], and more experienced [45, 52, 56]. In addition, patient's perception of a therapist as competent and respectful [24] was found to be characteristic of positive alliances. Therapist's affiliative type behavior such as helping and protecting

Table 22.2 Summary of therapist's techniques and attributes found to contribute positively to the alliance

Techniques positively related to alliance	Attributes positively related to alliance
<i>Supportive</i>	
Support the patient's struggle	Helpful
Affirm the patient's experience	Affirming
Convey a sense of understanding and connection	Understanding
Note past therapy success	Accepting
Foster a collaborative treatment process	Collaborative
Enhance motivation for change	Enthusiasm
<i>Exploratory</i>	
Utilize open-ended questions	Open
Clarify areas of distress or discrepancy	Empathic
Communicate clearly	Warm
Foster depth	Friendly
Provide appropriate, nonhostile, confrontation	Egalitarian
Provide accurate interpretation	
<i>Experiential and affect focused</i>	
Attend to patient experience	Honest
Reflect patient statements and experience	Trustworthy
Facilitate the expression of affect	Respectful
Explore different patient emotional states	
<i>Engaged and active relationship</i>	
Active-engaged involvement	Interested
Focus on the here and now of therapy relationship	Alert
Discuss therapist's own contribution to process	Flexible
Provide ongoing feedback to patient	Relaxed
	Confident
	Experienced
	Competent

Adapted from [51]

was found to be significantly related to alliance ratings taken later in the treatment process. A possible explanation for these findings is that the therapist's personal qualities such as dependability, benevolence, responsiveness and experience help patients have the confidence and trust that their therapist has the ability to both understand and help them cope with the issues that brought them to therapy. Moreover, it is important to keep in mind that it may be necessary for a patient to have a positive opinion of the therapist before s/he has enough influence to facilitate therapeutic change. A benevolent connection between the patient and therapist helps create a warm, accepting, and supportive therapeutic climate that may increase the opportunity for greater patient change. If a patient believes the treatment relationship is a collaborative effort between her/himself and the therapist, s/he may be more likely to invest more in the treatment process and in turn experience greater therapeutic gains.

It is interesting to note that a recent medical study conducted at the Mayo Clinic provides evidence that the value of these personal attributes is not solely limited to psychotherapy relationships. Bendapudi et al. [58] investigated patient perspectives regarding their medical doctors and isolated a set of clinician attributes that clients considered significantly beneficial in developing strong patient–physician working relationships. These clinician attributes are strikingly similar to those identified in our review of the psychotherapy research [10, 51]. Specifically, medical patients valued clinicians who were confident, empathic, humane, personal, forthright, respectful, and thorough. Likewise, there is emerging research in psychiatry and general medicine that suggests the construct of alliance is quite important with regard to patient outcome in the pharmacologic treatment of depression [59], the clinical management of bipolar disorder [60], and the quality of life for lupus patients [61]. This intersection of medical and psychological research findings speaks to the salience and ubiquity of these basic relational attributes in forming effective healing relationships.

Therapist Application of Technique

The strategic interventions used by the therapist in treatment may be at least one discernable component of the overall alliance that develops between the patient and therapist. The focus of this section of the chapter is to explore the application of therapeutic techniques that increase the therapist's potential to empathize with the patient and the patient's potential to develop a bond with the therapist. This includes, but is not limited to, the therapist ability to develop an affiliative atmosphere within the therapeutic setting. Therapists who work toward cultivating a comfortable as well as productive therapeutic environment are expected to be rated by patients, external observers, and themselves as having strong alliances. The studies in this section specifically explore the therapist application of techniques that contribute positively to the alliance (also see [51]). As can be seen in Table 22.2, the therapist techniques found to contribute positively to the alliance can be organized into four major types of interventions: Supportive, Exploratory, Experiential-Affect Focused, and Engaged-Active Relationship.

Therapist's application of techniques that increase the patient's understanding of the problems that brought them to treatment, as well as enhance the level of connection between the patient and therapist has been found to aid in the development and maintenance of the alliance. Techniques anchored within a motivation-enhancing therapeutic model, such as fostering collaboration, positive affirmations, use of open-ended questions, use of reflective statements, problem discussion and feedback, exploring client ambivalence, heightening discrepancies, enhancing motivation for change, and discussing a plan for change [54, 62], have all been positively related to alliance over the course of varied treatments. A recent study by Colli and Lingairdi [63] incorporated a transcript-based method for the assessment of therapeutic alliance ruptures and identified nine specific therapist interventions that were positively related to a collaborative treatment process. These interventions were verbalizations where the therapist focused on the here and now of the relationship, explored

different patient states, provided feedback to the patient, explore a patient's emotion, provided an empathic statement to the patient, made a clarification, made a confrontation, admitted to his/her participation in a rupture process, and self-disclosed countertransference feelings. Additional contemporary studies underscore the importance of exhibiting a sense of understanding [25, 64–67] and active therapist involvement to foster greater session depth [16, 68, 69] in the development of a positive alliance in ongoing treatment. Although most of the extant evidence supports that therapist engagement with the patient enhances subsequent alliance levels [57, 67, 70–72], one study [72] failed to support this goal. Specifically, the use of either prescriptive or exploratory techniques failed to aid in developing the alliance at the third session of dynamic psychotherapy. A possible explanation for these contrary findings is that in the Kolden [72] study the ratings were only taken early in treatment and the techniques investigated (e.g., suggesting behavior changes and focusing on past events) may be more related to alliance later in treatment. In general, when therapist's activities convey a sense of understanding, connectedness, and collaboration in the therapeutic process, a greater sense of partnership and trust may transpire in the therapeutic relationship [57, 66, 68, 73, 74]. Moreover, a recent study by Bachelor et al. [75] which examined client perceptions of their interactions with their therapists highlighted the importance of an active therapeutic stance in the development of a collaborative treatment process. Specifically, the majority of patients in this study valued the therapist's active involvement and emphasized the helpfulness of their collaborative experiences. The therapist's ability to form a relationship may enhance the patient's perception of being understood and help him/her feel even more connected to the treatment process. A greater feeling of connection to the treatment process may also provide even more opportunity for patient change and therapeutic growth throughout.

The studies included in this section suggest that the therapist's personal attributes and the use of therapeutic technique applicable in varied psychotherapy orientations have been found to positively influence the development and maintenance of the therapeutic alliance. Table 22.2 summarizes therapist personal attributes and techniques that were reported to be important in the development and maintenance of a strong alliance (also see [51]). They include: trustworthiness [47, 52], experience [45, 52], confidence [76], clear communication [71], motivation-enhancing techniques [54, 62], and accurate interpretation [77, 78]. The therapist's investment in the treatment relationship was found to be manifested through enthusiasm [79], interest [76], exploration [25, 64, 65, 67, 74], involvement [71], and activity [25, 70, 75]. The key elements of empathy include affirming [53], helping [73], warmth/friendliness [57, 65], and understanding [24, 53, 57, 66, 67].

We found very little variation between the different theoretical orientations regarding the therapist's positive impact on the alliance. The evidence found in this section supports the belief that the alliance is a pan-theoretical construct impacting psychotherapy process on multiple levels. While some theoretical orientations may prove to be more efficacious with specific patient populations, the findings from the present review suggest that many therapeutic pursuits can benefit from a focus on the factors contributing to a positive alliance.

Therapist Variables That Contribute Negatively to the Alliance over the Course of Therapy

Personal Attributes

It may come as no surprise that certain therapist characteristics or attributes have been shown to have a significantly negative impact on the working alliance at various stages of psychotherapy. Marmar et al. [80] found that therapists who were more rigid, self-focused, critical, and less involved

Table 22.3 Summary of therapist's techniques and attributes found to contribute negatively to the alliance

Techniques negatively related to alliance	Attributes negatively related to alliance
Managing the treatment in inflexible manner	Rigid
Over structuring the therapy	Tense
Failure to structure the therapy	Defensive
Inappropriate self-disclosure	Self-focused
Inappropriate use of silence	Exploitive
Unyielding transference interpretations	Distant/detached
Belittling or hostile communication	Cold
Superficial interventions	Distracted
	Uncertain
	Critical
	Aloof
	Indifferent

Adapted from [50]

in the psychotherapy process were perceived as less understanding, evoked more hostile resistance from their patients and had lower overall alliance ratings. Eaton et al. [81] reported that across all phases of psychotherapy, therapists who were characterized as exploitive, critical, defensive, as well as lacking warmth, respect, and confidence had lower alliance ratings. Examining unstructured psychotherapy from varied orientations, Sexton et al. [71] found a significant relationship between negative alliance ratings and therapists who were rated as uncertain and tense. Saunders [76] found that a patient's ratings of the overall session quality were lower when the therapist was perceived as distracted, tired, and bored. A recent study by Hersoug et al. [82] also found that therapists' self-reported scores on the "cold/detached" dimension of Inventory of Interpersonal Problems (IIP [83]) assessing therapists' interpersonal style, such as being distanced, disconnected or indifferent, had a negative impact on the working alliance as rated both by patients as well as therapists. These findings are consistent with additional studies reporting that therapists who were perceived as belittling, blaming, watching, managing, aloof, and distant had a difficult time engaging in the treatment process and, consequently, had lower alliance ratings [68].

These findings support the notion that the negative characteristics of the therapist can impede the development of a positive alliance and diminish the quality of an already established alliance (Table 22.3; also see [50]). Therapists who exhibited disregard for their patients, were less involved in the treatment process, and were more self-focused were less likely to form a positive connection with their patients [80]. There was common agreement among the studies that poor alliances were related to therapists who were not confident in their ability to help their patients and were tense, tired, bored, defensive, blaming, or unable to provide a supportive therapeutic environment [68, 71, 76, 81]. These findings suggest that how therapists react to patients influences whether or not they are able to form a positive treatment relationship. If the therapist reacts negatively toward the patient and appears disinterested in the patient's concerns, it will likely be difficult to develop a positive treatment relationship. Consequently, these negative interactions may weaken the alliance and reduce the opportunity for patient change. Taken together, these findings underscore the potentially adverse impact therapist's personal attributes can have on the therapeutic relationship and process. Whether or not therapists can be taught to be empathic and warm is largely unknown at present. Although, it is of critical importance that they vigilantly work toward conveying a respectful, flexible, accepting, and responsive attitude toward their patients.

Therapist Misapplication of Technique

Therapists may also make errors in their application of technique that may negatively influence alliance levels. Marmar et al. [80] reported a significant positive relationship between the therapist's avoidance of important issues and the patient's hostile resistance. Moreover, the therapist's repeated attempts to link a patient's inappropriate reactions toward the therapist (such as frustration) to earlier conflicted relationships with parental figures (transference interpretations) were significantly and negatively related to patient's commitment to the treatment process. Eaton et al. [81] found that therapist inflexibility, inappropriate use of silence, use of superficial interventions, or a failure to structure a session or address resistance were all significantly and positively correlated to a weak alliance. Coady and Marziali [73] found that the therapist's increased use of belittling, blaming, watching, and managing behaviors both early and late in therapy led to a decrease in the alliance. Price and Jones [68] found that therapists who disclosed their own emotional conflicts into the therapeutic setting had significantly lower alliance ratings. Piper et al. [84–86] reported that the number of transference interpretations offered by the therapist was inversely related to a positive alliance. They concluded that a therapist's unyielding use of transference interpretations, inflexibility, and lack of responsiveness to explore the patient's feelings or the “real” relationship may have influenced the weakening of the alliance.

This section highlights certain therapeutic misapplications of technique that have been found to adversely affect the alliance (Table 22.3 [50]). These errors include therapist inflexibility in treatment planning, inappropriate use of silence [81], placing too much emphasis on patient resistance [80], self-disclosure of therapist's own emotional conflicts [68, 73], and unyielding use of transference interpretation [80, 84–86].

Therapist Behaviors Producing Ruptures in the Alliance

The focus of this section is to present findings related to therapists' behaviors that may contribute to ruptures in the alliance as well as patient behaviors that can alert clinicians to the presence of a strained alliance. Ruptures in the alliance have been defined as either fluctuations in the quality of the therapeutic relationship or an ongoing problem in establishing an alliance [87–89], and research continues to demonstrate that higher levels of rupture resolution significantly contribute to better alliance and outcome [90, 91]. Castonguay et al. [92] examined cognitive-behavioral psychotherapy sessions with low alliance ratings and identified possible markers that pointed to potential ruptures. They identified a patient's expression of negative feelings toward the therapy process, avoidance of the therapeutic task, and unresponsiveness to therapist interventions as predictive of rupture. In addition, the authors found that the strain was not resolved when therapists continued to try to fit the patient's negative experience into the cognitive model despite his or her expressed desire to explore the painful emotion related to the experience. This suggests that a strain in the alliance may be exacerbated by the therapist's inflexible adherence to cognitive treatment strategies and the inability to focus on the emotional impact of their experience (also see [93–96]). Safran et al. [87–91, 97–99] have extensively examined ruptures in the alliance. Within this body of research, ruptures are seen as an expected part of the treatment process and that the use of ruptures can be a fertile ground for patient change and an opportunity for deepening the alliance. These authors have operationally defined alliance ruptures as well as proposed a therapeutic model to facilitate the recognition and repair of ruptures in the alliance (Tables 22.4–22.6). Markers of a weakening alliance were identified in this research and separated into two general categories, confrontation and avoidance of confrontation markers. Confrontation markers exist when patients directly express their negative sentiments

Table 22.4 Summary of precipitants and markers of ruptures in the alliance

Precipitants to ruptures (Adapted from [100])
Breach of patient's wants and/or needs:
(A) Therapist does something the patient does not want or need
Therapist confronts unsupportively ¹
Therapist focus is off
Therapist gives unwanted advice
Therapist interpretation is off
Therapist focused on something other than client
(B) Therapist fails to do something the patient wants or needs:
Therapist misses importance of issues
Markers of ruptures (Adapted from [99])
Confrontational
Overt expression of negative sentiments
Disagreement about the goals or tasks of therapy
Self-esteem enhancing operations
Nonconfrontational
Compliance
Indirect communication of negative sentiments or hostility
Avoidance maneuvers
Nonresponsiveness to intervention

Table 22.5 Therapist actions that aggravate alliance ruptures

1. Therapist not paying attention to the patient's experience
2. Therapist's refusal to accept any responsibility for the rupture experience
3. Dogmatic and rigid use of therapeutic interventions (i.e., transference interpretation, focus on patient resistance)
4. Belittling and rejecting the patient's expression of negative feelings

Table 22.6 Strategies for the repair of alliance ruptures

Therapist intervention	Technique
1. Focus on immediate experience	(a) Inquiry (b) Empathic reflection (c) Subjective feedback
2. Facilitate patient self-assertion	(a) Inquiry (b) Empathic reflection (c) Subjective feedback (d) Awareness experiment with direct expression (e) Acceptance of own responsibility for rupture (f) Focus on the therapeutic relationship
3. Explore patient's negative feelings	(a) Explore the meaning underlying the feelings (b) Facilitate patient awareness of feelings
4. Validate patient assertion	(a) Support and empathize with patient's assertion

Adapted from [98]

about the therapist or treatment process. The avoidance of confrontation markers include times when patient's negative sentiments are behaviorally acted out through withdrawal, distancing, or avoiding. Once a rupture has been recognized it can be systematically examined, interpreted, and hopefully resolved within the treatment process. Safran and Muran [87–89, 98] proposed a model that described four specific therapist interventions to facilitate the repair of alliance ruptures (Table 22.6). In the first intervention, the therapist addresses the immediate experience of the patient using metacommunication. Keisler [101] defined metacommunication as “any instance in which the therapist provides to the patient verbal feedback that targets the central, recurrent, and thematic relationship issues occurring between them in the therapy session” (p. 284). As we have previously cited, the key components include the therapist's personal attributes (i.e., affirming, communicate clearly, confident, accurate, understanding) and use of technique (i.e., active, exploratory, involved). It is also important to note that these attributes and techniques are *necessary* for the therapist to be optimally prepared to recognize and identify the markers of a rupture in the alliance.

The second intervention of this model consists of two parts, the therapist acknowledging his/her contribution to the rupture experience and the use of an awareness experiment to foster direct communication. In this model, self-disclosure is less a sharing of one's past experiences and more an expression/exploration of in-session affect related to the therapeutic relationship. In this model, in-session self-involvement serves as a vehicle of connection and support that validates the patient's experience in the moment of the session. For instance, a therapist might say “*You're right. What I said does sound critical*” to a patient who expresses that s/he was feeling that his/her therapist was being critical. In the second part of this intervention, the use of an awareness experiment not only demonstrates a therapist's active involvement and exploration: it may also help to build trust, increase understanding, and convey an interest in the patient's affective experience. Through the practice of adaptive expression, the patient may work on modifying their relationship patterns to include more benevolent responses from self and others. In addition, through the practice of adaptive expression with the therapist, the patient may learn to more effectively express his/her feelings in present and future relationships.

The third intervention of the resolution model is an exploration of the patient's experience in order to gain a greater sense of understanding. To successfully manage this intervention, Safran and Muran [87–89, 98] recommend that the therapist convey an affirming, understanding, and nurturing stance. These recommendations support previous findings that therapist behaviors such as exploration, depth, interest, affirming, and understanding [24, 53, 65, 74, 76] contribute to the development of a stronger alliance. The final intervention in the rupture resolution model is the validation of the patient's experience. The success of this intervention relies on the therapist's ability to effectively use therapeutic strategies and empathically connect with the patient.

An analogous pattern emerged between the therapist activities identified to cause deteriorations in the alliance and the essential features related to the aggravation of breaches in the alliance ([50]; Table 22.5). In unresolved breaches in the alliance, the therapist was portrayed as nonresponsive, closed-off, nonaccepting, and dogmatically maintaining his/her original point of view without taking the patient's perspective into account. These therapist characteristics and technical errors are similar to the personal attributes (e.g., rigid, aloof, distant, disrespectful, and self-focused) and misapplications of technique (e.g., unyielding use of transference interpretation) found to contribute negatively to the alliance (Table 22.3).

An additional rupture identification model was outlined in a study conducted by Rhodes et al. ([100]; Table 22.4), which examined the patient's perspective of resolved and unresolved therapeutic misunderstandings. Rhodes et al. [100] reported that misunderstandings were precipitated by either the therapist doing something the patient did not like or want (e.g., therapist was critical, inattentive, or gave unwanted advice), or the therapist not doing something that the patient expected or wanted (e.g., therapist did not remember important facts or missed the importance of an issue). In the resolved cases, the patients reported that their therapist accommodated (e.g., took responsibility for the problem,

apologized, or modified their behavior). In the cases with unresolved misunderstandings, the patients reported that their therapists were nonresponsive, defensive, cold, nonaccepting, or that they stubbornly maintained their original point of view without taking the patient's point of view into consideration.

Therapist's behaviors found to be effective in addressing and resolving strains in the alliance include addressing negative sentiments the patient may have about the therapist; [87–89, 98, 99, 102, 103], exploring the avoidance of negative emotions and expected responses from others [102], using accurate interpretations that focus on the patient's interpersonal problems and not necessarily on transference issues [77, 92, 94, 103], conveying a sense of affirmation, understanding, protection, and nurturance [87–89, 98], and accepting part of the responsibility for the emergence of a rupture [87–89, 98, 100]. Those therapist's behaviors that were found to be ineffective in the resolution of alliance strains included rigid adherence to a treatment model [60, 92–95], inflexibility [92–95, 100], being unresponsive, closed-off, and conveying a sense of nonacceptance [100]. The findings from these studies suggest that the resolution of ruptures in the alliance are not only possible, they may be an integral component of therapeutic change and more importantly the development of a healthy therapeutic relationship. A summary of empirically supported precipitants, strategies that aggravate, and strategies that repair alliance ruptures are presented in Tables 22.4, 22.5, and 22.6.

Conclusions

The studies covered in these reviews suggest that therapists' use of techniques from a range of psychotherapy orientations (e.g., cognitive-behavioral, experiential, interpersonal, person-centered, psychodynamic) may influence the therapeutic alliance in both positive and negative ways. Tables 22.1 and 22.2 summarize therapist techniques identified in these reviews that were reported to be important in the development and maintenance of a strong alliance. Conversely, Table 22.3 presents technical and personal therapist factors that have been found to be related to lower levels of, or even to, deterioration in the alliance.

Therapist techniques found to contribute positively to the alliance could generally be categorized as: Supportive, Exploratory, Experiential-Affect Focused, and Engaged-Active Relationship. Research indicated therapist techniques that specifically convey support, understanding, affirmation, and noting adaptive changes across treatment were significantly related to higher alliance. Higher alliance was also related to therapist techniques that increased a patient's understanding of the problems that brought him/her to treatment through greater exploration and in-depth (i.e., full, special, powerful) discussion of these topics, as well as accurate, high quality, case-specific interpretations (not simply quantity). Techniques that maintained focus on the patient's in-session subjective experience (i.e., reflection) and affect, or that facilitated the expression of these emotions, were also related to higher alliance. Finally, a more active, engaged, motivating, yet open-ended stance by the therapist was important in a positive therapeutic relationship.

Conversely, therapist interventions found to have negative effects on the alliance were at extreme ends of particular technical continua. For instance, over-structuring and managing therapy in an inflexible manner, as well as failure to structure the treatment in an organized or coherent manner, were both negatively related to alliance. Also, the therapist spending too much time regarding superficial information not related to key treatment issues, or self-disclosure of the therapist's own emotional conflicts had a negative impact on alliance levels. Conversely, therapists dedicating too little attention to the patient through the misuse of extended silence or withdrawal from the in-session process were also detrimental to alliance. The use of transference interpretations (patient–therapist–past other) in a sustained, high volume and unremitting manner was detrimental to the alliance. However, it is important to note that continued focus on the transference relationship (i.e., linking patient,

therapist, and past others) is not the same as exploring the “here-and-now” in-session process, including thoughts and feelings about the treatment relationship (i.e., exploring patient–therapist here-and-now interactions from a dyadic, interactive, relational theoretical perspective without directly linking to a past other; [87, 88, 91]). This is an important distinction that often muddies the water in research on transference interpretations. Finally, and not surprisingly, communication of hostility or disrespect by the therapist toward the patient was found to be related to lower alliance.

According to the studies reviewed, disruptions or ruptures in the alliance are generated from a patient’s negative reaction to the therapist and/or treatment process. Addressing the patient’s adverse reaction to the therapist and/or treatment process within the interior of the therapeutic frame was found to be the key element in the repair of ruptures in the alliance. One study reported that it was important for the patient to initiate the expression of his/her negative sentiments [100] while other studies emphasized the importance of the therapist drawing attention to the patient’s negative sentiments [87–91, 98]. However, it appears that how the patient’s negative sentiments are brought into the room may be less important than ensuring that the negative sentiments are acknowledged and openly explored ([77, 87–90, 98–100, 102–104]; Table 22.6). When a therapist is not paying attention to a patient’s experience, s/he is likely to overlook a breach in the alliance and/or mistakenly assume that they have not contributed to the breach. Errors such as these can be conceptualized as a lack of empathy and may lead to the eventual breakdown of the alliance [103]. The eventual breakdown of the alliance may also occur when a therapist dogmatically relies on strategic interventions in an attempt to resolve breaches in the alliance ([92]; Table 22.5). It is important to note that the essential features related to the repair of ruptures in the alliance are similar to the significant therapist contributions to the development and maintenance of a positive alliance mentioned previously in this chapter. To successfully manage the resolution of ruptures in the alliance, Safran and Muran [87–89, 98] recommend that the therapist convey an affirming, understanding, and nurturing stance as well as validate the patient through exploration of the patient’s experience in order to gain a greater sense of understanding. These recommendations support previous findings that therapist behaviors such as exploration, depth, interest, affirmation, and understanding [16, 24, 53, 65, 69, 74, 76] may contribute to the development of a stronger alliance.

The studies included in this chapter suggest that the therapist’s activity from a range of psychotherapy orientations have been found to positively influence the development, maintenance, and repair of ruptures in the therapeutic alliance. These interventions are relatively uniform and consistent throughout this review, also mirroring the conclusions of alternate contemporary sources [3]. A possible explanation for the consistency is that a potential common factor imbedded within these elements is a connection between the patient and therapist that provides the opportunity for relief from suffering, although caution is warranted when interpreting process–suboutcome correlations without considering the responsive properties of helping interactions [105]. That is, more of good process components may only be “better” when patients are not already getting enough of these interactions in a given therapy [106].

While some theoretical orientations may prove to be more efficacious with specific patient populations, the findings from the present review suggest a better understanding of the alliance can benefit all therapeutic pursuits. Therefore, it seems possible that the most effective therapists will be able to synthesize and integrate differing aspects of insight-oriented, experiential, humanistic, and cognitive-behavioral therapies into integrative therapeutic stance. In addition, perhaps a measure of the success attributed to these interventions, as Rumpold et al. [23] noted, can be seen as accessing avenues to increase a patient’s motivation for change and prepare them for the psychotherapy process, both relationally and through psychoeducation. Nevertheless, one of the most important overall themes inherent in the literature is that careful awareness of the therapeutic relationship as early as possible in treatment (i.e., psychological assessment, initial interview, first session) may well offer patients the best opportunity for development of a positive therapeutic relationship across the treatment process. Finally, we believe the summary findings of this review (Tables 22.1–22.3) provide an excellent resource for future scales, training initiatives and development of focused treatment

packages designed to better understand, evaluate, and maximize the benefit of alliance throughout the treatment process.

References

1. Horvath AO, Del Re AC, Fluckiger C, Symonds D. Alliance in individual psychotherapy. *Psychotherapy*. 2011;48:9–16.
2. Martin DJ, Garske JP, Davis MK. Relation of the therapeutic alliance with outcome and other variables: a meta-analytic review. *J Consult Clin Psychol*. 2000;68:438–50.
3. Norcross JC, editor. *Psychotherapy relationships that work*. 2nd ed. New York: Oxford University Press; 2011.
4. Zuroff DC, Blatt SJ. The therapeutic relationship in the brief treatment of depression: contributions to clinical improvement and advanced adaptive capacities. *J Consult Clin Psychol*. 2006;74:130–40.
5. Lambert M, Shimokawa K. Collecting client feedback. *Psychotherapy*. 2011;48:72–9.
6. Holm-Denoma J, Gordon K, Donohue K, Waesche M, Castro Y, Brown J, et al. Patient's affective reactions to receiving diagnostic feedback. *J Soc Clin Psychol*. 2008;27:555–75.
7. Poston J, Hanson W. Meta-analysis of psychological assessment as a therapeutic intervention. *Psychol Assess*. 2010;22:203–12.
8. Shimokawa K, Lambert MJ, Smart DW. Enhancing treatment outcome of patients at risk of treatment failure: meta-analytic and mega-analytic review of a psychotherapy quality assurance system. *J Consult Clin Psychol*. 2010;78:298–311.
9. Tryon GS, Winograd G. Goal consensus and collaboration. *Psychotherapy*. 2011;48:50–7.
10. Hilsenroth M, Cromer T. Clinician Interventions Related to Alliance During the Initial Interview and Psychological Assessment. *Psychotherapy*. 2007;44: 205–18.
11. Finn SE, Tonsager ME. Information-gathering and therapeutic models of assessment: complementary paradigms. *Psychol Assess*. 1997;9:374–85.
12. Fischer C. *Individualized psychological assessment*. Hillsdale: Erlbaum; 1994.
13. Hilsenroth M. A Programmatic Study of Short-Term Psychodynamic Psychotherapy: Assessment, Process, Outcome and Training. *Psychotherapy Res*. 2007;17:31–45.
14. Hilsenroth M, DeFife J, Blake M, Cromer T. The effects of borderline pathology on short-term psychodynamic psychotherapy for depression. *Psychother Res*. 2007;17:175–88.
15. Hilsenroth M, Peters E, Ackerman S. The development of therapeutic alliance during psychological assessment: patient and therapist perspectives across treatment. *J Pers Assess*. 2004;83:332–44.
16. Ackerman SJ, Hilsenroth MJ, Baity MR, Blagys MD. Interaction of therapeutic process and alliance during psychological assessment. *J Pers Assess*. 2000;75:82–109.
17. Hilsenroth M, Ackerman S, Clemence A, Strassle C, Handler L. Effects of structured clinical training on patient and therapist perspectives of alliance early in psychotherapy. *Psychother Theory Res Pract Training*. 2002;39:309–23.
18. Book H. *How to practice brief psychodynamic psychotherapy: the core conflictual relationship theme method*. Washington, DC: American Psychological Association; 1998.
19. Luborsky L. *Principles of psychoanalytic psychotherapy: a manual for supportive/expressive treatment*. New York: Basic Books; 1984.
20. Luborsky L, Crits-Christoph P. *Understanding transference: the core conflictual relational theme method*. 2nd ed. Washington, DC: APA; 1997.
21. Yeomans F, Gutfreund J, Selzer M, Clarkin J, Hull J, Smith T. Factors related to drop-outs by borderline patients. *J Psychother Pract Res*. 1994;3:16–24.
22. El-Shieb M. The MMPI-2 and client feedback: a quantitative investigation and exploratory factor analysis of feedback models. *Dissert Abstr Int B Sci Eng*. 2005;66:4-B.
23. Rumpold G, Doering S, Smrekar U, Schubert C, Koza R, Schatz DS, et al. Changes in motivation and the therapeutic alliance during a pretherapy diagnostic and motivation enhancing phase among psychotherapy outpatients. *Psychother Res*. 2005;15:117–27.
24. Bachelor A. Clients' perception of the therapeutic alliance: a qualitative analysis. *J Couns Psychol*. 1995;42(3):323–37.
25. Mohl PC, Martinez D, Ticknor C, Huang M, Cordell L. Early dropouts from psychotherapy. *J Nerv Ment Disord*. 1991;179:478–81.
26. Huber D, Henrich G, Brandl T. Working relationship in a therapeutic consultation. *Psychother Res*. 2005;15: 129–39.

27. Burke BL, Arkowitz H, Menchola M. The efficacy of motivational interviewing: a meta-analysis of controlled clinical trials. *J Consult Clin Psychol.* 2003;71:843–61.
28. Hettema J, Steele J, Miller WR. Motivational interviewing. *Annu Rev Clin Psychol.* 2005;1:91–111.
29. Kertes A, Westra HA, Angus L, Marcus M. The impact of motivational interviewing on client experiences of cognitive behavioural therapy for generalized anxiety disorder. *Cogn Behav Pract.* 2009;18:55–69.
30. Westra HA, Dozois DJA. Preparing clients for cognitive behavioral therapy: a randomized pilot study of motivational interviewing for anxiety. *Cogn Ther Res.* 2006;30:481–98.
31. Westra HA, Arkowitz H, Dozois DJA. Adding a motivational interviewing pretreatment to cognitive behavioral therapy for generalized anxiety disorder: a preliminary randomized controlled trial. *J Anxiety Disord.* 2009;23:1106–17.
32. Crits-Christoph P, Gallop R, Temes C, Woody G, Ball S, Martino S, et al. The alliance in motivational enhancement therapy and counseling as usual for substance use problems. *J Consult Clin Psychol.* 2009;77:1125–35.
33. Horvath AO. The role of the therapeutic alliance in psychotherapy. *J Consult Clin Psychol.* 1993;61:561–73.
34. Hartley DE, Strupp HH. The therapeutic alliance: it's relationship to outcome in brief psychotherapy. In: Masling J, editor. *Empirical studies in psychoanalytic theories.* Hillsdale: Erlbaum; 1983. p. 1–37.
35. Barrett MS, Chua W, Crits-Christoph P, Gibbons MB, Casiano D, Thompson D. Early withdrawal from mental health treatment: implications for psychotherapy practice. *Psychother Theory Res Pract Training.* 2008;45:247–67.
36. Richmond R. Discriminating variables among psychotherapy dropouts from a psychological training clinic. *Prof Psychol Res Pract.* 1992;23:123–30.
37. Wierzbicki M, Pekarik G. A meta-analysis of psychotherapy dropout. *Prof Psychol Res Pract.* 1993;24:190–5.
38. Principe JM, Marci CD, Glick DM, Ablon JS. The relationship among patient contemplation, early alliance, and continuation in psychotherapy. *Psychother Theor Res Pract Training.* 2006;43:238–42.
39. Sexton H, Littauer H, Sexton A, Tommeras E. Building the alliance: early therapeutic process and the client–therapist connection. *Psychother Res.* 2005;15:103–16.
40. Tryon GS. Session depth and smoothness in relation to the concept of engagement in counseling. *J Couns Psychol.* 1990;37:248–63.
41. Jungbluth N, Shirk S. Therapist strategies for building involvement in cognitive–behavioral therapy for adolescent depression. *J Consult Clin Psychol.* 2009;77:1179–84.
42. Karver M, Shirk S, Handelsman J, Fields S, Crisp H, Gudmundsen G, et al. Relationship processes in youth psychotherapy: measuring alliance, alliance-building behaviors, and client involvement. *J Emotion Behav Disord.* 2008;16:15–28.
43. Tryon GS. The engagement quotient: one index of a basic counseling task. *J Coll Student Personnel.* 1985;26:351–4.
44. Tryon GS. Study of variables related to client engagement using practicum trainees and experienced clinicians. *Psychotherapy.* 1988;26:54–61.
45. Mallinckrodt B, Nelson ML. Counselor training level and the formation of the psychotherapeutic working alliance. *J Couns Psychol.* 1991;38:133–8.
46. Raue PJ, Goldfried MR, Barkum M. The therapeutic alliance in psychodynamic-interpersonal and cognitive-behavioral therapy. *J Consult Clin Psychol.* 1997;65:582–7.
47. Horvath AO, Greenberg L. Development and validation of the working alliance inventory. *J Couns Psychol.* 1989;36:223–33.
48. Henry WP, Strupp HH. The therapeutic alliance as interpersonal process. In: Horvath AO, Greenberg LS, editors. *The working alliance: theory, research, and practice.* New York: Wiley; 1994. p. 51–89.
49. Barber JP, Luborsky L, Crits-Cristoph P, Thase ME, Weiss R, Frank A, et al. Therapeutic alliance as predictor of outcome in treatment of cocaine dependence. *Psychother Res.* 1999;9:54–73.
50. Ackerman S, Hilsenroth M. A review of therapist characteristics and techniques negatively impacting the therapeutic alliance. *Psychotherapy.* 2001;38:171–85.
51. Ackerman S, Hilsenroth M. A review of therapist characteristics and techniques positively impacting the therapeutic alliance. *Clin Psychol Rev.* 2003;23:1–33.
52. Evans-Jones C, Peters C, Barker C. The therapeutic relationship in CBT for psychosis: client, therapist and therapy factors. *Behav Cogn Psychother.* 2009;37:527–40.
53. Najavits LM, Strupp HH. Differences in the effectiveness of psychodynamic therapists: a process-outcome study. *Psychotherapy.* 1994;31:114–23.
54. Moyers TB, Miller WR, Hendrickson S. How does motivational interviewing work? Therapist interpersonal skill predicts client involvement within motivational interviewing sessions. *J Consult Clin Psychol.* 2005;73:590–8.
55. Kivlighan DM, Clements L, Blake C, Arnez A, Brady L. Counselor sex role orientation, flexibility, and working alliance formation. *J Counsel Dev.* 1993;72:95–100.
56. Hersoug AG, Høglend P, Monsen JT, Havik OE. Quality of working alliance in psychotherapy: therapist variables and patient/therapist similarity as predictors. *J Psychother Res.* 2001;10:205–16.

57. Saunders SM, Howard KI, Orlinsky DE. The therapeutic bond scales: psychometric characteristics and relationship to treatment effectiveness. *J Consult Clin Psychol.* 1989;1:323–30.
58. Bendapudi NM, Berry LL, Frey KA, Parish JT, Rayburn WL. Patients' perspectives on ideal physician behaviors. *Mayo Clin Proc.* 2006;81:338–44.
59. Weiss M, Gaston L, Propst A, Wisebord S, Zicherman V. The role of the alliance in the pharmacologic treatment of depression. *J Clin Psychiatry.* 1997;58:196–204.
60. Strauss JL, Johnson SL. Role of treatment alliance in the clinical management of bipolar disorder: stronger alliances prospectively predict fewer manic symptoms. *Psychiatry Res.* 2006;145(2–3):215–23.
61. Bennett J, Fuertes J, Keitel M, Phillips R. The role of patient attachment and working alliance on patient adherence, satisfaction, and health-related quality of life in lupus treatment. *Patient Educ Couns.* 2011. doi:10.1016/j.pec.2010.08.005.
62. Boardman T, Catley D, Grobe JE, Little TD, Ahluwalia JS. Using motivational interviewing with smokers: do therapist behaviors relate to engagement and therapeutic alliance? *J Subst Abuse Treat.* 2006;31:329–39.
63. Colli A, Lingardi V. The collaborative interactions scale: a new transcript-based method for the assessment of therapeutic alliance ruptures and resolutions in psychotherapy. *Psychother Res.* 2009;19:718–34.
64. Allen JG, Coyne L, Colson DB, Horowitz L, Gabbard GO, Frieswick SH, et al. Pattern of therapist interventions associated with patient collaboration. *Psychotherapy.* 1996;33:254–61.
65. Bachelor A. Comparison and relationship to outcome of diverse dimensions of the helping alliance as seen by client and therapist. *Psychotherapy.* 1991;28(4):534–49.
66. Crits-Christoph P, Siqueland J, Chittams J, Barber P, Beck AT, Liese B, et al. Training in cognitive, supportive-expressive, and drug counseling therapies for cocaine dependence. *J Consult Clin Psychol.* 1998;66:484–92.
67. Gaston L, Ring JM. Preliminary results on the inventory of therapeutic strategies. *J Psychother Pract Res.* 1992;1:135–46.
68. Price PB, Jones EE. Examining the alliance using the Psychotherapy Process Q-Set. *Psychotherapy.* 1998;25(3):392–404.
69. Svenson B, Hansson L. Relationships among patient and therapist ratings of therapeutic alliance and patient assessments of therapeutic process. *J Nerv Ment Disord.* 1999;187:579–85.
70. Dolinsky A, Vaughan SC, Lubner B, Mellman L, Roose S. A match made in heaven? A pilot study of patient-therapist match. *J Psychother Pract Res.* 1998;7:119–25.
71. Sexton H, Hembre K, Kvarme G. The interaction of the alliance and therapy microprocess: a sequential analysis. *J Consult Clin Psychol.* 1996;64:471–80.
72. Kolden GG. Change in early sessions of dynamic therapy: universal processes and the generic model of psychotherapy. *J Consult Clin Psychol.* 1996;64:489–96.
73. Coady NF, Marziali E. The association between global and specific measures of the therapeutic relationship. *Psychotherapy.* 1994;31:17–27.
74. Joyce AS, Piper WE. Expectancy, the therapeutic alliance, and treatment outcome in short-term individual psychotherapy. *J Psychother Pract Res.* 1998;7:236–48.
75. Bachelor A, Laverdiere O, Gamache D, Bordaleau V. Clients' collaboration in therapy: self-perceptions and relationships with client psychological functioning, interpersonal relations, and motivation. *Psychother Theor Res Pract Training.* 2007;44:175–92.
76. Saunders SM. Client's assessment of the affective environment of the psychotherapy session: relationship to session quality and treatment effectiveness. *J Clin Psychol.* 1999;55:597–605.
77. Crits-Christoph P, Barber JP, Kurcias JS. The accuracy of therapists' interpretations and the development of the therapeutic alliance. *Psychother Res.* 1993;3:25–35.
78. Ogrodniczuk JS, Piper WE. Measuring therapist technique in psychodynamic psychotherapies, development and use of a new scale. *J Psychother Pract Res.* 1999;8(2):142–54.
79. Luborsky L, Crits-Christoph P, Alexander L, Margolis M, Cohen M. Two helping alliance methods for predicting outcomes of psychotherapy, a counting signs vs. a global rating method. *J Nerv Ment Disord.* 1983;171(8):480–91.
80. Marmar CR, Horowitz MJ, Weiss DS, Marziali E. The development of the therapeutic alliance rating system. In: Greenberg LS, Pinsof WM, editors. *The psychotherapeutic process: a research handbook.* New York: Guilford; 1986.
81. Eaton TT, Abeles N, Gutfreund MJ. Negative indicators, therapeutic alliance, and therapy outcome. *Psychother Res.* 1993;3:115–23.
82. Hersoug AG, Høglend P, Havik O, Von der Lippe A, Monsen J. Therapist characteristics influencing the quality of alliance in long-term psychotherapy. *Clin Psychol Psychother.* 2009;16:100–10.
83. Horowitz LM, Alden LE, Wiggins JS, Pinkus AL. IIP: Inventory of Interpersonal Problems manual. San Antonio: The Psychological Corporation; 2000.
84. Piper WE, Azim HFA, Joyce AS, McMillan M. Transference interpretations, therapeutic alliance, and outcome in short-term individual psychotherapy. *Arch Gen Psychiatry.* 1991;48:946–53.

85. Piper WE, Joyce AS, Rosie JS, Ogrodniczuk JS, McCallum M, O'Kelly JG, et al. Prediction of dropping out in time-limited, interpretive individual psychotherapy. *Psychotherapy*. 1999;36:114–22.
86. Piper WE, McCallum M, Azim HFA, Joyce AS. Understanding the relationship between transference interpretations and outcome in the context of other variables. *Am J Psychother*. 1993;47:479–93.
87. Safran JD, Muran JC. Resolving therapeutic alliance ruptures: diversity and integration. *J Clin Psychol*. 2000;56:233–43.
88. Safran JD, Muran JC. *Negotiating the therapeutic alliance: a relational treatment guide*. New York: Guilford Press; 2000.
89. Safran JD, Muran JC, Proskurov B. Alliance, negotiation and rupture resolution. In: Levy RA, Ablon JS, editors. *Handbook of evidence-based psychodynamic psychotherapy: bridging the gap between science and practice*. New York: Springer; 2009.
90. Muran JC, Safran JD, Gorman BS, Samstag LW, Eubanks-Carte C, Winston A. The relationship of early alliance ruptures and their resolution to process and outcome in three time-limited psychotherapies for personality disorders. *Psychother Theor Res Pract*. 2009;46:233–48.
91. Safran JD, Muran JC, Eubanks-Carter C. Repairing alliance ruptures. *Psychotherapy*. 2011;48:80–7.
92. Castonguay LG, Goldfried MR, Wiser S, Raue PJ, Hayes AM. Predicting the effect of cognitive therapy for depression: a study of unique and common factors. *J Consult Clin Psychol*. 1996;64:497–504.
93. Aspland H, Llewelyn S, Hardy GE, Barkham M, Stiles W. Alliance ruptures and rupture resolution in cognitive-behavior therapy: a preliminary task analysis. *Psychother Res*. 2008;18:699–710.
94. Castonguay LG, Schut AJ, Aikins D, Constantino MJ, Lawrenceau JP, Bologh L, et al. Repairing alliance ruptures in cognitive therapy: a preliminary investigation of an integrative therapy for depression. *J Psychother Integr*. 2004;14:4–20.
95. Constantino MJ, Marnell M, Haile AJ, Kanther-Sista SN, Wolman K, Zappert L, et al. Integrative cognitive therapy for depression: a randomized pilot comparison. *Psychotherapy*. 2008;45:122–34.
96. Strauss JL, Hayes AM, Johnson SL, Newman CF, Brown GK, Barber JP, et al. Early alliance, alliance ruptures, and symptom change in a nonrandomized trial of cognitive therapy for avoidant and obsessive-compulsive personality disorders. *J Consult Clin Psychol*. 2006;74:337–45.
97. Safran JD. Breaches in the therapeutic alliance: an arena for negotiating authentic relatedness. *Psychotherapy*. 1993;30:11–24.
98. Safran JD, Muran JC. The resolution of ruptures in the therapeutic alliance. *J Consult Clin Psychol*. 1996;64:447–58.
99. Safran JD, Crocker P, McMain S, Murray P. Therapeutic alliance rupture as a therapy event for empirical investigation. *Psychotherapy*. 1990;27:154–65.
100. Rhodes RH, Hill CE, Thompson BJ, Elliot R. Client retrospective recall of resolved and unresolved misunderstanding events. *J Couns Psychol*. 1994;41:473–83.
101. Keisler DJ. *Contemporary interpersonal theory and research: personality, psychopathology, and psychotherapy*. New York: Wiley; 1996.
102. Foreman SA, Marmar CR. Therapist actions that address initially poor therapy alliances in psychotherapy. *Am J Psychiatry*. 1985;142:922–6.
103. Horowitz M, Rosenbaum R, Wilner N. Role relationship dilemmas: a potentially new process variable. *Psychotherapy*. 1988;25:241–8.
104. Watson JC, Greenberg LS. Alliance ruptures and repairs in experiential therapy. *J Clin Psychol*. 2000;56:175–86.
105. Stiles W, Honos-Webb L, Surko M. Responsiveness in psychotherapy. *Clin Psychol Sci Pract*. 1998;5:439–58.
106. Stiles W, et al. More of a good thing is better: reply to Hayes. *J Consult Clin Psychol*. 1996;64:915–8.

Chapter 23

The Contributions of the Psychotherapy Process Q-Set to Psychotherapy Research*

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Keywords Psychotherapy outcome research • Psychotherapy process measures • Psychotherapy process Q-set (PQS) • Psychotherapy process research • Psychotherapy process–outcome research

This year marks the 25th anniversary of the year that the late Enrico Jones first published his manual for the Psychotherapy Process Q-set (PQS) [1]. The manual has since been published in Jones' landmark book, *Therapeutic Action* (2000) [2], and was recently revised and updated by the Massachusetts General Hospital Psychotherapy Research Program (see Appendix IA in this volume). In this article, we mark the 25th anniversary of the PQS by reviewing both the early findings from the measure and more current research driven by those first findings.

Jones recognized that conducting horse races between different forms of psychotherapy would likely just lead to more findings of fairly equivalent outcomes. While those horse races have served the important function of providing an evidence base for a variety of different forms of psychotherapy, Jones understood that they would do little to advance our understanding of how patients

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improve in psychotherapy. Furthermore, he feared that Lester Luborsky's "dodo bird verdict" might lead researchers to conclude prematurely and perhaps erroneously that common factors were the only active ingredients in the treatment process. While many experienced clinicians like Jones felt strongly that specific techniques in context were important predictors of treatment outcome, he wanted to test this hypothesis empirically. Thus, he spent the better part of a decade developing and refining a robust, sensitive, pantheoretical measure for studying psychotherapy process.

The contributions of the PQS to psychotherapy research have been of immense value. As we review in this chapter, the measure has been used to examine therapy process in studies ranging from single-case designs to large randomized controlled trials, including the NIMH Treatment for Depression Collaborative Research Program (TDCRP). It has helped researchers identify key processes operating in treatment within different theoretical orientations, including psychoanalysis and psychodynamic psychotherapy, cognitive-behavioral therapy (CBT), interpersonal therapy (IPT), and control-mastery therapy (CMT). It has even helped researchers describe the unique, ideographic, and idiosyncratic processes occurring within individual dyads of therapists and patients (also known as "repetitive interaction structures," "role responsiveness," or "enactment") which many believe lie at the heart of therapeutic action.

The Psychotherapy Process Q-Set

The PQS is an instrument designed to describe psychotherapy process at the level of an individual psychotherapy session. It consists of 100 items describing therapist behaviors ($n=41$), patient behaviors ($n=40$), and therapist–patient interactions ($n=19$). The item descriptions are listed in Appendix IA in this volume.

Examples of therapist (T) items include: T conveys a sense of nonjudgmental acceptance, T clarifies, restates or rephrases P's communication, and T encourages P to try new ways of behaving with others. Examples of patient (P) items include: P brings up significant issues and material, P is tense and anxious, and P feels helped. Examples of interaction items include: P's treatment goals are discussed, the therapy relationship is a focus of discussion, and P's feelings or perceptions are linked to situations or behavior of the past. Each item is worded in neutral, descriptive language, and tied to specific behavioral and linguistic cues in order to minimize the amount of inference required by the rater. As we review below, the pantheoretical orientation of the PQS enables comparisons of therapy process between different treatment orientations.

The PQS is an ipsative measure in that independent observers rating the therapy session (from either transcripts, audiotapes, or videotapes) are instructed to sort the 100 items into categories ranging from least characteristic to most characteristic of the session. In other words, the raters are required only to compare the 100 items to each other for this particular hour, not to make judgments about how the session compares to other sessions or to other standards. The instructions specify the number of items required in each of the nine categories, and the measure thus counterbalances bias and halo effects by assuming a forced normal distribution. Different from other process measures which typically examine segments of the therapeutic hour, the PQS uses an entire hour as the unit of analysis, thereby facilitating a more representative view of the session. (The reader is referred to [2] or [3] for a detailed description of the development of the PQS.)

Several characteristics of the PQS speak to its strengths as a measure. It has demonstrated reliability and validity across a variety of different treatment samples including psychodynamic, cognitive-behavioral, client-centered, gestalt, rational-emotive and interpersonal therapies [3–7]. The inter-rater reliability across all 100 PQS items has consistently yielded alpha coefficients between .83 and .89 per rater pair. Reliability analyses for individual items have also yielded

acceptable to excellent values (between .50 and .95) across samples. The measure's construct and discriminant validity has also been demonstrated across studies [3, 6–8].

As mentioned above, Jones first developed the PQS manual 25 years ago [1], but later published it in his book *Therapeutic Action* [2]. By now, the measure exists in both paper and electronic versions and has been revised, updated, and translated into numerous foreign languages, including German [9], Japanese [10], Portuguese [11], Spanish [12, 13], Italian, and Norwegian.

Early Research: Process Predictors of What Works for Whom

One of the first studies conducted with the PQS verified Jones' belief that common or nonspecific factors were not solely responsible for therapeutic change, but rather that specific processes would predict outcome depending on their context. Specifically, he hypothesized that distinct processes might operate differently depending on variables such as patient characteristics, therapist characteristics, presenting problem, symptom severity, and phase of treatment.

Jones, Cumming, and Horowitz [3] investigated the treatments of 40 patients with post-traumatic stress disorder (PTSD) receiving 12 sessions of psychodynamic psychotherapy in order to examine the effects of specific therapist actions and techniques. At the beginning of the treatment, patients were separated into two groups depending on the severity of their symptoms. Results showed that different PQS items were associated with therapeutic success in each group. Specifically, the authors found that specific PQS items, in interaction with patient pretreatment disturbance levels, predicted treatment outcome. In fact, successful therapies with less disturbed patients were described by observers using the PQS as expressively oriented, as therapists emphasized patient feelings to help him/her experience them more deeply, made connections between the therapeutic relationship and other relationships, and drew attention to patient's nonverbal behaviors. In contrast, successful therapies with more severely disturbed patients were shown to be more supportive in nature, as therapists gave more explicit advice and guidance, acted to strengthen defenses, reassured patients, and behaved in a teacher-like (didactic) manner. The diverse therapeutic strategies described with the PQS in the two groups seem similar to what Sifneos [14] described as "anxiety suppressive" versus "anxiety provoking" or the "supportive" versus "expressive" techniques delineated by the Menninger Study [15].

Tracking Treatment Process over Time

In another early landmark study, Jones, Parke, and Pulos [16] studied the shifts in therapy process over time by applying the PQS to a sample of 30 patients with a range of neurotic disorders who received 16 sessions of short-term psychodynamic treatment in a naturalistic setting. The PQS items rated most characteristic of the treatments confirmed the importance of techniques traditionally considered integral to brief psychodynamic treatments, including transference and defense interpretations, the importance of the therapy relationship, and reformulation of patients' in-session behavior. The findings also suggested that these treatments were characterized by a gradual shift from an external, reality-oriented construction of personal difficulties to an emphasis on inner experience and on the relationship with the therapist.

In identifying which PQS items were associated with outcome, the authors found that the items associated with positive outcomes included: P achieves a new understanding or insight, P is introspective, P readily explores inner thoughts and feelings, P's aspirations or ambitions are topics of discussion, and P feels helped. Negative correlates of outcome included P resists examining thoughts, reactions, and motives, and P is controlling.

Comparing Process in Different Types of Treatment

Jones and Pulos [7] used the PQS to compare the process in the aforementioned sample of 30 patients receiving 16 sessions of psychodynamic treatment to a sample of 32 patients receiving 16 sessions of CBT. They found that the two treatments were similar in terms of important patient characteristics, since out of the 38 PQS items not distinguishing the two treatments, as many as 26 were descriptive of patient attitudes and emotional states, e.g., anxiety, guilt, inadequacy, depression, degree of trust in T, and sense of feeling understood by T.

In line with the authors' hypothesis, important differences distinguished the two treatments in terms of therapist stance and technique. The techniques employed by psychodynamic clinicians were consistent with that orientation's theoretical frame, and included evocation of affect, bringing troublesome feelings into awareness, integrating current difficulties with previous life experiences, and using the therapist–patient relationship as a change agent. Different techniques characterized the cognitive-behavioral therapies, including controlling negative affect through the use of intellect, vigorous encouragement, support and reassurance.

Factor Analysis of PQS Items: Associations with Outcome

The study by Jones and Pulos [7] represented an important methodological advance through the use of factor analysis to identify underlying factors across the two treatments.

Using a principal components analysis, the authors found four conceptually interpretable factors, including (1) Psychodynamic Technique (e.g., T is neutral, T interprets ward-off or unconscious wishes, feelings, or ideas; Table 23.1), (2) Cognitive-Behavioral Technique (e.g., T actively exerts control over the interaction, there is discussion of specific activities or tasks for P to attempt outside of session), (3) Patient Resistance (e.g., P rejects vs. accepts T's comments and observations, P resists examining thoughts, reactions or motivations related to problems), and (4) Negative Patient Affect (P feels sad or depressed, P feels inadequate or inferior).

To the investigators' surprise, Psychodynamic Technique was significantly correlated with four out of five measures of patient improvement in the CBT condition (and showed a near-significant trend with outcome in the psychodynamic treatment). In contrast, Cognitive-Behavioral Technique was found to have little or no relationship with outcomes in CBT, but showed a negative association with one of four outcomes in the dynamic treatment.

Table 23.1 PQS factor items and loadings for “Psychodynamic Technique” factor (Adapted with permission from Ref. [7]. Copyright © American Psychological Association)

Item #	Item description	Factor score
81	T emphasizes P's feelings to help him/her experience them more deeply.	.81
93	T is neutral.	.80
67	T interprets ward-off or unconscious wishes, feelings, or ideas.	.70
36	T points out P's use of defensive maneuvers (e.g., undoing, denial).	.62
92	P's feelings or perceptions are linked to situations or behavior of the past.	.61
50	T draws attention to feelings regarded by P as unacceptable (e.g., anger, envy, or excitement).	.58
91	Memories or reconstructions of infancy and childhood are topics of discussion.	.57
100	T draws connection between the therapeutic relationship and other relationships.	.50
82	P's behavior during the hour is reformulated by T in a way not explicitly recognized previously.	.50
62	T identifies a recurrent theme in P's experience or conduct.	.50

Note. PQS=Psychotherapy Process Q-set; T=therapist; P=patient

The Smuggling Hypothesis: Adherence to Prototypical Treatment Processes

The finding from Jones and Pulos [7] that psychodynamic strategies were positively correlated with therapeutic outcome across both CBT and psychodynamic treatment led to a systematic line of inquiry concerning the incidence and effect of borrowing treatment processes from one approach for use in another.

This new line of research began when Ablon and Jones [17] used expert ratings of PQS items to develop prototypes of ideal treatment process. Specifically, Ablon and Jones first gathered panels of experts in psychodynamic and CBT, respectively, and asked them to use the PQS to describe the process of an ideal session that adhered to their theoretical principles. Cluster analysis was then used to determine whether the panels of experts had distinct views of therapy process. Regression scores were calculated to determine the degree to which each individual item of the PQS contributed to the experts' view of ideal therapy process. Each factor array of 100 scores represented a prototype ideal treatment process according to the experts (see Table 23.2 for the 20 items most characteristic of psychodynamic treatment).

As the next step, using the same dataset as Jones and Pulos [7], Ablon and Jones [17] correlated observer ratings of actual sessions with the prototypes to determine the degree to which the actual treatments corresponded to the ideal, prototypical process prescribed by the psychodynamic and CBT experts. Finally, to determine which processes constituted the active ingredients of the treatments, they assessed the degree to which adherence to the prototypes correlated with outcome.

Surprising results emerged again. Therapists in the psychodynamic treatments fostered processes consistent with both ideal psychodynamic and cognitive-behavioral treatment, while, in

Table 23.2 Rank ordering of PQS items by factor scores on psychodynamic technique factor (Adapted with permission of Taylor & Francis Group from Ref. [17])

Item #	20 Items most characteristic of ideal psychodynamic therapy	Factor score
90	P's dreams or fantasies are discussed.	1.71
93	T is neutral.	1.57
36	T points out P's use of defensive maneuvers, e.g. undoing, denial.	1.53
100	T draws connections between the therapeutic relationship and other relationships.	1.47
6	T is sensitive to the P's feelings, attuned to the P; empathic.	1.46
67	T interprets ward-off or unconscious wishes, feelings or ideas.	1.43
18	T conveys a sense of nonjudgmental acceptance.	1.38
32	P achieves a new understanding or insight.	1.32
98	The therapy relationship is a focus of discussion.	1.28
46	T communicates with P in a clear, coherent style.	1.24
50	T draws attention to feelings regarded by P as unacceptable (e.g., anger, envy, or excitement).	1.17
11	Sexual feelings and experiences are discussed.	1.12
82	P's behavior during the hour is reformulated by T in a way not explicitly recognized previously.	1.12
35	Self-image is a focus of discussion.	1.11
91	Memories or reconstructions of infancy and childhood are topics of discussion.	1.08
92	P's feelings or perceptions are linked to situations or behavior of the past.	1.05
62	T identifies a recurrent theme in P's experience or conduct.	0.95
3	T's remarks are aimed at facilitating P's speech.	0.92
79	T comments on changes in P's mood or affect.	0.88
22	T focuses on P's feelings of guilt.	0.87

Note. Factor scores derived from expert psychodynamic therapists ($N=11$) ratings of the Psychotherapy Process Q-set. PQS=Psychotherapy Process Q-set; T=therapist; P=patient

contrast, therapists in the CBT group fostered mostly CBT processes, and not psychodynamic processes, thus adhering more closely to prescribed techniques. These results suggest that the psychodynamic clinicians employed a more heterogeneous set of treatment strategies than their CBT colleagues.

However, results furthermore showed that adherence to the CBT prototype was associated with positive outcome for only one of the six symptom measures across the psychodynamic and CBT samples, while adherence to the psychodynamic prototype was consistently associated with positive outcome across the two groups. This was true despite very little adherence to the psychodynamic prototype in the CBT sample. Thus, the surprising finding that psychodynamic process emerged as a positive predictor of outcome in the CBT sample was a replication of previous findings in the same sample using different methods. This study also suggested, however, that the active ingredients in a treatment do not necessarily need to be the most characteristic ones. Even minimal adherence to certain therapy processes can be robust predictors of treatment outcome.

Following these findings, Ablon and Jones [4, 5] conducted a replication study using data from the psychotherapy arms of the National Institute of Mental Health's Treatment for Depression Collaborative Research Program (NIMH TDCRP), at the time a state-of-the-art controlled clinical trial for depression [18]. Results revealed significant areas of difference in process between IPT and CBT, as well as important points of similarity in the processes of both approaches. Differences in process were consistent with the theoretical distinctions between the two orientations, and centered on the therapist's stance, activity, and technique. When prototype methodology was applied, however, it became evident that both treatments adhered equally strongly to the CBT prototype. Of note, while the CBT therapists fostered a robust CBT process to the exclusion of other processes, the IPT therapists were found to be fostering both CBT and psychodynamic process. However, adherence to the CBT prototype correlated positively with treatment outcome across both groups. In summary, these results challenged the assumption that the two treatment approaches tested in the TDCRP relied on mutually distinct interventions and techniques and that positive outcomes validated their proposed mechanisms of change. The moral of this line of research seems to be that brand names of therapy can be misleading when it comes to actual treatment processes fostered and active ingredients promoting positive change.

Other PQS Findings from the TDCRP

Building on these findings, Coombs, Coleman, and Jones [19] used the TDCRP dataset to explore the role of emotion in CBT and IPT, focusing on the therapists' stance toward patients' experience and expression of emotion. Their factor analysis revealed three key factors: Factor 1, termed Collaborative Emotional Exploration, was significantly related to positive outcome in both CBT and IPT. The PQS items on this factor included P is introspective, readily explores inner thoughts and feelings, T is sensitive to the patient's feelings, and P has cathartic experience. Factor 2, termed Educative/Directive Process, included Discussion centers on cognitive themes, T behaves in a teacher-like, didactic manner, and There is discussion of specific activities or tasks for the patient to attempt outside of the session; this factor was not related to positive outcomes. These results are especially interesting given the earlier findings by Jones and Pulos [7] that psychodynamic treatments tend to focus more on patient emotion than CBT, and that emotional exploration was correlated with improvement on four of five outcome measures in the CBT sample.

Using the CBT and IPT archives from the TDCRP, Karlsson and Kermott [20] investigated which PQS process factors were associated with reflective functioning (RF; [21]). The authors found that

the PQS items most strongly associated with RF were T accurately perceives the therapy process, T draws attention to feelings regarded as unacceptable by the patient (e.g., anger, envy, or excitement), T is sensitive to the patient's feelings, attuned, empathic, P brings up significant issues and material, P is committed to the work of therapy, and P achieves new understanding insight. These PQS items were in turn significantly associated with positive outcomes.

In contrast, the PQS items associated with lower levels of RF were T actively exerts control over the interaction (e.g., structuring and/or introducing new topics), P does not initiate topics, is passive, P does not feel understood by the therapist, P feels weary or suspicious, and P rejects therapist's comments and observations. These items were in turn significantly related to poorer outcomes.

Taken together, the PQS findings from the TDCRP shed important light on psychotherapy process and outcome in CBT and IPT treatments. The findings also revealed the significant limitations of controlled trials of manualized treatments when it comes to studying psychotherapy process. This realization led to the next wave of research using the PQS to study psychotherapy naturalistically. While RCTs maximize internal validity, Jones and colleagues proposed the study of naturalistic treatments as an important complement to controlled studies in an effort to study psychotherapy process from a more ecologically valid perspective.

Adherence to Prototypical Treatment Processes in Naturalistic Treatments

To complement the research from the TDCRP and other RCTs, Ablon, Levy, and Katzenstein [22] studied 17 naturalistic treatments of panic disorder by seven self-identified psychodynamic clinicians delivering treatment as usual. Using the PQS, they found that the therapists employed a large spectrum of interventions, and the treatments included process variables typically associated with CBT. In fact, adherence to the CBT prototype was stronger than adherence to the psychodynamic and IPT prototypes, despite the self-identified psychodynamic orientation of the clinicians. However, adherence to IPT and psychodynamic process was most associated with positive outcomes. In other words, the most predominant processes were in fact not the active ingredients of the treatment, a replication of findings from prior studies.

The authors went a step further by using individual Q-item analyses to isolate the specific ingredients of the treatment process that predicted positive change, coining the phrase "empirically supported change processes." Specifically, they found that emphasizing feelings in order to deepen them was the single most important predictor of outcome with this population ($r=.70$). In fact, processes aimed at facilitating expression of the patient's negative affect, such as self-accusations, shame, and guilt, negative feelings toward the therapist, and emotions deemed unacceptable by the patient were significantly associated with positive outcomes (Table 23.3). This replicated the findings by Coombs, Coleman, and Jones [19], discussed earlier, showing that collaborative emotional exploration was key in both CBT and IPT as delivered in the TDCRP.

Ablon and Jones [23] used the PQS to compare therapy process from three different treatment settings: two psychoanalyses ($N=130$ sessions), three long-term analytic therapies (two sessions weekly; $N=229$ sessions), and two short-term dynamic therapies ($N=122$ sessions). The authors calculated each sample's degree of adherence to the psychodynamic prototype and found, as predicted, that the two psychoanalyses demonstrated a significantly greater correlation with the prototype, while the psychoanalytic psychotherapy treatments showed a weaker correlation and the short-term dynamic therapies an even weaker correlation. The differences between each sample were statistically significant, providing the first empirical evidence that psychoanalysis proper fosters more of an analytic process than psychodynamic psychotherapy.

Table 23.3 Individual item process correlates of outcome (Adapted with permission of Elsevier from Ref. [22])

Item #	Item descriptions	Effect size
81	Therapist emphasizes patient's feelings to deepen them	.70
74	Humor is used	.52
1	Patient verbalizes negative feelings toward therapist	.50
97	Patient is introspective, explores inner thoughts/feelings	.49
73	Patient is committed to the work of therapy	.49
8	Patient is concerned/conflicted about dependence on the therapist	.49
72	Patient understands the nature of therapy, what is expected	.47
75	Termination of therapy discussed	.47
50	Therapist draws attention to feelings patient regards unacceptable	.43
28	Therapist accurately perceives therapeutic process	.42
11	Sexual feelings and experiences are discussed	.40
96	Discussion of scheduling or fees	.38
32	Patient achieves a new understanding or insight	.37
71	Patient is self-accusatory expresses shame, guilt	.37
22	Therapist focuses on patient's feelings of guilt	.34
6	Therapist is sensitive to the patient's feelings, attuned, empathic	.34
12	Silences occur during the hour	.32
92	Patient's feelings/perceptions are linked to the past	-.45
38	Discussion of activities/tasks to do outside session	-.47
25	Patient has difficulty beginning the hour	-.37
30	Discussion centers on cognitive themes, ideas, beliefs	-.36
76	Therapist suggests patient accept responsibility for problems	-.34
45	Therapist adopts supportive stance	-.33
37	Therapist behaves in a teacher-like (didactic) manner	-.33
48	Therapist encourages independence of action/opinion	-.32
52	Patient relies upon therapist to solve his/her problems	-.54
35	Patient's self-image is focus of discussion	-.62
85	Therapist encourages patient to try new ways of behaving with others	-.67

Note. Positive correlations reflect favorable associations with outcome on the SCL-90-R. PQS=Psychotherapy Process Q-set; $N=17$

Rapid Versus Slow Response to Treatment

Another unique study using the PQS was conducted by Comminos and Greyer [24] who compared the early sessions of “rapid responders” and “gradual responders.” The process findings revealed that the rapid responders were better able to work with intensive feelings (e.g., guilt) in early stages of therapy. In contrast, the gradual responders had high ratings of defensiveness and externalization early in treatment, despite no differences in early working alliance, which confirms prior findings regarding the importance of focusing on affect in treatment while utilizing different treatment processes depending on patient characteristics.

Single-Case Studies

While the aggregated data in studies of therapy process at the group level have contributed enormously to our understanding of process and outcome, Jones and colleagues realized that their findings were too global to pinpoint the specific active ingredients in individual treatments. In parallel with the

studies reviewed previously, a separate group of studies using single-case designs have used the PQS to examine similar research questions about what processes operate in treatment, how process changes over time, whether therapists adhere to prescribed technique based on theoretical orientations, and how process relates to outcome. Gottman [25] referred to single-case studies as “*N*-of-one-at-a-time research,” emphasizing that findings from *N*=1 studies are valuable in part because they can be repeated across cases, leading to an accumulation of rich knowledge about therapy process and outcome. As illustrated below, the PQS represents an ideal instrument for such research.

The Case of Mrs. C

The first intensive single-case study using the PQS was conducted by Jones and Windholz [26], who examined the 6-year psychoanalysis of Mrs. C. Mrs. C was a social worker in her late 20s who sought treatment for her lack of sexual enjoyment, inability to relax, drivenness at home and at work, and self-critical tendencies. The analysis consisted of approx. 1,100 h over 6 years, and the authors selected a 10-session block of audio-recordings from each year (i.e., hours 91–100 in year 1, hours 258–267 in year 2, hours 429–438 in year 3, and so on).

In order to provide a view of the salient processes in the treatment overall, the authors first identified the PQS items that demonstrated consistently high ratings and little variability across time. Consistent with traditional psychoanalytic technique, results showed that the analyst’s stance was consistently neutral, accepting, and nondefensive, and that he refrained from offering direct support, reassurance, and advice. The patient was consistently rated as anxious, tense, active in initiating dialogue, but not controlling nor demanding.

In order to examine changes in therapeutic process over time, the authors compared the process from Year 1 to Year 2, from Year 3 to Year 4, and from Year 5 to Year 6. For example, from Year 1 to 2, Mrs. C began feeling less shy and embarrassed, more trusting and secure, and less concerned about how the analyst might judge her, while the analyst’s communications became more direct, clear, and evocative.

Interestingly, the authors found evidence for the emergence of a transference neurosis in the fourth year of the analysis. Q-descriptors signified a remarkable heightening of Mrs. C’s resistances and symptoms, as well as an increase of disturbing affect during the analytic hours, especially defiance, guilt, and intense hostility toward the analyst. Even at this difficult point in the analysis, however, she clearly made active efforts to work constructively with the analyst’s interpretations. Of note, the data from the last period of the analysis suggested a resolution of the transference resistances, signaled in part by the patient’s greater openness about her desires, feelings, and fantasies, including sexual desires and a need for intimacy.

The authors found that Mrs. C’s discourse over the 6-year period became gradually less intellectualized and dominated by rationalization and increasingly reflected greater access to her emotional life and a developing capacity for free association. The analyst became gradually more active in challenging the patient’s understanding of experiences and events, identifying recurrent patterns in her life experience and behavior, interpreting defenses, and emphasizing feelings the patient considered wrong, dangerous, or unacceptable.

Spence, Dahl, and Jones [27] took the investigation of Mrs. C’s analysis one step further by using time series analysis, a very sophisticated and useful method in process research. The reader is referred to Jones et al. [28] for a detailed description of the statistical techniques employed; in brief, time series analysis can be used to test whether (1) the analyst influences the patient, (2) the patient influences the analyst, (3) neither influences the other, or (4) the analyst and patient influence each other bidirectionally. The method has been used to study mother–infant, husband–wife, as well as therapist–patient interactions.

Table 23.4 PQS factor items and loadings for “Playing Stupid” factor (Adapted with permission of SAGE Publications from Ref. [23]. Copyright c SAGE Publications)

Item #	Item description	Factor score
11	Sexual feelings and experiences are discussed	.65
43	T suggests the meaning of others’ behavior	.65
64	Love or romantic relationships are a topic of discussion	.62
38	There is discussion of specific activities or tasks for the patient to attempt outside of session	.51
19	There is an erotic quality to therapy relationship	.49
68	Real versus fantasized meanings are differentiated	.49
90	P’s dreams or fantasies are discussed	.47
5	P has difficulty understanding the therapist’s comments	–.62
4	P does not feel understood by the therapist	–.47

Note. PQS = Psychotherapy Process Q-set; T = therapist; P = patient

Spence, Dahl, and Jones [27] found that Mrs. C’s associative freedom increased over time to a significant degree and was significantly associated with the number of interventions used by the analyst in each hour, but only in the later phases of treatment. Three interventions in particular were identified which increased associative freedom in the current session and in the next three sessions; specifically, when the analyst made an interpretation directed toward the patient’s defensive style, identified a recurrent theme in the material, or discussed the patient’s dreams or fantasies, Mrs. C’s verbalizations in response demonstrated a higher degree of freedom in her associations.

A factor analysis conducted by Ablon and Jones [23] revealed three clusters of items reflecting recurring patterns of interaction in the analysis. The process captured by the factor Patient Self-Exploration/Analyst Acceptance included Mrs. C being introspective, readily examining her thoughts and reactions, and actively bringing up material; and the analyst typically accommodated her to improve the relationship during difficult interactions. However, this interaction structure became less prevalent over time. In contrast, the factor termed Analyst Activity gradually became more prevalent as the analysis progressed, as evidenced by the analyst exerting gradually more control over the interaction and more frequently interpreting ward-off or unconscious wishes, feelings, and ideas.

The third recurring interaction structure identified by the factor analysis was termed Playing Stupid because the analyst frequently interpreted Mrs. C’s behavior during these types of interactions as her “playing stupid.” As evident in the session transcripts, Mrs. C often found herself having muddled thoughts when talking about sexual desires and her wish to make men feel aroused. The items loading most strongly on this factor included Sexual feelings and experiences are discussed, T suggests the meaning of others’ behavior, and Love or romantic relationships are the topic of discussion (Table 23.4).

A close examination of these interactions revealed that Mrs. C often felt quite confused when talking about sexual matters; in response, the analyst typically talked more and provided longer explanations and interpretations of why she found it necessary to keep herself in a confused, muddled state of mind, related in part to a memory of a time she had to “play dumb” to hide something important she knew.

In sum, various authors have used the PQS to describe in detail the dyad-specific processes involved in the successful 6-year analysis of Mrs. C, including her resistance, transference, access to deepening unconscious wishes, and eventual easing of restrictions on her self-expression.

The Case of Mr. A: An Integrative Psychoanalysis

Porcerelli, Dauphin, Ablon, and Leitman [29] examined treatment process in the 5-year psychoanalysis of Mr. A. Mr. A was a married computer technician, age 50, who sought treatment for chronic anxiety and a phobia related to driving on expressways. Underlying his anxiety was hostility

towards his wife, inhibitions regarding advancement at work, sensitivity to criticism, and conflicts over sexuality. He was diagnosed with avoidant personality disorder based on clinician ratings with the Shedler–Westen Assessment Procedure [30]. Mr. A was seen three to four times weekly on the couch for 5 years, but only 20 audio-recorded sessions were available for the study (four intake sessions, three therapy sessions at each year’s end, and one session at follow-up).

PQS ratings of the 15 therapy sessions showed that the treatment was consistently characterized by strong psychodynamic process, as the ratings correlated significantly with the psychodynamic prototype developed by Ablon and Jones [5, 17]. This was exemplified by therapist behaviors such as drawing attention to feelings deemed unacceptable by the patient, interpreting ward-off feelings and ideas, emphasizing feelings in order to help the patient experience them more deeply, and conveying nonjudgmental acceptance. Discussion frequently focused on Mr. A’s dreams and fantasies and on the therapeutic relationship, both highly reflective of psychodynamic process. Characteristic patient behaviors included bringing up significant issues and material, being committed to the work of therapy, understanding the nature of therapy, experiencing ambivalent and conflicted feelings about the therapist, and being concerned about what the therapist thought of him.

Interestingly, the process in the three sessions from Year 3 (but not in other years) also showed significant correlations with the interpersonal and cognitive-behavioral prototypes, suggesting a more integrative process at that point in treatment. Of note, at this time, Mr. A and his analyst were often discussing his rage at his wife as her health deteriorated and threatened to deplete him emotionally and financially; this focus on his current relationships likely drove the correlation with the IPT prototype. Furthermore, they often discussed Mr. A’s efforts to “behave differently” in relation to his wife between sessions; this focus on “homework” and advice giving likely drove the correlation with the CBT prototype. In sum, Mr. A’s treatment was a successful psychoanalysis with significant integrative elements.

The Case of Ms. M: Mutual Influence in a Therapist–Patient Dyad

Jones, Ghannam, Nigg, and Dyer [28] examined the treatment of Ms. M who was in intensive, twice-weekly psychodynamic psychotherapy with Dr. X over a period of 2½ years (208 sessions). Ms. M was a divorced woman in her mid-30s who sought treatment for longstanding depression. Her current depressive episode occurred in the context of difficulties with her son, age 16, who wanted to live with his father, her ex-husband. A key historical event was the accidental drowning of her older brother (who was a rival for her parents’ attention) when she was a child; as a result, she felt blamed by her mother and abandoned by her father. Dr. X’s formulation was grounded in control-mastery theory (CMT) which is a cognitive-psychodynamic theory emphasizing the role of pathogenic beliefs and unconscious guilt in psychopathology.

The PQS was used to rate the videotapes from every fourth session ($n=53$) and showed that Ms. M was characteristically compliant, trusting, and undemanding. She felt understood by the therapist and accepted the therapist’s comments and observations. Dr. X was consistently responsive, affectively involved, confident, and self-assured. While supportive and didactic at times, she also employed traditional psychodynamic technique such as interpreting and linking current feelings and experiences to the past and identifying recurrent patterns in Ms. M’s life.

The authors identified four key dimensions of the therapy process through the use of an exploratory principal components factor analysis which showed four clusters of PQS items. The first factor, Therapist Acceptance/Neutrality, reflected Dr. X’s nonjudgmental acceptance, empathy, facilitation, and neutrality. Factor 2, Therapist Interactive, captured Dr. X’s more authoritative behaviors, i.e., the times when she took on a more controlling, challenging, and didactic role. The factor included items related to the patient as well; presumably in response to Dr. X’s authoritative stance, Ms. M had difficulty understanding Dr. X and felt misunderstood. The third factor,

Psychodynamic Technique, reflected the therapist's use of traditional techniques such as interpreting warded-off feelings or ideas, emphasizing unacceptable feelings, interpreting defenses, and allowing difficulties to emerge without appeasing or accommodating the patient. Factor 4, Patient Dysphoric Affect, captured Ms. M's depression and anxiety, and her efforts to control these feelings during sessions.

Taking these findings a step further, the authors used time series analysis to explore whether the four factors were related in either unidirectional and bidirectional ways. The authors found that the processes between Dr. X and Ms. M were in fact mutual and reciprocal, challenging the conventional idea that primarily the therapist's techniques bring about change in the patient unidirectionally. Specifically, the authors concluded that Dr. X was more neutral, nonjudgmental, and facilitative in the beginning, and that Ms. M's depressive affect during sessions gradually "pulled" Dr. X toward a more involved and authoritative stance; this change in process in turn predicted Ms. M's reduction in depression. These findings support the notion of "role responsiveness" [31] and the idea that certain repetitive interaction structures typically develop between therapist and patient.

In addition, it was found that change in Patient Dysphoric Affect both predicted and was predicted by both supportive and expressive techniques. Specifically, sometimes Dr. X was more reassuring in response to Ms. M's depression and anxiety, and sometimes Ms. M became less depressed in response to Dr. X's reassurance. In addition, Dr. X's transference interpretations led to increased depression and anxiety, while Ms. M's depression level predicted how often Dr. X interpreted the transference. Presumably, the patient experienced Dr. X's interpretations as narcissistic injuries rather than empathic, helpful explanations of her unconscious motivation.

The use of factor analysis and time series by Jones et al. [28] represented two important methodological advancements. Building on these, Pole and Jones [32] used the archived sessions of Ms. M's treatment to further investigate why, contrary to conventional psychoanalytic wisdom, *decreased* therapist acceptance and neutrality led to symptom improvement in the patient and how exactly therapy contributed to her other improvements, such as increased awareness of unconscious guilt. They furthermore examined whether Ms. M's degree of free association (measured by word co-occurrence) and discussion of key topics (related to her mother, father, brother, and guilt) were related to treatment outcomes.

Using time series analysis, the authors found that Ms. M's associative freedom (i.e., the degree to which she spoke freely and explored intrapsychic topics in depth) increased over the course of treatment, was facilitated by Dr. X's use of psychodynamic techniques, and in turn predicted symptomatic improvement. Furthermore, Ms. M became more conscious of her guilt over time, and her increased capacity to free-associate predicted her later ability to express and experience guilty feelings. Dr. X's use of Psychodynamic Technique also directly influenced Ms. M's conscious experience of guilt. The analysis of key topics showed that Dr. X demonstrated a non-neutral, challenging stance during discussion of certain topics (mother, father, and guilt), but not others (brother), actively taking the stance that Ms. M had a right to have had better mothering and to be a better mother to her own children without having to fear hurting her mother. In other words, Dr. X was not less accepting of Ms. M as a person but rather less accepting of her guilt-inducing beliefs regarding her parents. Finally, time series analysis showed that Ms. M's symptoms were ameliorated by discussion of specific key topics (mother and father) but not others (brother).

Further building on these findings in their study of Ms. M's treatment, Pole, Ablon, and O'Connor [33] found that overall, the treatment significantly resembled CBT and CMT prototypes (and in fact resembled ideal CBT process more than ideal CMT process), but did not resemble the psychodynamic prototype. However, looking in more detail at the PQS items describing the therapist's and patient's behaviors as well as their interactions, it was found that Dr. X's behaviors were more adherent to ideal CMT therapist behaviors than ideal CBT and psychodynamic behaviors. Interestingly, Ms. M's behaviors were more adherent to ideal CBT patient behaviors than ideal CMT and PDT behaviors. In other words, the treatment's overall resemblance to CBT was driven mostly by the

patient's CBT-like behaviors. The interactions between Ms. M and Dr. X were closely adherent to both ideal CMT and ideal CBT interactions.

The authors furthermore found that Dr. X's adherence to the CBT and CMT prototypes predicted symptom improvement, while adherence to the psychodynamic prototype did not. Symptom improvement did not in turn influence adherence to any of the three prototypes. Looking in more detail at what therapist, patient, and dyadic behaviors predicted symptom reduction, the authors found that improvement was predicted by therapist adherence to ideal CMT behaviors (e.g., focusing on guilt), patient adherence to ideal CMT behavior (e.g., testing the limits of the therapy relationship) and psychodynamic behaviors (e.g., achieving new insight), and patient-therapist interactions consistent with ideal CBT (e.g., discussion of homework) and psychodynamic (e.g., discussion of dreams and fantasies). Of note, the patient's strong adherence to CBT behaviors was not associated with improvement.

This series of single-case studies represented an important advance beyond conventional ways of measuring adherence that tend only to examine therapist techniques, by suggesting that treatment processes are co-created by therapist and patient.

The Case of Maria: Ideal Technique on a Case-by-Case Basis

While Pole et al. [33] employed a generic CMT prototype specifying general ideal CMT process, Pole, Ablon, O'Connor, and Weiss [34] used the PQS to develop case-specific CMT treatment guidelines in the case of Maria. Maria was a married woman, age 30, originally from Mexico, who had forsaken her studies in veterinary medicine to care for her children and support her husband in his professional pursuits. She sought treatment for depression related to the feeling that her life had gotten off track since she withdrew from school due to an unexpected pregnancy. The CMT formulation focused on the guilt she felt for wanting to pursue her own interests (as opposed to devoting all her time to her family), and for potentially surpassing her mother, grandmother, and other women from her culture. Each of the 16 sessions was videotaped and rated with the PQS.

At the outset, the therapist and his supervisor developed a case-specific measure of ideal CMT technique based on their formulation of the patient's particular difficulties. This was done in collaboration with the progenitor of CMT. The guidelines specified that in an ideal session, the therapist would focus on the patient's guilt; provide supportive, encouraging, and reassuring statements; interpret unconscious wishes, feelings, and ideas; and facilitate the patient's speech (which was especially important since she doubted her English proficiency).

The authors found that Maria's self-rated in-session affect associated with feeling ineffective and depressed fluctuated from session to session, but showed improvement over time, as did the therapeutic alliance (rated by patient, therapist, and independent observers). Session outcomes in terms of therapist helpfulness, patient response, and overall session quality (also rated by patient, therapist, and independent observers) showed a range from session to session, but improved moderately over time. Therapist-rated adherence was close to ideal CMT throughout and improved over the 16 sessions.

Furthermore, adherence to ideal CMT technique was associated with reduced ineffective and depressed affect in session and with positive patient- and observer-rated session outcomes. Adherence was more strongly correlated with positive session outcomes than was the therapeutic alliance, and even predicted outcome above and beyond the combined effects of the passage of time, the in-session affect, and the therapeutic alliance.

These findings speak clearly to the importance of developing measures of case-specific ideal technique based on theory-driven formulation of individual patients' difficulties, rather than adhering rigidly to generic techniques specified by treatment manuals (which can be associated with negative process and outcomes, as shown by [35, 36]).

The Case of Amalia X: The Private Meanings of Session 152

Amalia X was an adult German woman who sought psychoanalysis for depression with underlying self-esteem difficulties related to excessive body hair growth (hirsutism). She felt that, starting in puberty, her life had suffered severe strain related to this problem, resulting in significant anxiety, depression, irritability, compulsiveness, and social insecurity. She attended 517 sessions with good results.

Amalia is considered the German specimen case, and her analysis has been studied extensively. Albani, Blaser, Jacobs, Jones, Thomä, and Kächele [37] used the PQS to examine five therapy hours from early in treatment and 5 h from the end of the treatment. The PQS items that were characteristic across these ten sessions included the analyst being empathic, neutral, accepting, and tactful, while the patient was consistently active in beginning the hour and bringing up significant issues and material, spoke of wanting to be separate, and accepted the analyst's comments and observations. The sessions were consistently characterized as having a specific focus, e.g., the patient's body image, relationships, or cognitive themes.

In comparing the early treatment process to the process at the end of treatment, the authors identified several PQS items that distinguished the two treatment phases. In the beginning, the analyst more often asked for more information, clarified, facilitated the patient's speech, and identified recurrent themes in the patient's experience; the patient had a clearer and more organized expression, felt shy and inadequate more often, and expressed shame and guilt more frequently (compared to the end of treatment). At the end of treatment, the analyst reformulated the patient's behavior less, had a reduced focus on the patient's feelings of guilt, and was less active in exerting control of sessions; the patient was more controlling, provocative, resistant to examining thoughts and feelings, and more able to express anger (compared to the beginning of treatment).

Neither the beginning nor the ending closely resembled the psychoanalytic prototype, suggesting that the psychoanalytic work was just beginning or coming to a close. These findings indicate that psychoanalytic treatments are more varied than notions of theoretical purity suggest and that treatments do not necessarily conform to theoretical prototypes, a replication of earlier findings.

At the same time, session 152 of Amalia's treatment has in fact been identified as a prime example of modern psychoanalytic technique. In this session, Amalia brings up an important dream, and the analyst helps her explore its unconscious meanings by not drawing sharp distinctions between fantasy and reality. The most characteristic PQS items for this session included P's dreams and fantasies are discussed; T's remarks are aimed at facilitating speech; T interprets ward-off or unconscious wishes, feelings, or ideas; and The analytic relationship is a focus of discussion. The least characteristic items included T acts to strengthen defenses; P does not feel understood; P does not initiate topics, is passive; and real versus fantasized meanings of experience are actively differentiated.

As described by Levy, Ablon, Ackerman, and Seybert [38], session 152 was particularly difficult to rate with the PQS, in part because of the complex dialogue, personal associations, and intimate exchange between analyst and patient. The raters indeed had the experience of being invited into 'a very private world of dyadic meaning.'

The PQS items most difficult to rate for session 152 included item 42 (P rejects rather than accepts T's comments and observations) in part because Amalia at times first resisted the analyst's interpretations, but then shifted focus to deepen the conversation. Another difficult item was item 58 (P resists examining thoughts, reactions, or motivations) mainly because she readily explored parts of the transference, but resisted expressing her sexual thoughts and feelings. In fact, item 11 (sexual feelings or experiences are discussed) was difficult to rate in part because Amalia made several references to sexual content without direct mention, and in fact appeared to actively resist deeper discussion of it.

A final example was item 12 (silences occur during the hour). This item was difficult to rate because the session contained several long silences, including one reflecting significant resistance prior to Amalia's changing the subject. However, the raters felt that the silences did not change the flow of the session in major ways, as the session had a vitality and productive energy to it overall. The silences seemed to reflect shifts in focus, rather than ruptures in the relationship or suppressed aggression, so the raters rated them as less salient. In sum, while some items were difficult to rate, the PQS allowed the researchers to capture even the private meanings and unique processes of session 152 of Amalia's analysis.

The Case of Beth

Beth was a woman in her mid-20s who sought treatment soon after choosing to leave graduate school in the physical sciences due to intense competition and performance pressures. She felt lost and stuck in her professional pursuits and had applied for no jobs since leaving graduate school. She broke off her romantic relationship with a girlfriend of many years soon after leaving graduate school, but continued to live with her. Beth was in twice-weekly psychotherapy for approximately 15 months with Dr. A, a psychologist with a psychodynamic orientation who was asked to conduct the treatment as she would if seeing Beth in private practice.

Katzenstein [39] examined process and outcome in Beth's treatment using the PQS ratings from every other hour ($n=61$), derived from the transcripts of the videotaped sessions. The treatment process was found to adhere most closely to the psychodynamic prototype ($r=.43$) and the cognitive-behavioral prototype ($r=.38$) with no statistically significant difference in adherence between the two. The process correlated significantly less with the interpersonal prototype ($r=.20$). However, adherence to psychodynamic process was the only significant predictor of symptom level and symptom change.

A principal components factor analysis revealed two factors underlying the PQS items. Factor 1 was labeled Patient's Affective and Cognitive Distancing and described a stance frequently taken by Beth during sessions. Specifically, she had a strong tendency to distance herself from her own experience, as exemplified by PQS items such as P is controlling, P is anxious and tense, P discusses experiences as if distant from feelings, and P resists examining thoughts, reactions, or motivations. The item with the strongest negative factor loading was P is introspective and readily explores inner thoughts and feelings (Table 23.5).

Factor 2 was labeled Therapist Cutting Through to Affect, and described Dr. A's efforts to help Beth focus on and talk about her inner experience. This stance was exemplified by PQS items such as T emphasizes the patient's feelings to help him/her experience them more deeply, T's remarks are aimed at facilitating speech, and T asks for more information or elaboration.

Time series analysis showed that Beth's level of symptom distress (a) resulted in more frequent distancing and disengaging from her thoughts and feelings, and (b) led Dr. A to focus more on affect to help her access her thoughts and feelings more deeply. These efforts in turn predicted a reduction in Beth's level of symptom distress in a reciprocal manner.

Interestingly, in the exit interview with an independent clinician, Beth spoke eloquently about these processes when asked what made the treatment effective: "My therapist had me talk in very concrete terms and get in touch with a lot of my feelings...I was able to talk about those things instead of spending all my energy staying away from it...She made me aware that I talked about my feelings in abstract ways...I think this was a big part of what was helpful to me about our therapy and what helped me feel better."

Table 23.5 PQS factor items and loadings (Adapted with permission from Ref. [39])

Item #	Item description	Factor score
Factor 1: Patient's Affective and Cognitive Distancing		
87	Patient is controlling	.75
7	Patient is anxious or tense (vs. calm and relaxed)	.65
56	Patient discusses experiences as if distant from feelings	.65
58	Patient resists examining thoughts, reactions or motivations	.64
44	Patient feels wary or suspicious (vs. trusting and secure)	.61
39	There is a competitive quality to the relationship	.51
15	Patient does not initiate topics, is passive	.48
32	Patient achieves a new understanding or insight	-.59
40	Therapist makes interpretations referring to actual people	-.59
88	Patient brings up significant issues and material	-.59
97	Patient is introspective, readily explores	-.78
Factor 2: Therapist Cutting Through to Affect		
81	Therapist emphasizes the patient's feelings	.61
3	Therapist's remarks are aimed at facilitating speech	.54
31	Therapist asks for more information or elaboration	.53
13	Patient is animated or excited	.51
65	Therapist clarifies or restates patient's comments	.48

Note. PQS = Psychotherapy Process Q-set

Discussion of Case Studies

Taken together, the single-case studies reviewed above provide a rich description of process and outcome in each dyad as an important complement to the aggregated data in studies at the group level. Most importantly, single-case studies have allowed for an ideographic examination of the particular processes at play in individual treatments, greatly facilitated by prototype methodology, factor analysis, and time series analysis.

To review, these ideographic processes included (1) Mrs. C's development and resolution of a transference neurosis, and her tendency to "play stupid" in certain sessions, (2) the use of interpersonal and cognitive-behavioral techniques during Year 3 of Mr. A's analysis (but not during other years), (3) the process by which Ms. M's depressive affect gradually pulled Dr. X away from her original neutral position towards a more involved and authoritative posture, which in turn predicted improvement in Ms. M's depression, and the importance of Dr. X's gradual change to become more challenging of Ms. M's guilt-inducing beliefs regarding her parents, (4) the usefulness of developing and adhering to case-specific ideal technique, driven by a CMT formulation, by Maria's therapist, (5) the "private world of dyadic meaning" between Amalia and her analyst, and (6) Beth's tendency to distance herself from her feelings, Dr. A's efforts to help her access them, and the resulting improvement in symptoms. Of note, in several of these studies, researchers identified how these ideographic, idiosyncratic processes between patient and therapist (often called "enactments," "role responsiveness" or "repetitive interaction structures;" [2]) relate to positive treatment outcome.

The PQS in Relation to Other Measures of Process

While the PQS has primarily been used to examine process and outcome in psychotherapy studies, the instrument has also been found to be helpful in elucidating key constructs such as the therapeutic alliance and countertransference.

Price and Jones [40] examined the PQS in relation to alliance using the archived sample of 30 brief psychodynamic treatments from Jones, Parke, and Pulos [16]. They found that 19 PQS items correlated significantly with alliance as measured by the CALPAS [41], including P feels helped, P conveys positive expectations about therapy, P achieves a new understanding or insight, P is committed to the work of therapy, P is introspective and readily explores inner thoughts and feelings, and P understands the nature of therapy and what is expected.

The PQS items were examined with a factor analysis which detected three underlying factors, including one named Patient–Therapist Interaction which strongly predicted CALPAS scores. The items with the strongest factor loadings included those reflecting that the patient felt trusting, secure, and understood by the therapist, understood the therapist’s comments, accepted the therapist’s observations, and had clearly positive feelings toward the therapist.

Tobin [42] identified patterns of positive and negative countertransference as reported by therapists using the Feeling Checklist immediately following a therapy session. These patterns of countertransference were found to appear in relation to specific therapeutic interactions, identified with the PQS, and suggested that therapists’ countertransference feelings were determined primarily by how effective they believed they were in the session.

Heaton, Hill, and Edwards [43] took a novel approach, and examined the construct validity of the PQS with the Therapeutic Procedures Inventory (TPI; [44]) and the Hill Counselor Verbal Response Category System (HCV RCS; [45–47]). Therapist techniques such as interpreting, paraphrasing, and giving directives were highly correlated between the PQS and TPI, which both assess process rated at the level of the entire therapy hour. Surprisingly, none of the clusters from the PQS were correlated with corresponding clusters on the HCV RCS, i.e., approval, directives, question, paraphrase, interpretation, confrontation, and self-disclosure. The authors speculated that the reason for these findings may be that the HCV RCS measures process at the level of the individual sentence or speaking turn aggregated up to the session level (while the PQS captures process at the level of the entire therapy hour).

These findings highlight the importance of examining the PQS in relation to other measures of process (including those that take a more fine-grained look at treatment process at a micro-level).

Innovations with the PQS

Branching out from the lines of research reviewed above, more recent studies have applied the PQS to exciting new areas of investigation. Recognizing the need to expand process research into the area of child and adolescent psychotherapy, Schneider [48] developed the Child Psychology Q-Set (CPQ) by adapting the PQS for treatment with children, including play therapy, and is in the process of publishing an Adolescent Psychotherapy Q-set building on previous work by Bambery, Porcerelli, and Ablon [49, 50].

Brent [51] applied the original PQS to a sample of depressed adolescents receiving cognitive-behavioral treatment for inflammatory bowel disease. Replicating earlier findings, it was found that the treatment adhered most strongly to the CBT prototype; however, symptom improvement was strongly associated with processes from CBT, IPT, and dynamic therapy. Kelley et al. [52] used the PQS to study placebo effects in acupuncture treatment of irritable bowel syndrome. Valter [53] applied the PQS to a group treatment for latency-age girls with histories of sexual abuse and used the PQS items to classify the self-object functions present in the group process.

As a final example of innovation, Pinto-Ferreira [54] examined therapy process in the email communications between therapists and patients in 30 dyads. The email correspondence in each case complemented a low-frequency face-to-face therapy. Results showed that therapists’ behaviors/communications were characterized by a clear, secure, and committed attitude. This commitment

was seen in the patients' communications as well, and it was concluded that email correspondence can effectively be used to support traditional face-to-face treatment.

Conclusions from 25 Years of Process and Outcome Research with the PQS

In conclusion, across many studies of psychotherapy process and outcome, researchers have successfully used the PQS to identify what processes are at play in treatment, how these processes change over time, and how they are associated with outcome. Here are some of the clinical and methodological lessons learned:

First of all, treatments are rarely theoretically pure and often include processes typically associated with other theoretical orientations. These borrowed processes need not be the most characteristic processes to play an important role in treatment outcome. Furthermore, emotional exploration predicts positive outcomes across many different types of treatment, and how clinicians help patients understand and regulate their emotions is critical.

Research using the PQS has also provided methodological clues for the future of psychotherapy research. Treatment names and labels can be misleading. Even in controlled trials, treatments are not pure. Thus, naturalistic studies have important value as a complement to RCTs. Studying therapist adherence is too simplistic since patients are co-authors of treatment process. Single-case studies provide an essential view of treatment not captured by aggregated data. The mysteries of psychotherapeutic change might best be understood by the intensive study of one treatment at a time since each dyad seems to create its own unique process associated with change.

The strengths of the PQS lie in its ability to capture therapy process in neutral, descriptive language that allows researchers from various theoretical orientations to communicate about the active ingredients of treatment. Research with the PQS has begun to answer fundamental questions regarding psychotherapy about which many in our field have strong theory-driven hypotheses and opinions. It is our hope that the neutral language of the PQS will continue to inspire open-minded investigations across theoretical divides to answer increasingly complex questions about how all forms of psychotherapy work.

References

1. Jones EE. Manual for the psychotherapy process Q-set. University of California at Berkeley, unpublished, 1985.
2. Jones EE. Therapeutic action: a guide to psychoanalytic therapy. Northvale: Aronson; 2000.
3. Jones EE, Cumming JD, Horowitz MJ. Another look at the nonspecific hypothesis of therapeutic effectiveness. *J Consult Clin Psychol.* 1988;56:48–55.
4. Ablon JS, Jones EE. Psychotherapy process in the National Institute of Mental Health Treatment of Depression Collaborative Research Program. *J Consult Clin Psychol.* 1999;67(1):64–75.
5. Ablon JS, Jones EE. Validity of controlled clinical trials of psychotherapy: findings from the NIMH collaborative study. *Am J Psychiatry.* 2002;159(5):775–83.
6. Jones EE, Hall SA, Parke LA. The process of change: the Berkeley Psychotherapy Research Group. In: Beutler LE, Crago M, editors. *Psychotherapy research: an international review of programmatic studies.* Washington: American Psychological Association; 1991. p. 99–106.
7. Jones EE, Pulos SM. Comparing the process in psychodynamic and cognitive-behavioral therapies. *J Consult Clin Psychol.* 1993;61(2):306–16.
8. Jones EE, Krupnick JH, Krieg PK. Some gender effects in a brief psychotherapy. *Psychotherapy.* 1987;24:336–52.
9. Albani C, Ablon JS, Levy RA, Mertens W, Kächele H. Der "Psychotherapie Prozess Q-Set" von Enrico E. Jones: Deutsche Version (PQS-R-D) und Anwendungen. Ulm: Verlag Ulmer Textbank; 2008.
10. Ablon JS, Goodrich C. Foreword: E.E. Jones, therapeutic action: a guide to psychoanalytic therapy. London: Paterson Marsh Ltd; 2004.

11. Serralta FB, Nunes MLT, Ezirik CL. Development of a Portuguese version of the psychotherapy process Q-set. *Revista de Psiquiatria do Rio Grande do Sul* (online). 2007;29(1):44–55.
12. Avila-Espada, Rampulla, Vidal & Herrero (2008). Spanish version.
13. Toro, Guitierrez, Avila-Espada & Vidal (2008). Spanish version.
14. Sifneos P. Short-term psychotherapy and emotional crisis. Cambridge: Harvard University Press; 1972.
15. Wallerstein RS. Forty two lives in treatment: a study of psychoanalysis and psychotherapy. Guilford Press: New York; 1986.
16. Jones EE, Parke LA, Pulos SM. How therapy is conducted in the private consulting room: a multivariate description of brief dynamic treatments. *Psychother Res*. 1992;2:16–30.
17. Ablon JS, Jones EE. How expert clinicians' prototypes of an ideal treatment correlate with outcome in psychodynamic and cognitive-behavioral therapy. *Psychother Res*. 1998;8:71–83.
18. Elkin I, Shea MT, Watkins JT, Imber SD, Sotsky SM, Collins JF, et al. National Institute of Mental Health treatment of depression collaborative research program: general effectiveness of treatments. *Arch Gen Psychiatry*. 1989;4:971–82.
19. Coombs MM, Coleman D, Jones EE. Working with feelings: the importance of emotion in both cognitive-behavioral and interpersonal therapy in the NIMH Treatment of Depression Collaborative Research Program. *Psychother Theor Res Pract Training*. 2002;39(3):233–44.
20. Karlsson R, Kermott A. Reflective-functioning during the process in brief psychotherapies. *Psychother Theor Res Pract Training*. 2006;43(1):65–84.
21. Fonagy P, Target M, Steele H, Steele M. Reflective-functioning manual, version 5, for application to adult attachment interview. Unpublished Manuscript, University College London, UK, 1998.
22. Ablon JS, Levy R, Katzenstein T. Beyond brand names of psychotherapy: identifying empirically supported change processes. *Psychother Theor Res Pract Training*. 2006;43(2):216–31.
23. Ablon JS, Jones EE. On analytic process. *J Am Psychoanal Assoc*. 2005;53:541–68.
24. Comminos A, Greyer BFS. Patient-therapist interactions in early therapy sessions predict sudden gains and outcomes. 39th Annual Meeting of the Society for Psychotherapy Research. Barcelona, June 2008.
25. Gottman JM. N-of-one and N-of-two research in psychotherapy. *Psychol Bull*. 1973;80:93–105.
26. Jones EE, Windholz M. The psychoanalytic case study: toward a method for systematic inquiry. *J Am Psychoanal Assoc*. 1990;38(4):985–1016.
27. Spence DP, Dahl H, Jones EE. The impact of interpretation on associative freedom. *J Consult Clin Psychol*. 1993;61(3):395–402.
28. Jones EE, Ghannam J, Nigg JT, Dyer JFP. A paradigm for single-case research: the time series study of a long term psychotherapy for depression. *J Consult Clin Psychol*. 1993;61(3):381–94.
29. Porcerelli JH, Dauphin VB, Ablon JS, Leitman S, Bamberg M. Psychoanalysis with avoidant personality disorder: a systematic case study. *Psychother Theor Res Pract Training*. 2007;44(1):1–13.
30. Shedler J, Westen D. Refining the measure of axis II: A Q-Sort procedure for assessing personality pathology. *Assessment*. 1998;5:333–53.
31. Sandler J. Countertransference and role-responsiveness. *Int J Psychoanal*. 1976;3(1):43–7.
32. Pole N, Jones EE. The talking cure revisited: content analyses of a two-year psychodynamic psychotherapy. *Psychother Res*. 1998;8(2):171–89.
33. Pole N, Ablon JS, O'Connor E. Using psychodynamic, cognitive behavioral, and control mastery prototypes to predict change: a new look at an old paradigm for long-term single-case research. *J Couns Psychol*. 2008;55(2):221–32.
34. Pole N, Ablon JS, O'Connor L, Weiss J. Ideal control mastery technique correlates with change in a single case. *Psychother Theor Res Pract Training*. 2002;39(1):88–96.
35. Castonguay LG, Goldfried MR, Wiser S, Raue PJ, Hayes AM. Predicting the effects of cognitive therapy for depression: a study of unique and common factors. *J Consult Clin Psychol*. 1996;64:497–504.
36. Henry WP, Strupp HH, Butler SF, Schacht TE, Binder JL. Effects of training in time-limited dynamic psychotherapy: changes in therapist behavior. *J Consult Clin Psychol*. 1993;61:434–40.
37. Albani C, Blaser G, Jacobs U, Jones EE, Thomä H, Kächele H. Amalia X's psychoanalytic therapy in the light of Jones's psychotherapy process Q-sort. In: Leuzinger-Bohleber M, Target M, editors. *Outcomes of psychoanalytic treatments. Perspectives for therapists and researchers*. London/Philadelphia: Whurr Publishers; 2002. p. 294–302.
38. Levy RA, Ablon JS, Ackerman JA, Seybert C. The psychotherapy process Q-set and Amalia X, session 152. In: Albani C, Ablon JS, Levy RA, Mertens W, Kächele H, editors. *Der "Psychotherapie Prozess Q-Set" von Enrico E. Jones. Deutsche Version und Anwendungen*. Ulm: Ulmer Textbank; 2008. p. 7–41.
39. Katzenstein T. Empirical validation of change processes in long-term psychodynamic psychotherapy: the bidirectional effects of clinician-patient interaction. *Dissertation abstracts international: section B: the sciences and engineering* 2007; 67(8-B): 4712.
40. Price PB, Jones EE. Examining the alliance using the psychotherapy process Q-set. *Psychother Theor Res Pract Training*. 1998;35(3):392–404.

41. Marmar CR, Gaston L, Gallagher D, Thompson LW. Alliance and outcome in late-life depression. *J Nerv Ment Dis.* 1989;177:464–72.
42. Tobin MJ. Countertransference and therapeutic interaction: an exploratory study. *Dissertation abstracts international: section B: the sciences and engineering* 2006; 67(4-B): 2247.
43. Heaton KJ, Hill CE, Edwards LA. Comparing molecular and molar methods of judging therapist techniques. *Psychother Res.* 1995;5(5):141–53.
44. McNeilly DL, Howard KL. The therapeutic procedures inventory: psychometric properties and relationship to phase of treatment. *J Psychother Integr.* 1991;1:223–35.
45. Hill CE. Development of a counselor verbal response category system. *J Couns Psychol.* 1978;25:461–8.
46. Hill, Clara E. An overview of the Hill counselor and client verbal response modes category systems. In *The psychotherapeutic process: A research handbook*. Greenberg, Leslie S., Pinsof, William M. (Ed.); New York, NY, US: Guilford Press; 1986. p. 131–59.
47. Hill CC. An overview of four measures developed to test the Hill process model: therapist intentions, therapist response modes, patient reactions, and client behaviors. *J Couns Dev.* 1992;70:728–39.
48. Schneider C. The child psychotherapy Q-set manual. Proquest dissertation abstracts, 2003.
49. Bambery M, Porcerelli JH, Ablon JS. Measuring psychotherapy process with the adolescent psychotherapy Q-set (APQ): development and applications for training. *Psychother Theor Res Pract Training.* 2007;44(4):405–22.
50. Bambery M, Porcerelli JH, Ablon JS. Prototypes of psychodynamic and CBT psychotherapy with adolescents: development and applications for training. *J Am Psychoanal Assoc.* 2009;57:175–81.
51. Brent M. Therapeutic process in a cognitive-behavioral treatment for depressed adolescents with inflammatory bowel disease. Utah State University dissertation; 2007.
52. Kelley JM, Lembo AJ, Ablon JS, Villaneuva JJ, Conboy LA, Levy R, et al. Patient and practioner influence on the placebo effect in irritable bowel syndrome. *Psychosom Med.* 2009;71:789.
53. Valter MW. Identification of selfobject functions in group process: a Q-sort method. *Dissertation abstracts international: section B: the sciences and engineering* 1997; 57(7-B): 4730.
54. Pinto-Ferreira C. Wie funktioniert E-Mail-Therapie? Eine Einzelfallstudie mit dem “Psychotherapie Prozess Q-Sort (PQS).” *PDP Psychodynamische Psychotherapie: Forum der tiefenpsychologisch fundierten Psychotherapie.* 2006;5(3):171–7.

Chapter 24

Attachment Theory and Research: Implications for Psychodynamic Psychotherapy

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Keywords Attachment theory • Attachment-based interventions • Process and outcome • Psychoanalysis • Psychodynamic psychotherapy • Psychotherapy research • Therapeutic alliance

Though attachment research today is best conceptualized as integrationist and multidisciplinary, it is important to remember that attachment theory was born out of clinical process. Bowlby [1–3] was first and foremost a psychoanalyst, and he drew from clinical experiences with children and adults to conceptualize his theory. Many of his ideas developed in response to dissatisfaction with the prevailing perspectives of the time. Though Melanie Klein, his supervisor at the time, was quite influential in his thinking about object relations, her conceptualization of development focused almost exclusively on internal conflict rather than external events in the child’s family and environment [4, 5]. Contrary to Klein’s perspective, during the analysis of a 3-year-old boy, Bowlby observed direct links between disturbances in the mother and pathology in the child. Such experiences in analytic treatment formed the basis for his assertion that early attachment difficulties increase vulnerability to later psychopathology.

Bowlby [2] contended that internal working models of attachment help to explain “the many forms of emotional distress and personality disturbances, including anxiety, anger, depression, and emotional detachment, to which unwilling separations and loss give rise” (p. 201). He held that childhood attachment underlies the “later capacity to make affectional bonds as well as a whole range of adult dysfunctions” including “marital problems and trouble with children, as well as ... neurotic symptoms and personality disorders” (p. 206). Thus, Bowlby [1, 3] postulated that early attachment experiences have long-lasting effects that tend to persist across the lifespan, are among the major determinants of personality organization, and have specific clinical relevance. Despite their shared

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history, for many years, attachment theory and psychoanalysis developed in parallel. Consistent with Bowlby's integrationist perspective, attachment theory incorporated concepts and research paradigms from a breadth of traditions such as ethology, behaviorism, and cognitive and affective psychology (and more recently developmental neuroscience). Based on Bowlby's attachment theory, Ainsworth et al. developed an observational research paradigm called the Strange Situation for assessing attachment security [6]. Ainsworth identified three major behavioral patterns of attachment in infancy—secure, avoidant, and anxious-ambivalent—and traced these attachment patterns to caregivers' parenting behavior. Babies that approached their mother for comfort, soothing, and emotional refueling were deemed securely attached. Infants who avoided, ignored, or were difficult to console following a 3-min separation from their mother were coded as insecurely attached.

Subsequent investigators replicated and extended Ainsworth et al.'s [6] initial findings, both in the United States and within other countries (see reviews by [4, 7, 8]). Longitudinal studies investigating the predictability of later functioning and adaptation from infant attachment styles have found considerable, although variable, stability of attachment classification from infancy to adulthood [9–11], although the degree of stability is dependent on intervening experiences in relationships (see [9, 12–14] for a review).

Despite the richness of this body of research, psychoanalysts experienced these behaviorally derived findings as distant from the internal experiences of their patients, and thus the influence of this work on psychoanalytic practice was minimal. However, a major shift occurred with the introduction of the work of Main [15, 16], who focused on adults' "state of mind with respect to attachment" as a predictor of the adults' infants' attachment classification in the Strange Situation. In so doing, she moved the assessment of attachment from the behavioral level to, what she and her colleagues (e.g. [17]) called, "the level of representation" as reflected in the Adult Attachment Interview (AAI). Research using the AAI has demonstrated that mental representations with respect to attachment can be assessed with empirical rigor and that parental representations have significant implications for the social-emotional development of their children.

These findings have had significant implications for not only theory and research, but also psychotherapy technique [18]. This influence is not limited to psychodynamic psychotherapy, but also has provided a framework useful for those of various orientations/perspectives (e.g., developmentalists, behaviorists, cognitive-behaviorists). While there is no form of psychotherapy that could be said to derive wholly from attachment theory, a number of psychodynamic treatments have come to conceptualize change in terms of attachment (e.g., Transference-Focused Psychotherapy (TFP)), while others specifically target the attachment system (e.g., Mentalization-Based Therapy (MBT)).

In the present chapter, we will review the empirical literature on attachment theory, with a focus on how findings have altered psychotherapy technique. We discuss the empirical literature on adult attachment classifications, including issues surrounding the measurement of the construct of attachment and how these issues have been addressed. We also discuss attachment in psychotherapy research, including its role as a moderator of process and indicator of outcome in treatment. Lastly, we will demonstrate the clinical utility of attachment theory for technique in psychodynamic psychotherapy.

Measurement of Attachment

From the seminal work of Bowlby, attachment theory and research has evolved into two traditions, each with its own methodology for assessing attachment patterns (e.g., self-report and interview). Main and her colleagues developed the AAI [19], which inquires about early attachment relationships. The interview evaluates the subject's sense of how these experiences have affected adult personality by probing for specific memories that both corroborate and contradict the sense of attachment history the interviewee presents. Noting the discourse features in the interviews, Main and

colleagues identified three major patterns of adult attachment: secure/autonomous (F), dismissing (D), and enmeshed/preoccupied (E); and more recently, two additional categories have been identified: unresolved/disorganized (U/d) and cannot classify (CC). The first three categories parallel the attachment classifications originally identified in childhood [6], and the disorganized classification parallels a pattern later described in infants [15, 16]. These attachment patterns in adults reliably predicted the Strange Situation behavior of their children.

Security on the AAI is characterized by a well-organized, undefended discourse style in which emotions are freely expressed and by a high degree of coherence exhibited in the discussion of attachment relationships, regardless of how positively or negatively these experiences are portrayed. These individuals maintain a balanced and realistic-seeming view of early relationships, value attachment relationships, and view attachment-related experiences as influential to their development. In contrast, dismissing individuals devalue the importance of attachment relationships or portray them in an idealized fashion with few corroborating concrete examples. They have difficulty recalling specific events and usually describe an early history of rejection. These individuals are judged to have low “coherence of mind” because of the vagueness and the sparseness of their descriptions as well as the inconsistency between the vaguely positive generalizations and “leaked” evidence to the contrary.

Preoccupied individuals have little difficulty talking about attachment and expressing attachment-related feelings. However, these individuals tend to display confusion about past experiences, and are unable to gain insight into early events. They describe early relationships with parents as overinvolved or as guilt inducing. Descriptions of their current relationship with parents are often characterized by pervasive anger, passivity, and attempts to please parents, even when they describe the relationship as positive. Perhaps, most importantly, preoccupied individuals have a tendency toward incoherence in their descriptions. Specifically, their interviews are often excessively long and are characterized by the use of long, grammatically entangled sentences, jargon and nonsense words, reversion to childlike speech, and confusion regarding past and present relationships.

The u/D classification is assigned when an individual displays lapses in the monitoring of reasoning or discourse when discussing experiences of loss and abuse. These lapses include highly implausible statements regarding the causes and consequences of traumatic attachment-related events, loss of memory for attachment-related traumas, and confusion and silence around discussion of trauma or loss. CC is assigned when an individual displays a combination of contradictory or incompatible attachment patterns, or when no single state of mind with respect to attachment is predominant. This occurs when the subject shifts attachment patterns in mid-interview, when the subject demonstrates different attachment patterns with different attachment figures, or when the subject shows a mixture of different attachment patterns within the same transcript or passage.

In contrast to Main’s focus on relationships with parents, Hazan and Shaver [20] and colleagues [21], using a social psychological perspective, applied the childhood attachment paradigm to study adulthood by conceptualizing romantic love as an attachment process. This work is important because it translates the childhood paradigm into terms directly relevant for adolescent and adult relationships. They translated Ainsworth’s descriptions of the three infant attachment types into a single-item, vignette-based measure in which subjects characterized themselves as secure, avoidant, or anxious-ambivalent in romantic relationships. In subsequent research, Bartholomew [22, 23] and Bartholomew and Horowitz [24] developed a four-category classification of adult attachment that corresponds to a two-dimensional model of anxiety and avoidance. This classification system includes secure (low anxiety/low avoidance) and preoccupied (high anxiety/low avoidance) categories, but divides the avoidant category into both dismissing (low anxiety/high avoidance) and fearful-avoidant (high anxiety/high avoidance) attachment classifications.

Although categorical comparisons between the AAI and self-report measures have typically failed to correspond with each other (see [25, 26] for reviews), studies that have related the dimensional coding scales from the AAI to the self-report measures have found that they are significantly related, even if the two categorical typologies were not significantly related [27].

Attachment and Psychotherapy

From its inception, Bowlby believed that attachment theory was central to both normative and psychopathological development, and he believed that attachment theory had particular relevance for psychotherapy. This shift to an attachment perspective was accompanied by a move toward a view of the therapist as functioning to “provide the patient with a secure base from which to explore both himself and also his relations with all those with whom he has made or might make, an affectional bond” ([2, p. 421]). The role of the therapist “to provide the patient with a temporary attachment figure” serves many functions in the treatment process ([1, p. 191]). In this role, the therapist helps the patient to explore past and present attachments, including their expectations, feelings, and behaviors. The therapist accomplishes this goal by helping the patient examine the relationship with the therapist and how it may relate to relationships or experiences outside of therapy. The therapist creates links between past experiences to present ones, which involves encouraging awareness of how current relationship experiences may be related to past ones. In doing so, the patient has the opportunity to revise internal working models. Transference and countertransference dynamics provide the opportunity to negotiate multiple contradictory internal working models, which involves helping patients to feel, think, and act in new ways that are unlike past relationships. The internalization of the affectional bond with the therapist then itself becomes a representational safe haven to which the patient can turn internally in times of distress.

Following from Bowlby’s theory, there are a number of ways in which attachment and psychotherapy may intersect, and many of these connections have been examined empirically. First, attachment theory has provided a guiding framework for many interventions, and many existing treatments employ attachment theory principles either implicitly or explicitly. Secondly, client attachment organization has been shown to act as moderator or prognostic indicator of both psychotherapy outcome and psychotherapy process. This body of research, particularly comparisons of findings between treatments and patient groups, has also provided evidence regarding how attachment organization may act as a prescriptive indicator. Third, changes in attachment representations have been conceptualized as outcomes, with several studies finding evidence for shifts in client attachment organization over the course of psychotherapy. Finally, attachment and related constructs may be thought of as psychotherapy process that can be examined through client–therapist in-session behaviors. Findings from this body of research indicate the clinical importance of accounting for patients’ attachment styles as well as the potential fruitfulness of addressing issues around attachment, both in terms of current relationships and internal working models, within treatment. In particular, this work suggests that patient attachment status may be extremely relevant to the course and outcome of psychotherapy and may also change as a result of psychotherapy interventions.

Attachment Theory-Based Interventions

As noted previously, most existing psychotherapies implicitly employ techniques and principles that are congruous with attachment theory, particularly those concerning the importance of a healthy therapeutic relationship as well as the exploration and updating of mental representations of significant relationships and the self. Until recently, few psychotherapies have been based directly on the principles of attachment theory; however, in recent years, a number of explicitly attachment-based interventions have been developed for both child and adult populations. Trials of these interventions have yielded promising evidence with regard to their efficacy.

Consistent with the developmental framework from which attachment theory stems, a number of attachment-based treatments are aimed at preventing or alleviating symptoms and fostering secure

attachment organization in child populations. Many of these treatments actively engage other family members, particularly maternal caregivers, and some also include visits to the home. These interventions, which target a range of child ages, include prenatal treatments for high-risk pregnant women [28], a baby carrier intervention [29], toddler–parent psychotherapy [30, 31], parent–child psychotherapy [32, 33], prenatal and postnatal home visits [34, 35], and other structured treatments including the Watch, Wait, and Wonder program [36] and the Circle of Security [37, 38].

In addition to these various child-directed interventions, a few efficacious adult interventions have also been based on attachment theory principles. Interpersonal psychotherapy (IPT [39]) is a time-limited, widely used, and efficacious treatment for several disorders, most notably depression. IPT is explicitly based on the work of Bowlby, Adolf Meyer, and Harry Stack Sullivan and is focused on addressing interpersonal issues and disruptions in interpersonal relationships above and beyond any other clinical foci. This strictly interpersonal focus is consistent with Bowlby’s theory that disordered attachment relationships are at the root of the development of pathology. The Attachment Injury Resolution Model for Couples [40, 41] is another currently used treatment that is based directly on attachment theory. This intervention is based within emotion-focused therapy (EFT) and is designed for couples who have experienced an “attachment injury” (i.e., a perceived abandonment during a time of need that threatens the perceived safety/security of the entire relationship). This treatment, which has the explicit goal of resolving attachment injuries and rebuilding the attachment relationship between partners, has shown efficacy over long-term follow-up periods with regard to increases in dyadic adjustment, trust, and forgiveness. A final attachment-based adult intervention is MBT [42–44], which was designed as a long-term, psychoanalytically oriented, partial hospitalization treatment for borderline personality disorder. This treatment model is based on the idea that patients were not able to develop the capacity of mentalization (i.e., the social-cognitive and affective process through which one makes sense of intentional behavior in the self and others by reflecting on mental states) within the context of an early attachment relationship, and that fostering the development of this capacity in turn leads to more stability in terms of the self (e.g., emotional and behavioral regulation) and relationships with others. This goal of MBT also rests on developing a safe attachment relationship between client and therapist to provide a context in which these mental states can be explored. MBT has been demonstrated to be effective over long-term follow-up with regard to reduction of depressive symptoms, suicidality, parasuicidality, and length of inpatient stays as well as improvement in social functioning [45].

Attachment as a Moderator of Psychotherapy Outcome

Several studies have examined how attachment styles, as measured prior to treatment, may relate to psychotherapy outcome. Many of these studies have focused on psychodynamic treatments, although there is also evidence of this moderating relationship within treatments of other orientations. In an early study in this area, Fonagy et al. [46] found evidence that attachment classification (as assessed by the AAI) at intake was associated with clinical change by the end of treatment in a nonpsychotic inpatient sample. Half of their sample had shown clinically reliable improvement on the GAF by the end of intensive psychodynamic inpatient treatment. In analyses examining the proportion of patients within different attachment classifications that had shown this improvement, almost 93% of those in the dismissive group improved, whereas 41% of the preoccupied group and 33% of the free-autonomous group improved. Subsequent analyses also found that attachment status was a significant predictor of final GAF score (controlling for GAF at intake). Interestingly, the authors found that attachment status was the only one of the psychometric measures used (including unresolved status, Axis I and Axis II comorbidity, and other measures of initial symptomatology) that significantly predicted improvement on the GAF, suggesting that attachment status may have a robust effect on

treatment progress. Fonagy and colleagues proposed two main explanations for the particular pattern of findings they observed (1) dismissive individuals may represent such an extreme interpersonal state that the observed change may just be due to regression to the mean and (2) these findings indicate how difficult it is for preoccupied individuals to do well in psychotherapy.

Reis and Grenyer [47] examined how attachment, as measured by Bartholomew and Horowitz's Relationship Questionnaire (RQ) at intake, related to process (specifically the alliance) and outcome in short-term supportive–expressive psychodynamic psychotherapy for clients diagnosed with major depressive disorder. They found that 39% of their sample of 58 clients was classified as fearful avoidant with regard to attachment; additionally, they found that fearful avoidance at intake was associated with more negative outcomes in terms of non-remittance of depressive symptomatology, particularly over the first 6 weeks of treatment. They also found that 21% of their sample was preoccupied with respect to attachment; this style was predictive of relatively poorer outcomes later in treatment. The authors also found that attachment style was not related to the alliance and that the alliance was unrelated to treatment outcome, suggesting that the negative impact of attachment on treatment response was unrelated to impacts on the alliance. According to the authors, these findings suggest that the early phase of treatment may be particularly difficult for individuals with a fearful-avoidant attachment status, as psychotherapy involves a level of interaction and disclosure with which they may be typically uncomfortable. For preoccupied individuals, the later stage of treatment may prove more difficult, as it may activate fears of separation from the treating clinician and feelings of abandonment prior to time of termination.

Similar findings relating attachment status to outcome have been observed in subsequent studies. Strauss et al. [48] also found that preoccupied clients showed the least improvement among clients with a variety of psychiatric diagnoses who were receiving inpatient treatment (principally psychodynamic-interpersonal group therapy). In this sample, securely attached clients were the most likely to show improvement. Similarly, higher levels of feared loss of attachment figure, a subscale of the Reciprocal Attachment Questionnaire related to insecure attachment styles, were found to be associated with poorer outcomes at both treatment termination and follow-up in a sample of patients participating in an inpatient, psychodynamic treatment program for traumatic stress [49]. In this study, attachment remained a predictor independent of demographic variables, symptom severity, and degree of trauma exposure.

Tasca et al. [50] suggested that attachment may differentially predict treatment outcome depending on the type of treatment. Their study examined attachment as it related to outcome within two treatments—group cognitive-behavioral psychotherapy and group psychodynamic-interpersonal psychotherapy—for binge eating disorder. In this study, the authors assessed attachment using the Attachment Styles Questionnaire, a self-report measure of attachment that yields five scale scores related to different attachment patterns. In this study, higher scores on the Need for Approval subscale (associated with anxious attachment patterns) were related to greater improvement in the group psychodynamic-interpersonal treatment (as assessed by fewer days binged) but relatively poorer outcomes in group cognitive-behavioral psychotherapy. Additionally, higher scores on the Relationship as Secondary subscale (associated with avoidant attachment patterns) were related to greater attrition within group cognitive-behavioral psychotherapy.

Investigations of treatments other than psychodynamic psychotherapies have also found evidence for a relationship between attachment status and outcome. Meyer and Pilkonis [51] found that secure attachment status, assessed by the Pilkonis [52] Attachment Prototype Rating System, predicted improvement in patient symptom severity (on the Hamilton Rating Scale for Anxiety) and GAF in a diagnostically diverse sample of patients who received 1 year of outpatient or inpatient treatment. In a study of interpersonal therapy for women with recurrent major depression [53], remitted patients identified as having a fearful-avoidant attachment style on the RQ were found to reach clinical stabilization more slowly when compared with other patients whose depression had

remitted with treatment. In this study, attachment style did not predict whether or not patients reached clinical remission following treatment. In a study of integrative treatment for male perpetrators of intimate partner violence, attachment anxiety, as assessed by the Adult Attachment Scale, predicted higher levels of posttreatment mild abuse and psychological abuse; additionally, attachment avoidance predicted higher total violence severity scores posttreatment [54]. In this sample, a decrease in attachment avoidance over the course of treatment was related to less violence posttreatment. Additionally, McBride et al. [55] examined dimensional attachment anxiety and avoidance, as measured by Griffin and Bartholemew's Relationship Scales Questionnaire (RSQ), as moderators of treatment outcome in interpersonal and cognitive-behavioral psychotherapy for major depression. In this study, clients who displayed higher levels of attachment avoidance were less likely to reach clinical remission of symptoms when treated with interpersonal therapy as compared to patients in cognitive-behavioral therapy, who were more likely to reach clinical remission. Attachment anxiety did not predict treatment outcome in this study.

Taken together, this literature suggests that attachment classification may significantly influence the trajectory of change in psychotherapy. While generalizing from findings is to some degree hampered by differences in methods for assessing attachment status, a number of patterns seem to be consistent across samples. First, a number of studies indicated that secure attachment was related to better treatment outcomes across psychotherapies for a range of disorders (e.g. [48, 51]). Second, there is evidence that higher attachment anxiety may be predictive of poorer treatment outcomes, among both preoccupied (e.g. [46, 48]) and fearful-avoidant clients (e.g. [53]). Finally, findings from studies that examined attachment status in relation to outcome in more than one psychotherapy suggest that attachment may be differentially predictive of outcome depending on type of treatment (e.g. [50, 55]).

Attachment as a Moderator of Psychotherapy Process

Researchers have also explored how attachment relates to psychotherapy process, with emphasis on the therapeutic alliance, treatment engagement, and treatment compliance. Patients with more secure attachment styles generally tend to have stronger alliances with their therapists across a variety of treatments [56–60]. In general, attachment avoidance—particularly fearful avoidance—is related to a poorer alliance across a variety of clinical groups [56, 57, 60, 61]. Attachment avoidance has also been found to be related to a fearful-avoidant attachment between client and therapist (as assessed by the Client Attachment to Therapist Scale), which may explain some of the impact on the alliance [61].

Other studies have examined how patients' attachment patterns may impact treatment use and engagement. In terms of treatment use, these studies utilizing the AAI and the ECR have found that dismissive individuals are less likely to report having been in treatment than secure, preoccupied, or unresolved individuals [62, 63]. Furthermore, one study examining the relationship between attachment status and reported psychotherapy use in a large sample of young adults found that individuals classified as fearful or preoccupied with regard to attachment were approximately twice as likely to report past psychotherapy use as securely attached individuals [62]. There is some indication that preoccupied individuals may also be more frequent users of medical services other than psychotherapy, as well; for example, preoccupied individuals with Cluster B personality disorders report longer medical hospitalizations than do matched individuals of other attachment classifications [64]. Related to treatment use, attachment anxiety is related to more acknowledgement or perception of distress as well as more help-seeking behaviors, while dismissing attachment is more associated with less acknowledgement of distress and help-seeking [65].

In general, findings have suggested that securely attached patients in a variety of treatments tend to be particularly collaborative, compliant, and are able to fully utilize treatment. These patients are typically able to trust their therapists and use interventions in an effective way. By contrast, dismissive individuals tend to be more resistant to treatment and less engaged. Interestingly, preoccupied individuals may seem needy and disclosive in treatment yet may not be more compliant [28, 63, 66]. Dozier [66] examined this question in a sample of 40 young adults who were receiving inpatient treatment for a variety of serious psychological disorders, including schizophrenia and bipolar disorder. In this study, client attachment was assessed using the Assessment Interview Q-set [67]. In addition, clinicians rated their clients' degree of compliance with treatment, help-seeking or help-rejecting behaviors, self-disclosure, and overall use of treatment. As suggested earlier, more secure strategies were found to be associated with more compliance (e.g., these clients were more likely to come to appointments and/or take medications as prescribed), as compared with more avoidant strategies. Similarly, avoidant individuals were found to be less likely to seek out help (and more likely to reject it) and were rated overall as poorer users of treatment as compared to preoccupied individuals. More preoccupied strategies were associated with higher levels of disclosure than were more avoidant strategies.

Interestingly, findings from other medical disciplines have also indicated that dismissing individuals may be less compliant with treatment recommendations. For instance, patients with Type I and II diabetes have been shown to exhibit poorer glucose control than preoccupied or secure patients [68]. In this sample, dismissing patients who also rated communication with their treatment provider as poor displayed higher glycosylated hemoglobin levels and were less likely to adhere to taking oral hypoglycemic medications and regularly monitoring glucose.

Subsequent studies have found that dismissive patients often become more distressed and confused when confronted with difficult issues in treatment, which may impact their subsequent engagement [69]. In general, these findings may suggest that dismissive patients are at a greater risk for treatment drop-out, given the lack of initial engagement and compliance. However, while these findings suggest that avoidant clients may seem less engaged than their preoccupied counterparts, it should be noted that they do seem to fare better in terms of outcome. As noted earlier, Fonagy et al. [46] found that dismissive patients were most likely to show improvement during treatment, as compared to patients exhibiting other attachment styles (including preoccupied clients). These findings suggest that while avoidant (particularly dismissing) clients may seem detached, they may be able to effectively utilize treatment; conversely, while preoccupied individuals may seem particularly engaged, they may not be able to use interventions in a helpful way. Interestingly, it also appears that dismissing clients may pull for more active interventions from therapists (i.e., interpretations) whereas preoccupied clients may elicit more reflective comments from therapists [70].

These ideas are echoed in relevant clinical writings, which have focused on how the findings of the process and outcome literature may play out in everyday practice. Diamond et al. [71] described two patients with borderline personality disorder who changed from insecure to secure attachment after 1 year of TFP with the same therapist. One of these patients was initially classified as preoccupied on the AAI, whereas the other was initially classified as dismissing; the therapist experienced interactions with each of these patients as very different. The patient who was initially classified as preoccupied engaged the therapist, and the therapist felt more active in the treatment; however, the therapist felt less engaged and even excluded by the patient initially classified as dismissive. By the therapist's estimation, a weaker therapeutic bond was forged with the dismissive patient, as well. These observations are congruent with the findings on preoccupied versus dismissive attachment styles as they relate to treatment use and engagement (e.g. [72]). Other clinical writings, particularly those of Slade [73–75], describe how preoccupied patients may be more difficult to treat despite seeming more engaged and engaging. These patients' representations of self and other may be vivid and rich (and therefore intriguing to the therapist) but also very chaotic, which may prove to be confusing and difficult material for the therapist to work with.

Therapist Attachment as a Moderator of Psychotherapy Process and Outcome

A number of studies have also examined how therapist attachment style may impact the course and outcome of psychotherapy. One prevailing finding is that securely attached clinicians (as assessed by the AAI and the RSQ) tended to have clients who had relatively better outcomes than clinicians with other attachment classifications [72, 76]. There is some evidence that secure attachment in clinicians is particularly related to better outcomes and alliance in more severely symptomatic patients [77]. Securely attached clinicians have also been shown to appear more “psychologically available” to patients over time, as compared to insecurely attached clinicians [78]. Clinicians classified on the secure/autonomous dimension also tended to challenge their clients’ interpersonal styles, particularly as opposed to those clinicians classified on the insecure dimensions, who tended to compliment clients’ interpersonal styles [72, 79]. Furthermore, clinicians with an anxious attachment style tended to respond with less empathy than those with a secure attachment style [72, 79–83] and also have weaker therapeutic alliances [84].

Additionally, findings suggest that the match between therapist and client attachment styles may be an important predictor of psychotherapy process and outcome [72, 76, 79]. In particular, aside from having a securely attached therapist, clients who have a therapist opposite to them on the preoccupied to dismissing dimension of attachment on the AAI tended to have better outcomes and stronger therapeutic alliances than patient–therapist dyads who were not matched in this way. For example, a particularly advantageous pairing in terms of alliance and outcome would be a clinician rated at the dismissing end of the autonomous dimension and a preoccupied client. This pattern of findings, along with prior research on client–clinician match, suggests that a mismatch of interpersonal style between clinician and client may be beneficial in terms of crafting an intervention that is particularly effective for a given client with regard to developing a more adaptive interpersonal style. That is, more emotional or preoccupied patients may need more detached interventions whereas more dismissing patients may benefit more from interventions directed at emotional expression and affiliation with others [70, 85].

Attachment as Outcome

Several studies have used change in attachment representations as a means of assessing clinical outcome within psychodynamic psychotherapies across diverse patient populations. Many of these investigations have compared pre- and posttreatment assessments of client attachment styles to evaluate changes in these patients’ attachment classifications that occur during the course of psychotherapy.

Fonagy et al. [46] found evidence of a shift in attachment status following 1 year of intensive psychodynamic psychotherapy in 35 nonpsychotic inpatients. In their sample, all 35 patients were classified as insecure based on pre-treatment AAIs, yet 40% ($n = 14$) showed a shift to secure attachment status by discharge. This study was among the first to examine changes in attachment status from pre- to posttreatment and was integral in suggesting that psychotherapy can alter clients’ attachment patterns and lead them to progress to a secure attachment status. However, neither the type of psychopathology nor the treatment used in this study was well specified. Subsequent studies aimed to examine these changes in the context of specific diagnoses and/or more structured treatments.

Travis et al. [86] examined changes in attachment styles in clients enrolled in the Vanderbilt II Study who were treated with time-limited dynamic psychotherapy. These patients exhibited a range of psychological difficulties but had to carry at least one Axis I or Axis II diagnosis to be included in the study. Client attachment styles were rated at intake and termination using the Bartholomew Attachment Rating Scale [24], which allowed attachment patterns to be rated both dimensionally

and categorically. The researchers found significant changes from insecure to secure attachment styles from intake to termination on both dimensional and categorical ratings of attachment. Additionally, the researchers found significant relationships between attachment styles, posttreatment Global Assessment Scale scores, and posttreatment symptom severity. They interpreted these findings as suggesting that secure attachment status may endow a person with more adaptive interpersonal coping strategies, which would then serve to mitigate symptom severity.

In another group of studies, Levy and colleagues [87–89] examined changes in attachment status as assessed by the AAI in patients diagnosed with borderline personality disorder. In a pilot study [89], the researchers assessed change in attachment following a year-long course of TFP, a structured psychodynamic treatment, in a group of ten patients and found that of the nine patients who were initially classified as insecure, an additional two patients became secure after treatment, resulting in a third of the patients being classified as secure posttreatment. Additionally, of the six patients initially classified as unresolved with respect to trauma and/or loss, four lost their unresolved status by the end of treatment (leaving only 40% of the sample unresolved). In a randomized controlled trial [89], the researchers examined changes in attachment in 90 patients with borderline personality disorder who were randomized to receive one of three treatments: TFP, dialectical behavior therapy (DBT), or a modified psychodynamic supportive psychotherapy (SPT). After a year of treatment, the researchers observed a significant increase in the number of patients classified as secure who were in the TFP condition; this change was not observed within the other two treatment groups. Within the TFP group, 7 of 22 (31.8%) patients changed from an insecure to secure attachment classification.

There is also evidence that change in attachment status may also be related to changes in symptomatology. Similar to the findings of the previously discussed studies, patients within an inpatient treatment for posttraumatic stress disorder showed significant increases in secure attachment over the course of treatment, which was sustained over follow-up [90]. Interestingly, these positive changes in attachment styles were also significantly related to symptom reduction.

Attachment as Process

Some preliminary work has indicated that attachment-related constructs may also be used as a lens through which to examine psychotherapy process. Samstag et al. [91] used the narrative coherence coding system from the AAI to examine psychotherapy process as a predictor of treatment outcome within 48 client–therapist dyads. This sample included clients with mixed diagnoses (primarily Cluster C personality disorders with comorbid depression and/or anxiety) who were randomly assigned to be treated with a 30-session protocol of one of the following: short-term psychodynamic psychotherapy, brief adaptive (dynamic) psychotherapy, cognitive-behavioral psychotherapy, SPT, or relational psychotherapy (see [91] for details about these treatments). Patients were divided into three groups (with 16 patients in each group) based on outcome (1) drop-out (termination within first third of treatment), (2) good outcome (high reliable change), and (3) poor outcome (low reliable change). Coherence was rated for a portion of sessions that were randomly selected from the first third of treatment. Coherence ratings were significantly higher for the good outcome group, as compared with the drop-out and poor outcome groups. These findings suggest that more highly coherent narratives occurring within the context of psychotherapy may be an indication of a particularly fruitful collaboration within the client–therapist dyad. Furthermore, it is possible that patient-level factors, including attachment, may influence the level of narrative coherency, which may in turn influence the course of psychotherapy.

Clinical Implications of Attachment Research

Taken together, these findings have prescriptive implications for working with patients of various attachment classifications. The two patient classifications with the most research suggestive of clinical application, preoccupied and dismissive, will be highlighted.

Preoccupied patients are often likely to seek treatment. Because such individuals often have a negative model of themselves but a positive model of others [22], they are likely to look for the therapist to meet needs that they feel unable to address within themselves. Such individuals are likely to disclose a great deal of information to the therapist, with evocative descriptions of themselves and others that engage the therapist's attention; however, their discourse often lacks the narrative coherence that would allow for others to fully join with their experience. In fact, such individuals are likely to assume that the therapist has more knowledge about the patient than can be realistically expected. At best, the therapist often may feel that she is working hard to make links within her own mind between disparate pieces of information, since the patient has not provided such narrative bridges. At worst, the therapist may feel lost in a chaotic, entangled narrative that leaves the therapist feeling confused and frustrated. Thus, even though the preoccupied patient may appear to be working very hard in treatment, such work may not translate into a productive dialog that allows for shifts in the patients representations of self and others.

The work of Dozier et al. [69] suggests a seemingly contradictory stance on the part of the therapist; to remain securely present with the patient while simultaneously maintaining sufficient distance from becoming entangled in the patient's production. This secure detachment allows the therapist sufficient distance to clarify and confront breaks and omissions in the patient's discourse [92]. Slade suggests that progress is slow moving with preoccupied patients, and that it is gained through the therapist's "emotional availability and tolerance for fragmentation and chaos" as they aid the patient in forming less distorted and/or chaotic representations of self and others ([73, p. 588]).

In contrast, dismissive patients are less likely to seek treatment [62]. Because such individuals often have a positive model of themselves and a negative model of others [22], they are unlikely to expect that help from and dependency on others will lead to change. Such individuals are likely in the early stages of treatment to maintain a distance from the therapist, disclose little, and express skepticism about the treatment. Though they may appear compliant in relaying personal information, their discourse will often lack the details needed to create vivid, complex, and multifaceted images of self and others in the mind of the therapist. At best, the therapist often may feel that she is going through the motions of a treatment with a distant and superficially compliant patient. At worst, the therapist may repeatedly feel she has to answer to the criticisms of an individual who continually has "one foot out the door."

Therefore, the early phases of treatment with dismissive patients often focus on the high threat of drop-out. As with preoccupied patients, this challenges the therapist to balance two seemingly contradictory demands. On one hand, as previously discussed, dismissive patients often become more distressed and confused when confronted with difficult issues in treatment [69]. At the same time, to not directly confront threats to the treatment creates an increased risk for drop-out [92]. The capacity of the therapist to emotionally engage herself in a narrative that may not be engaging to begin with, and to bring direct emotional expression to a narrative that often omits complex affects, may provide an optimal space for intervening with such patients. Despite these challenges in engaging and retaining dismissive patients in treatment, as previously discussed, when they follow through with treatment they do seem to fare better in terms of outcome.

Conclusions

Bowlby's attachment theory, coupled with the large body of research his theory has generated, has come to occupy a central place in current psychodynamic theory and treatment. Whereas classical drive theory once dominated psychodynamic thought, Bowlby's contention of a drive toward object-seeking has come to be a commonly accepted tenant among many schools of psychoanalysis [93].

Initially, psychoanalysis was relatively uninterested in attachment theory and research, in part because of its behavioral emphasis but also because of its focus on actual relationships, the view of representations as relatively accurate, and the de-emphasis on sex and aggression. However, attachment theory and research has proven to provide a powerful and valuable heuristic framework for conducting psychoanalytic research, testing psychoanalytic hypotheses, and enriching the perspective of psychoanalytic clinicians and investigators.

Attachment research has provided evidence for many of the basic tenets of psychoanalysis. The landmark research by Ainsworth et al. [6] on the relationship of maternal sensitivity to attachment patterns and the subsequent research by Sroufe, Hamilton, and Waters [9–11] on the continuity of infant attachment into adolescence and young adulthood have provided strong empirical evidence for two basic psychoanalytic tenets (1) the importance of early childhood relationships in shaping adult relationships; and (2) the importance of meaning systems. Additionally, the seminal work of Mary Main and her colleagues in developing the AAI and relating mothers' and fathers' attachment representations to their children's attachment patterns as well as Fonagy and Target's creative research on mentalizing provide fertile ground for the future growth of psychoanalysis and its scientific evolution.

Following from Bowlby's theory, there are a number of conclusions that can be drawn from the data reviewed regarding research at the intersection of attachment and psychotherapy. Specifically, we have learned that:

1. Attachment theory has provided a guiding framework for many child-directed interventions, and these interventions have demonstrated promising outcomes [29–38]. The success of such interventions is also notable because, in contrast to skills-based interventions that target manifest behaviors, these programs demonstrate the importance of addressing the underlying attachment organization in order to effect long-term change.
2. Attachment theory has provided a guiding framework for many types of psychotherapy, thus bringing psychodynamically oriented principles into broader non-dynamic treatments (e.g., IPT and EFT). Though such treatments may not typically be conceptualized as rooted in dynamic principles, these treatments employ attachment theory principles either implicitly or explicitly [39–41].
3. Attachment theory has also led to the modification of psychodynamic treatments for specific populations and disorders (e.g., MBT). The impact of attachment theory evidences itself not only in the conceptualization of clinical phenomenon (such as BPD), but also in terms of the implementation of interventions (such as monitoring the level of activation of the patient's attachment system; [45]).
4. Attachment organization has been shown to act as moderator of both psychotherapy process and outcome, thus influencing the trajectory of therapy within a given session and over the entire course of the treatment [71, 87]. This set of findings suggests that attachment constructs have prognostic implications for treatment. While attachment avoidance may be related to poorer alliance and compliance in therapy [56, 57, 61], individuals high in attachment avoidance often benefit from therapy if they stay in treatment [46]. On the other hand, those high in attachment anxiety, while more likely to seek help, may evidence poorer treatment outcomes [46, 48, 53].
5. Research comparing findings between treatments and patient groups has also provided evidence regarding how attachment organization may act as a prescriptive indicator [50, 55]. The fact that

attachment status is differentially predictive of outcome depending on type of treatment suggests the importance of clinicians attending to attachment organization during treatment planning.

6. Attachment-related constructs such as narrative coherence may be thought in terms of psychotherapy process through examination of client–therapist in-session behaviors [91]. This suggests that attachment constructs have implications for the quality of relatedness between patient and therapist, which may in turn influence the course of psychotherapy [66].
7. Further, the therapist’s own attachment organization, and its correspondence to the patient’s organization, may significantly impact the process and outcome of treatment [72, 76, 79]. Though it is no surprise that securely attached therapists have the best outcomes, research has shown that clients who have a therapist discordant to them on the preoccupied to dismissing dimension tended to have better outcomes and stronger therapeutic alliances than concordant dyads.
8. Research has demonstrated evidence for shifts in client attachment organization over the course of psychotherapy [88]. This suggests that attachment constructs such as narrative coherence and reflective functioning may be important outcomes in their own right.

The last point is worth highlighting because it speaks to the powerful role attachment theory and research has played in validating what may be a unique aspect of psychodynamic therapy: the capacity to change internal psychological structures. This body of research demonstrates that patients can change relationship patterns and can revise internal working models, and this shift allows them to feel, think, and act in new ways that are unlike past relationships.

References

1. Bowlby J. Attachment and loss, Separation: anxiety and anger, vol. 2. New York: Basic Books; 1973.
2. Bowlby J. The making and breaking of affectional bonds: I. Aetiology and psychopathology in light of attachment theory. *Br J Psychiatry*. 1977;130:201–10.
3. Bowlby J. Attachment and loss, Attachment, vol. 1. 2nd ed. New York: Basic Books; 1982.
4. Bretherton I. Attachment theory: retrospect and prospect. *Monogr Soc Res Child Dev*. 1985;50:3–35.
5. Bretherton I. The origins of attachment theory: John Bowlby and Mary Ainsworth. *Dev Psychol*. 1992; 28:759–75.
6. Ainsworth MS, Blehar MC, Waters E, Wall S. Patterns of attachment: a psychological study of the strange situation. Hillsdale: Lawrence Erlbaum Associates; 1978.
7. Paterson RJ, Moran G. Attachment theory, personality development, and psychotherapy. *Clin Psychol Rev*. 1988;8:611–36.
8. Van IJzendoorn MH. Adult attachment representations, parental responsiveness, and infant attachment – a meta analysis of the predictive validity of the adult attachment interview. *Psychol Bull*. 1995;117:387–403.
9. Waters E, Merrick S, Treboux D, Crowell J, Albersheim L. Attachment security in infancy and early adulthood: a twenty-year longitudinal study. *Child Dev*. 2000;71:684–9.
10. Hamilton CE. Continuity and discontinuity of attachment from infancy through adolescence. *Child Dev*. 2000; 71:690–4.
11. Weinfield NS, Sroufe LA, Egeland B. Attachment from infancy to young adulthood in a high-risk sample: continuity, discontinuity and their correlates. *Child Dev*. 2000;71(3):695–702.
12. Lewis M, Feiring C, Rosenthal S. Attachment over time. *Child Dev*. 2000;71:707–20.
13. Fraley RC. Attachment stability from infancy to adulthood: meta-analysis and dynamic modeling of developmental mechanisms. *Pers Soc Psychol Rev*. 2002;6:123–51.
14. Grossmann KE, Grossmann K, Waters E. Attachment from infancy to adulthood: the major longitudinal studies. New York: Guilford; 2005.
15. Main M, Weston DR. The quality of the toddler’s relationship to mother and to father: related to conflict behavior and the readiness to establish new relationships. *Child Dev*. 1981;52:932–40.
16. Main M, Hesse E. Parents’ unresolved traumatic experiences are related to infant disorganized attachment status: is frightened or frightening parental behavior the linking mechanism? In: Greenberg MT, Cicchetti D, Cummings EM, editors. Attachment in the preschool years: theory, research, and intervention. Chicago: University of Chicago Press; 1990. p. 161–84.

17. Main M, Kaplan N, Cassidy J. Security in infancy, childhood, and adulthood: a move to the level of representation. *Monogr Soc Res Child Dev.* 1985;50:66–104.
18. Obegi JH, Berant E. Attachment theory and research in clinical work with adults. New York: Guilford; 2009.
19. George C, Kaplan N, Main M. The berkeley adult attachment interview. Unpublished manuscript. Berkeley: Department of Psychology, University of California; 1985.
20. Hazan C, Shaver P. Romantic love conceptualized as an attachment process. *J Pers Soc Psychol.* 1987;52: 511–24.
21. Shaver P, Hazan C, Bradshaw D. Love as attachment. In: Sternberg RJ, Barnes ML, editors. *The psychology of love.* New Haven: Yale University Press; 1988. p. 68–99.
22. Bartholomew K. Avoidance of intimacy: an attachment perspective. *J Soc Pers Relat.* 1990;7:147–78.
23. Bartholomew K. Assessment of individual differences in adult attachment. *Psychol Inq.* 1994;5:23–7.
24. Bartholomew K, Horowitz LM. Attachment styles among young adults: a test of a four-category model. *J Pers Soc Psychol.* 1991;61:226–44.
25. Bartholomew K, Shaver PR. Methods of assessing adult attachment: do they converge? In: Simpson JA, Rholes WS, editors. *Attachment theory and close relationships.* New York: Guilford Press; 1988.
26. Crowell JA, Fraley RC, Shaver PR. Measurement of individual differences in adolescent and adult attachment. In: Cassidy J, Shaver PR, editors. *Handbook of attachment: theory, research, and clinical applications.* New York: Guilford Press; 1999. p. 434–65.
27. Shaver PR, Belsky J, Brennan KA. The adult attachment interview and self-reports of romantic attachment: associations across domains and methods. *Pers Relationship.* 2000;7:25–43.
28. Korfmacher J, Adam E, Ogawa J, Egeland B. Adult attachment: implications for the therapeutic process in a home visitation intervention. *Appl Dev Sci.* 1997;1:43–52.
29. Anisfeld E, Casper V, Nozyce M, Cunningham N. Does infant carrying promote attachment? An experimental study on the effects of increased physical contact on the development of attachment. *Child Dev.* 1990;61: 1617–27.
30. Cicchetti D, Toth SL, Rogosch FA. The efficacy of toddler-parent psychotherapy to increase attachment security in offspring of depressed mothers. *Attach Hum Dev.* 1999;1:34–66.
31. Toth SL, Rogosch FA, Manly JT, Cicchetti D. The efficacy of toddler-parent psychotherapy to reorganize attachment in the young offspring of mothers with major depressive disorder: a randomized preventive trial. *J Consult Clin Psychol.* 2006;74(6):1006–16.
32. Lieberman AF, Van Horn P, Ippen CG. Toward evidence-based treatment: child–parent psychotherapy with preschoolers exposed to marital violence. *J Am Acad Child Adolesc Psychiatry.* 2005;44:1241–7.
33. Lieberman AF, Ippen C, Van Horn P. Child-parent psychotherapy: 6-month follow-up of a randomized controlled trial. *J Am Acad Child Adolesc Psychiatry.* 2006;45:913–8.
34. Heinicke CM, Goorsky M, Levine M, Ponce V, Ruth G, Silverman M, et al. Pre and postnatal antecedents of a home visiting intervention and family developmental outcome. *Inf Mental Health J.* 2006;27:91–119.
35. Van den Boom DC. The influence of temperament and mothering on attachment and exploration: an experimental manipulation of sensitive responsiveness among lower-class mothers with irritable infants. *Child Dev.* 1994;65:1457–77.
36. Cohen NJ, Muir E, Lojkasik M, Parker CJ, Barwick M, Brown M. Watch, wait, and wonder: testing the effectiveness of a new approach to mother–infant psychotherapy. *Inf Mental Health J.* 1999;20:429–51.
37. Marvin R, Cooper G, Hoffman K, Powell B. The circle of security project: attachment-based intervention with caregiver-preschool child dyads. *Attach Hum Dev.* 2002;1:107–24.
38. Hoffman K, Marvin R, Cooper G, Powell B. Changing toddlers’ and preschoolers’ attachment classifications: the circle of security intervention. *J Consult Clin Psychol.* 2006;74:1017–26.
39. Klerman G, Weissman MM, Rounsaville B, Chevron E. *Interpersonal psychotherapy of depression.* New York: Basic Books; 1984.
40. Johnson SM. Attachment theory a guide for healing couple relationships. In: Rholes WS, Simpson JA, editors. *Adult attachment.* New York: Guilford Press; 2004. p. 367–87.
41. Makinen JA, Johnson SM. Resolving attachment injuries in couples using emotionally focused therapy: steps toward forgiveness and reconciliation. *J Consult Clin Psychol.* 2006;74:1055–64.
42. Bateman A, Fonagy P. Effectiveness of partial hospitalization in the treatment of borderline personality disorder: a randomized controlled trial. *Am J Psychiatry.* 1999;156:1563–9.
43. Bateman A, Fonagy P. Treatment of borderline personality disorder with psychoanalytically oriented partial hospitalization: an 18-month follow-up. *Am J Psychiatry.* 2001;158:36–42.
44. Bateman A, Fonagy P. 8-year follow-up of patients treated for borderline personality disorder: mentalization-based treatment versus treatment as usual. *Am J Psychiatry.* 2008;165:631–8.
45. Bateman A, Fonagy P. Randomized controlled trial of outpatient mentalization-based treatment versus structured clinical management for borderline personality disorder. *Am J Psychiatry.* 2009;166:1355–64.
46. Fonagy P, Leigh T, Steele M, Steele H, Kennedy R, Mattoon G, et al. The relation of attachment status, psychiatric classification, and response to psychotherapy. *J Consult Clin Psychol.* 1996;64:22–31.

47. Reis S, Grenyer BFS. Fearful attachment, working alliance and treatment response for individuals with major depression. *Clin Psychol Psychother.* 2004;11:414–24.
48. Strauss B, Kirchmann H, Eckert J, Lobo-Drost A, Marquet A, Papenhausen R, et al. Attachment characteristics and treatment outcome following inpatient psychotherapy: results of a multisite study. *Psychother Res.* 2006;16:579–94.
49. Stalker CA, Gebotys R, Harper K. Insecure attachment as a predictor of outcome following inpatient trauma treatment for women survivors of childhood abuse. *Bull Menninger Clin.* 2005;69:137–56.
50. Tasca GA, Kerri R, Conrad G, Balfou L, Gayton J, Lybanon V, et al. Attachment scales predict outcome in a randomized controlled trial of two group therapies for binge eating disorder: an aptitude by treatment interaction. *Psychother Res.* 2006;16:106–21.
51. Meyer B, Pilkonis PA, Proietto JM, Heape CL, Egan M. Attachment styles and personality disorders as predictors of symptom course. *J Pers Disord.* 2001;15:371–89.
52. Pilkonis PA. Personality prototypes among depressives: themes of dependency and autonomy. *J Pers Disord.* 1988;2:144–52.
53. Cyranowski JM, Bookwala J, Feske U, Houck P, Pilkonis P, Kostelnik B, et al. Adult attachment profiles, interpersonal difficulties, and response to interpersonal psychotherapy in women with recurrent major depression. *J Soc Clin Psychol.* 2002;21:191–217.
54. Lawson DM, Brossart DF. Attachment, interpersonal problems, and treatment outcome in group therapy for intimate partner violence. *Psychol Men Masculinity.* 2009;10:288–301.
55. McBride C, Atkinson L, Quilty LC, Bagby MR. Attachment as moderator of treatment outcome in major depression: a randomized control trial of interpersonal psychotherapy versus cognitive behavior therapy. *J Consult Clin Psychol.* 2006;74:1041–54.
56. Dolan RT, Arnkoff DB, Glass CR. Client attachment style and the psychotherapist's interpersonal stance. *Psychother.* 1993;30:408–11.
57. Eames V, Roth A. Patient attachment orientation and the early working alliance: a study of patient and therapist reports of alliance quality and ruptures. *Psychother Res.* 2000;10:421–34.
58. Goldman GA, Anderson T. Quality of object relations and security of attachment as predictors of early therapeutic alliance. *J Couns Psychol.* 2007;54:111–7.
59. Hietanen OM, Punamäki R. Attachment and early working alliance in adult psychiatric inpatients. *J Ment Health.* 2006;15:423–35.
60. Satterfield WA, Lyddon WJ. Client attachment and perceptions of the working alliance with counselor trainees. *J Couns Psychol.* 1998;42:187–9.
61. Mallinckrodt B, Porter MJ, Kivlighan DM. Client attachment to therapist, depth of in-session exploration, and object relations in brief psychotherapy. *Psychother Theor Res Pract Training.* 2005;42:85–100.
62. Levy KN, Temes CM, Critchfield KL. Differential use of psychotherapy treatment by young adults as a function of sex, ethnicity, religion, and adult attachment style. Manuscript in preparation.
63. Riggs SA, Jacobvitz D. Expectant parents' representations of early attachment relationships: associations with mental health and family history. *J Consult Clin Psychol.* 2002;70:195–204.
64. Hoermann S, Clarkin JF, Hull JW, Fertuck EA. Attachment dimensions as predictors of medical hospitalizations in individuals with DSM-IV Cluster B personality disorders. *J Pers Disord.* 2004;18:595–603.
65. Vogel DL, Wei M. Adult attachment and help-seeking intent: the mediating roles of psychological distress and perceived social support. *J Couns Psychol.* 2005;52:347–57.
66. Dozier M. Attachment organization and treatment use for adults with serious psychopathological disorders. *Dev Psychopathol.* 1990;2:47–60.
67. Kobak RR. The attachment Q-sort. Unpublished manuscript. Newark: University of Delaware; 1989.
68. Ciechanowski PS, Katon WJ, Russo JE, Walker EA. The patient-provider relationship: attachment theory and adherence to treatment in diabetes. *Am J Psychiatry.* 2001;158:29–35.
69. Dozier M, Lomax L, Tyrrell CL, Lee S. The challenge of treatment for clients with dismissing states of mind. *Attach Hum Dev.* 2001;3:62–76.
70. Shapiro D, Hardy G, Aldridge J, Davidson C, Rowe C, Reilly S. Therapist responsiveness to client attachment styles and issues observed in client-identified significant events in psychodynamic-interpersonal psychotherapy. *Psychother Res.* 1999;9:36–53.
71. Diamond D, Clarkin J, LeVine H, Levy K, Foelsch P, Yeomans F. Borderline conditions and attachment: a preliminary report. *Psychoanal Inq.* 1999;19:831–84.
72. Dozier M, Cue KL, Barnett L. Clinicians as caregivers: role of attachment organization in treatment. *J Consult Clin Psychiatry.* 1994;62(4):793–800.
73. Slade A. Attachment theory and research: implications for the theory and practice of individual psychotherapy with adults. In: Cassidy J, Shaver PR, editors. *Handbook of attachment: theory, research, and clinical applications.* New York: Guilford Press; 1999. p. 575–94.
74. Slade A. The development and organization of attachment: implications for psychoanalysis. *J Am Psychoanal Assoc.* 2000;48:1147–74.

75. Slade A. The move from categories to process: attachment phenomena and clinical evaluation. *Inf Mental Health J.* 2004;25:269–83.
76. Bruck E, Winston A, Aderholt S, Muran JC. Predictive validity of patient and therapist attachment and introject styles. *Am J Psychother.* 2006;60:393–406.
77. Schauenburg H, Buchheim A, Beckh K, Nolte T, Brenk-Franz K, Leichsenring F, et al. The influence of psychodynamically oriented therapists' attachment representations on outcome and alliance in inpatient psychotherapy. *Psychother Res.* 2010;20:193–202.
78. Zegers MA, Schuengel C, van IJzendoorn MH, Janssens JMAM. Attachment representations of institutionalized adolescents and their professional caregivers: predicting the development of therapeutic relationships. *Am J Orthopsychiatry.* 2006;76:325–34.
79. Tyrrell CL, Dozier M, Teague GB, Fallot RD. Effective treatment relationships for persons with serious psychiatric disorders: the importance of attachment states of mind. *J Consult Clin Psychol.* 1999;67(5):725–33.
80. Hardy GE, Stiles WB, Barkham M, Startup M. Therapist responsiveness to client interpersonal styles during time-limited treatments for depression. *J Consult Clin Psychol.* 1998;66:304–12.
81. Hardy GE, Cahill J, Shapiro DA, Barkham M, Rees A, Macaskill N. Client interpersonal and cognitive styles as predictors of response to time-limited cognitive therapy for depression. *J Consult Clin Psychol.* 2001;69:841–5.
82. Kanninen K, Salo J, Punamäki R. Attachment patterns and working alliance in trauma therapy for victims of political violence. *Psychother Res.* 2000;10:435–49.
83. Rubino G, Barker C, Roth T, Fearon P. Therapist empathy and depth of interpretation in response to potential alliance ruptures: the role of therapist and patient attachment styles. *Psychother Res.* 2000;10:408–20.
84. Dingel U, Strack M, Sachsse T, Schauenburg H. Therapists' attachment, patients' interpersonal problems, and alliance development over time in inpatient psychotherapy. *Psychother Theor Res Pract Training.* 2009;46:277–90.
85. Stiles WB, Honos-Webb L, Surko M. Responsiveness in psychotherapy. *Clin Psychol Sci Pract.* 1998;5:439–58.
86. Travis LA, Bliwise NG, Binder JL, Horne-Moyer HL. Changes in clients' attachment styles over the course of time-limited dynamic psychotherapy. *Psychother Theor Res Pract Training.* 2001;38:149–59.
87. Diamond D, Clarkin JF, Stovall-McClough KC, Levy KN, Foelsch PA, Levine H, et al. Patient–therapist attachment: impact on the therapeutic process and outcome. In: Cortina M, Marrone M, editors. *Attachment theory and the psychoanalytic process.* London: Whurr Publishers, Ltd; 2003. p. 127–78.
88. Levy KN, Kelly KM, Meehan KB, Reynoso JS, Clarkin JF, Lenzenweger MF, et al. Change in attachment patterns and reflective function in the treatment of borderline personality disorder with transference focused psychotherapy. *J Consult Clin Psychol.* 2006;74:1027–40.
89. Levy KN, Diamond D, Yeomans FE, Clarkin JF, Kernberg OF. Changes in attachment, reflection function, and object representation in the psychodynamic treatment of borderline personality disorder. Unpublished manuscript; 2007.
90. Muller RT, Rosenkranz SE. Attachment and treatment response among adults in inpatient treatment for posttraumatic stress disorder. *Psychother Theor Res Pract Training.* 2009;46:82–96.
91. Samstag LW, Muran JC, Wachtel PL, Slade A, Safran JD. Evaluating negative process: a comparison of working alliance, interpersonal behavior, and narrative coherency among three psychotherapy outcome conditions. *Am J Psychother.* 2008;62:165–94.
92. Clarkin JF, Yeomans F, Kernberg OF. *Psychotherapy of borderline personality.* New York: Wiley; 2006.
93. Eagle M, Wolitzky DL. Adult psychotherapy from the perspectives of attachment theory and psychoanalysis. In: Obegi JH, Berant E, editors. *Attachment theory and research in clinical work with adults.* New York: Guilford Press; 2009. p. 351–78.

Chapter 25

Accuracy of Defense Interpretation in Three Character Types

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Keywords Defense mechanisms • Interpretation of defenses • Personality disorders • Psychotherapy outcome • Psychotherapy process

Defense mechanisms are one of the most durable constructs in psychoanalysis and dynamic psychiatry/psychology, spanning theoretical, clinical, and research approaches. While the construct originated with Freud's 1894 [1] publication, *The Neuro-Psychoses of Defence*, the first seven decades of psychoanalytic writing largely advanced the theoretical understanding and clinical approaches to defense mechanisms, while the research did not begin in earnest until about the last 40 years, accelerating somewhat more recently. Much of this research has understandably concentrated first on issues of how to assess defenses [2, 3], second, on the relationship of defenses to clinical disorders, such as depression [4] and personality disorders [5, 6], and, third, on change in defenses over time and long-term development [7]. In recent years, this latter avenue has expanded to include treatment outcome studies indicating that defenses and defensive functioning improve with treatment [4, 8–10]. To date, these have been naturalistic observational studies of patients in treatment and follow-up, but they have also begun to examine the role of defenses in the processes of change with psychotherapy. Kramer et al. [11] found that change in distress was mediated by prior improvement during psychotherapy of defensive functioning, but not of conscious coping. Perry and Bond [12] reported that change in defense mechanisms at 2.5 years of long-term dynamic psychotherapy predicted change in multiple measures of symptoms and functioning at 5 years. While we await additional research to establish that change in defenses mediates improvement in symptoms and functioning, it is important

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to explore and delineate therapeutic processes that lead to change in defenses. This chapter, then, is an effort to examine some early hypotheses and approaches to determining how therapeutic interventions lead to change in defensive functioning within and across psychotherapy sessions.

Background

In the previous volume in this series, our research group reviewed the theoretical and clinical characteristics of defenses, and the rationale and methods for studying defense mechanisms in patients undergoing psychotherapy [13]. We briefly summarize these points here. Defenses are automatic mechanisms that deal with internal and external stress and conflict [14]. They occur partly or wholly out of awareness preceded by signal anxiety, that is, a momentary sense of distress. Everyone has a repertoire of defenses that they habitually use; hence, some defenses appear trait-like. However, they are dynamic so that different stressors, conflicts, and states of mind may occasion the use of different defenses. Defenses are attempts to adapt inner and outer realities, and they underlie symptom formation and character traits. There is no basis for a necessary and sufficient list of defenses, say, the way there is for the elements in the periodic table. Rather, we choose which defenses to study based on criteria such as having good definitions, differentiation from other defenses, and evidence of validity. Each defense is associated with a usual level of adaptation; hence, the defenses can be arranged hierarchically by this level (Table 25.1). Nevertheless, every defense is adaptive in some circumstances, which accounts for the persistence of some defenses that are only occasionally adaptive. There may be defense sequences in which individuals shift from using lower to higher adaptive defenses, both in development and normal maturation, across treatment and even across the sequence of dealing with severe stressors over time. One sequence often seen by clinicians is that of acting out shifting to reaction formation, which later shifts to self-assertion or altruism. These potential sequences require empirical delineation, and, if correctly delineated, would help clinicians identify positive developments in defensive functioning whenever they occur. Defense and coping mechanisms conceptually overlap, but the latter are sometimes differentiated from defenses as conscious

Table 25.1 DMRS hierarchy of defense categories, levels, and individual defense mechanisms

I. Mature
7 <i>High Adaptive Level (Mature)</i> : Affiliation, altruism, anticipation, humor, self-assertion, self-observation, sublimation, suppression
II. Neurotic
6 <i>Obsessional Level</i> : Intellectualization, isolation of affect, undoing
5 <i>Other Neurotic Level</i> : (a) Repression, dissociation, and (b) reaction formation, displacement
III. Immature
4 <i>Minor Image-distorting Level (Narcissistic)</i> : Devaluation of self or object images, idealization of self or object images, omnipotence
3 <i>Disavowal Level</i> : Denial, projection, rationalization. Although not a disavowal defense, autistic fantasy is scored at this level
2 <i>Major Image-distorting Level (Borderline)</i> : Splitting of other's images, splitting of self-images, projective identification
1 <i>Action Level</i> : Acting out, hypochondriasis, passive-aggression
IV. Psychotic
0 <i>Defensive dysregulation Level (psychotic)</i> : Distortion, psychotic denial, delusional projection, psychotic dissociation, concretization

Overall Defense Maturity (ODF): 0–7 scale summarizes defensive functioning by taking the mean of all the defense scores, each weighted by the above 0–7 scheme

and intentional [15], whereas defenses protect the individual from awareness of threat, anxiety, and conflict, often at the expense of constricting awareness, reducing flexibility of response, and optimization of adaptation. Finally, we noted that specific defenses may be associated with specific disorders and problems in treatment, study of which may inform management and treatment of individuals. The use of individual defenses also serves as a marker, alerting the clinician that a core issue is activated and informing on how it is being handled. Considering the defenses in use then offers the clinician opportunities to intervene at specific times and with specific interventions. This issue is the focus of the current report.

In the remainder of the chapter in the previous volume [13], we developed four hypotheses about characteristic ways defenses change over the course of psychotherapy and then examined them on four cases, with follow-up varying from 1 to 14 years. Understanding patterns of defensive change across sessions and time is an important precursor to examining how to influence change within a session. We briefly recap those hypotheses and results (Fig. 25.1).

The first hypothesis was that as individuals change, they increase their overall level of defensive functioning, while at the same time, variability in defensive functioning tends to decrease, indicating increased resilience to stress. The evidence indicated that this is true over the long term (years) [13]. However, the time frame over which this is true may depend on patient and treatment characteristics as well as time. For instance, we recently reported a study of long-term psychotherapy in which we found that change in defenses by two-and-a-half years was, on average, not yet associated with a decrease in variability [12]. This appears to stem from the fact that, as a group, the patients had not yet attained the neurotic level of functioning. Thus, future tests of this hypothesis may need to determine the degree to which variability is a function of the usual level of defensive functioning. Decreased variability may not occur until improvement in overall defensive functioning (ODF) has reached a certain level, which is yet to be determined.

The second hypothesis was that change in defense levels occurs in a stepwise fashion in which individuals trade off defenses lower on the hierarchy for those in the middle and only later develop those at the top of the hierarchy. Specifically, as lower level (principally immature) defenses decrease, mid-level (principally neurotic level) defenses increase, and then as improvement continues, mature defenses increase. This hypothesis was generally found to be true in the three cases with enough data to examine it. However, in one intensively treated case, high adaptive (mature) level defenses began to increase early on. This latter phenomenon was also reported in a subsequent study [12], in which improvement was larger for the high adaptive defenses than for the mid-level defenses. As a result, the hypothesis of stepwise improvement requires refinement, as mid-level defenses may not change in unison in some individuals. For instance, over the course of therapy with most individuals, repression may decrease, whereas with severe personality disorders in which splitting is initially prevalent, repression may paradoxically increase in early years of treatment before decreasing much later.

The third hypothesis was that over a given period of time, individuals and classes of individuals (e.g., a diagnostic group) have their own rates of change which may vary across naturalistic and different treatment conditions. For example, in episodic disorders, such as major depression, state changes (depressed to remitted) may be associated with initially large changes that then decelerate. By contrast, individuals with stable traits, such as some personality disorders, may have long initial periods of induction into the therapeutic process (“priming”) before change commences. Thereafter, the underlying trend of improvement may become more or less linear. Treatments that increase this rate of change are likely to be seen as more effective. While we found evidence consistent with this in four cases [13], a full test requires multiple assessments across time for a variety of disorders and treatment types. Furthermore, controlled trials would be required to determine whether specific treatments alter the naturalistic rate of change in defensive functioning.

Our fourth hypothesis, in line with most of the research to date, was that as defensive functioning improves, symptoms decrease and other aspects of functioning improve. Of the four hypotheses, this

Hypothesis	Results: 4 cases with 1 to 13 years follow-up
1a. Improvement: The general level of Overall Defensive Functioning rises	Yes in 3 cases ± (slight improvement) in 1 case
1b. Improvement: Variability in defensive functioning decreases	Yes in 3 cases, (1 case insufficient data) Variability decreased over time
2. Improvement follows the hierarchy of defenses High Adaptive Neurotic Immature	Yes in 4 cases Increased (2), little change (2) Decreased in 4 cases Decreased greatly in 4 cases
3. Individuals and classes of individuals have unique rates of change in a given condition; Natural history or specific treatment	Depression: Defenses return to neurotic levels by 6-18 months (2 cases) Personality Disorders: Clear improvement by 2-5 years (2 cases) Development of healthy functioning by 13 years (1 case)
4. Improvement in defensive functioning correlates with improvement in symptoms, functioning	Yes Social functioning improved (4/4) Decreased depression (3/3) Improved coping (1/1) Developed healthy functioning (1/1)
Overall summary	Defenses are a robust measure of how personality structure functions at any time Measured over time, they reveal whether that structure is changing (improving) Therapy appears to promote improvement, including developing healthy functioning Improved defensive functioning is associated with other improvements in symptoms and functioning
	People improve at different rates

Fig. 25.1 Results of four defense hypotheses examined in four cases (Data from [13])

has garnered the most support in recent studies [8, 11, 12], including evidence suggestive that improvement in defenses acts as a mediator of change in symptoms and functioning.

While each of the above hypotheses will benefit from additional study, we believe that the findings to date have firmly established that defense mechanisms are clinically meaningful, playing a central role in adaptation. However, there is a question as to how therapists directly intervene with defenses, say, by using interpretation. A recent review of psychotherapy studies – all of which identified therapist interventions using the Psychodynamic Intervention Rating Scales (PIRS) – found consistent evidence that dynamic therapists often directly address defensive functioning [16]. In reviewing four studies of short and longer term dynamic psychotherapy and psychoanalysis, the authors found that defense interpretations were used more commonly than transference interpretations. Furthermore, defense interpretations increased from early to later sessions and became somewhat deeper.

Several reports indicate that addressing defenses has important effects. In a case series, Foreman and Marmar [17] reported that at difficult therapeutic impasses, addressing the patient's defenses, such as denial, resulted in improved therapeutic alliance. Despars et al. [18] considered the effect of interpretation on patient defensive functioning and suggested that interpreting defenses at the same level as the patient was actually using should have an effect of improving the alliance. Following this idea, Junod et al. [19] examined the accuracy of therapist interpretations in the middle two sessions of a four-session Brief Psychodynamic Investigation. They divided patients into a high or low alliance group based on the mean alliance of the two sessions. In the high alliance group, they found that therapists tended to interpret the patient's most commonly used defense level (43% of cases) or a level just slightly above it (43% of cases), whereas in the low alliance group therapists tended to interpret below the patients' most commonly used defense level (75% of cases). In a study of short-term psychotherapy, Winston et al. [20], using a different methodology, found that therapists addressing defenses (TAD) was associated with improvement in neurotic defenses. While the heterogeneity of design and methods precludes specific conclusions, we can safely conclude that examining how therapists address defenses is promising.

A review of all of the possible mediators of in-session change is beyond the scope of this report, but focusing on defenses, the above research leads us to link the following. Defenses are clinically meaningful. Therapists recognize defenses and interpret or otherwise address or manage them with some frequency. Attempts to modify defenses should be associated with change in defensive functioning and subsequently with change in measures of symptoms and functioning. The question we will explore is how can we empirically determine that some specific aspect of interpreting defenses is associated with change in defensive functioning in the process of psychotherapy. By contrast with our previous chapter [13], which dealt with whether defenses change and in what patterns, the current chapter deals more directly with how they change.

Addressing and/or Interpreting Defenses

Our research group recently conducted a review of the general theoretical and clinical literature related to the addressing defenses in psychotherapy [21] in which we enumerated 74 separate hypotheses related to the process of improving defensive functioning. Among the most promising to examine was theme 14, that identifying specific individual defenses can be necessary for successful interpretations, previously noted by Rangell ([22, p. 168]) and ourselves ([23, pp. 532, 538]). We will explore two conceptually related hypotheses regarding change at the level of the individual psychotherapy session and across sessions. We will examine the feasibility of this approach, applying it to several cases reflecting borderline, histrionic (hysterical), or narcissistic personality disorder types.

Hypothesis 1: Defensive changes within sessions predicts overall defensive change across sessions

In line with the findings that defensive functioning improves over time, we hypothesize that defensive functioning will change over the course of a session, and that this general trend within sessions will relate to the overall change across sessions. Operationally, we will examine the defenses across each individual session selected to determine the trend in the defense level score (1–7). A positive trend indicates that ODF is improving, while a negative trend indicates that ODF is regressing.

Corollary

A clinical implication of this hypothesis is that large moves in defensive functioning within a session would indicate that something of particular interest has occurred, which could reflect the patient's response to a stressor, the patient's response to the therapist, or the patient–therapist interaction. These large moves might be “hot spots” of good or poor therapeutic activity, warranting particular clinical attention.

Hypothesis 2: Accuracy of defense interpretation predicts change in defensive functioning within and across sessions

This can be examined in two parts: 2a. On average within a session, the accuracy of interpretation will be reflected in the direction and amount of change in patient defensive functioning; 2b. Across sessions, on average, the accuracy of defense interpretation will relate to the rate of overall change in defensive functioning. Operationally, we will examine the defenses prior to and immediately following therapist defense interpretations to look for the direction and amount of change in ODF. The level of accuracy of interpretation (defense adjustment) within and across sessions should then mirror change in ODF within and across sessions.

Methods

Study Design

We selected cases from our previously published naturalistic study of long-term dynamic psychotherapy. This sample was particularly apt for our purpose because we had previously found that defensive functioning improved using the self-report Defense Style Questionnaire and that this change correlated with change in other measures of symptoms and functioning [24]. In addition, we had session audio recordings and transcripts which had been rated for defenses using the DMRS [12] on a subsample ($n=21$) of the study participants. As in the report on the DSQ results, we found that the majority of individuals demonstrated improvement in defensive functioning, suggesting that an examination of the process of defense change would be fruitful.

Study participants were referred from the outpatient psychiatric department of a university teaching hospital. The design, inclusion and exclusion criteria, and subjects have been described previously [25–28]. Briefly, the overall aim of the study was to examine the course and outcome of long-term dynamic psychotherapy for subjects whom clinicians deemed that previous, usually short-term, treatments had been inadequate. Selection criteria included having a depressive, anxiety,

and/or personality disorder, expressing a desire for psychotherapy, and agreeing to participate in the research component. Participants gave written informed consent after the study was explained to them and their questions addressed.

Twenty-two experienced practitioners of long-term dynamic therapy participated, with a mean of 13.1 years of post-doctoral experience. Twenty were psychoanalysts. Therapists treated a median of three subjects each.

Dynamic psychotherapy was offered once or twice weekly at the discretion of the subject and therapist at no cost to the participants. The design was naturalistic and observational, intended to reflect long-term dynamic therapy as locally practiced. Neither specific therapy manuals nor supervision groups were used. While participants were offered a minimum of 3 years, they could terminate at will, or try other therapies such as pharmacotherapy. The median duration of therapy was 3 years or 110 sessions [95% CI: 52–141; range 4–339] [28].

Measures

Defense Mechanism Rating Scales

We identify defenses using the quantitative directions for the Defense Mechanism Rating Scales, fifth edition (DMRS) [29]. The DMRS is a quantitative, observer-rated method [3] which is almost identical in content to the qualitative Provisional Defense Axis in Appendix B of DSM-IV [14, 30]. Each defense from the list of 30 defenses is identified in sequence as it occurs in the session. This method differs from other observer-rated methods that are qualitative or semi-quantitative ratings, which yield global ratings for the whole interview (see review in [3]), missing moment-by-moment defensive activity.

Once a session has been rated, three levels of scoring the whole session are used, all of which yield continuous, ratio scales for the whole session.

- *Individual defense score.* A proportional or percentage score is calculated by dividing the number of times each defense was identified by the total instances of all defenses for the session.
- *Defense level score.* The defenses are arranged into seven defense levels hierarchically arranged by their general level of adaptiveness (Table 25.1). Each defense level has a proportional or percentage score calculated.
- *Overall Defensive Functioning.* The ODF score is obtained by taking the average of each defense level score, weighted by its order in the hierarchy, yielding a number between 1 (lowest) and 7 (highest).

In addition, the defense level scores can be divided into several super-ordinate categories: mature, neurotic, immature, and psychotic, described by Vaillant [6], although in most publications using the DMRS, the fourth is not included. For the purpose of psychotherapy process research, an immediate ODF can also be calculated from one or several defenses at any point in a session, allowing a moment-to-moment representation of the level of defensive functioning across the session.

The PIRS [31, 32] is a systematic observer-based method for identifying therapist's interventions from therapy transcripts. The PIRS consists of a manual of definitions with examples of ten types of interventions characteristic of psychodynamic therapies. The interventions include (1) acknowledgments (Ack), (2) work-enhancing strategies (WES), (3) contractual arrangements (CA), (4) questions (Q), (5) associations (Assoc), (6) support strategies (SS), (7) reflections (Rf), (8) clarifications (Cl), (9) defense interpretations (D), and (10) transference interpretations (T). These are sometimes further grouped into three broad functional categories: therapy-defining (2, 3),

supportive (4 through 8), and interpretive (9 and 10). Banon et al. [16] found that in early therapy sessions, the mean proportion of interpretive interventions varied from about 10% to 20% across four studies. Each interpretation is given an additional rating based on a five-point scale anchored by definitions, reflecting the depth and linkage of each. Briefly, for defense interpretations these are:

- 1 = The therapist specifies the methods used to diminish affect or diffuse meaning, or points out an affect.
- 2 = The therapist specifies both the method used to diminish affect or diffuse meaning and also points out an affect.
- 3 = The therapist alludes to methods used to diminish affect or diffuse meaning and inquires about a possible motive (without specifying what the motive is).
- 4 = The therapist makes a remark which alludes to both the process of avoiding or mitigating affect, *and* the motive as to why the affect is being avoided or mitigated.
- 5 = The therapist specifies the defensive process, the motive, and makes a link to past relationships.

In applying the PIRS, the rater first identifies the beginning and end of an intervention, and identifies its type. Interpretations are then given the additional depth rating [1–5] above. Raw counts were expressed as a proportion of total interventions for that session. For whole session scores, the individual interventions are summed by category and divided by the total number of interventions to yield a percentage score. The interrater reliabilities of the PIRS categories varied from k values of 0.83–0.99 [32].

Procedures

Participants had an initial Guided Clinical Interview (GCI) with a psychiatrist who made DSM-IV Axes I through V diagnoses and obtained a personal lifetime history [24]. At baseline and every 6–12 months, research assistants interviewed subjects using the Longitudinal Interval Follow-up Evaluation [33] – Adapted for the Study of Personality (LIFE-ASP) [29]. All psychotherapy sessions were audiotaped.

Transcripts were made of sessions 3, 5, 7, three sessions at 6 months, and two at 2.5 years of treatment for those still in treatment. Audiotapes and transcripts of sessions were disguised as to session number and rated in random order for defenses. These data were then entered into computer files for analysis of longitudinal change. A separate file was made to examine change in defenses within sessions, in which each defense scored was entered in the order that it was scored, allowing analysis of defense and defense level as the session progressed. Defenses were rated on 21 of the 49 participants on whom we collected session and follow-up data. We selected patients who had completed at least 6 months of therapy, but preferably 3 years as the design allowed. Due to funding limitations, transcribing and rating stopped at 21.

A rater blind to defense data rated the session transcripts above, identifying therapist interventions using the PIRS. The same or a different rater then examined the transcripts with PIRS ratings, selecting defense interpretations and then identifying the specific defense levels and/or individual defenses that the therapist was interpreting. A research assistant then combined the information for computer analysis as follows. For each session the defense interpretations were entered in sequence along with the three immediately preceding and three immediately following defenses rated for the patient, along with the defense levels and individual defenses interpreted by the therapist. From these data, we calculated the patient's ODF prior to interpretation (*prior-ODF*), the patient's ODF following the interpretation (*post-ODF*), and the prior–post difference (*dif-ODF*), which reflected

the direction and magnitude of the change in defensive functioning. The ODF of the therapist's *interpretation* was also calculated (*interpretation-ODF*). Taking advantage of the 1–7 hierarchy of defense levels, we devised a *defense adjustment score* to reflect the accuracy of defense interpretation. A ratio was calculated dividing the therapist's interpretation-ODF by the patient's prior-ODF in which a score of 1 = perfect agreement, <1 = interpreting below the patient's mean prior-ODF, and >1 = interpreting a defense level higher than the patient's mean prior-ODF. Defense adjustment then represents accuracy by the direction and magnitude of any difference from the mean of the patient's actual three defenses immediately preceding the interpretation.

Results

We selected the cases for this report to reflect several personality disorder types, with somewhat different responses to treatment and long-term outcome. Figure 25.2 shows the data from all the individual session ratings, with the linear regression trend lines reflecting change in ODF for the three cases. While all the cases show change in a positive direction, they differ in the rate of change, with the highest rate 22 times greater than the lowest. There was some suggestion that initial ODF moderated the rate of change in ODF in these cases, in that Case E with the lowest initial ODF (4.15) had the slowest rate of improvement. This individual had borderline personality disorder (BPD), reflected by a low ODF. Secondly, as we posited and found in our previous chapter in this series [13], the session-to-session variability, which was initially large, also decreased over time, in these cases at about 2.5 years. Thus, these cases represent a good opportunity to see whether the intra-session response to interpretation is reflected in the overall rate of change.

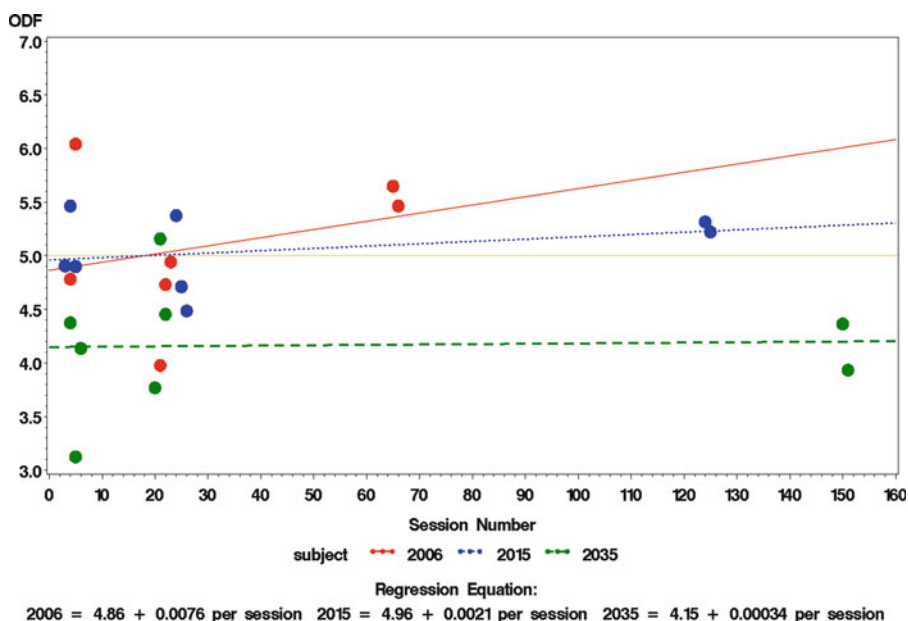


Fig. 25.2 Change in overall defensive functioning over 2.5 years of therapy: individual session data and linear regression trend lines for three cases

Case E (2035)

Miss E was a 22-year-old single woman working in the erotic services field, studying for one of the broad helping professions, and doing an internship, when she was referred to the psychotherapy research study. She was recently discharged from the psychiatry in-patient service after a highly lethal suicide attempt with pills that required treatment in the intensive care unit. She had one of the highest persistent levels of suicidal ideation in the study, with suicidal ideation most days of the week. She showed clear signs of emotional instability, impulsive, self-destructive behavior and intense, unstable relationships. On the Borderline Personality Disorder Scale [34] her score of 40.7 (28 is the cutoff for BPD) was in the extreme upper range of BPD individuals. She also met full criteria for dependent and depressive PDs, and had significant self-defeating and antisocial traits. At intake, she had five current Axis I disorders, including major depressive and dysthymic disorders, generalized anxiety and post-traumatic stress disorders, and substance use disorder. Her GAF at intake was 48 while 53 was her best level of functioning in the prior year.

She had a history of being molested by a male second degree relative. From school age onward, her father would punish her by first ordering her to undress, then beating her. Her mother never intervened, and both parents were emotionally neglectful except in the earliest years. In her late teen years, she became addicted to heroin and cocaine by her boyfriend who also pimped her for financial gain. In general, she had often been abused and abandoned by men.

She began therapy but requested and received a change of therapists early in the course of treatment, remaining in therapy for a combined total of 189 sessions over about 4 years. She was usually seen weekly, occasionally twice weekly. Her therapist was a male psychoanalyst. We present two sessions with her second therapist.

Session 6

In this session, the patient had 22 defenses scored. Figure 25.3 shows the progression of the defense level scores over the session. In the initial third of the session, she displayed largely level 5 neurotic (especially repression) and some level 6 obsessional and level 7 mature defenses, while in the latter two-thirds, she vacillated among neurotic (e.g., repression, displacement), disavowal (e.g., rationalization), and minor image distorting (e.g., devaluation), that is, levels 3 through 5. Her final defense was an action level 1 defense evident in a story she told. The regression line in Fig. 25.3 indicates that with each subsequent use of a defense, her ODF decreases by .1 of a point, which is a substantial rate of change. Thus, this session would be characterized as one that challenged the patient's initial, neurotic level of defensive functioning, leading her to recount and explore stories highlighting her lower defensive functioning from mid-session onward.

The therapist was highly active in this session, making a total of 37 interventions, a high proportion of which were interpretive (40.5%). Figure 25.4 shows the individual data and linear regression line for the adjustment level of interpretations (range 0.38–1.50) and the associated difference in ODF from immediately before and after each interpretation (range 0.67–4.33). Both regression lines trend negatively and in parallel, as the session progressed. In fact, for the 11 paired observations with complete ratings, the correlation of defense adjustment and dif-ODF was quite high ($r_s = 0.80$, $p = .003$). At the outset, the therapist interpreted at the patient's average level of defensive functioning (e.g., interpreting repression) or slightly higher. However, by mid-session as the patient began to open up, she showed a wider range of defenses, and the therapist increasingly interpreted the lower level defenses in her repertoire; thus, defense adjustment decreased, but only slightly. As this proceeded, the patient tended to reveal vignettes with more lower level defenses. The three following selections represent this.

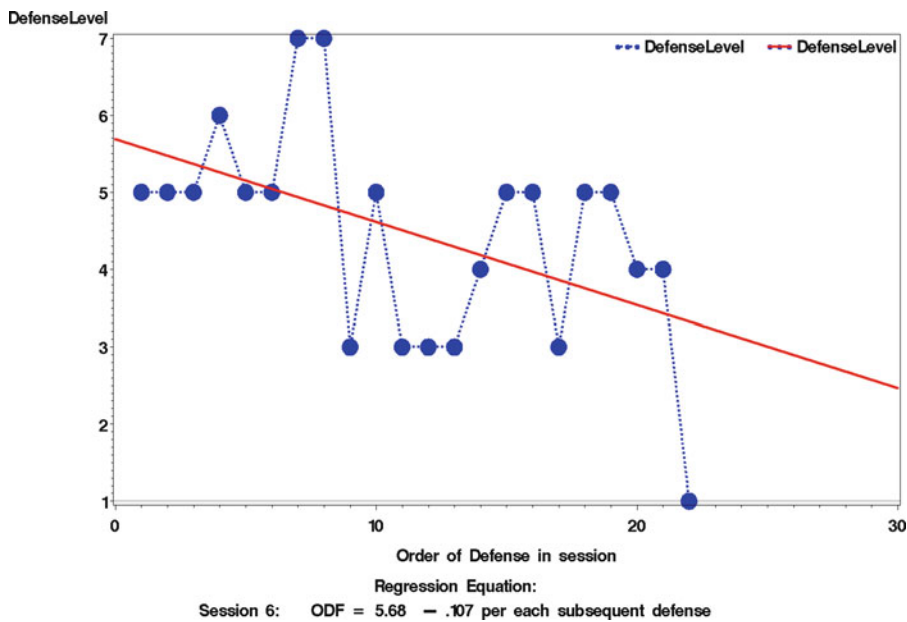


Fig. 25.3 Ms. E Session 6: Evolution of defense level scores across the session

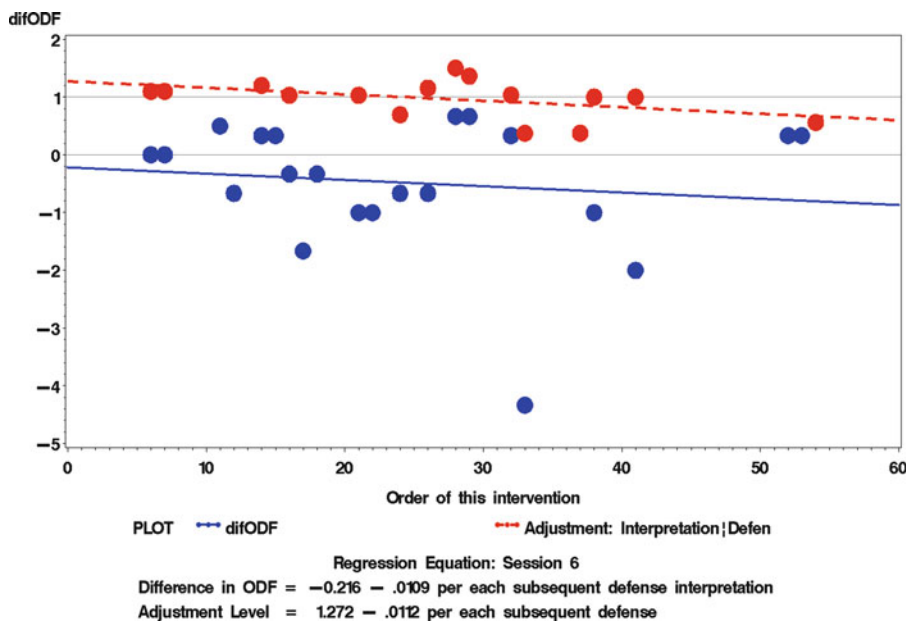


Fig. 25.4 Ms. E Session 6: Parallel evolution of defense adjustment and dif-ODF scores across the session

This interchange began with the patient inquiring about who listened to the audiotapes of the session, and whether that included the therapist. In the following interchange, the therapist is trying to explore whether she has any fantasies about this. He interprets whether she might be defending against a fantasy that might challenge her experience as to how well the therapy is going, and encourages exploring this. The therapist’s interventions are noted on the leftmost margin, while the patient’s defenses are demarcated by their onset and offset. Interpretations also carry their depth rating [1–5] as a suffix.

Selection E-1

- WES I: ...I'm interested in exploring what that thought would be in the back of your mind, what I might say about things that would disappoint or upset you. Because you did think that.
- S: *[REPRESSION]* Yeah, I don't – I don't know specifically just... [pause] I don't know, I'm just – I'm very naive and I don't know if – I don't know what you would say that would upset me, but if there was something it would – you know what I mean?
- Like there – there – the reason might be very simple and – and straightforward, but I – I don't know. [pause] [sighs] *[repression ends]*.
- WES I: What I'm trying to encourage you to do here is what we call free association. I realize we're not having a discussion that's that much grounded in the official and realistic answers. It's more we're having a discussion to explore what fantasies you might have in your mind, because those might help us in the therapy.
- T-3 I: [T-3 begins] So you did have a thought somewhere that if you were to ask me about the tape, my answer might upset or disappoint you. So I would imagine that hiding behind that thought are some specific possibilities of what I might say that would disappoint or upset you.
- It's maybe hard for you to let them sort of come up to the surface and see that they're sort of underneath the surface themselves. They have to be there, because you wouldn't have the thought that you shouldn't rock the boat, everything's going well so far and that if you do rock the boat, I'll tell you it's none of your business and say something that would upset you or disappoint you.
- So there's something in there somewhere, but I don't know if you could identify or tell me. [end T-3]
- S: I don't know.
- T-1 I: [T-1 begins] I mean, I realize it's in the general ball park of whether or not you will be disappointed and let down again and whether or not therapy really will be for you. What you've said is that so far it's going well...
- S: Uh-huh.
- I: ...and you don't want to rock the boat, as if you don't quite believe that it's going well, that there's got to be a rat somewhere. [T-1 ends]
- S: Uh-huh.
- WES I: So maybe we should explore that a little bit.
- S: [pause] [speaking quietly] [inaudible] [pause] *[SELF-ASSERTION]* I just have to say that, um, sometimes you use the word fantasize and fantasies and it just makes me very uncomfortable *[self-assertion ends]*. *[RATIONALIZATION]* Like I don't – I'm very grounded, I'm very like down to earth *[rationalization ends]*. *[DENIAL]* I don't have fantasies *[denial ends]*. Just, it makes me really uncomfortable.

Comment

In the above, his transference interpretation questions an affect and a defense, and the defense adjustment is 1.03, indicating that he is interpreting at the level of defenses that she is using, the most recent being level 5 repression. The repression is supported by three additional defenses. This selection also demonstrates that defense interpretations are contained within transference interpretations. After several more minutes in like exchange, the patient opens up further.

Selection E-2

S: *[REPRESSION]* Just everything you're saying, it's like you're verbalizing what I'm thinking, what I'm feeling. [pause] I don't know, sometimes it's [sighs] I'm – I – I'm thinking things and I don't even realize till you say it, like [pause] I don't know, *[repression ends]* I just [pause] I just have so many thoughts and feelings. *[PROJECTION]* Like I'm afraid you're going to tell me that I'm too screwed up, you can't help me or that I'm – I don't have any problems so you can't help me or, I don't know, you don't want to. [pause] *[projection ends]*

[RATIONALIZATION] There's a part of me that wonders if you respect me and I think about that and I'm like well, it doesn't matter 'cause you're my doctor and you're not here to judge me, but it must affect the way you talk to me. [long pause] *[rationalization ends]*

D1 I: You stopped. Where did your thoughts go there?

S: I just wonder what you think about me.

Comment

The above defense interpretation points out that she is using a defense, but addresses the highest level of her previous three defenses, level 5, repression – “You stopped. Where did your thoughts go?” – so defense adjustment is quite high (1.50). The therapist explored and interpreted her concerns about respect and self-evaluation, leading to a transference interpretation (not shown), following which she opened up further about her belief that she trusts too easily and that others will just take from her and she ends up devastated. This is a pivotal point following which she is somewhat stressed by the line of inquiry and responded both adaptively (level 7 self-assertion), and somewhat more defensively (level 3 rationalization and denial). The patient then associated to her general experience of people taking things from her and devastating her. Both the above example and the material that followed are consistent with the importance of addressing neurotic level defenses, whenever surrounding lower level defenses are evidently active in protecting the inhibitions. It is tempting to interpret the lower level defenses, but because they support the central role of repression, the interpretation of repression was warranted. Hence, the high defense adjustment score was associated with an opening up of exploration.

Selection E-3

S: *[REPRESSION]* Sometimes I don't even realize that I am being mistreated till it's too late. I just think it's normal to feel that – feel certain ways and then I'll find out, no, it's wrong, so it's – I just, I blame myself for not knowing or for putting myself in that. [pause].

And if I don't – I don't know, *[repression ends]* *[REACTION FORMATION]* sometimes I just smile or I laugh, 'cause it's just [laughs] I don't know. Sometimes, if I don't – if I don't laugh, I'll cry *[reaction formation ends]*. *[DEVALUATION-SELF]* Sometimes it's just so – it's so sick, it's ridiculous. It's funny [long pause] *[devaluation ends]*.

[PASSIVE-AGGRESSION] Sometimes I'll recognize that I'm doing something wrong and I just – I can't help it, I just – I see myself repeating patterns. Just it's really confusing, 'cause then I hate myself for doing it and I hate whoever I'm with, 'cause if you loved me, then you wouldn't do it to me, but it's my own fault for letting you. [long pause] *[passive-aggression ends]*

D-4 I: [D-4 begins] I think that what you're saying and what we're talking about here is really a crucial issue for your well-being and I think it's a large reason why you're here in the first place. That you're in this rut of repeated, lousy relationships where you get abused and you have an awareness and an insight that you're part of the pattern, because you allow it to happen.

And you're quite mixed up as to who to blame. And you probably fluctuate between blaming the other person and hating them to pieces, and hating yourself, because you clearly do. You're suicidal and you want to cut yourself.

S: Uh-huh.

I: You want to be hurt. So we have to really try to see if we can get a handle on this really core problem for you.

S: Like I...

I: Because there's a simultaneous, a very intense hatred of yourself and the other person. [D-4 ends]

Assoc Sorry I interrupted you.

S: [PASSIVE-AGGRESSION] [pause] Um, I – I've been in therapy for enough years to know myself a little bit and I just recognize that I'm just – this – these past couple of weeks I've just been regressing, getting worse, just like I used to be.

Um, when Jacques and I first started going out, I had a big fight with him, I was angry with him and I slept with his best friend. And later he found out and I denied it and to this day I think deep down he knows it, but I won't admit it and he – we just will never talk about it...

The session continued exploring this story, ending with a D-4 interpretation by the therapist.

Comment

Overall, these selections demonstrate two related common phenomena. First, the patient, who made an initially neurotic, inhibited presentation, responded to well-adjusted interpretation – in our technical meaning – and opened up. Second, because the patient has BPD, the new material that followed included vignettes evidencing lower level defenses. As the therapist began to interpret the lower level defenses, the patient vacillated between immature and neurotic levels. In this instance, the therapist interpreted “aggressively,” as evidenced by two things. First, the level of defense adjustment decreased slightly as the therapist tended to pick up on the lower levels of the patient's defenses. Second, the pre–post difference in ODF after each interpretation tended to be negative from mid-session onward, and to become more negative. However, despite her diagnosis of BPD, the patient did not regress in the malignant sense of using major image-distorting and action defenses toward the therapist. Hence, the therapy promoted exploration at the price of some regression, but “contained” the patient well enough, thereby avoiding enactments (e.g., projective identification), which would be evidence of more severe regression.

Session 20

In this session, the patient used neurotic level defenses early and late on but generally exhibited her lower defensive functioning in the middle. In the section that follows, the patient discussed her ambivalent feelings and actions toward her boyfriend, including an odd feeling of getting pleasure from fighting with him. In this selection, she emphasized her wish to help him, although letting him keep drugs for sale in her house made her nervous. The selection includes the sixth through eighth of 11 interpretations.

Selection E-4

S: [REPRESSION] Well, what am I doing? I still don't understand [repression ends].

WES I: Good question. I don't know. Let's look into it. You must have your own reasons for being in this situation. It's not just, you know, something that just dropped you in this situation.

S: [REACTION FORMATION] I just – I want to help him out. [reaction formation ends] I don't know. He kept the stuff at his house till he was arrested. But the more I think about it, the more nervous and upset I get about it.

SS I: Of course; you could go to jail.

S: See, but if I were to say something, I feel like I'm being unfaithful, you know what I mean?

SS I: Yes, I know what you mean. [inaudible]

S: What do I do, tell him to take it out?

WES I: It's the same – look, the answer to that is the same as the answer [inaudible]. You want to know, you know, why – you're saying to me, why am I in this nightmare? Well, we have to maybe take our time and look why you're in that nightmare, figure it out.

D-1 [D-1 begins] You're giving – and again, I come back to the whole business of your laughing. It's like you yourself have an official version of what goes on. The laugh tells us that something else is true underneath [inaudible]. [end D-1]

S: [laughs] [pause] I don't know, for a while, when we first started going out, I felt very guilty, uh, [PASSIVE-AGGRESSION] because from day one I wasn't – I wasn't faithful and he had some suspicion that – obviously I never told him [passive-aggression ends]. [REPRESSION] [laughs] I don't know why I'm laughing [repression ends].

D-1 I: [D-1 begins] Well, because it was your method, from the very beginning, of stabbing him in the back, because you allow him to stab you in the back all the time and you have various ways of stabbing him back.

S: I was just afraid that he...

I: So in that sense it's a [inaudible]. [end D-1]

S: He just seemed too good to be true. Like I was – I was going out with this Caribbean guy, I got pregnant and that's when I met François who convinced me, "No, don't have a baby. You're Quebecoise, you're white, whatever, you're not going to stay with him," na, na, na.

So I told François that I broke up with the other guy, had the abortion and I think I was still with the other guy. Then I broke up with him and continued with François and François found out, 'cause he was snooping or whatever, he was looking at my books.

And then he – [DEVALUATION-OTHER] maybe he was an asshole from the beginning [devaluation ends]. I don't know, [PASSIVE-AGGRESSION] but I mean, 2, 3 months after we were going out, I slept with his best friend and I remember it was to get back at him. I was just furious with him [passive-aggression ends]. And that turned out to be the biggest mistake because later he found out and he was – I wouldn't admit it and I felt from then on everything changed, [same DEVALUATION-OTHER as above] that from then on he was an asshole [Devaluation ends].

D-4 I: [D-4 begins] Let's say you're going to two-time a guy and you're going to sleep with somebody else as a method of getting back at him, of getting something nice for yourself [inaudible] or something, okay? You do it in such a way, though, as to get caught and get shit. You got caught with the Caribbean guy and you got caught with his best friend. It's like you didn't use your head, and if you're going to do that, why not do it in such a way that you'd never get caught? I would suspect that the reason is, is that there's a part of you that is quite masochistic and every time you give shit you have to be paid back and receive shit. [end D-4]

S: I hate how I feel now, like I'm so uncomfortable; I want to change so much, but I can't.

- WES I: I think the stuff I'm referring to in your life is something [inaudible] and I don't think you can change until we can slowly but surely trace out what it is, why it's happening, how it got to be that way, what it's all about, what's going on here. And until that we're pretty much in the dark [inaudible] this that and the other thing.
- S: [pause] Like how – how do I tell François I don't want the shit [referring to drugs] in my house? [inaudible]. [pause] *[RATIONALIZATION]* My rationalization has always been that I have his lawyer's card and it's a great lawyer and if the charges couldn't ever be dropped, God forbid, then François would take the rap *[rationalization ends]*.
- SS I: That's a very pretty rationalization, but the one who may end up in jail is you, the one who may end up pregnant is you and the one who may get killed because of the guns, is you.
- S: *[DENIAL]* I don't care about that, I just care about going to jail *[denial ends]*.

While the above began with neurotic level defenses, the therapist interpreted the lowest level defenses after they began to appear in the vignette. As the story unfolded, the therapist's next interpretations focused on repression, which then elicited passive-aggression. The therapist then responded further by interpreting how the passive-aggression functions when she is uncomfortable over her wish for something good for herself. This deep, challenging interpretation led to disavowal of some concerns accompanied by more material. This series of interpretations leading up to a deeper interpretation reflects how interpretation that targets the lowest of the defenses used – that is, show low defense-adjustment levels – can lead to increased exploration but also to some regression in defensive functioning. Although the patient's responses were volatile, Table 25.2 indicates that on average the patient had an increasingly positive response to interpretation across session 20, reflected in the positive slope of dif-ODF.

Discussion Case E

For the four sessions rated on all measures (Table 25.2), the patient's mean ODF across all four sessions was 4.36, SD = .59, ranging from 3.77 to 5.16, indicating an extreme range of functioning from low borderline to neurotic level functioning. This variability is consistent with Stern's [35] seminal description of "the borderline neuroses," that individuals with BPD may sometimes appear neurotic but readily regress in treatment. The rates of change in ODF within the sessions varied from -0.11, to +0.021. While the patient regressed over the course of half the sessions, in one instance, session 6, the magnitude of the regression was substantial.

Her therapist was aggressively interpretive, often including motive, object relationships and transference in addition to affect and defense. His mean adjustment to defense score was .80, range .59 to 1.00, indicating that on average he tended to address the defenses somewhat below the moving average level of her defensive functioning. Furthermore, as most sessions evolved, the trend of his defense adjustment score was negative, indicating that as she began to reveal more lower level defenses, the therapist preferentially tended to interpret the lower level defenses. Related to this, the mean difference in ODF before and after interpretation was positive in only one (25%) session and the trend within the sessions was positive in only one (25%). The overall result of the case was that at 2.5 years, she evidenced a very slow rate of improvement in ODF, with raw change (Δ) = +.05, about one tenth of an effect size. She was still within the range of defensive functioning, consistent with BPD. Left for consideration is whether greater improvement would have followed on average interpretations with higher defense adjustment scores on average.

Table 25.2 Comparing defense and defense-adjustment changes within and across sessions

Subject	Session	Within session						Across 2.5 years	
		ODF		dif-ODF		Defense-adjustment		ODF ^a	
		Mean	Slope	Mean	Slope	Mean	Slope	By model	Slope per session
Ms. E	4	4.38	−0.013	0.0	−0.0090	0.80	−0.0029		
	6	4.14	−0.11	−0.43	−0.011	1.00	−0.011		
	20	3.77	+0.021	+0.20	+0.0078	0.79	−0.0071		
	21	5.16	+0.0027	−0.10	−0.0076	0.59	−0.0057		
	Mean	4.36	−0.025	−0.083	−0.0050	0.80	−0.0067	4.15 4.20	+0.00034
SD		0.59	0.051	0.23	0.075	0.15	0.0029	Δ = +0.05	
Positive			50%	25%	25%		0%		
Mr. F	5	4.90	−0.013	0.0	+0.18	1.08	+0.033		
	24	5.35	−0.0024	−0.92	−0.071	0.89	+0.0043		
	26	4.50	−0.0018	+0.26	+0.053	0.93	+0.0047		
	125	5.24	+0.0083	+0.39	+0.037	1.16	−0.0043		
	Mean	5.00	−0.0022	−0.068	+0.050	1.02	+0.0094	4.96 5.23	+0.0021
SD		0.38	0.0075	0.51	0.089	0.11	0.014	Δ = +0.27	
Positive			25%	50%	75%		75%		
Ms. G	4	4.78	−0.038	+0.17	+0.015	0.97	+0.00046		
	5	6.04	+0.028	+0.42	−0.0020	0.87	−0.00063		
	21	3.98	+0.035	+0.13	−0.0056	1.17	−0.015		
	22	4.73	−0.0027	+0.20	+0.020	0.93	−0.0057		
	23	4.94	+0.040	+0.99	+0.032	1.43	−0.010		
	66	5.46	+0.010	−0.38	−0.0022	0.91	−0.0039		
Mean		4.98	+0.012	+0.26	+0.0095	1.05	−0.0058	4.86 5.37	+0.0076
SD		0.70	0.027	0.41	0.014	0.20	0.0054	Δ = +0.51	
Positive			67%	83%	50%		17%		

^aFirst | second ODF scores from the modeled data refer to predicted values at outset and at 2.5 years of therapy; Δ = raw ODF change

Case F (2015)

Mr. F was a man in his mid-20s who was referred to long-term therapy after completing a short-term therapy which had been precipitated by the end of his relationship with a girlfriend. He felt he was still “a basket case.” He had a long history of substance dependence on cannabis beginning at age 13 but had been abstinent for over a year. He had no other Axis I disorders, except a history of childhood conduct disorder. On Axis II, he had definite histrionic and narcissistic personality disorders, with the former predominating clinically, along with some significant antisocial, self-defeating, and borderline traits.

The patient felt loved by his parents in his early years, although his mother was strict, not showing her emotions readily, but unconditionally loving and understanding. He lost an eye at 5 due to illness and remembered the event as suffused with caring. Grammar school went well; there were no academic problems, and he had friends. The parents argued a lot and the father was physically abusive to an older brother, who in turn from mid-childhood on became verbally and physically abusive to the patient. The children could tell that their parents were heading for divorce. While at summer camp at age 12, his mother was hospitalized, allegedly for anorexia but in fact had made a suicide attempt. After discharge, she went to live with relatives. After the divorce, the children remained living with father. Father was preoccupied with a new girlfriend, and exercised no oversight. From 14 onward, the patient felt very alone and became hungry for attention. He started lying to build up his self-image, and did anything he could to be popular. He began smoking, having lots of sexual

encounters, and stealing, first from his father, and later elsewhere, such as at a part-time job. There was no direction, caring, or understanding at home. In later teenage years, he began using cannabis regularly and worked out an arrangement where he bought the drug for his father who gave him a share in return. He repeated a grade of high school and went through college in a desultory fashion while taking a series of jobs that he quit or left before being fired. He got into financial trouble with credit cards. He had intense relationships with girlfriends, desperate to connect with them. He was purposefully exhibitionistic, and women found him entertaining, even captivating, but ultimately needy. He had concerns about trust and fidelity and became excessively angry when disappointed by them. At the outset of the project therapy, he hoped to develop a new career in drama or finance, make a lot of money, and be seen as important.

He saw a male therapist once weekly for 125 sessions, terminating at about 2.5 years due to a move across country for economic reasons. Follow-along continued by phone and mailed questionnaires for 7 years from intake. We examine one of six sessions rated.

Session 26

Raters identified 70 defenses in this very active session. In descending order, his most prominent defenses were minor image distorting (30%), obsessional (24%), disavowal (20%), other neurotic (11%), and high adaptive (7%) levels. The very high proportion of minor image-distorting defenses reflected that his narcissistic, and to some extent hysterical, character issues were salient in the session, as was a tendency to compartmentalize his own affective reactions by use of obsessional defenses.

The session largely concerned several events that had recently transpired at a restaurant where the patient worked as a waiter. At some point in each story, the patient talked from the vantage point of an expert about how things should be done, how to run the floor, how to sell to customers and so on, in part to protect or boost his self-esteem or to deal with related conflicts while minimizing his uncomfortable feelings. Thus, there was a swing between narcissistic and largely obsessional neurotic defenses.

Selection F-1

The first vignette demonstrates one of two large shifts in defensive functioning in the session. In it, he described problems that he has with the floor manager, relating some interchanges along with comments on how he thinks things should be run.

S: And again, just to jump ahead a little bit with that Brad conversation, you know, he started explaining to me that, you know, “[subject’s name], you know, don’t worry about it. But if she’s in her face and you’re in her face, just walk away, man. Do whatever she says. Just say yes and don’t worry about it.” You know.

And that’s true. I mean, I could – I mean, [*DISPLACEMENT*] this restaurant business is very high pressure. I mean, there is a lot – I mean, it’s little things, right. You think like, oh my God, where’s the lettuce for the hamburgers, right? Well, when you got an order to get out and there’s no lettuce for the hamburgers, you start going crazy for a piece of stupid lettuce. I mean, it’s really funny, but it’s a piece of... But it could be a milker, it could be a little spoon, it could be a million things right? [laughs][*displacement ends*]. [*INTELLECTUALIZATION*] And you would think why is this person upset over a little spoon or a piece of lettuce, but you’ve got a table full of six plates to get at and you’re waiting for a piece of lettuce to get the six plates, you go crazy. It’s the nature of the business, you know. [*intellectualization ends*]

[*DISPLACEMENT*] So by definition her job is that much more difficult because she's got the - she's in an intermediary position. She's got management, senior management on her head to say, "We need this place to perform," and then she's got a staff of about fifteen to make them perform. And she's being told, "Get these guys working," you know. And she's trying to do her best job of making it happen. And sometimes she's playing the tough cop right now. It's like the good cop, bad cop thing. [*displacement ends*]

And, uh, and I got caught up with the whirlwind of that. And until I spoke to Brad yesterday and found out, you know, you're cool, man. You're what we want.

D-2 I: [D-2 begins] But you were taking it very personally...

S: Completely.

I: ...and feeling unappreciated and not understood.[end D-2]

S: [*RATIONALIZATION*] Well, I had to source it and I came to the understanding the source of my insecurities, just for myself, never mind myself, it was her. That was the relationship that wasn't working in the restaurant. And you know what, I came to that - I sat down and I wrote it...[*rationalization ends*]

D-1 I: [D-1 begins] You weren't getting the strokes that you needed to keep you going, eh, to reassure you that you're doing okay and that she knows what you're doing. [end D-1]

S: Well, yeah. It's like I recognize her position and, um, I recognize it's a very key relationship for me to maintain in that restaurant and it was frustrating for me that I couldn't maintain it, you know. [*RATIONALIZATION*] It was frustrating for me that the little things were getting in, like a phone call or a 15 min break when I'm working a 15 h day is making this relationship sour. It's stuff like that.[*rationalization ends*] It's really very difficult for me to accept this because this is silly, you know, when you work 15 h days, consecutive days, you know, not like one day here, but doing like 10 h, 15 h, 13 h. I mean, I work a weekend, out of 48 h, I work twenty-eight of them, you know. [*UNDOING*] The staff works very hard and we're compensated very well and we're treated well, but you know, this one relationship in the restaurant with me, just was really a source of, like really, it was very scary [*undoing ends*].

Comment

The patient initially distanced himself from his feelings and reactions by displacements and intellectualization [mean pre-interpretation ODF=5.33]. The therapist made interpretations, numbers 2 and 3 out of 10 this session. The first spoke to his taking the problem with the floor manager personally, which is a turning against the self, rated as passive-aggression [not shown]. This was directed toward a defense occurring much earlier in the story, but at this point in time, it scored as a very low defense adjustment=0.19, the lowest value of the session's 10 interpretations. This was followed by an immediate decrement in ODF [dif-ODF=-1.33], reflecting two rationalizations and one undoing [mean post-interpretation ODF 4.00]. This interpretation, way below the level of the patient's immediately preceding defenses, resulted in downward shift in defensive functioning, reflecting some disavowal of his own role in the problem. However, the second interpretation addressed affective experience only (D-1), without reference to a specific defense, and so defense adjustment is not calculable. However, it was followed by a move upward in post-interpretation ODF, indicating a positive response.

Selection F-2

This selection occurred late in the session. He related a vignette of which he is proud wherein he gave away free coffee at the end of a meal to a group of wealthy customers. This raised an issue of conflict of interest between the effect on the bill versus his tip.

S: [DEVALUATION-OTHER] It's totally – no, I mean, and then the grade's important too, right? I'm going to be upset if I get like a shit grade, if I put a hard effort in, you know.

But I'm not going to worry about, like if I'm writing one test and I'm worrying about that A after, you know, when I got to write ten tests in the semester and I get like a C or a B minus and I'm like, "Oh, my God, I got to get that A," that's a crock of shit. You know, all I got to do is do my best and it'll take care of itself [*devaluation ends*]. [RATIONALIZATION] And that's why I don't worry about it, because I look at the percentage. I calculate my tip at the end of the night, I do my division there, my tips over my total sales. I get my points. And if I'm in the range, my range from fourteen and a half percent to eighteen percent, hey, man, I'm making scratch and I'm getting paid for it, you know, and that's an average. And that's all I will get, you know. I don't care if I make fifteen cents on a dollar, I make fifteen percent. That's all I think about. I'm not worried about anything else [*rationalization ends*]. And those are good points, man. Waiters make good points. You know, salespeople – most sales jobs you're making six, seven, eight percent and even that much, you know. [DEVALUATION-OTHER] Telemarketing, scumbag business that is, [*devaluation ends*] they pay you 20%, you know. So we're pretty high in percentage points, you know.

D-4 I: [D-4 begins] That's why when you got sort of the possible conflict of interest with the coffee, because the likelihood is what you've done is you've knocked five dollars off the bill...

S: Hoping to get the five dollars in my pocket.

I: Well, the chances are they will appreciate the service and [unclear]. [end D-4]

S: So, what would it be, it would be about seventy-five more cents for me, an extra dollar. That's what it would work out to. Actually, yeah, seventy-five cents. You're right. [DENIAL (or rationalization)] But you know what, when I was doing it, I mean, I know that. I wasn't even thinking about – I won't say – I was thinking about let's serve them, you know, and if that meant, yeah, a better tip, it also meant a better name for the house. Okay, it wasn't just for me. I wasn't selfish in the act. It was really a selfless act. You know, 'cause for me a dollar here, a dollar there is not going to change my life. [Denial (or rationalization) ends]

D-2 I: [D-2 begins] Yeah, sure. No, it's not that it doesn't sound like it made good business sense, but it sounds as if you were acting more on the basis of being a principal of the outfit, of the restaurant, where you would have that option and that flexibility, where you wouldn't have to answer to somebody else.[end D-2]

S: But I am constrained.

Ack I: Sure.

S: [DISPLACEMENT] Yeah. [laughs] Again, it's so funny, man. The little things that we argue about in the restaurant, like you know, it's funny, you know. I mean, it's like I was telling you about spoons, right? [laughs] It could be about anything. You could take shit for [raises voice] "Why did you leave the mayonnaise in that little..." like it would be one little mayonnaise and, "You can't leave it like that." [laughs] And I'm like, "Oh, my God." [*Displacement ends*]

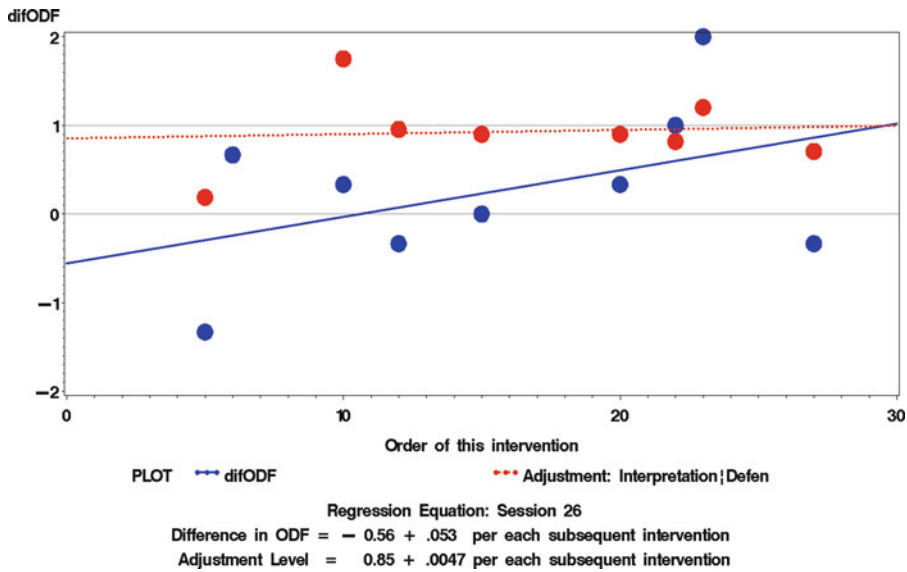


Fig. 25.5 Mr. F Session 26: Parallel evolution of defense adjustment and dif-ODF scores across the session

[UNDOING] But everybody works so hard. I have to say it's a tremendous, tremendous staff and we're being recognized for it, you know. We are being appreciated for it. Yeah, they work us very hard because some of the people didn't stick up front and the ones that stuck are going to carry the load right now. And everybody's putting in, on average, you know, anywhere between 10 and 15 h a day. [undoing ends]

Q I: What were you thinking of when you said you argued with the boss?

Comment

The action of giving away the coffee to the customers encompassed issues of his self-image and self esteem – a salesman who knows the right things to do – versus his duty to his employer. His defenses largely deflected the conflict in favor of boosting his self-regard. The two interpretations related his actions to a wish to be appreciated, and later his wish to be powerful (“being a principal of the outfit”). Before the first interpretation, the patient's pre-interpretation ODF was low (mean ODF 3.67) followed by the therapist interpreting almost at the same level (defense adjustment = .82). In turn, the first post-interpretation mean was higher (ODF = 4.67; dif-ODF = +1.00). The next pre-interpretation ODF was the lowest of the session (mean ODF = 3.33), but the next interpretation had an even higher defense adjustment (1.20). This led to a much higher post-interpretation mean ODF (5.33) and the highest dif-ODF (+2.00) of the session. Because the two interpretations were separated by a single defense, their effects are somewhat confounded. Alternately, their juxtaposition may have produced some synergy, resulting in a large, positive dif-ODF. These examples also demonstrate that low-level defense interpretations (D-1, D-2) can be supportive while still setting the stage for fuller interpretation (e.g., about his conflict in doing his duty to the employer).

Figure 25.5 displays the evolution of both defense adjustment and associated dif-ODF across the whole session 26. Both trended higher. In fact, for the eight paired observations with complete ratings, the correlation of defense adjustment and dif-ODF was high ($r_s = 0.60$, $p = .11$), albeit shy of power to demonstrate statistical significance.

Discussion Case F

For the four sessions rated, Mr. F had a mean ODF (5.00) on the border between immature and neurotic levels of functioning with two sessions on either side. This is consistent with having a high functioning personality disorder. Only one of four sessions (25%) showed a trend for ODF to rise, principally due to an initial reliance on obsessional and other neurotic level defenses early in the sessions while telling stories, with lower level defenses showing up later. However, when the interpretive parts of the sessions were examined, we found that the mean dif-ODF following interpretations in each sessions was positive in 50% of sessions while the slope of dif-ODF within sessions was positive in 75% of sessions. Defense adjustment varied slightly around a mean of 1.02, indicating, on average, high accuracy at interpreting at the level of the patient's defensive functioning.

The overall pattern of evolution of defenses within each session is somewhat counter to the overall rate of change. Overall, his change in ODF was positive (+0.27) across the 125 sessions, moving the patient up from the level of personality disorder to neurotic functioning. His change in ODF was at about the median for the study. However, the data on dif-ODF were in line with the changes in defenses at 2.5 years, suggestive that changes in defenses in the interpretive parts of the session were the better predictor of overall change. Consistent with our hypothesis, defense adjustment was close to 1, indicating that on average, the therapist interpreted at the level of the patient's defensive functioning. The session also demonstrated that sometimes deviations in defense adjustment can also be associated with large swings in defensive functioning. Along with these metrics, those listening to the sessions would describe the therapist as respectful, supportive, and well-attuned to the patient, while taking an interpretive stance.

Case G (2006)

Ms. G was a 27-year-old married woman working in a joint small business with her husband, referred for long-term psychotherapy when their couple's therapist encouraged her to get individual help. She had a history of recurrent major depressions of short duration with dysthymic disorder beginning at age 10 but terminating 2 years before admission to the study. As a teenager, she had a 3-year period of alcohol dependence and substance use disorder but had been largely abstinent for nearly a decade. She had definite antisocial and narcissistic PD types, with significant borderline, histrionic, dependent, and passive-aggressive traits. At intake, her current GAF was 62, as was her best level of functioning in the past year.

She grew up in the suburbs where her father owned a small business. She was the eldest of four children. Mother had a hard pregnancy and some post-partum depression and did not want to take care of the patient for the first several months of life. She felt some affection from mother until the birth of a brother at age 4. While mother always thought the patient was adorable from 4 onward, she rejected showing physical affection toward the patient. In general, mother showed affection only toward one brother and largely ignored the children conversationally. Mother was emotionally neglectful, for instance offering no comfort if the patient hurt herself. At age nine, the patient began to beat up the younger brother out of jealousy, and sibling rivalries were rampant. While father was more attentive toward her, he too turned his attention more toward the brothers when they became active in sports. She began to steal things such as cosmetics from 11 onward and at 17 began hanging out with friends who stole a lot. While she liked primary school, she lost interest by 14 and began skipping school. She engaged in some vandalism. At 15, she threatened to quit school if her brother did not start treating her better, and when he did not, she quit and entered a jobs program. She became disinterested in work, partied a lot with friends, would come late to work, and began

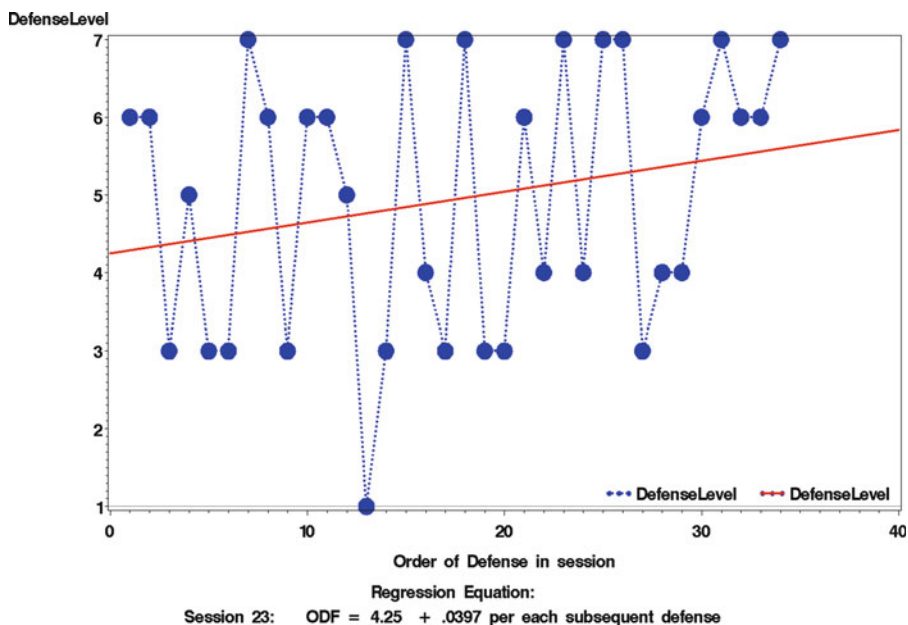


Fig. 25.6 Ms. G Session 23: Evolution of defense level scores across the session

drinking a lot and having sex. At 16, her family got fed up and after a big argument kicked her out of the house with no notice. As she was crying and packing up, they sat down and watched TV. She lived with various people on and off for 6 months with no fixed address, but got a food service job.

At 18, she followed a boyfriend into a recovery program and became abstinent. She worked as an exotic dancer engaging in some prostitution as well. She was irresponsible with protection and had a series of abortions. She met a boyfriend and became quite dependent upon him although he was abusive, was frequently unfaithful, and even took her money. She was afraid to disagree with him, but finally left after getting tired of being berated. She met her current husband while stripping. He was a big spender and a show-off but a gentleman and was admiring of her. She was reluctant to get involved, then, later after he proposed, reluctant to get married, but finally did in order not to lose him. He brought her into his business as a partner. Soon after getting married, they began to fight physically, and she would hit, scratch, or slap him, once receiving a black eye in return. Their recent couple's therapy ended the violence. She described herself as very much in love but not that happy with her marriage, often complaining that he thinks he is perfect, and blames all problems on her. She was jealous and possessive of him as well as competitive at work, although she frequently gave in to him at work. Seeking therapy, she wished to improve herself, her self-image and confidence, her relationship, as well as to develop her intense sense of ambition.

Session 23

We selected this session because it was at her average ODF level, including many minor image-distorting and disavowal defenses, which are characteristic of antisocial and narcissistic personality [5]. The patient showed 34 defenses. Figure 25.6 displays the evolution of the associated defense level scores across the session. The trend reflects a decrease in her level 3 defenses by the middle and level 4 defenses by the end of the session, with a concomitant increase in levels 6 and 7 at the

end. The therapist was very active with a total of 85 interventions, 16 of which were interpretations, two of which were transference interpretations. The topics of the session concerned working with her husband and a coworker who liked to pit her against her husband, who paradoxically often sided with the coworker. This brought up issues of self-esteem, aggressive feelings, and competition versus how she actually wanted to show a softer side at times.

Selection G-1

This selection occurred toward the end of the interview after the therapist had made a number of interpretations concentrating on revealing hidden affects and defenses against awareness, with several interpretations speaking to underlying motives as well. In this selection, the patient had just revealed how her husband had a very confrontational style, based on seeing others as the ones with problems, not himself. The therapist then used the recent material as a foil for making essentially a summary interpretation of the most important issues of the session.

CI I: That this is how he sees things.

S: Yeah, that he sees me as a truly sick person and that he's not at all, not sick, would be that he doesn't have any of these common problems and neither does his family and so these are super people, super humans and [DEVALUATION-SELF] it makes me feel very shitty. It makes me feel lower [*devaluation ends*].

SS I: I wonder though if there's another way of framing it which is that you have become perhaps more knowledgeable than he has about the varieties of human experience, if you like.

S: Yes, I'm aware of that and, you know, that's good. I'm very happy that I'm aware of that, but it makes me feel sad that the person that I'm with is not aware of that.

Rf I: And defines you as someone who's sick.

S: Yes.

Assoc I: But it takes a fair amount of self esteem to stand up to that and [unclear].

S: Like everything with him, you know, I'd love to talk like this to him, but everything with him is a confrontation. And whenever, you know, when he wanted to get married, a few years ago when we broke up and he wanted to get back together and he wanted to get married and I didn't, he told me that he went to see a family friend that was a psychiatrist and this family friend told him, you know, how to run his – you know, what to do. You know, "You should tell her that she has to get married," and this, you know, [DEVALUATION-OTHER] and I thought that was crazy, you know. I mean, he went to see a psychiatrist in order to back him up to confront me [*devaluation ends*]. You know, and this is something that I don't want to confront him. I never, you know, with what I learn here I never go out there wanting to confront him, you know, and I just feel that everything is a confrontation and, you know, I mean, I'd love to share on a much more open, but somehow it's a confrontation of I know and I don't know if I'm making any sense or...

Ack I: Uh-huh, uh-huh.

T-4 [T-4 begins] No, I think I understand what you're saying, and, uh, it sounds like – well, I guess that maybe your theme of what you're talking about today is really that you can threaten people, even without meaning to. If you show your rough side, your rough side, that can threaten people; it threatens your husband's partner and you're worried that it might threaten or upset me or [unclear]. That if you show some of your knowledge or some of your own self esteem, I am not a sick person, [part of sentence unclear] that you can be a type of [unclear] I guess and that, that concerns you sometimes.

S: Uh-huh.

- I: It's almost as if you feel that you can't let yourself kind of go and be the most impressive that you can. You sometimes have to hide your abilities and your knowledge and your capacities or just certain aspects of yourself.
- S: Uh-huh.
- I: And yet there are aspects that could be threatening to other people.
- S: Uh-huh.
- I: Because, I suppose, because they contain a component of aggression and a well-worked component of aggression and a refined component, but that, that's, there's an aggression there and that [unclear] you feel that people will become defensive and fight you back because they feel the aggression.
- S: Uh-huh.
- I: Rather than enjoying it or learning from it.
- S: Right, uh-huh.
- I: I suppose that's, you know, part of – maybe one of the more difficult parts of becoming a more confident person, a more successful person is that other people may be intimidated by you [unclear].
- S: Uh-huh.
- I: If you do feel good about yourself [unclear] how are people going to handle [unclear] I don't know what they'll do if they're you [laughs], but you know, how are you doing to handle that aspect, the fact that you may intimidate people [rest of sentence unclear]
- S: Uh-huh. No.
- I: Sometimes I wonder if your retreat into depression or tears or whining is really an attempt not to use yourself as much as you can [T-4 ends].
- S: Yes. For me it has been that. I don't, you know, I don't like it and I think that was a very interesting conversation last week or two weeks ago, whatever, because, you know, we sort of talked about that, you know, the two sides and which one do I like the most and, [UNDOING] you know, you were even under the impression, or maybe I misunderstood you, but it seemed you were under the impression that I liked the softer side and... [undoing ends]
- [SELF-OBSERVATION] But you just put it into words very well a few minutes ago when you said it's – you know, there is a sort of aggression there, but a refined aggression. And this is what I want. I don't want to be rough and crazy and – but I certainly don't want to have to retreat to that and I feel that I've had to and that I have and that it's not comfortable at all, you know, and it's – I don't respect myself when I'm there and I don't feel that you should respect me or that anybody else should if I'm there too long. You know, I mean... [self-observation ends].

Comment

The selection began with a projection (not shown) and two devaluations, one each of self and other. The therapist then made the deepest interpretation of the session (T-4). Although it is largely an interpretation of her defenses in relationships, because the therapist included the phrase, "it threatens your husband's partner and you're worried that it might threaten or upset me," thereby in passing referring to the transference, it is scored as a T-4 rather than a D-4. The therapist interpreted her inhibition of her talents (repression) for fear she would be seen as aggressive, which would then cause others to retaliate. This makes it hard for her to enjoy herself and feel confident. She instead turns herself into a weaker, less successful person (reaction formation) to prevent this retaliation (her motive). This deeper interpretation has a high defense adjustment level of 1.43 because it interprets the neurotic defenses leading to lower self-esteem, rather than the minor-image-distorting defenses

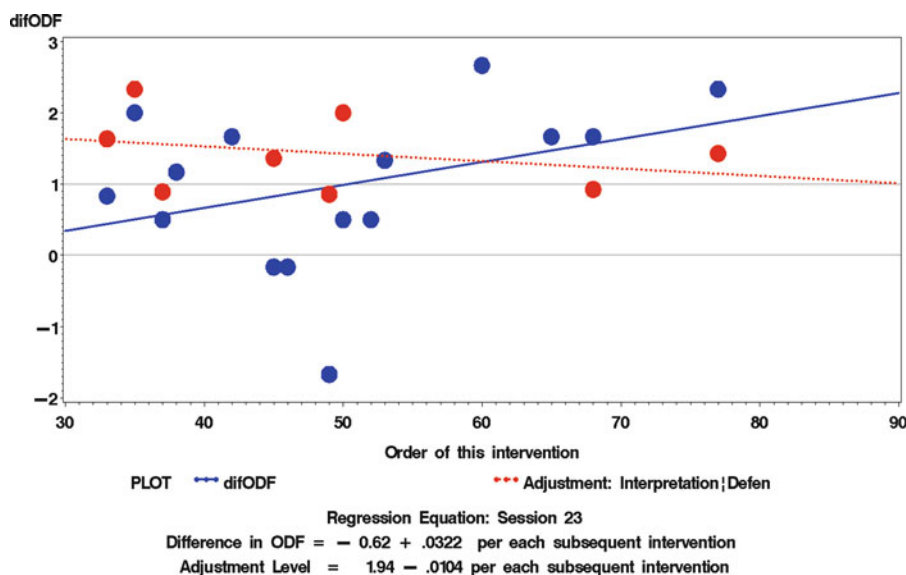


Fig. 25.7 Ms. G Session 23: Parallel evolution of defense adjustment and dif-ODF scores across the session

used to temporarily shore up the low self-esteem. The patient responded with an opening up about her ambivalence about herself and what the therapist pointed out about her (undoing). She then used self-observation in an attempt to deepen her understanding of how to deal with the rough, self-protective, and tender parts of herself.

Overall, the session had a high mean defense adjustment (1.43) and the highest mean dif-ODF (+0.99) score of all sessions of all three patients. Figure 25.7 shows the evolution of the defense adjustment and dif-ODF scores. In fact, for the eight paired observations with complete ratings, the correlation of defense adjustment and dif-ODF was high ($r_s = 0.54$, $p = .17$), albeit shy of power to demonstrate statistical significance. This session shows the power of deeper defense and transference interpretations aimed at defenses like repression that hide awareness of broader conflicts, even though these defenses are at a higher level than those defenses used by the patient nearby. Reflected in this high defense adjustment score is an accurate interpretation of the higher level defenses. This stimulated the patient to explore the material more using obsessional and high adaptive level defenses.

Discussion Case G

Despite the combination of personality types (antisocial and narcissistic), this patient was very actively engaged with the therapy and made great progress. Her few remaining antisocial features ceased early on and the narcissistic and other personality issues predominated. Her initial ODF of 4.86 indicated a slight predominance of immature defenses over the neurotic and high adaptive levels, although she had sufficient proportions of the latter to build upon. The therapeutic alliance measured at 6 months of treatment was slightly above the median for the entire sample. The therapist, as this session demonstrated, was very active and interpretive in ways that supported both self-esteem and emotional growth. The mean defense-adjustment level of 1.05 indicated that, on average, the therapist accurately interpreted the patient's defense levels. This was associated with the highest mean dif-ODF of the three cases (+0.26), indicating that, on average, an interpretation was followed by an increase of one-quarter of a defense level, also the largest and only positive mean dif-ODF of

the three cases. Consistent with this, the patient's mean slopes of ODF both within the sessions (+0.012) and across all six sessions (+0.0076) were positive. She also had the largest raw improvement in ODF across the 2.5 years of treatment of all three cases (+0.51), leading to a final ODF of 5.37, at the high end of the neurotic range by that time. The patient had 178 sessions over 4.26 years. We considered that Ms. G had a very successful treatment and outcome.

Overall Analysis of the Hypotheses

These three cases provide an opportunity to examine the potential value of our hypotheses about change in defense mechanisms in psychotherapy and to determine the feasibility of the design and methods used. Our approach takes the justification perspective of discovery rather than validation, as a case series of three is limited in statistical power and generalizability. Despite this, we have extended the usage of validated methods (i.e., DMRS, PIRS) to examine the process in which patient and therapist respond to one another centered on the interpretation of defenses. The examination of the three cases together provides a preliminary evaluation of the stated hypotheses and this approach to examining them.

Table 25.2 displays the individual scores and a summary row for each case with mean, SD, and the percentage of each rating that were positive. The two rightmost columns summarize the defense scores as calculated by individual linear regression models for all the sessions rated for defenses for each case. While all three cases evidenced improved scores by about 2.5 years, the rates and amounts of change varied by factors of 22 and 10, respectively. Thus, the three cases provide a good range of the outcome of interest: change in ODF. To examine our hypotheses, we correlated each of the measures of interest summarized for the group of sessions for each case with the above mentioned rate of change in ODF across the 2.5 years. We then relate each statistic to the relevant hypothesis as a basis for discussion. We calculated both Spearman rank order r_s and Pearson's r , viewing the former as more conservative, but the latter as potentially more informative, given its sensitivity to the magnitude of differences. Significance testing is omitted, as the sample size ($N=3$) is inadequate. The following results are summarized in Fig. 25.8.

We first hypothesized that the rate of change within sessions would relate to the overall rate of change across sessions. We provide two tests of this. Both the mean rate of change in ODF within sessions ($r_s = 1.00$ and $r = 0.91$) and, to a lesser extent, the percentage of sessions in which the rate of change ($r_s = 1.00$ and $r = 0.65$) were positively correlated with the overall rate of change in ODF over 2.5 years. This is consistent with our hypothesis. The rate and direction of change within the individual session are apparently fractal phenomena which, when aggregated over time, correlate with the overall rate of change in ODF. The variability of rates of change across individual sessions suggests that this overall relationship includes sessions that are better or worse. Some sessions ending with regressed defensive functioning were found in all three cases, suggesting that some occasional regression is compatible with overall positive change. Two cases, E and F, actually had a high proportion of sessions with some regression, which suggests that additional factors may be necessary to produce overall change. This leads to consideration of our second hypothesis, discussed below.

The corollary to the first hypothesis was that large changes in defensive functioning within a session would identify "hot spots" in which something was affecting defensive functioning. Our textual selections from the cases provided some examples. However, we cannot provide a broad test of the factors associated with these dramatic shifts from selections alone, other than those systematically studied in the second hypothesis. Conceptually, these factors may include one or more of the following: a) internal stress, anxiety, and conflict which lead to a shift in one's defensive state of mind (exploratory, inhibited, counter-attacking, disorganized); b) recounting a recent or past vignette that

Hypotheses	Results
1. Defensive changes within sessions predicts overall defensive change across sessions	Yes - The mean rate of change of ODF within sessions correlated highly with overall rate of change of ODF across sessions, $r = 0.91$ - The proportion of sessions with a positive rate of change of ODF correlated moderately with the overall rate of change in ODF across sessions, $r = 0.65$
2. Accuracy of defense interpretation predicts change in defensive functioning within sessions	
a. On average within a session, the accuracy of interpretation will be reflected in the direction and amount of change in patient defensive functioning	Yes - Within sessions: Correlations between accuracy of interpretation (defense adjustment) and immediate change in ODF (dif-ODF) varied from $r = 0.20$ to 0.80 (median $r = 0.57$) for 4 sessions studied - Using the means from all 3 cases, based on all 14 sessions rated: - Mean defense adjustment and mean dif-ODF correlated $r = 0.62$ - Mean defense adjustment and mean overall slope of ODF within sessions correlated $r = 0.96$
b. The trend within a session in shifts in defensive functioning from before to after defense interpretations will mirror the overall change in defensive functioning within the session	Yes - Using the means from all 3 cases, based on all 14 sessions rated: - Mean defense accuracy scores correlated with rate of change in ODF across 2.5 years $r = 0.76$
Overall summary	- The rate and direction of change of defensive functioning within sessions are apparently fractal phenomena, which, when aggregated over time, correlate with the overall rate of change in ODF - Some sessions show regression in ODF, which is still compatible with overall positive change over time - Within and across sessions, accuracy of interpretation (defense adjustment) correlates with immediate change in defenses (dif-ODF) - Therapists appear to select which of a patient's defenses to interpret - Accurate interpretation of defenses correlates with rate of change in defenses over time - Further research on this approach is warranted

Fig. 25.8 Summary of hypotheses and results

includes substantially different levels of functioning from the present; or c) response to an external stimulus such as time of session, an interruption (e.g., checking who called on a cell phone), or a therapist's response. The latter includes defense interpretations.

Our second hypothesis examined the interpretation of defenses, specifically that the accuracy of defense interpretation, as measured by defense adjustment, would be associated first with the direction and amount of change within individual sessions and across sessions. To explore part A of this within the sessions, we examined the correlations between defense adjustment and dif-ODF scores. For the four individual sessions reported in the above case examples, we found Spearman correlations of 0.80 and 0.20 (Ms. E), 0.60 (Mr. F), and 0.54 (Ms. G). The median correlation was 0.57. This is consistent with our hypothesis. To explore this for the averages across the sessions for all three cases, we correlated the summary statistics in Table 25.2 (all correlations $n=3$). First, we correlated mean defense adjustment with mean dif-ODF, which was positive: $r_s=1.00$ and $r=0.62$. We then correlated the mean defense adjustment score with the mean slope of ODF within sessions: $r_s=1.00$ and $r=0.96$. Both are consistent with hypothesis 2a: change in ODF within sessions is related to defense adjustment.

For hypothesis 2b, we correlated the mean defense adjustment score for each case with the rate of change in ODF across the 2.5 years, obtaining $r_s=1.00$ and $r=0.76$. This is consistent with the hypothesis that, on average, defense adjustment within sessions relates to the overall rate of change in ODF across sessions. Of course, as observational not experimental data, these findings are consistent with suggesting but not validating that therapist accuracy of interpretation might be a mechanism of change for patient defensive functioning.

The three cases differed in mean ODF for the rated sessions; notably, Case E with borderline personality had markedly lower mean ODF in the rated sessions. This led us to conduct an exploratory analysis, correlating the mean session ODF with mean defense adjustment scores: $r_s=0.50$ and $r=0.98$. This correlation is open to several possible interpretations. First, the ODF of the patient moderates the therapist's selection of the level of defense adjustment; for instance, low patient ODF pulls for the therapist to interpret toward a lower defense adjustment. Second, the finding could simply reflect differences in the therapists' responses to their patients, rather than a systematic moderating effect (e.g., therapists randomly differed in the likelihood of interpreting lower level defenses when they occurred). A larger sample will be required to indicate further the likelihood that any or all of the above affect defense adjustment and the patient's responses to interpretation.

Overall Discussion

Overall, we balance the coherence of the above findings against the limitations of examining our hypotheses on only three cases. Our findings are consistent with both hypotheses but from an exploratory not validating perspective. Nonetheless, we consider them good evidence of the value of pursuing this further on a larger sample, which we have available. Furthermore, we conclude that our methods are feasible and practicable for conducting this type of psychotherapy process and outcome research.

Kazdin [36] has encouraged those examining the process of psychotherapy to move from examining correlates and predictors of change in psychotherapy toward mechanisms of change. The present report suggests that we have candidate measures that may fit this aim. We can assess defenses on a moment-to-moment basis and obtain evidence of change within sessions. By comparing defenses before and after an intervention, we can judge the patient's apparent response to the intervention. We can then summarize these measurements as the mean level of defensive functioning for the session, and change in the mean level of defensive functioning across the session, and across the interventions of a given type within the session. We can then relate these summary scores, like those in Table 25.2,

to the overall change in defenses over time, either using mean session scores, or defenses as rated outside of sessions, say, independent dynamic or RAP interviews [13]. The capabilities of our measures put us within conceptual and methodological reach of one aspect of Kazdin's suggestion. Does defense interpretation with certain characteristics (e.g., accuracy as measured by defense adjustment) cause improvement in defensive functioning within and across sessions?

Elsewhere, we have categorized 74 hypotheses about change in defenses in psychotherapy, of which 19 we considered highly warranted for immediate further study [21]. The accuracy of interpretation, as measured by defense adjustment, is one of these. We posited several different designs, including the experimental manipulation of defense interpretation, that may bring us closer to understanding how defense interpretation may in fact be a causal mechanism in producing change in defenses, which, in turn, are mechanisms underlying the level of symptoms and functioning. Thus, the study of defenses in and outside of psychotherapy may offer a very robust opportunity to tie process and outcome in a theoretically coherent way, an important aspect of the validation of causal mechanisms [36]. Our next step is to examine the present hypotheses in our larger sample, and then as many of the other 19 as resources allow. Our most difficult challenge will then follow: attracting financial support for the further study of the causal role that changing defenses in therapy plays for overall improvement. For this, we will need to rely on our best defenses.

References

1. Freud S. The neuro-psychoses of defence, The complete works of sigmund freud, vol. 2. Standardth ed. London: Hogarth Press; 1962.
2. Davidson K, MacGregor MW. A critical appraisal of self-report defense mechanism measures. *J Pers.* 1998; 66:965–992.
3. Perry JC, Ianni F. Observer-rated measures of defense mechanisms. *J Pers.* 1998;66:993–1024.
4. Hoglend P, Perry JC. Defensive functioning predicts improvement in major depressive episodes. *J Nerv Ment Dis.* 1998;186(4):1–7.
5. Perry JC, Presniak M, Olson T. Defense mechanisms in borderline schizotypal, antisocial and narcissistic personality disorders; 2011.
6. Vaillant GE, Drake RE. Maturity of ego defenses in relation to DSM-III Axis II personality disorders. *Arch Gen Psychiatry.* 1985;42:597–601.
7. Vaillant GE. The wisdom of the ego. Cambridge: Harvard University Press; 1993.
8. Hersoug AG, Sexton HC, Hoglend PA. Contribution of defensive functioning to the quality of working alliance and psychotherapy outcome. *Am J Psychother.* 2002;56:539–554.
9. Perry JC. A pilot study of defenses in adults with personality disorders entering psychotherapy. *J Nerv Ment Dis.* 2001;189:651–660.
10. Roy C, Perry JC, Banon E, Luborsky LL. Changes in defensive functioning in completed psychoanalyses: the Penn Psychoanalytic Treatment Collection. *J Am Psychoanal Assoc.* 2009;57:399–415.
11. Kramer U, de Roten Y, Stiglar M, Despland, J-N. Change in defense mechanisms and coping over the course of short-term dynamic psychotherapy for adjustment disorder. *J Clin Psychol.* 2010;66:1232–1241.
12. Perry JC, Bond M. Change in defense mechanisms during long-term dynamic psychotherapy and outcome. In: Paper presented at annual meeting of the Society for Psychotherapy Research, June 22–25, 2010, Asilomar (Monterey); 2010.
13. Perry JC, Beck SM, Constantinides P, Foley JE. Studying change in defensive functioning in psychotherapy, using the defense mechanism rating scales: four hypotheses, four cases. In: Levy RA, Ablon JS, editors. *Handbook of evidenced based psychodynamic psychotherapy: bridging the gap between science and practice.* New York: Humana Press; 2009. p. 121–153.
14. American Psychiatric Association. *Diagnostic and statistical manual of mental disorders.* 4th ed. Washington, DC: American Psychiatric Press; 1994. p. 751–757.
15. Cramer P. Coping and defense mechanisms: what's the difference? *J Pers.* 1998;66:919–946.
16. Banon E, Semeniuk T, Perry JC, Bond M, Hersoug AG, Despland J-N, et al. Therapist interventions using the Psychodynamic Interventions Rating Scale (PIRS) in dynamic interviews and therapy, psychoanalysis and CBT, under review.

17. Foreman S, Marmar CR. Therapist actions that address initially poor therapeutic alliances in psychotherapy. *Am J Psychiatry*. 1985;142:922–926.
18. Despars J, Kiely MC, Perry JC. Le développement de l'alliance thérapeutique: influence des interventions du thérapeute et des défenses du patient (The development of the therapeutic alliance: influence of therapist interventions and the defenses of the patient). *Psychothérapies*. 2001;21:141–152.
19. Junod O, de Roten Y, Martinez E, Drapeau M, Despland J-N. How to address patient's defences: a pilot study of the accuracy of defense interpretations and alliance. *Psychol Psychother Theor Res Prac*. 2005;78:419–430.
20. Winston B, Winston A, Samstag LW, Muran JC. Patient defense/therapist interventions. *Psychotherapy*. 1994;31:478–491.
21. Olson TR, Perry JC, Janzen JJ, Petraglia J, Presniak MD. Addressing and interpreting defense mechanisms in psychotherapy: general considerations. *Psychiatry*. 2011;74:142–165.
22. Rangell L. Defense and resistance in psychoanalysis and life. In: Blum HP, editor. *Defense and resistance: historical perspectives and current concepts*. New York: International Universities Press; 1985. p. 147–174.
23. Perry JC, Bond M. Defensive functioning [in personality disorders]. In: Oldham J, Skodol AE, Bender D, editors. *The American psychiatric publishing textbook of personality disorders*. Washington, DC: American Psychiatric Press Inc; 2005. p. 589–609 [Chapter 33].
24. Bond M. Empirical studies of defense style: relationship with psychopathology and change. *Harv Rev Psychiatry*. 2004;12:263–278.
25. Bond M, Perry JC. Long-term changes in defense styles with psychodynamic psychotherapy for depressive, anxiety and personality disorders. *Am J Psychiatry*. 2004;161:1665–1671.
26. Bond M, Perry JC. Psychotropic medication use, personality disorder and improvement in long-term dynamic psychotherapy. *J Nerv Ment Dis*. 2006;194:21–26.
27. Perry JC, Bond M. The sequence of recovery in long-term dynamic psychotherapy. *J Nerv Ment Dis*. 2009;197:930–937.
28. Perry JC, Bond M, Roy C. The natural history of long-term dynamic psychotherapy: predictors of treatment duration. *J Psychiatr Pract*. 2007;13:221–232.
29. Perry JC. *Defense Mechanism Rating Scales (DMRS)*. 5th ed. Cambridge: Author; 1990.
30. Perry JC, Høglend P, Shear K, Vaillant GE, Horowitz MJ, Kardos ME, et al. Field trial of a diagnostic axis for defense mechanisms for DSM-IV. *J Pers Dis*. 1998;12:56–68.
31. Cooper SH, Bond M. *The Psychodynamic Intervention Ratings Scales (PIRS)*, 2002 revision. Montreal: authors (1992 and revised in 1996, 1998, 2002).
32. Milbrath C, Bond M, Cooper S, Znoj HJ, Horowitz MJ, Perry JC. Sequential consequences of therapists' interventions. *J Psychother Pract Res*. 1999;8:40–54.
33. Keller M, Lavori PW, Friedman B, Neilsen E, Endicott J, McDonald-Scott P, et al. Longitudinal interval follow-up evaluation: a comprehensive method for assessing outcome in prospective longitudinal studies. *Arch Gen Psychiatry*. 1987;44:540–548.
34. Perry JC, Cooper S. Psychodynamics, symptoms, and outcome in borderline and antisocial personality disorders and bipolar type II affective disorder. In: McGlashan TH, editor. *The borderline: current empirical research*. Washington, DC: American Psychiatric Press; 1985. p. 21–41.
35. Stern A. The borderline group of neuroses. *Psychoanal Quart*. 1938;7:467–489.
36. Kazdin AE. Mediators and mechanisms of change in psychotherapy research. *Ann Rev Clin Psychol*. 2007;3:1–27.

Chapter 26

When Is Transference Work Useful in Psychodynamic Psychotherapy? A Review of Empirical Research

Per Høglend and Glen O. Gabbard

Keywords In-session outcome • Long-term outcome • Mediators • Moderators • Psychodynamic psychotherapy • Transference work

Analysis of transference has been considered the heart of psychoanalysis and psychoanalytically oriented psychotherapy since Freud introduced the term (Uebertragung) in 1895. The concept of transference was seen by Freud as a living reconstruction of the patient's repressed historical past "transferred" onto current relationships, especially the relationship with the therapist. In his first use of the term, he described it as a "false connection" ([1, p. 302]). In other words, the patient would displace feelings associated with a past figure in the patient's life onto the analyst. The first detailed clinical description of transference was the famous "Dora" case [1]. Dora dropped out of psychotherapy after 3 months. Freud wrote in the epilog: "I did not succeed in mastering the transference in good time...At the beginning it was clear that I was replacing her father in her imagination."

Since Freud's death, there have been a number of contributions about transference that reflect theoretical disagreements. Some have argued that additional concepts, such as therapeutic alliance and the real relationship to the therapist, may be needed to account for the patient's reactions to the therapist [2]. There has also been disagreement about the degree to which transference should be viewed as an enactment of an earlier relationship or partly a new experience [3]. The constructivist view [4] focuses on the analyst's personal involvement and sees the analyst as having a continuous effect on what the analyst understands about the patient and the interaction. In other words, the analyst's actual behavior is always influencing the patient's experience of the analytic situation. Some intersubjectivists [5] have argued that in addition to the repetitive aspect of transference, there is also an unconscious wish in the patient for a healing and reparative new object embedded in transference.

The psychoanalytic literature originally defined interpretations as therapist interventions intended to bring unconscious material into consciousness. Whether or not certain material is really out of the patient's awareness (unconscious) is difficult to judge, not only for researchers listening to taped sessions, but also for the psychotherapist treating the patient.

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More recently, clinical theorists and researchers have relied on broader definitions of interpretations that are more “experience near,” recognizing that many interpretations are actually focused on material that is preconscious rather than truly unconscious. The many somewhat different definitions in the literature are beyond the scope of this article. There seems, however, to be general agreement in the psychodynamic tradition that interpretations include interventions that aim to establish connections (by cause or analogy) between different internal dynamic components (wishes, needs, motives, affects, defences, anxiety) and past or present objects (persons). Transference interpretations are a subgroup of interpretations that also includes an explicit link to the patient–therapist interaction. The alternative to transference interpretation is to interpret conflicts and/or interpersonal patterns in the patient’s contemporary relationships or search for memories of past relationships, without including a reference to the patient–therapist interaction (extra-transference interpretation). An example of such an interpretation may be: “I noticed that you tend to avoid talking about your sadness and anger after your divorce. Maybe because those memories make you uncomfortable?” An interpretation of the same material may include an explicit reference to the patient–therapist interaction (transference interpretation): “It occurs to me that you have avoided talking about your sadness and anger after your divorce, because it makes you feel uncomfortable. Maybe you hesitate to talk to me about your feelings concerning the end of therapy for the same reasons?”

Almost all of a patient’s associations may theoretically have some meaning in the transference, the awareness of which (it is maintained) is often resisted. An example of an interpretation of such resistance may be: “You told me your colleague is doing less than her share of the job, which gave you a headache that has bothered you since our last session. Could this be related to a feeling you have that I don’t do my share of the analytic work? It may be difficult for you to say this directly to me.” An interpretation of this material may also be given without a reference to the transference: “You feel that your colleague is exploiting the situation, which may be difficult to say to her directly, so your headache builds up.”

It has been argued by influential theorists that extra-transference interpretations lend themselves to defensive intellectualization by both the patient and the therapist, and at best will bring about unstable long-term changes [6, 7]. Analysis of transference, on the other hand, makes it possible for the patient (and analyst) to become directly aware of the distinction between what is real in the situation and what is fantasy influenced by past experience. A focus on the conflicts and themes that arise in the therapeutic relationship will therefore have immediate affective resonance and illuminate the true nature of problems in the patient’s relationships outside of therapy. Transference interpretations are thought to set in motion a chain of events that bring about insight and change that may protect against future stressful events, enable the patient to make better plans for his future, and over time improve the quality of interpersonal relationships.

The technical use of transference interpretations in psychodynamic therapy has been discussed extensively over a period of 100 years. Strikingly different positions have been taken by influential psychoanalysts on the relative importance of transference interpretations versus extra-transference interpretations.

The “Conservative” Position

At one point, Freud viewed the resolution of transference through interpretation as a *sine qua non* of therapeutic change [1]. Subsequently, however, Freud and other analysts regarded analysis of transference as ancillary (secondary) to work outside the transference. Transference interpretations were mainly used to overcome resistance [8]. Strachey [6] consolidated this view in his influential

paper, “The nature of the therapeutic action of psychoanalysis.” He maintained that the majority of interpretations that analysts actually make are outside the transference. Until an intense “transference neurosis” develops through the patience and neutrality of the therapist (and it does not in brief therapy), transference interpretations are “premature.” Glover [9] and others warned against overemphasis on transference interpretations, especially early in treatment. Others believed that a moderate use of transference interpretations might be indispensable in psychoanalysis and long-term dynamic psychotherapy, but should be completely avoided in brief psychotherapy [10–12].

The most important arguments in the clinical literature against a frequent use of transference interpretations generally are that transference interpretations may be anxiety provoking or perceived as critical. The patient may feel that focusing on the relationship to the therapist comes at the expense of problems with significant others and reality concerns. Furthermore, transference phenomena are often resisted by the patient and are therefore difficult to interpret. The patient’s main interpersonal conflicts and patterns may not be duplicated (expressed) in the relationship to the therapist [13, 14]. Stone [15], for example, maintained that patients’ relationships to individuals other than the therapists often provide indispensable data for interpretation, because of the sheer variety of references, many of which will never be reproduced in the relationship to the therapist. In addition, data from neuroscience suggest that the notion of transference neurosis may be misleading. Neural network theory supports the idea that there are multiple networks in the brain with diverse self and object representations contained within them. Different representations are triggered by different elements of the therapist. Hence, it is more accurate to speak of “transferences” rather than “THE transference” [16].

The “Radical” Position

On the other hand, the notion of a high level of focus on analysis of transference is almost as old as psychoanalysis itself. Seminal figures such as Rank, Ferenzci, Reich, and Sullivan, among others, have maintained that transference interpretations should be used more often [17–19]. Advocates of brief dynamic psychotherapy have consistently recommended that transference manifestations and also allusions to the transference in the patient’s material should be identified and interpreted as soon as they appear [20–22]. The state of affairs urged Rangell [23] to raise the question: “Is it still resistance and defences first, as it has been with Freud, Anna Freud, Fenichel and others? Or have we now moved to what is promulgated by many as transference first, or even transference only?” Gill [7] reviewed the extensive discussion about use of transference interpretation in his monograph *Analysis of Transference: Volume 1*. He argued that most interpretations should be about the transference in the here and now, regardless of the length and format of therapy [24]. Gill concluded, however, that different positions on the relative roles of transference interpretations versus extra-transference interpretations have faded in and out of prominence in psychoanalysis and have been discovered again and again. The most important reason for this, in his opinion, was the almost total absence of systematic and controlled research in the psychodynamic tradition. Gabbard and Westen [25] concluded, more than 20 years later: “In psychoanalysis, we write about therapeutic action as if somehow the question of what is therapeutic...can be settled by logical argument and debate. In fact, it is an empirical question...We do not know whether one technical stance works better than any other...” While there has been an historical debate on whether the primary vehicle of change involves internalization of the (total) therapeutic relationship or acquisition of insight through transference interpretation, that dialectic of “either/or” has waned in recent years as there is wide recognition that both modes of therapeutic action are important and may operate synergistically [25, 26].

The “Empirical” Position

It should be noted that many psychotherapy researchers (if not most) have supported for a long time the position that specific techniques do not contribute much to therapeutic change. Non-specific factors, such as understanding, attention, and a good relationship between the therapist and patient, account for all, or almost all change [27–30].

The Empirical Literature 1976–1999

Given the importance of transference interpretation in the psychodynamic tradition, relatively few empirical studies have been published, which attempt to provide some systematic evidence with regard to the technical use of transference interpretations. The studies are too heterogeneous to allow meta-analytic technique, so a brief review of the studies will follow.

In-Treatment Effects of Transference Interpretation

Several studies have indicated that transference interpretations do not elicit more positive immediate patient responses compared to other interpretations [31–34], but on the contrary, tend to increase the risk of defensive responses [35–37], a less favorable alliance [38, 39], and less patient involvement [40]. Piper et al. [41] reported that 22 patients who dropped out of interpretive therapy were lower on therapist-rated therapeutic alliance, lower on patient exploration, and higher on therapist and patient focus on transference, than 22 matched completers.

Gabbard et al. [42, 43] studied the detailed process of representative sessions from three cases of long-term dynamic therapy of borderline patients at the Menninger Clinic. All sessions of the three psychotherapy processes were audio-taped, and two sets of investigators worked from typed transcripts of randomly selected psychotherapy hours. A team of three clinician researchers rated the interventions on the basis of their degree of expressiveness or supportiveness. From the expressive end of the continuum to the supportive end, the interventions were rated as follows: interpretation, confrontation, clarification, encouragement to elaborate, empathic validation, advice and praise, and affirmation. Each of these seven interventions was also classified as having a focus on either transference or extra-transference issues. A separate team of three clinical judges assessed the patient's collaboration with the therapist as a measure of the therapeutic alliance. The judges were primarily interested in detecting upward or downward shifts in the patient's collaboration with the therapist, a marker of the therapeutic alliance, in response to the therapist's interventions.

An excerpt from a transcript of session 32 from one of the patients will illustrate this method:

Therapist: Um-hum. Maybe you're feeling, uh, kind of disengaged now?

Patient: Yeah, that's a very good word for it. It's just, it's strange 'cause when you say things, you know, I can tell that they're true but when you ask me to give an example, I can't really think of one.

Therapist: Um-hum. See, I think, uh, one....one way you have of becoming engaged with me, for example, is by being angry.

(This transference interpretation leads to a downward shift in the therapeutic alliance).

Patient: Wh-when did I...become angry...with you? I don't understand what you mean by that.

Therapist: You can't recall being angry with me?

Patient: That on...that, but that was...because I had taken drugs...that one time.

Therapist: Uh-huh, yeah, that wa...well, that's a prime instance.

Patient: Yeah.

Therapist: As I remember you saying at the time that you were feeling in a way good about what was going on.

Patient: Um-hum. Well, when I took drugs here, it just, you know, it just, I don't, I don't know how to describe it, it just, uh, made me more aware of how I was feeling.

This patient tended to respond negatively to transference interpretations. Of the upward shifts in her collaboration with the therapist, only 29% could be linked to an interpretation of the transference. The two other patients tended to respond more positively. In one case, 63% of the upward shifts could be related to transference interpretation, and in a third case, 81% of the upward shifts were tied to transference focus. All three patients had good outcomes [44], but one of the key findings was that transference interpretations had a greater impact—both positive and negative—than other interventions. As a result, Gabbard et al. [42] coined the term high risk–high gain to characterize transference interpretations in the psychotherapy of borderline patients.

From this research, the investigators stressed the need to tailor the use of transference interpretations to the characteristics of the particular patient. Patients with early trauma may need to externalize aggression and will not take well to the attribution of anger or hostility to them. The research suggested that paving the way for transference interpretation with affirmative appreciation of the patient's internal experience may be crucial. Surgeons need anesthesia before they can operate. The psychotherapist may need to create a holding environment through empathic validation of the patient's experience before offering an interpretation of unconscious issues. With patients who are more internalizing and have lesser degrees of trauma in childhood, transference interpretation may be more palatable [42].

Transference Interpretation and Outcome

Process studies can help therapists make choices within sessions by assessing the “mini-outcomes” of their interventions. However, outcome studies are badly needed to look at the long-range outcomes of strategies that emphasize transference work compared to those that do not. Malan and colleagues at the Tavistock Clinic [21, 45] reported from two studies a positive correlation between transference-parent linking interpretations and good long-term outcome. Malan scored the treatment process by reviewing therapists' notes, which had been dictated from memory after sessions. Malan's findings created enthusiasm for empirical research within the psychodynamic tradition. Marziali and Sullivan [46] re-evaluated the 22 therapies from Malan's replication study and were able to replicate his findings. However, only 9 of the 22 therapies contained separate interpretations of transference-parent links, and in very small proportions.

Marziali [47] rated audio-taped sessions of 25 patients. Transference-parent linking interpretations predicted good outcome on one of seven outcome measures. Piper et al. [48] reported that transference interpretations were uncorrelated with outcome. McCullough et al. [35] examined therapist–patient interactions in 16 cases of brief dynamic psychotherapy. Transference interpretations followed by an affective response from the patient were positively correlated with a composite outcome score. It should be noted, however, that transference interpretations were followed by a defensive response from the patient five times as often as an affective response.

Rosser et al. [49] studied 32 patients with chronic obstructive airway disease. All patients were treated by two experienced psychoanalysts. Sixteen patients were randomized to eight sessions of analytic psychotherapy. The analysts were instructed to make free use of transference interpretations. The other 16 patients received eight sessions of dynamic psychotherapy, by the same two analysts, who were instructed to withhold transference interpretations in this group. Change in psychiatric symptoms was significantly greater in the psychotherapy without transference interpretations. However, these patients were not primarily seeking psychological treatment, and treatments were ultra-short.

Piper et al. [39] studied the relationships between concentration of transference interpretations, and both therapeutic alliance and therapy outcome in a sample of 64 outpatients who received approximately 20 sessions of brief dynamic psychotherapy by experienced psychotherapists. Within the subsample of patients with high Quality of Object Relations (QOR) [50], negative correlations were reported. At one extreme (upper quartile of concentration of transference interpretations), nearly ten transference interpretations were given per session. The percentage of patients evaluated as recovered in this subsample was 25%. In the lower quartile of transference interpretations (less than two transference interpretations per session), 100% of the patients traversed the criterion of recovery.

In a Norwegian study of 43 patients [51], those patients who scored above a predetermined cut-off score on QOR were treated with a high frequency of transference interpretations (on average six per session), whereas patients who fell below the cut-off score were treated with dynamic psychotherapy with few transference interpretations. Contrary to expectations, the study found a negative long-term effect of a high frequency of transference interpretations given to highly “suitable” patients. A limitation of the study was the sample size. The true effects in the population could be small to very large. Since the two groups were unequal, potential selection maturation effects preclude definitive causal interpretations. That is, the patients in the comparison group might have been more amenable to any treatment.

Connolly et al. [52] found that patients with low quality of current interpersonal functioning showed less favorable improvement even with low levels of transference interpretations (0–2 per session). Ogrodniczuk et al. [53] studied 40 patients in interpretive psychotherapy. Significant negative correlations between moderate use of transference interpretation (2–4 per session) and both alliance and outcome were found for patients with low QOR.

Based on these studies, the future of transference interpretation looked rather bleak. In *Handbook of Psychotherapy and Behaviour Change* [54], Henry et al. concluded: “Although transference interpretations are the theoretical linchpin of psychodynamic technique, attempts to demonstrate their unique value seem doomed to failure and will contribute little to new knowledge.” This may be a bit premature. Most of the studies reviewed are observational studies (naturalistic studies). Despite some replications, within-group correlations are open to several interpretations [55]. One reason for the negative associations reported may be that the encouragement to focus on transference interpretations may unwittingly encourage therapists to offer critical transference interpretations in order to overcome mounting resistance, or “overdose” the patient trying to force insight, rather than help patients when ready. Six of ten studies had treatment formats of 20 sessions or less. It could be argued that these therapies were too short for transference work. The research base reviewed previously is therefore too sparse to give technical guidelines about the use of transference interpretation in psychodynamic therapy. However, despite the limitations in the studies, it seems fair to conclude that clinicians should be aware that a high dosage level of transference interpretations (on average four–six or more per session) does not seem to overcome patient resistance and defensiveness and may in fact contribute to a negative therapeutic process.

The First Experimental Study of Transference Interpretations (FEST)

The FEST study [56–58] is a dismantling randomized clinical trial, specifically designed to study long-term effects of transference interpretations in dynamic psychotherapy. Patients from general practice, private specialist practices, and psychiatric outpatient departments were referred to the study therapists and assessed for eligibility. Inclusion criteria were liberal. One hundred patients were randomized to dynamic psychotherapy of 1 year’s duration with transference interpretation or therapy without such interventions.

Since the main aim of transference interpretation is long-term improvement of adaptive and interpersonal functioning, all patients have been followed up 1 and 3 years after treatment termination. It is an important methodological aspect of the study that the patients were not told about the main hypothesis. In other words, they did not know that they were randomized to two different treatments. They were told that the aim of the study was to explore long-term effects of dynamic psychotherapy. The clinicians evaluating outcome were blind to treatment groups. The randomization procedure was successful. No significant differences were detected between the two groups with regard to baseline characteristics.

The Psychodynamic Functioning Scales (PFS) was the primary outcome measure in this study. The six scales, with the same format as the Global Assessment of Functioning, were used to measure psychological functioning over the 3 previous months. Three of the scales measure interpersonal aspects: Quality of Family Relationships, Quality of Friendships, and Quality of Romantic/Sexual Relationships. The other three measure intrapersonal functioning: Tolerance for Affects, Insight, and Problem Solving Capacity. Aspects of content validity, internal domain construct validity, discriminant validity from symptom measures, and sensitivity for change in dynamic therapy have been established in different samples of patients and evaluators [59–63]. The reliability of single, randomly drawn experienced raters have ranged from 0.65 to 0.79. In this study, three clinical raters were used on each case, blind to treatment group, who made evaluations at pre-treatment, and again 1 year, 2 years, and 4 years after the start of therapy. The inter-rater reliability estimates (ICC) for average scores of three raters varied from 0.87 to 0.93 for the PFS. All follow-up assessments were completed by December 2005. The total mean score of the Inventory of Interpersonal Problems-Circumplex version [64] was used to assess patients' self-reported interpersonal problems at pre-treatment, mid-treatment, post-treatment, 1-year follow-up, and 3-year follow-up. At all evaluations, patients rated 24 life events on a scale from –3 (extremely negative) to +3 (extremely positive) [65]. Additional treatments, such as contact with mental health professionals, psychotherapy, psycho-pharmacological treatment, and sick leave, were recorded.

Psychotherapy researchers are constantly confronted with questions that concern how individuals differ in their response to treatment. For what types of patients or for what patient characteristics/apertitudes are treatments maximally or minimally effective [66]? Two patient characteristics were chosen a priori as possible moderators of treatment effects [67]: the QOR Scale [50, 68, 69] and the presence versus absence of personality disorders (PD). The QOR measures the patient's lifelong tendency to establish certain kinds of relationships with others, from mature to primitive, using three 8-point scales. The predetermined cut-off score for differentiating high versus low QOR scores was 5.00. QOR scores above the cut-off means that recent relationships may be difficult but there is evidence for at least one mature relationship in the patient's history. QOR scores at or below the cut-off means a history of less gratifying relationships, characterized by less emotional investment, less stability, and need for dependency or over-control. Inter-rater reliability (ICC) for the average QOR scores of three raters was 0.84.

Treatment Process

Both treatments employed use general psychodynamic principles. One treatment avoided an interpretive focus on the ongoing patient–therapist interaction (comparison group). The other treatment used material from the patient–therapist interaction as an important vehicle for clarifications, confrontations, and interpretations (transference group). The design of the study is a so-called constructive or dismantling design, in which a single component (analysis of transference) is added (or subtracted) to an existent treatment package. Thus, the causal efficiency of a specific technique can be identified. The specific techniques used for transference work is shown in Table 26.1. Items 1–3

Table 26.1 Specific transference techniques

1. Therapist addresses transactions in the patient–therapist relationship
2. Therapist encourages exploration of thoughts and feelings about the therapy and the therapist and repercussions on transference by (high) therapist activity
3. The therapist encourages the patient to discuss how the therapist might feel or think about the patient
4. The therapist explicitly includes himself in interpretive linking of dynamic elements (conflicts), direct manifestations of transference, and allusions to the transference
5. The therapist interprets repetitive interpersonal patterns, including genetic interpretations, and links to transference

Table 26.2 Treatment integrity (sessions rated = 452)

					Transference	Comparison
					<i>N</i> = 52	<i>N</i> = 48
Transference interpretation (five items)***					1.7 (0.7)	0.1 (0.2)
Extra-transference interpretations (five items)***					2.4 (0.5)	2.7 (0.6)
Supportive interventions (seven items)					0.7 (0.3)	0.7 (0.3)
General skill (eight items)					3.6 (0.2)	3.6 (0.3)
Scale format:						
No emphasis		Minor	Moderate	Considerable	Major emphasis	
0		1	2	3	4	

*** $p < 0.005$

are preparatory interventions, and items 4 and 5 are transference interpretations in a stricter sense. In the comparison group, the therapists consistently used material about interpersonal relationships outside of therapy as the basis for similar interventions (extra-transference interpretations), without any links to the patient–therapist relationship.

The therapists were specifically trained in order to enable them to provide treatment with a moderate level of transference work (an average of two transference interpretations per session) and treatment without such interpretations, with equal ease and mastery. Treatment fidelity or treatment integrity was extensively documented with ratings of four–five full sessions from each treatment by two raters, blind to treatment group (sessions $n = 452$) [56, 70–72]. Treatment integrity was excellent. Only use of transference interpretations was significantly different between the two treatments. The average score of transference work was 1.7, indicating moderate use, as outlined in the study protocol. Use of extra-transference interpretations was given somewhat more often in the comparison group, but also in the transference group extra-transference interventions were more often given than transference interventions, as shown in Table 26.2.

Comprehensive treatment integrity checks are advisable, especially in dismantling studies. When therapists are “forced” to add or withhold one treatment component, they may make other intuitive adjustments in one or both treatment groups.

Case Illustration

The patient was a 50-year-old sociologist. He wanted psychotherapy for anxiety and somatization symptoms which had developed after he left his wife some months prior to the start of therapy. He constantly ruminated about going back in order to please her. He was diagnosed with adjustment disorder and avoidant PD.

Psychodynamic Formulation

The patient had identified with his mildly depressed, submissive mother and was ambivalent about a dominating but distant father. He had learned to avoid conflicts and instead bury himself with hard work. He wanted to “repair” disagreements with his wife by being submissive. At work, he tried to solve conflicts by supporting the “weak” part. Being assertive meant for him “bloody aggression,” leading to guilt feelings for him and imagined unhappiness for others. Even when others made very unreasonable demands, he wanted to comply. Excerpts of a session are presented here:

Session 16

- Patient: Should I go back home? I am so afraid of hurting Nancy (wife). Moreover she would be very angry...and what would the kids say?
- Therapist: What do you imagine that I think that you ought to do?
- Patient: I don't know.
- Therapist: What would you prefer me to think?
- Patient: Damn...I don't know. You would say: “Get you home to Nancy!”
- Therapist: Did you notice that you spoke dialect just now? You usually speak standard Norwegian.
- Patient: Yes...Yes.
- Therapist: You have this with you from earlier on. Maybe you see me as an authority from the past: “That just isn't the way things are done my boy.” You seem to put me in this authority position.
- (Long pause)
- Therapist: I believe you grasp this well enough and are able to look at it, also between sessions, and even if I'm not there anymore.
- Patient: Well, yes, I....
- Therapist: You are more catholic than the Pope.
- Patient: What?
- Therapist: I'm thinking, you feel almost absolutely committed to everybody, even everything that your parents might think. But you are the most demanding of yourself, you are the one who is absolutely categorical. “Get you back home.”
- Patient: Well, yes,...(sigh)....
- ...At times I want to be happy, but I don't know, is that to stay out of conflicts and problems? When I am able to avoid a possible conflict I feel relieved...for a while. Is that my goal in life...am I so blunted?
- Therapist: Maybe (it's something like this) you feel that you don't deserve more? ...Would it be helpful if I told you what to do?
- Patient: yes, I agree....
- (later in the session)
- Patient: A colleague wrote a recommendation letter for one of our secretaries. He showed it to me,...probably to ask my opinion. It was a very poor piece of work, and unfair to the secretary! I did not dare to tell him, even though he is an OK guy.
- Therapist: Would it have been possible for you to correct me?
- Patient: Never occurred to me. You just get me started, so to criticize you would be to criticize myself.
- Therapist: Isn't that something you do all the time?...Three sessions ago you said that you wanted to prolong therapy. I reminded you about our plan to terminate, and you immediately backed off.

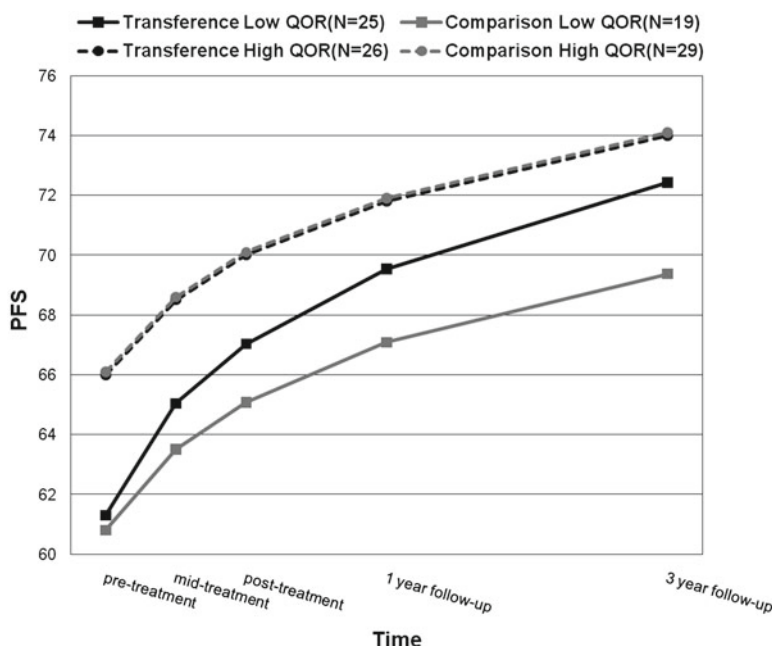


Fig. 26.1 Model predicted mean trajectories of the Psychodynamic Functioning Scales for the Transference group and the Comparison group within the subsamples of patients with high (N=55) and low (N=44) scores on the Quality of Object Relations Scale (lifelong pattern)

Patient: I don't know, I haven't thought about it anymore, it's probably OK.

Therapist: You don't make me authoritarian, but you make me into an authority figure, who knows what is best for you,—maybe you do this in order to avoid being in opposition?

Patient: Do you think so?

Therapist: I don't know, what do you think?

Patient: No ...well....

Therapist: Maybe you disagree a little (on termination)?

Patient: Yes, I do have a need for more... There are things that I feel I should go more into. In the beginning of therapy you said I could become frustrated and angry and so on. But you have mostly given me back my own opinions, maybe with different words.

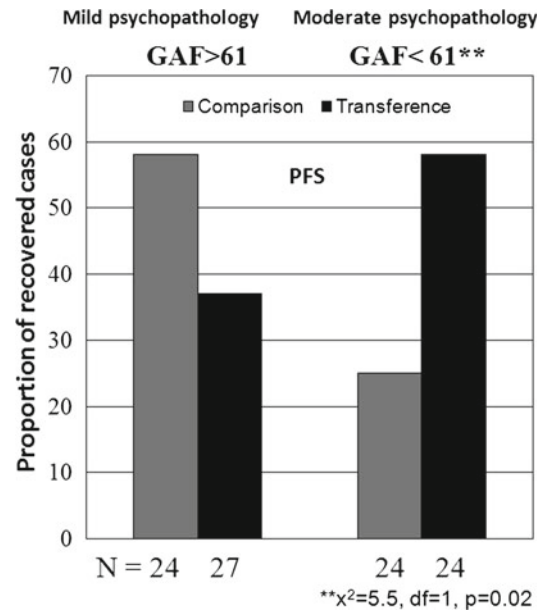
Outcome

The first a priori hypothesis in this study was that transference interpretation will have specific long-term effects, at least for patients with more mature relationships, more psychological resources, and less psychopathology. However, contrary to conventional clinical wisdom, we found that the subsample of patients with low QOR benefitted significantly more from therapy with transference interpretation than without [56]. Despite the fact that patients in the comparison group received more than twice as much additional treatment, compared to the transference group, the effect of transference interpretation was sustained over a 3-year follow-up period [57], shown in Fig. 26.1.

As also seen in Fig 26.1, patients with mature interpersonal relationships benefitted equally well from both treatments.

We also divided the sample into two other subsamples, patients with GAF above 61 (mild psychopathology) and patients with GAF below 61 (moderate to severe psychopathology). A small negative

Fig. 26.2 Proportions of cases recovered on PFS at post-treatment in the Transference group and the Comparison group within the subsamples of patients with mild psychopathology (N = 51, GAF > 61) and moderate psychopathology (N = 48, GAF < 61)



effect (non-significant) of transference interpretation was observed within patients with mild psychopathology and a substantial positive effect for patients with more severe psychopathology. Within this subsample, almost three times as many patients were recovered on PFS after therapy with transference interpretation compared to therapy without [58], as shown in Fig 26.2.

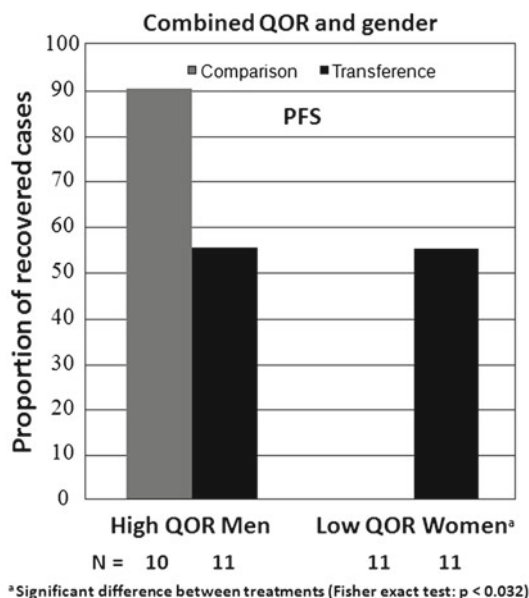
Healthier patients may present more subtle transference cues, thus forcing therapists to base transference interpretation more on inference than concrete evidence. Glover [9] has pointed out that the early “spontaneous” transference enactments of less healthier patients, such as fear of rejection, dependency/counter-dependency, idealization/devaluation, may take on a “dependant” or “pathological” form that is more suitable to transference interpretations. Our findings may correspond to Levy et al. [73]. They reported that 1 year of transference-focused psychotherapy for borderline patients was more favorable than dialectical behavior therapy or supportive therapy with regard to attachment patterns and reflective functioning.

Gender Differences in FEST

The effects of gender have received a lot of attention in clinical theory. For instance, analysts recognize that sex contributes to transference [74], although several research reviews indicate that, on average, men and women respond similarly across different types of psychotherapy [75]. Almost all studies have explored sex as a general predictor. Only two studies have explored sex as a moderator in individual psychotherapy, testing whether men and women responded differentially to different psychotherapies. Zlotnick et al. [76] reported no moderator effects of patient gender. Ogrodniczuk et al. [77] reported that men responded more favorably to interpretive psychotherapy, while females responded better to supportive therapy.

In FEST, women and men responded equally to both treatments in the whole sample (N=99), consistent with earlier research findings. However, women responded significantly better than men to transference interpretation, and men responded significantly better than women to therapy without transference interpretation [78]. When the moderator effects of QOR and gender were combined, a strong positive effect of transference interpretation among female patients with low

Fig. 26.3 Proportion of cases recovered at post-treatment on PFS in the Transference group and the Comparison group within the subsamples of women with low QOR scale scores (N = 22) and men with high QOR scale scores (N = 21)



QOR scale scores appeared, versus a negative effect of transference interpretation for male patients with high QOR scale scores. As can be seen in Fig. 26.3, no females with low QOR scale scores were recovered (clinically significant change) after therapy without transference work.

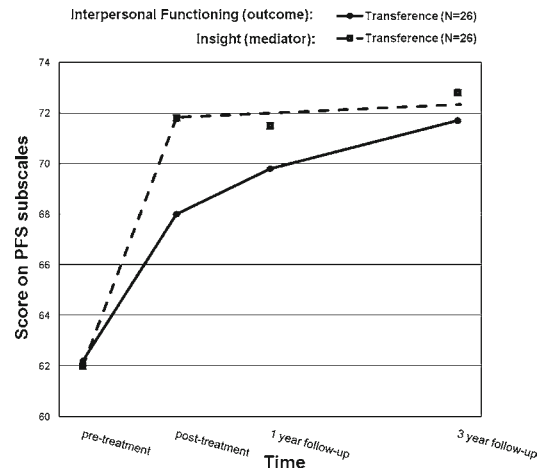
The findings in FEST seem inconsistent with the findings in earlier naturalistic studies. This may be due to differences in design. In FEST, the level of transference work varied substantially from case to case. When we analyzed the subgroups as done in naturalistic studies, that is, computed within-group correlations between transference interpretations and outcome, we found a significant negative correlation ($r = -0.40$) between level of early transference work and outcome, precisely *within the subgroup of low QOR patients receiving transference interpretations* ($N = 25$), the subgroup that showed a positive response to a moderate level of transference interpretation compared to therapy with no transference interpretation. Within group correlations indicate that high levels of transference interpretations, at least to some patients, may contribute to a negative therapeutic process, or that many transference interpretations are given to “poor prognosis” patients in unsuccessful attempts to overcome resistance, defensiveness, or hostility. Naturalistic studies may not give the “whole picture” and may lead to erroneous conclusions about the effects of transference interpretation [55]. Experimental manipulation of treatment techniques is the only method available, to date, for studying causal effects.

The findings in FEST seem to be partly consistent with a previous quasi-experimental study by Høglend et al. [79]. That study reported a negative effect of a high frequency of transference interpretations (on average six per session) to highly suitable patients, versus a positive effect of a low frequency of transference interpretations (less than one per session) to less suitable patients. There was no comparison group treated without transference interpretation, however.

Mechanisms of Change

The second aim of this study was to determine whether or not long-term changes in interpersonal functioning are mediated [67, 80] through increased insight or through the patient’s identification with the therapist (therapist representations).

Fig. 26.4 Descriptive mean trajectories of Insight (mediator) and Interpersonal Functioning (outcome) over time for patients in the transference group with low QOR scale scores ($N = 26$)



Stable dynamic changes after therapy must not be dependent on the therapist's physical presence, but continue because of increased insight or in the form of therapist representations [81]. Representations reflect the patient's identification with the therapist's knowledge, attitudes and behavior [82]. Geller et al. [83] have constructed a self-report instrument for measuring therapist representations, which they have termed The Therapist Representation Inventory. Access to therapist representations makes self-analysis possible [84, 85]. Psychoanalytic theorists emphasize therapeutic dialog through activation of therapist representations in times of crises as an important mediator of long-term changes [80, 86]. Others, such as Blum [87], maintain that "the critical agent of change is insight." Rangell [88] noted that insight is important, but not sufficient. The internalization of the "total relationship" to the therapist may be more important. In our study, both insight measured by clinical evaluators [62] and "therapeutic dialog" measured by five items in the Therapist Representation Inventory (patient self-report) were analyzed as possible mediators of long-term interpersonal functioning.

Insight is defined as cognitive and emotional understanding of the main dynamics of inner conflicts, the related interpersonal patterns and repetitive behaviors, and connection to past experiences. An ability to understand and describe one's own vulnerabilities and strengths is also part of this dimension, see Appendix 23.1.

Therapeutic dialog contains items such as "When I am having a problem, I try to work it out with my therapist in my mind" and "I try to solve my problems in the way my therapist and I worked on them in psychotherapy."

Figure 26.4 illustrates that, in the subsample of patients with low QOR scale scores that received transference interpretation ($N=26$), insight is improved substantially during treatment, while interpersonal functioning continues to improve over the 3-year follow-up period after treatment termination.

Of the 26 patients in the transference group with scores below the mean score on the QOR Scale, 18 (69%) changed more (faster) on the Insight Scale than on the Interpersonal Scales during the 1-year treatment period. During the 1 year after treatment, only eight (32%) of the same patients changed more on the Insight Scale than on the Interpersonal Scales ($\chi^2=8.01$, $df=1$, $p=0.005$). In the comparison group, interpersonal functioning and insight changed in closely parallel lines. Insight may have an important function for interpersonal functioning also in the other subgroups of patients, but we could not determine what came first in these groups.

In our opinion, the causal associations between transference interpretation—insight—and outcome bridge the gap between clinical theory and empirical research [89].

Therapeutic Dialog did not change more in the low QOR transference group than in the low QOR comparison group, indicating that internalization of the “total relationship” to the therapist is not a mechanism linking transference interpretation to long-term outcome. Internalization of the “total relationship” to the therapist may be important for improvement after psychotherapy. We could not document, however, that this putative mechanism was a result of transference work.

Case Vignette

A 40-year-old female secretary wanted psychotherapy because of depression and binge eating that developed after her divorce 7 years ago. She had two teenage children and was concerned about her lack of stability in her relationships with men. She was living with her fourth partner. She was diagnosed with depression and eating disorder. She was randomized to psychodynamic psychotherapy with transference interpretation.

She was the youngest of three children with a dominant and verbally aggressive father and a depressive, negative mother who was also an alcoholic. The family had limited ability to verbalize emotions. She was given little understanding by her parents. During childhood, her talent in sports provided self-esteem.

At the time of therapy, she had difficulties in expressing her feelings. When she had disagreements with her partner, instead of being angry or sad, she ate huge amounts of ice cream alternating with a very strict low-calorie diet. She contemplated leaving her partner. The patient hoped psychotherapy could help her to feel more independent.

In the initial phase of the therapy, the patient felt that the therapist was understanding and no disagreement occurred between the two of them. Using transference interpretation, the therapist focused on her dependency needs:

- Therapist: In your relationships everything is quiet and peaceful. So I can look forward to the same in our relationship. I can feel safe, there will be no conflicts between us.
- Patient: Yes that...uh, that depends. With my sisters...we never have arguments.
- Therapist: So you have very little practice in standing up for yourself. Your mother was afraid of conflicts, and you learned to be afraid too. In our relationship you may also get disappointed, withdraw and overeat, as you did with her and others, but you do not get irritated. Have you thought about that? I don't give you the advice or reassurance you have asked for.
- Patient: I'm not sure what I can ask of others, like with my children, and wonder what other people would do
- Therapist: Can you think what I might have done in your situation?
- Patient: If I can think of what you would do? I don't get any answers here.
- Therapist: How do you feel about that?
- Patient: I don't know.
- Therapist: No, but maybe you get disappointed, withdraw or overeat instead of feeling irritated or angry.
- As therapy progressed, the patient more often expressed her own point of view:
- Therapist: What do you feel about me, leading you onto thin ice so to speak, pointing out that you don't say what you mean?
- Patient: I'm not sure how I feel. I see that I suddenly changed and became a bit too opinionated. So why not try something in between?

When asked at treatment termination whether or not she had learned something new about herself, she said that, before therapy, she had not been aware of how much she automatically disavowed her own feelings, especially negative ones. Prior to treatment, she was to some extent aware

of a connection between stress and binge eating. After treatment, she could give a much more detailed account of the associations between specific stressors, negative emotions, and binge eating, and the way this had interfered with her daily life.

At the 3-year follow-up, the patient emphasized that the focus on exploring how she repeated her feelings toward parents in her relationship with the present partner and also toward the therapist had been helpful. She no longer found herself dependent on advice from others, was no longer depressed, and the binge eating had stopped. The relationship with her partner was much improved although she sometimes withdrew after disputes.

Conclusions

What can we conclude from this overview of research that may help us answer the questions posed at the beginning of the chapter?

A mainstream clinical theory in the psychodynamic tradition is supported by empirical research. A moderate use of transference interpretation has specific effects on long-term functioning, mediated by increase in insight during therapy.

However, a high frequency of transference interpretations does not seem to overcome defensiveness, resistance or hostility in “difficult patients.” Such patients, many who suffer from severe PD, may experience such interventions as attacks on their defences that they view as needed to protect the self. As a result, excessive transference interpretation may result in a fortification of defences to ward off the perceived attacks. Research suggests that paving the way for transference interpretation with affirmative appreciation of the patient’s internal experience may be critical at least for patients with cluster B pathology.

Moderate emphasis on transference work may be particularly useful when treating patients with PD pathology and more severe and chronic difficulties in establishing stable and fulfilling relationships. It is well established that these patients are subject not only to reduced psychological well-being, but also higher overall mortality as shown in a large body of epidemiological research.

Future Research

A lot of research is still needed before we can understand the full impact of transference interpretations and how they work. The presence or absence of transference interpretations, or their frequency, are not by themselves sufficient. The effect of interpretations may be dependent on several characteristics of the interpretations themselves, such as accuracy, i.e., the degree to which an intervention is congruent, accurate or consistent with an independently derived psychodynamic formulation about the patient [14, 90, 91]; and affiliation, i.e., the degree of caring versus hostility communicated to the patient through the intervention [92]; and content, i.e., which dynamic conflict or relationship components are included in the intervention: wishes, defences, anxieties, current others, parental figures, therapist. The depth of interpretation may be seen as one aspect of content [93].

Also, the context in which transference interpretations are offered may be important, such as stage of therapy (initial, middle, late), and the quality of other interventions. Non-interpretive interventions that precede transference interpretation, in addition to those that follow, may carry weight as well [42]. The state of the therapeutic alliance may be important at the time an interpretation is offered. The timing and quality of interventions are probably the most difficult aspect to evaluate, but are probably crucial to how well an interpretation is received and considered by the patient.

Furthermore, the attitude and subjectivity of the therapist and counter-transference reactions may have an impact on the quality of interpretations [40, 94].

To understand more in depth how and why dynamic psychotherapy works, more treatment component studies should have priority. If we can isolate specific components that are most effective, be it specific techniques or common factors, the search for mechanisms (mediators) may be narrowed down from a vast number of putative mechanisms. The study of mechanisms and interaction of mechanisms, such as therapeutic alliance, tolerance for affects, self-esteem, self-efficacy, social avoidance, coping (problem solving capacity), and use of defences, may improve basic knowledge.

References

1. Freud S. Fragments of an analysis of a case of hysteria. In: Strachey J, editor. The standard edition of the complete psychological works of Sigmund Freud, vol. 1. London: Hogarth Press; 1953. p. 3–122.
2. Ehrenreich JH. Transference: one concept or many? *Psychoanal Rev.* 1989;76:37–65.
3. Cooper AM. Changes in psychoanalytic ideas: transference interpretation. *J Am Psychoanal Assoc.* 1987;35:77–98.
4. Hoffman IZ. Ritual and spontaneity in the psychoanalytic process: a dialectical-constructivist view. Hillsdale: Analytic Press; 1998.
5. Stolorow RD, Brandchaft B, Atwood GE. Psychoanalytic treatment: an intersubjective approach. Hillsdale: Analytic Press; 1987.
6. Strachey J. The nature of the therapeutic action of psychoanalysis. *Int J Psychoanal.* 1934;15:127–59.
7. Gill MM. Analysis of transference, Theory and technique, vol. I. New York: International Universities Press; 1982.
8. Freud S. Papers on technique. In: Strachey J, editor. The standard edition of the complete psychological works of Sigmund Freud, vol. 2. London: Hogarth Press; 1953. p. 99–111.
9. Glover E. The technique of psychoanalysis. New York: International Universities Press; 1955.
10. Berliner B. Short psychoanalytic psychotherapy: its possibilities and its limitations. *Bull Menninger Clin.* 1941;5:204–11.
11. Deutsch F. Applied psychoanalysis. New York: Grune & Stratton; 1949.
12. Pumpian-Mindlin E. Considerations in the selection of patients for short-term therapy. *Am J Psychother.* 1953;7:641.
13. Barber JP, Foltz C, DeRubeis RJ, Landis JR. Consistency of interpersonal themes in narratives about relationships. *Psychother Res.* 2002;12:139–58.
14. Crits-Christoph P. The interpersonal interior of psychotherapy. *Psychother Res.* 1998;8:1–16.
15. Stone L. The psychoanalytic situation and transference: post-script to an earlier communication. *J Am Psychoanal Assoc.* 1967;15:3–58.
16. Westen D, Gabbard GO. Developments in cognitive neuroscience. II: Implications for theories of transference. *J Am Psychoanal Assoc.* 2002;50:99–134.
17. Ferenczi S, Rank O. The development of psychoanalysis. Trans. C. Newton. New York: Dover; 1956.
18. Reich W. Character analysis. Trans. T. Wolfe. Rangley, ME: Orgone Institute Press; 1945.
19. Sullivan HS. The interpersonal theory of psychiatry. New York: Norton; 1953.
20. Davanloo H. Basic principles and techniques in short-term dynamic psychotherapy. New York: Jason Aronson; 1978.
21. Malan DH. The frontier of brief psychotherapy: an example of the convergence of research and clinical practice. New York: Plenum; 1976.
22. Sifneos P. Short-term dynamic psychotherapy: evaluation and technique. New York: Plenum; 1971.
23. Rangell L. The analyst at work. Synthesis and critique. *Int J Psychoanal.* 1984;65:125–40.
24. Gill MM, Muslin H. Early interpretation of transference. *J Am Psychoanal Assoc.* 1976;24:779–94.
25. Gabbard GO, Westen D. Rethinking therapeutic action. *Int J Psychoanal.* 2003;84:823–41.
26. Gabbard GO. When is transference work useful in dynamic psychotherapy? *Am J Psychiatry.* 2006;163:1667–9.
27. Rosenzweig S. Some implicit common factors in diverse methods of psychotherapy. *Am J Orthopsychiatry.* 1936;6:422–5.
28. Frank JD. Therapeutic factors in psychotherapy. *Am J Psychother.* 1971;25:350–61.
29. Wampold BE. Methodological problems in identifying efficacious psychotherapies. *Psychother Res.* 1997;7:21–43.
30. Baskin TW, Tierney SC, Minamy T, Wampold BE. Establishing specificity in psychotherapy: a meta-analysis of structural equivalence of placebo controls. *J Consult Clin Psychol.* 2003;71:973–9.
31. Luborsky L, Spence D. Quantitative research on psychoanalytic therapy. In: Garfield SL, Bergin AE, editors. *Handbook of psychotherapy and behavior change: an empirical analysis.* 2nd ed. New York: Wiley; 1978.
32. Porter FA. The immediate effects of interpretation on patient response in short-term dynamic psychotherapy. Doctoral dissertation. New York: Colombia University; 1987.

33. Strisik P. In-session discussion about the therapist-client relationship as a facilitator of client experiencing (transference). Doctoral dissertation. Atlanta: Georgia State University; 1980.
34. Silberschatz G, Fretter PB, Curtis JT. How do interpretations influence the process of psychotherapy? *J Consult Clin Psychol.* 1986;54:646–52.
35. McCullough L, Winston H, Farber BA, Porter F, Pollack J, Laikin M, et al. The relationship of patient-therapist interaction to the outcome in brief dynamic psychotherapy. *Psychother Theor Pract Res Training.* 1991;28:525–33.
36. Joyce AS, Piper WE. Interpretive work in short-term individual psychotherapy: an analysis using hierarchical linear modelling. *J Consult Clin Psychol.* 1996;64:505–12.
37. Banon E, Grenier EM, Bond M. Early transference interventions with male patients in psychotherapy. *J Psychother Pract Res.* 2001;10:79–97.
38. Marmar CR, Weiss DS, Gaston L. Towards the validation of the California therapeutic alliance rating system. *Psychol Assess.* 1989;1:46–52.
39. Piper WE, Azim HF, Joyce AS, McCallum M. Transference interpretations, therapeutic alliance, and outcome in short-term individual psychotherapy. *Arch Gen Psychiatry.* 1991;48:946–53.
40. Henry WP, Schacht TE, Strupp HH. Structural analysis of social behavior: application to a study of interpersonal process in differential psychotherapeutic outcome. *J Consult Clin Psychol.* 1986;54:27–31.
41. Piper WE, Ogrodniczuk JS, Joyce AS, McCallum M, Rosie JS, Kelly JG. Prediction of dropping out in time-limited, interpretive individual psychotherapy. *Psychother Theor Pract Res Training.* 1999;36:114–22.
42. Gabbard GO, Horwitz L, Allen JG, Frieswyck S, Newsom G, Colson DB, et al. Transference interpretation in the psychotherapy of borderline patients: a high-risk, high-gain phenomenon. *Harvard Rev Psychiatry.* 1994;2:59–69.
43. Gabbard GO, Horwitz L, Frieswyck S, Allen JG, Colson DB, Newsom G, et al. The effect of therapist interventions on the therapeutic alliance with borderline patients. *J Am Psychoanal Assoc.* 1988;36:697–727.
44. Horwitz L, Gabbard GO, Allen JG, Frieswyck S, Colson DB, Newsom G, et al. Borderline personality disorder: tailoring the psychotherapy to the patient. Washington, DC: American Psychiatric Press; 1996.
45. Malan DH. Toward the validation of dynamic psychotherapy. New York: Plenum; 1976.
46. Marziali EA, Sullivan JM. Methodological issues in the content analysis of brief psychotherapy. *Br J Med Psychol.* 1980;53:19–27.
47. Marziali EA. Prediction of outcome of brief psychotherapy from therapist interpretive interventions. *Arch Gen Psychiatry.* 1984;41:301–4.
48. Piper WE, Delbane EG, Bienvenu J-P, de Carufel F, Garrant J. Relationships between the object focus of therapist interpretations and outcome of short-term individual psychotherapy. *Br J Med Psychol.* 1986;59:1–11.
49. Rosser R, Denford J, Heslop A, Kinston W, Macklin D, Minty K, et al. Breathlessness and psychiatric morbidity in chronic bronchitis and emphysema: a study of psychotherapeutic management. *Psychol Med.* 1983;13:93–110.
50. Azim HFA, Pipe W, Segal PM, Nixon GWH, Duncan SC. The quality of object relations scale. *Bull Menninger Clin.* 1991;55:323–43.
51. Høglend P. Transference interpretations and long-term change after dynamic psychotherapy of brief to moderate length. *Am J Psychother.* 1993;47:494–507.
52. Connolly MB, Crits-Christoph P, Shappel S, Barber JP, Luborsky L, Schaffer C. Relations of transference interpretations to outcome in the early sessions of brief supportive-expressive psychotherapy. *Psychother Res.* 1999;9:485–95.
53. Ogrodniczuk JS, Piper WE, Joyce AS, McCallum M. Transference interpretations in short-term dynamic psychotherapy. *J Nerv Ment Dis.* 1999;187:572–9.
54. Henry WP, Strupp HH, Schacht TE, Gaston L. Psychodynamic approaches. In: Bergin AE, Garfield S, editors. *Handbook of psychotherapy and behavior change.* 4th ed. New York: Wiley; 1994. p. 467–508.
55. Stiles WB, Shapiro DA. Disabuse of the drug metaphor: psychotherapy process-outcome correlations. *J Consult Clin Psychol.* 1994;62:942–8.
56. Høglend P, Amlø S, Marble A, Bøggwald K-P, Sørbye Ø, Sjaastad MC, et al. Analysis of the patient-therapist relationship in dynamic psychotherapy: an experimental study of transference interpretations. *Am J Psychiatry.* 2006;163:1739–46.
57. Høglend P, Bøggwald KP, Amlø S, Marble A, Ulberg R, Sjaastad MC, et al. Transference interpretations in dynamic psychotherapy: do they really yield sustained effects? *Am J Psychiatry.* 2008;165:763–71.
58. Høglend P, Johansson P, Marble A, Bøggwald KP, Amlø S. Moderators of the effects of transference interpretations in brief dynamic psychotherapy. *Psychother Res.* 2007;17:162–74.
59. Bøggwald KP, Dahlbender RW. Procedures for testing some aspects of the content validity of the psychodynamic functioning scales and the global assessment of functioning scale. *Psychother Res.* 2004;14:453–68.
60. Hagtvet KA, Høglend P. Assessing precision of change scores in psychodynamic psychotherapy: a generalizability theory approach. *Meas Eval Couns Dev.* 2008;41:162–78.
61. Hersoug AG. Assessment of therapists' and patients' personality: relationship to therapeutic technique and outcome in brief dynamic psychotherapy. *J Pers Assess.* 2004;83:191–200.
62. Høglend P, Bøggwald KP, Amlø S, Heyerdahl O, Sørbye Ø, Marble A, et al. Assessment of change in dynamic psychotherapy. *J Psychother Pract Res.* 2000;9:190–9.

63. Høglend P. Analysis of transference in dynamic psychotherapy: a review of empirical research. *Can J Psychoanal.* 2004;12:280–300.
64. Alden LE, Wiggins JS, Pincus AL. Construction of circumplex scales for the inventory of interpersonal problems. *J Pers Assess.* 1990;55:521–36.
65. Havik OE, Monsen JT, Høglend P, von der Lippe A, Lyngstad G, Stiles T, et al. Norwegian Multi-Site Study of Process and Outcome in Psychotherapy (NMSPOP). Research protocol. Bergen: Department of Clinical Psychology, University of Bergen; 1995.
66. Snow RE. Aptitude-treatment interaction as a framework for research on individual differences in psychotherapy. *J Consult Clin Psychol.* 1991;59:205–16.
67. Kraemer HC, Wilson GT, Fairburn CG, Agras WS. Mediators and moderators of treatment effects in randomized clinical trials. *Arch Gen Psychiatry.* 2002;59:877–83.
68. Høglend P. Selection for brief dynamic psychotherapy modified after Sifneos. Manual. Oslo: University of Oslo, Department of Psychiatry; 1994.
69. Høglend P. Suitability for brief dynamic psychotherapy: psychodynamic variables as predictors of outcome. *Acta Psychiatr Scand.* 1993;88:104–10.
70. Høglend P. Manual for process ratings of general skill, supportive interventions and specific techniques. Manual. Oslo: University of Oslo, Department of Psychiatry; 1994.
71. Ogrodniczuk JS, Piper WE. Measuring therapist technique in psychodynamic psychotherapies. Development and use of a new scale. *J Psychother Pract Res.* 1999;8:142–54.
72. Bogwald KP, Høglend P, Sorbye O. Measurement of transference interpretations. *J Psychother Pract Res.* 1999;8:264–73.
73. Levy KN, Meehan KB, Kelly KM, et al. Change in attachment patterns and reflective function in a randomized control trial of transference-focused psychotherapy for borderline personality disorder. *J Consult Clin Psychol.* 2006;74:1027–40.
74. Notman MT, Nadelson CC. Sex in the consulting room. *J Am Acad Psychoanal Dyn Psychiatry.* 2004;32:193–200.
75. Clarkin JF, Levy KN. The influence of client variables in psychotherapy. In: Lambert MJ, editor. *Bergin and Garfield's handbook of psychotherapy and behavior change.* 5th ed. New York: Wiley; 2004. p. 194–226.
76. Zlotnick C, Shea MT, Pilkonis PA, et al. Gender, type of treatment, dysfunctional attitudes, social support, life events, and depressive symptoms over naturalistic follow-up. *Am J Psychiatry.* 1996;153:1021–7.
77. Ogrodniczuk JS, Piper WE, Joyce AS, McCallum M. Effect of patient gender on outcome in two forms of short-term individual psychotherapy. *J Psychother Pract Res.* 2001;10(2):69–78.
78. Ulberg R, Johansson P, Marble A, Høglend P. Patient sex as moderator of effects of transference interpretation in a randomized controlled study of dynamic psychotherapy. *Can J Psychiatry.* 2009;54:78–86.
79. Høglend P, Heyerdahl O, Amlø S, Engelstad V, Fossum A, Sorby O, et al. Interpretations of the patient–therapist relationship in brief dynamic psychotherapy: effects on long-term mode specific changes. *J Psychother Pract Res.* 1993;2:296–306.
80. Baron RM, Kenny DA. The moderator–mediator variable distinction in social psychological research: conceptual, strategic and statistical considerations. *Psychol Bull.* 1986;51:1173–82.
81. Schaefer R. Aspects of internalization. New York: International Universities Press; 1968.
82. Schlesinger N, Robbins F. A development view of the psychoanalytic process. Madison: International Universities Press; 1983.
83. Geller JD, Cooley RS, Hartley D. Images of the psychotherapist: a theoretical and methodological perspective. *Imagination Cogn Pers.* 1981;1:123–46.
84. Geller JD, Faber BA. Factors influencing the process of internalization in psychotherapy. *Psychother Res.* 1993;3:166–80.
85. Orlinsky DE, Geller JD, Tarragona M, Farber B. Patients' representations of psychotherapy: a new focus for psychodynamic research. *J Consult Clin Psychol.* 1993;61:396–610.
86. Loewald H. On the therapeutic action of psychoanalysis. *Int J Psychoanal.* 1960;51:1–18.
87. Blum H. Psychic change: the analytic relationship(s) and agents of change. *Int J Psychoanal.* 1992;73:255–66.
88. Rangell L. The psychoanalytic theory of change. *Int J Psychoanal.* 1992;73:415–27.
89. Johansen P, Høglend P, Ulberg R, Bøgwald KP, Amlø S, Heyerdahl O, et al. The mediating role of insight for long-term improvements in psychodynamic therapy. *J Consult Clin Psychol.* 2010;78:438–48.
90. Piper WE, Joyce AS, McCallum M, Azim HFA. Concentration and correspondence of transference interpretations in short-term psychotherapy. *J Consult Clin Psychol.* 1993;61:586–95.
91. Høglend P, Piper WE. Focal adherence in brief dynamic psychotherapy: a comparison of findings from two independent studies. *Psychother Theor Res Pract Training.* 1995;32:618–28.
92. Benjamin LS. Structural analysis of social behavior. *Psychol Rev.* 1974;81:392–425.
93. Cooper S, Bond M, Audet C, Boss K, Csank P. The Psychodynamic intervention rating scale. Unpublished MS; 2002.
94. Muran JC. Early career award paper: a relational approach to understanding change: plurality and contextualism in a psychotherapy research program. *Psychother Res.* 2002;12:113–38.

Appendix 23.1

The Insight Scale. This dimension covers cognitive *and* emotional understanding of the main dynamics of inner conflicts, the related interpersonal patterns and repetitive behaviors, and connection to past experiences. Ability to understand and describe own vulnerability, reactions to stress, and coping abilities.

100	Unusual ability to describe genuinely personal wishes, fears, defences, and the related behavior and
91	connections to earlier (childhood) experiences. High awareness of own vulnerability, attitudes, and
	interpersonal patterns, secondary gains. Open and curious about and reflects on the multiple levels
	and meanings of experience. Realistic judgment of self and others
90	Can account for inner conflicts, the related problems and repetitive behaviors, and connections to earlier
81	experience. Aware of own vulnerability and reactions to stress. A tolerant and realistic sense of self
	and others in interpersonal disputes. May feel disillusionment but no bitterness or hopelessness
80	Can account for most important inner conflicts, related problems and repetitive behavior patterns, and
71	personal attitudes. Connections to earlier experience may partly be forgotten. Aware of own
	vulnerability, stress reactions, and coping abilities. May blame self or others too much in interper-
	sonal disputes but reflects freely and observes own reactions and learns from it (integration).
	Generally curious and tolerant. Realistic expectations about the future
70	Recognizes but cannot clearly describe the complex association between past experience, inner conflicts
61	and present problems, and repetitive patterns. Reasonably aware of own vulnerability and strength
	and reactions to stress. Tendency to blame self or others too much in disputes. Occasionally, behavior
	and attitude may be unrecognized, but reflects and observes self in other areas
60	Understanding of inner conflicts and associations to past and present experience and behavior is
51	somewhat unclear, or less emotionally integrated, or "learned." Inadequate judgment of self and
	others but ability to observe and reflect with time. Vulnerability and stress reactions sometimes a
	surprise. Some defensive, unrecognized attitudes and behaviors. Rigid views of rights and wrongs.
	May look for superficial solutions. Recognizes symptoms as sign of disturbance
50	Superficial "learned" or misleading ideas of inner conflicts and past and present experience. Distortions
41	of judgment of self versus others also when no disputes. Painful feelings accompanied by harsh
	self-blame or incorrectly ascribed to external factors. Little or no reflection on personal motives,
	unaware of important aspects of attitudes and behaviors (fundamentalism). May deny symptoms as
	sign of disturbance. Excessive pessimism or optimism
40	Does not recognize associations between behavior and internal dynamic components. Severely distorted
31	perceptions/judgment of self or others. Disavows painful personal reactions. Can describe internal
	experiences but in a stereotyped, confusing, or misleading way. Denies signs of mental disturbance
30	Great difficulty describing internal experiences. Does not acknowledge associations between internal
21	experiences and own behavior. Severe distortions/delusional ideas may be present
20	Disorganized or fragmented mental functioning. Breakdown of reality testing. Need outside assistance
11	
10	Continuously disorganized in need of constant assistance for days

Part IV

Single Case Studies

Chapter 27

Single-Case Research: The German Specimen Case Amalia X

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Keywords Evaluation • Process research • Psychoanalysis • Single case

In a pivotal review of the problem of psychoanalytic treatment research some 40 years ago, Wallerstein and Sampson [1] enthusiastically recommended performing systematic single-case studies to enhance the field. Three decades later, Wallerstein [2] concluded: “that we are without warrant... to claim the greater heuristic usefulness or validity of anyone of our general theories over the others, other than by the indoctrination and allegiances built into us by the happenstance of our individual trainings, our differing personal dispositions and the explanatory predilections then carried over into our consulting rooms” (p. 1,251). In the same vein, Gabbard and Westen [3] urge that “we attempt to move from *arguing* about the therapeutic action of psychoanalysis to demonstrating and refining it” (p. 338). The best possibility for resolving these differences and for developing some consensus about the fundamental tenets of psychoanalysis rests on empirical research generating relevant data that can provide a basis for consensual agreement about fundamental psychoanalytic principles [4].

Historically in psychoanalysis, oral tradition and loosely documented case vignettes have constituted the principal means of reporting the insights originating from the therapeutic situation; the clinical encounter has well served as a field for discovery-oriented research [5]. When Dahl used the term “the specimen hour” [6] to designate session five of one of his tape-recorded psychoanalytic treatments which was transcribed in order to make the clinical material available to the general public [7], this implied that there are not only specimen dreams in psychoanalysis, as Freud stated, but also specimen cases. However, the number of papers calling for single-case research (for example [8]) still outnumber those reporting on single-case studies. Searching through the history of psychoanalysis for true single-case studies—excluding the Freud’s cases—is enlightening (quoted from [9, chap. 3]).

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Table 27.1 Tabulated results of post-Freud psychoanalytic literature search for treatment reports of a certain size, searching for presentations that cover, using a rough measure, more than 30 pages in published form

Author	Case	Date of Treatment	Duration	Date of Publication	Type of Record	Size (page-count)
Adler	"Fräulein R."	—	—	1928	after-session notes	146
Traft	7-year-old boy	—	31 sessions	1933	in-session notes	161
Wolberg	42-year-old man "Johann R."	1940	4 months	1945	after-session notes	169
Berg	young man	ca. 1940	—	1946	in-session notes	ca. 240
Sechehaye	18-year-old-woman	1930	10 years	1947	after-session notes	107
McDougall/ Lebovici	9-year-old-body "Sammy"	1955	166 sessions	1960	in-session notes	270
Klein, M.	10-year-old boy "Richard"	1944	93 sessions	1961	after-session notes	490
Thomä	26-year-old woman "Sabine"	1958	304 sessions	1961	after-session notes	70
Parker	16-year-old boy	1955	200 sessions	1962	after-session notes	355
Bolland/ Sandler	2-year-old boy "Andy"	ca. 1960	221 sessions	1965	weekly report after-session notes	88
Boor	22-year-old man "Frank A."	ca. 1960	580 sessions	1965	after-session notes	30
Pearson	12-year-old boy "adolescent."	—	6 years	1968	after-session notes	140
Milner	23-year-old woman "Susan"	1943-1958	15 years	1969	after-session notes	410
Dolto	14-year-old boy "Dominique"	1968	12 sessions	1971	after-session notes	160
Balint	43-year-old man "Mr. Baker"	1961	29 sessions	1972	after-session notes	130
Dewald	26-year-old woman	ca. 1966	304 sessions	1972	in-session notes	620
Winnicott	30-year-old man	ca. 1954	—	1972	after-session notes	240
Argelander	35-year-old man	—	ca. 600 session	1971	after-session notes	75
Stoller	30-year-old woman	—	—	1974	in-session notes	400
Winnicott	2-year of girl "Piggle"	1964	14 sessions	1978	after-session notes	200
Firestein	25-year-old woman	—	—	1978	after-session notes	30
Goldberg	25-year-old man "Mr. I."	—	—	1978	after-session notes	108
Goldberg	31-year-old woman	ca. 1966	600 sessions	1978	after-session notes	98
Goldberg	22-year-old man "Mr. E."	ca. 1972	2 years	1978	after-session notes	134

As a bibliographic exercise, Kächele [10] reviewed the post-Freud psychoanalytic literature for treatment reports of a certain size, searching for presentations that cover, using a rough measure, of more than 30 pages in published form. Here, we tabulate those reports that at the time of the study met this criterion. Though some publications may have escaped the search, the overview ought to be informative and representative on the whole.

Table 27.1 lists the authors and identifies the patients, whenever possible citing their age, sex and any names by which they might be known in the literature, the dates and length of treatment, to the extent that this could be ascertained from the reports, as well as indicating the type of record and the approximate page count of the report in published form. Looking at the dates of publication in this sample, its incompleteness must be emphasized once again, and one is struck that from 1930 to 1959, there were six reports, while from 1960 to 1979, there were 20.

These extended clinical case reports constitute a bridge to the more formalized systematic case studies. Given their material qualities, they well could have been and still can be the object of more formal empirical studies. However, the introduction of tape recording into the psychoanalytic treatment situation opened a new window onto the process that for long was ardently debated and for most analysts is still controversial. Audio recordings of the psychoanalytic dialogue indeed do pose a number of substantial clinical and ethical problems, although for scientific reasons, they provide true progress [11]. They allow an independent, third-person perspective on the analytic, interpersonal transaction; with regard to the analyst's and the patient's internal modes of experiencing, they are silent and ideally have to be completed by the participant's testimony. The recording of these cases has opened up access to many theoretical and technical issues.

Single-case studies are not confined to tape recording; any systematic gathering of treatment relevant material can be used to document a treatment.

Overviews of the methodology of single-case studies have been presented by Kazdin [12, 13], Hilliard [14], Fonagy and Moran [15]. The latter summarized the topic succinctly:

Individual case studies attempt to establish the relationship between intervention and other variables through repeated systematic observation and measurement... The observation of variability across time within a single case combines a clinical interest to respond appropriately to changes within the patient, and a research interest to find support for a causal relationship between intervention and changes in variables of theoretical interest. The attention to repeated observations, more than any other single factor, permits knowledge to be drawn from the individual case and has the power to eliminate plausible alternative explanations [15, p. 65].

For many years, the Ulm Psychoanalytic Process Research Study Group has implemented a program to examine the material bases of psychoanalytic therapy. We have remained convinced that only the careful exploration of the patient's interaction with the analyst can illustrate the central aspects of psychoanalytic treatment and enable an empirically driven theory of the process. Therefore, we have undertaken a sustained, multilevel, collaborative examination of what may be described as a "specimen case." Over the course of many years—even decades—studies of various kinds in qualitative and quantitative methodology have been made on the psychoanalytic treatment of our specimen case, "Amalia X."¹ Clinical vignettes and a psychodynamic summary of the case have been provided in the second volume of Thomä and Kächele's textbook *Psychoanalytic Practice* [18, 19]. The following clinical description of the patient has been quoted from this text:

Amalia X (born 1939) was in psychoanalytic treatment (517 sessions) during the early seventies with good results. Some years later she returned to her former therapist for a short period of analytic therapy because of problems with her lover, many years her junior. Twenty five years later she consulted a colleague of mine as her final separation from this partner had caused unbearable difficulties and she again asked for circumscribed help.

Amalia X came to psychoanalysis because the severe restrictions she felt on her self-esteem had made her vulnerable to depression in the last few years. Her entire life history since puberty and her social role as a woman had suffered from the severe strain resulting from her hirsutism. Although it had been possible for her to hide her stigma—the virile growth of hair all over her body—from others, the cosmetic aids she used had not raised her self-esteem or eliminated her extreme social insecurity. Her feeling of being stigmatized and her neurotic symptoms, which had already been manifest before puberty, strengthened each other in a vicious circle; scruples from a compulsion neurosis and various symptoms of anxiety neurosis impeded her personal relationships and, most importantly, kept the patient from forming closer heterosexual friendships.

This woman, who was hard-working in her career, cultivated, single and quite feminine despite her stigma, impressed me positively. The analyst was relatively sure and confident that it would be possible to change the significance she attributed to her stigma. In general terms, he proceeded from the position that our body is not our only destiny and that the attitude which significant others and we have to our bodies can also be decisive. Freud's [20, p. 189] paraphrase of Napoleon's expression to the effect that our anatomy is our destiny must be modified as a consequence of psychoanalytic insights into the psychogenesis of sexual identity. Sexual role and core identity originate under the influence of psychosocial factors on the basis of one's somatic sex.

The analyst's (H.T.) previous experience warranted the following initial assumptions. A virile stigma strengthens penis-envy and reactivates oedipal conflicts. If the patient's wish to be a man had materialized, her hermaphroditic body image would have become free of conflict. The question "Am I a man or a woman?" would then have been answered; her insecurity regarding her identity, which was continuously reinforced by her stigma, would have been eliminated; and self-image and physical reality would then have been in agreement. It was impossible for her to maintain her unconscious fantasy that she was a man, however, in view of her female genital. A virile stigma does not make a man of a woman. Regressive solutions, such as reaching an inner security despite her masculine stigma by identifying herself with her mother, revitalized old mother-daughter conflicts and led to a variety of defensive processes. All of her affective and cognitive processes were marked

¹ To avoid any association with Erikson's [16] "dream specimen of psychoanalysis," we emphasize from the outset that the examination of Amalia's treatment should be considered as our own specimen case. Since then, we have completed a report on the second specimen case Christian Y [17]; two more cases are to follow, Franziska X and Gustav Y.

by ambivalence, so that she had difficulty, for example, deciding between different colors when shopping because she linked them with the qualities of masculine or feminine ([18, 19], pp. 79).²

Given the paucity of systematic descriptive data on psychoanalytic cases, we have to accept that the various studies performed on the specimen case of Amalia X refer to parts and aspects of the treatment only, and must eventually be integrated so that the relationships among them, and thus the case as a whole, may be appreciated. Whether general conclusions can be drawn from our efforts remains an open question. The principle conviction which led us to start this enterprise was that psychoanalysis—like any other scientific field—requires careful descriptive work. This necessary step in research was dubbed as the “botanical phase in psychotherapy research” [23].

Luborsky and Spence’s [24] statement concerning the requirements for specimen cases spells out quite succinctly what is at stake here. They write: “Ideally, two conditions should be met: The case should be clearly defined as analytic, and the data should be recorded, transcribed and indexed so as to maximize accessibility and visibility” (p. 426). The first condition has been met as well as possible, given the existing epistemological problem that there is no consensually agreed upon definition of the psychoanalytic process, by virtue of the fact that a reasonable number of colleagues considered this case to be truly “analytic.” The treating analyst had a high reputation in the professional community, although all analysts have to demonstrate the nature of their work in each and every case. Based on the results of our studies, it can also be said in retrospect that the treating analyst conformed to the fundamental psychoanalytic rules which predominated during the 1970s. Conforming to a specific method should not be confused with abiding by a law. Rather, we share the view of Gabbard and Westen [3] that the process should be conducted according to the principle of trial and error. Our stand on this issue remains exclusively within the professional community.

The second condition formulated by Luborsky and Spence [24] is fulfilled by the utilization in our studies of the Ulm Textbank [25], in which audio recordings of 517 sessions of this psychoanalytic case are stored and kept available for investigation by members of the scientific community. Through many years of work, approximately half of the sessions in this case have been transcribed according to the rules of the Ulm Textbank [26]. Most of our investigations would not have been possible without these audio recordings and verbatim transcripts of the therapeutic dialogue.

We would like to emphasize the value that audio recordings create for empirical analytic studies of treatment reports and interdisciplinary research. The accessibility of psychoanalytic dialogue and the investigation of it by psychoanalytic researchers in collaboration with psychologists, linguists, or other independent scholars strengthen the foundation of psychoanalysis. In the past, too often, scholars wrote about psychoanalysis without having access to its primary data—a situation that may be compared to discussing the philosophical ideas of Socrates without having read any of the Platonic dialogues.

The Empirical Approach: A Multilevel Observational Strategy

Our long-term aim has been to establish ways of systematically describing the various aspects and dimensions of psychoanalytic processes and to use the descriptive data obtained in this way to examine process hypotheses. This included the generation of general process hypotheses as well as the specification of single-case process assumptions. Specifying how the psychoanalytic process should unfold must go beyond general clinical ideas by considering the kind of material brought forth by

² A report on the analytic technique in this case has been presented at the New Orleans IPA conference in 2004 [21], where the case has been discussed by a good number of analysts from diverse camps [22].

each patient and the strategic interventions most appropriate to achieving change in the dimensions of theoretical relevance specified for each particular case. Although our approach excluded the use of non-clinical measures to limit the intrusions on the clinical process,³ independent psychometric pre–post outcome data were used to assess the effectiveness of the psychoanalytic treatment, and these data have been published in the second volume of Thomä and Kächele [19, chap. 9.11.2].

Our methodological approach distinguishes four levels of case research, each working on different material studied at different levels of conceptualization [28]. These are: clinical case study (level I); systematic clinical description (level II); guided clinical judgment procedures (level III); linguistic and computer-assisted text analysis (level IV). Following Sargent’s [29] recommendations, we chose this multilevel strategy based on our understanding that the gap between clinical understanding and objectification cannot be meaningfully bridged by using only one approach.

Level I: Clinical Case Studies

The clinical case study based on good memory or even accurate process notes of an analyst fulfils an important communicative function within the profession. As demonstrated by Dewald [30], there is a general acceptance of this form of case study as a tool for training. Astonishingly enough, these case studies have scarcely ever been the focus of formal scientific study.⁴ Yet, exactly that focus is necessary to demonstrate their scientific value and thus their usefulness to our scientific community [5]. At present, there is increasing agreement regarding the critical need for carefully prepared case studies. Exactly how this may be achieved is still a key question in ongoing discussions (for example [32]).

As a contribution to these discussions, the second volume of the Ulm textbook [19] contains examples of this traditional form of reporting clinical material through the case study of Amalia X which focused on identification with the analyst’s function (chap. 2.4.2); free association (chap. 7.2); anonymity and naturalness (chap. 7.7); examples of audio recordings (chap. 7.8.1); and changes (chap. 9.11.2).

Level II: Systematic Clinical Descriptions⁵

The level of systematic clinical description by trained observers is clearly distinct from that of clinical case study, but still remains close to clinical reasoning. In the case of Amalia X, these methods have been based on tape recordings of the whole treatment, supplemented by verbatim transcripts of one-fifth of the sessions (e.g., 1–5, 26–30, 51–55,...501–505). The use of verbatim records of the sessions allows for systematic access to clinical material by outside readers. Working with a systematic time sample assumes that systematic data analysis within fixed time intervals can capture the decisive change processes.

³In the 1970s of the last century—when this case was recorded—extra-clinical interviewing during the analytic treatment was not yet in our mind; today, this strategy has been shown not to be detrimental to the analytic process [27].

⁴Recently, we have completed a study on diagnostic features of 900 cases prepared for the final evaluation by candidates of the German Psychoanalytic Association with respect to gender [31].

⁵The material presented in the following sections is reported in great detail in the third volume of the Ulm textbook which has been edited by [9].

We used the following points of description for each five session block spread over the whole treatment from hour 1 to 517 with regular excluded intervals of 20 sessions:

1. External situation of the patient and treatment
2. Transference/countertransference situation
3. Relations of the patient to important “objects” outside the treatment, present and past
4. Working alliance
5. Important episodes within the five session block

This systematic description was initially prepared by two medical students and then revised and refined by two experienced psychoanalysts. The material available after such an effort can serve many purposes besides being a valuable achievement in itself (see [9, chap. 3]). It allows for an easy orientation to the whole case while being more detailed and more systematic than the usual novella-like case history. This systematic descriptive record marks out the orderly progress of clinical topics. One can rearrange the qualitative data (e.g., aggregating all transference descriptions one after the other) and thereby gain a good impression of the development of major issues, as illustrated by the following condensed description of the prevailing transference issues:

Systematic description of Amalia X’s focal transference issues

- 001–005: The analysis as confession
- 026–030: The analysis as an examination
- 051–055: The bad, cold mother
- 076–080: Submission and secret defiance
- 101–105: Searching her own rule
- 116–120: The disappointing father and the helpless daughter
- 151–155: The cold father and her desire for identification
- 176–180: Ambivalence in the father relationship
- 201–205: The father as seducer or judge of moral standards
- 226–230: Does he love me—or not?
- 251–255: Even my father cannot change me into a boy
- 276–280: The Cinderella feeling
- 301–305: The poor girl and the rich king
- 326–330: If you reject me I’ll reject you
- 351–355: The powerless love to the mighty father, and jealousy
- 376–380: Separation for not being deserted
- 401–405: Discovery of her capacity to criticize
- 426–430: I’m only second to my mother, first-borns are preferred
- 451–455: Hate for the giving therapist
- 476–480: The art of loving consists in tolerating love and hate
- 501–505: Be first in saying good-bye
- 513–517: Departure-symphony

An even more simplifying method to abstract the total content of a treatment is provided by the Topic-Index Method, based on the early work of Gill’s research team [33], which was used by Dahl [34] to study the distribution of major themes throughout the treatment. Following this procedure, we assessed the presence of each topic in a binary (yes/no) format, and the resulting graphical matrix provided a good overview of when a certain topic was covered by the patient and/or analyst during the treatment [35].

Level III: Guided Clinical Judgment Procedures

This methodological level consists of qualitative, clinically informed judgments which are performed by two or more trained judges in a systematic fashion. This approach first records the data on a qualitative level, yet allows for the handling of such data with both parametric and non-parametric statistics. To perform this transformation, a simple scale is used to represent the dimensional aspect of any concept under study. This scale, being a more elaborate version of the binary “yes/no” distinction, marks the beginning of any measurement procedure. Luborsky [36] aptly called these “guided clinical judgment procedures” that utilize the skills with which a clinician records complex data. At this level of our research approach, various studies were performed on our specimen case as follows:

1. Change of emotional insight [37]
2. Change of self-esteem [38]
3. Types of subjective suffering [39]
4. Change in dreams [40]
5. Focal model of process [41]
6. Breaks between sessions and the analytic process [42]
7. Psychoanalytic technique assessed by the Psychotherapy Process Q-Sort method [43]

Summarizing these approaches focuses on what we have learned from them.

Change of Emotional Insight

The concept of insight is one of the key concepts in psychoanalytic treatment, although substantial measures of change in emotional insight have been rare. Hohage and Kübler [37] constructed a rating scale that differentiates between a patient’s cognitive access (C-score) and emotional access (E-score) to her material. Added to this is a combined score of the specific construct called “emotional insight” which is fully described in Hohage’s manual [44].

This approach consists not only of a quantitative assessment of insight itself but also of the cognitive and emotional involvement. Of course, change in emotional insight is only an indicator of an important step, portraying that the patient begins to reflect on himself and his involvement with other persons.⁶ In such cases, the extent of the patient’s increased experiencing of himself would be a relevant result. The patient Amalia X, however, from the outset of the treatment was psychologically minded and often dealt with her own thoughts and feelings (C-score unchanged). Even so, changes in her emotional experiencing (E-score) were of importance. When placed under the impact of psychic conflict, she appeared to strengthen her emotional access to her material, which indicates an important therapeutic change. For example, when under the pressure of imminent termination, she was able to remain emotionally involved. This supplemented the finding of generally increased insight scores.

Change of Self-esteem

Ever since Kohut rediscovered the positive aspects of narcissism, the concept of self-esteem has had the potential to be used as a unifying concept for a diversity of research lines both within and outside

⁶ At the time this study was performed, the concept of mentalization was not yet around; today, it would be interesting to see whether the Self-Reflection Scale of Fonagy et al. [45] would correlate with the measure of emotional insight.

of psychoanalysis. In the personality research of recent years, self-esteem and a number of related concepts have played an increasingly important part, as Cheshire and Thomä [46] have shown. On the other hand, it has so far largely been neglected as a clinical-psychotherapeutic concept in the framework of empirical psychotherapy research. Yet, it is precisely this concept which can, in our opinion, most readily create meaningful links between process and outcome research because it is a variable equally relevant to both realms. If the process of therapy is understood as a gradual acquisition of certain attitudes and abilities, and if outcome is assessed in terms of the possession and availability of these attitudes and abilities, then researchers should gather information about those features of the patient that reflect this process of acquisition and the stability of its result. Hence, we believe in the importance of longitudinal and follow-up studies of these features.

Neudert et al. [38] developed a manual to assess the diverse aspects of this concept. The two central hypotheses about changes in overall self-esteem were confirmed: positive self-esteem increased significantly during the course of treatment, although the trend did not set in right at the start of treatment but only after wide fluctuations over the first 100 sessions, and negative self-esteem showed a significant and continuous decrease from the beginning of treatment. However, hypotheses regarding changes in acceptance by others were not confirmed, as there were no systematic trends. Nor were the hypotheses confirmed having to do with the relative incidence of different categories of material before and after focal working-through. On the other hand, there were indeed two confirmatory results for hypotheses about differences between correlations among categories: Self-esteem in connection with imagined heterosexuality improved significantly, as expected, and negative self-esteem in connection with autoeroticism decreased significantly.

Types of Subjective Suffering

Another key concept of psychoanalysis has been subjective suffering, that is, suffering that is not captured by standard psychiatric rating scales but rather reflects the patient's subjectivity. Neudert and Hohage [39] developed a manual-guided procedure that delineates forms of suffering in the patient's recorded communications. In their study on patient Amalia, they were interested in the following issues:

1. What was the total amount of subjective suffering during the course of treatment?
2. Which part of the patient's suffering during psychoanalysis was related to her psychoanalyst, which part had other sources, and what were those other sources?
3. How did the patient's suffering in relation to the psychoanalyst change over the course of treatment? Were there crises in the course of treatment, and, if so, what caused them?
4. How much of the suffering related to the analyst was in fact due to his abstinence?
5. What did the therapist do when he became the object of the patient's suffering?

The results indicated that the amount of total suffering throughout the treatment can be described as a monotonic and statistically significant negative trend, and that "helplessness in dealing with suffering" decreased significantly over the course of treatment. From the data, it was clear that suffering related to the analyst was low in comparison to the total amount of subjective suffering. However, the suffering experienced in relationship to the analyst increased slowly to a peak toward the middle of the treatment. Here, the suffering related to the environment evidently replaced the patient's suffering in regard to herself. Until that point, she had primarily been occupied with her own insufficiencies, insecurities, and inhibitions. Having overcome this, the data show that she began to tackle her environment even though doing so was painful for her, and the psychoanalyst became the primary *safe* object for her painful conflicts.

Change in Dreams

Even though most discussions about dreams in clinical practice focus on a single dream, it is evident that the reporting of dreams during a psychoanalytic treatment is one of the most regular phenomena. Some patients report dreams more and others less, and analysts differ as to the extent they use the dreams offered by the patient [47]. In compromise, both patient and analyst establish a non-conscious, non-intentional agreement on the relevance of dreams for the purpose of the treatment.

The Ulm dream study group investigated cognitive changes based on dream reports also in this case. The development of these cognitive functions was studied throughout the treatment using the total dream material of the transcribed sessions of Amalia X [48].

Our results related to three questions. First, what were the dreamer's relations to other people? It was obvious that Amalia X did not change with respect to her social relations in her dreams, which is remarkable when considering that she suffered from erythrophobic symptoms at the beginning of the treatment. The second question pertained to the global emotional atmosphere in the dreams. A list of adjective scales was used and by means of factor analysis, we identified a steady trend from negative dream emotions at the beginning to positive dreaming coloration toward the end of the analysis. The third issue focused on the problem-solving activity of the dreamer, and we observed a steady systematic change escalating as the analysis proceeds. Another issue in this study was whether the changes observed could be modeled as linear trends, and in the results, we found both stationary processes with variations in intensity (as in aggressive or anxious feelings) and changes that increased or decreased in a linear fashion over time.

The Ulm Focal Model of Process

At present, the number of coherent models of the psychoanalytic process still remains small. In the Ulm Process Model [18, chap. 9], psychoanalytic therapy is understood as a continuing, temporally unlimited focal therapy with a changing, interactively developing focus. The sequence of foci is regarded as a result of an unconscious exchange between the needs of the patient and the resources of the analyst.

The Core Conflictual Relationship Theme (CCRT) method summarized by Luborsky and Crits-Christoph [49] offers a way of making such focal and core conflicts operational. The basic assumption of the CCRT method is that patients' accounts of interpersonal experiences contain typical internalized subject–object relationship patterns. Stories told in therapy reflect experiences, and for that reason, the CCRT method analyzes narratives of the patient's experiences in relationships (“relationship episodes”).

The study by Albani et al. [41] investigated how effective the CCRT method would be in depicting the therapeutic course of the psychoanalytic treatment of Amalia X according to the Ulm Process Model. The data we evaluated were drawn from the first and last therapy phases (sessions 1–30 and 510–517, respectively), and beginning with the 50th session blocks of five sessions were analyzed at 50 session intervals, with a final sample of 11 blocks and 92 sessions.

The following pattern was found by counting the most frequent categories across all phases of therapy:

Wish toward the Object	<i>Others should be attentive to me</i>
Wish toward the Self	<i>I want to be self-determined</i>
Assumed Response of the Object	<i>Others are unreliable</i>
Assumed Response of the Self	<i>I am dissatisfied, scared</i>

This pattern formed a central focus, and this focus was worked-through in many therapy phases detailed in the study. Amalia X's wish for change was expressed in her desire for autonomy, overcoming her experience of herself as dependent and weak, as unable to set limits, and as dissatisfied. A basic theme manifested itself in each of the absolute highest frequency categories ("nuclear conflicts"), and each therapy phase showed typical clusters of CCRT categories which characterize thematic foci in the sense of French's [50] "focal conflicts" as operationalized by the CCRT method.

Both the strengths and limits of the CCRT method stem from its confinement to reports of relationship experiences by the patient herself. In other words, investigations remain limited to relationship experiences that the patient has perceived and verbalized. The method provides no way of including unconscious material other than the repetitive schemas that patients unconsciously follow in describing the course of relationship and of assessing defense mechanisms. This study showed that the CCRT method captures clinically relevant interpersonal aspects of the psychoanalytic process from the patient's point of view, supporting the Ulm Process Model, although the analyst's contribution was reflected only in the patient's narratives regarding her relationship to the therapist.

Breaks Between Sessions and the Analytic Process

The evolution of Amalia X's reactions to breaks during the course of the analysis was studied by Jiménez et al. [42] on the hypothesis that this could serve as an indicator of change achieved through the therapeutic process. The study was based on a sample of 212 transcribed sessions evenly distributed over the treatment and comprised three stages (1) A formal definition of a break in the treatment was determined by means of a histogram based on the attendance card. (2) Using the Ulm Anxiety Topic Dictionary, a computer-assisted method of verbal content analysis, an attempt was made to characterize the sessions correlated in time with the various types of breaks: this instrument defined the construct "separation session," which tended to appear immediately before the more prolonged breaks, but was also found sporadically in relation to shorter breaks. (3) A sample of separation sessions was investigated for transference responses by means of the CCRT: the components of the CCRT evolved in accordance with expectations, and the results were discussed in relation to the methodology used and the psychoanalytic theory of therapy.

Psychoanalytic Technique

The Psychotherapy Process Q-Sort [51] proved to be a reliable and relevant instrument for describing patterns of interactions in the case of Amalia X [43]. Comparison of sessions from the beginning and termination phases of a psychoanalytic therapy demonstrated clinically relevant differences between the two phases of treatment. The initial phase of the therapeutic interaction was characterized by the analyst's intensive and supportive treatment of the patient. A reciprocal influence existed between the patient's self-accusatory patterns, her embarrassment and feelings of low self-esteem, and the analyst's helpful interventions. The therapeutic technique consisted of clarifications as well as confrontations and interpretations of in-session behavior. This helped the patient become more forthright in exploring her thoughts and feelings. The description of the initial phase with this method pointed to the establishment of a good helping alliance early in treatment. In the end phase of the analysis, the patient had become capable of expressing aggressive feelings. Feelings of guilt had dramatically subsided, and the patient was able to talk well about difficult love relations. The topic of separation was openly discussed in the analysis, and the patient identified her ability to work with her dreams as expressing her internalization of the analytic function.

These findings are well supported by Akhtar's [52] comments on the specimen session 152:

Dr. Thomä's technique shows flexibility, resilience, and broad-mindedness. It is centered upon helping the patient achieve ego freedom through interpretation and transference resolution. However, it incorporates a variety of listening attitudes and a broad range of interventions that can be seen as preparatory for, as well as in lieu of, the interpretive enterprise (p. 690).

This clinically based evaluation fits well with the recent addendum to the study of technique in the case of Amalia X that was provided by the detailed analysis of the specimen session 152 by Levy et al. [53]:

Our first impression of Session 152 of the analytic treatment of Amalia X is that the dialogue is complex, the associations very personal, and the exchange very intimate between a patient and analyst who have developed an excellent therapeutic alliance. In fact, this is a session requiring more than one reading in order to feel confident in one's rating. We experienced this hour as an entry into a very private world of dyadic meaning that requires careful attention to the process. (p. 18)

It is obvious that this detailed method of analyzing the interiors of an analytic exchange deserves a fuller, more systematized application to this treatment which is underway.

Level IV: Linguistic and Computer-Assisted Text Analysis

Systematic investigations on the special conversational nature of psychoanalytic technique have been made using materials from the Ulm specimen case. Koerfer and Neumann [54] focused on the patient's sometimes painful transition from everyday discourse to psychoanalytic discourse. These and other findings from that field of discourse analysis support the topical formulation of our "philosophy" of psychoanalytic therapy: Provide as much everyday talk as necessary to meet the patient's safety needs, and provide as much psychoanalytic discourse as feasible to stimulate the exploration of unconscious meanings in intrapsychic and interpersonal dimensions [19, chap.7.1].

Following Schafer's [55] ideas of action language, Beermann [56] studied the use of various syntactical variations in active and passive voice expressed by Amalia X over the course of treatment. Kächele [57] investigated the analyst's conversational strategies, focusing first on the analyst's verbal involvement, showing that in a productively evolving analytic process (as it happened in the case Amalia X), there was no correlation between patient's and analyst's amount of verbal participation. The analyst's verbal activity steadily declined over the course of the analysis, reflecting the analyst's recognition that this patient would be increasingly able to develop her own verbal space.

A distinction of formal and substantial aspects of the speaker's vocabulary (the term "vocabulary" referring to the number of different words or "types" that are used by a speaker) has been shown to be useful. Measures of types are interesting, since words stand for concepts and therapy may be viewed essentially as an exchange of concepts involving the assimilation of new material and accommodation of previous schemata. Thus, the analyst's vocabulary at the beginning of the analysis likely will both shape and reflect the patient's experiential world, and during the analysis, its evolution might run parallel to, or at least partly reflect, the conceptual and emotional learning processes that take place.

To explore this, we examined the analyst's characteristic vocabulary in the opening phase of Amalia X's analysis with a specific focus on the part of his vocabulary that he actively introduced in the dialogues (as distinct from following the patient's lead) [58]. Based on its frequency of occurrence of types, the analyst in the first 18 sessions characteristically emphasized four classes of nouns in his interventions: *technical nouns* that were part of his task to invite the patient's participation in the analysis; *emotional nouns* that were part of the analyst's technique to intensify emotions; *sexual*

bodily linked nouns that referred to the patient's embarrassed sexual self concept; and a few *topical nouns* that reflected aspects of the patient's life situation reported in the first sessions.

Computer-assisted vocabulary screening may be useful to identify basic interpretive strategies focusing on analysts' emotions. Reviewing previous works using computer-based vocabulary analysis based on Dahl's [59] emotion theory, we tested a systematic sample from our specimen case. The study confirms that in the treatments, a systematic change from negative "ME-emotions" to negative "IT-emotions" can be demonstrated [60]. This finding underscores the basic Freudian notion that self-referential complaints have to be transformed into object-related activities.

Last but not least, Mergenthaler's cycle model [61] was applied to the session 152 of the patient Amalia [62]. This approach working on the microscopic level of moment-to-moment interactions directly allows for a feedback process into the rich clinical discussions that have been the topic of many contributions of this session material.

Summary Comments

In view of the paucity of thorough clinical-empirical studies of psychoanalytic cases [9, chap. 3], Werbart [63] expresses the opinion that this work represents a major step in devising a methodology of sound empirical research into the process of analytic treatments. First, we have demonstrated *that* the empirical research can be done, and then we have shown *how* it can be done, given sufficient dedication and institutional support. Psychoanalytic treatment can be made the focus of objective and methodologically sophisticated research, leading to findings and discoveries that cannot be made by the treating analyst alone. The clinical perspective of the treating analyst is essential but is necessarily limited by his or her role as a participant observer of the analytic process. Supplementing this, formal systematic research opens the way to independent understandings of the mechanisms of change in psychoanalysis.

The studies of our specimen case not only support the notion that this analytic treatment led to considerable change in many aspects of the patient's cognitive and emotional functioning, but also demonstrate the usefulness of micro-analytic research techniques that help to identify and conceptualize change processes. The number of descriptive dimensions that are possible and necessary to describe these changes is not small. However, one conclusion can safely be drawn from the studies of our specimen case, which is that change processes exist and can be demonstrated by research methods that are reliable and valid. Both the process of change in psychoanalysis and in the patient's basic psychological capacities take place all along the way, and it is often but not always the case that they can be described in terms of linear trends along the continuum of the treatment.

The case of Amalia X is one of the most intensely studied, perhaps the most intensively studied, of all specimen cases. Almost all of the hypotheses tested were significant, thereby providing support for the underlying conceptions of psychoanalytic treatment that guided the studies. Although this substantiation is valuable, it is also of interest to consider the limitations of the studies. Except for the hypotheses relating to Amalia X's improvement in acceptance by others, which were paralleled by failure to improve her social relations in her dreams, in all other instances, we found what we expected to find, which may be a form of the association between investigator allegiance and treatment outcome [64]. Consequently, we were disappointed that more significant surprises did not emerge from the studies. The implication is that we need to develop and to address more innovative questions. One example has been developed by a Swiss research group studying Amalia's transcripts with a sophisticated linguistic methodology [65] thus generating a host of detailed, fine-grained analyses [66, 67].

A corollary of this failure to find new phenomena is that we did not come away from this array of studies with any new, convincing ideas of which were the most important mutative factors in her

substantial improvement. Although momentary affective patient–analyst interactions may have mutative effects (see Levy’s [53] comment to session 152), we have concluded that a long-term view of the course of treatment is essential to identify structural changes in the patient. This emphasizes the extraordinary complexity of attempting to delineate the causes of mutative effects and reinforces the need for humility in approaching such endeavors. Often, the analyst’s uncertainty is defended against by compensatory feelings of knowing all about analytic treatment, or, as Jonathan Lear [68] terms it, “Knowingness.”

Having said this, we would like to assert that in the domain of examining mutative factors specifically in psychoanalytic treatment, single-case research has certain advantages compared to group studies. Conversely, with regard to the assessment of therapeutic benefit, group studies seem advantaged. Indeed, group studies seem to have solidly established the therapeutic efficacy of psychodynamic treatment [69, 80–82].

Any attempt to study mutative factors in psychoanalytic treatment in particular must deal with the unresolved epistemological problem that there is no consensually agreed definition of “psychoanalytic process.” This is so vexing that it has been dealt with largely by denial of the existence of the problem. For example, the definition of psychoanalysis used by De Maat et al. [69] is: “the patient lies on a couch, and there are at least three sessions a week” (p. 2). As Gill [70, 71] has argued, these external criteria are insufficient. It is noteworthy that although the outstanding attribute of contemporary psychoanalysis is the diversity of theory and praxis, we know of no attempt to substantiate the characterization of a treatment as psychoanalytic that included psychoanalytic reviewers who were diverse in orientation.

Psychoanalysis, unfortunately, is a field lacking clear boundaries. We can say what it is not; we cannot say what it is. It is time, in agreement with Winnicott [72], Gill [70], Fosshage [73], and Cooper [74], to be more definite in stating that attempting to distinguish between psychoanalysis and psychoanalytic psychotherapy is futile. Having digested Sandell et al.’s [75] report from the Stockholm study demonstrating how strongly therapist attitudes influence change during treatment, we think that the field should move on. We propose Gill and Fosshage’s suggestion that any treatment that focuses upon analysis of transference (“stereotyped rigidity,” Gill [71]) be considered psychoanalytic treatment. However, many investigators use the term “transference” loosely to apply to all patient–analyst interactions. We propose that the term “transference” should be limited to patient behaviors that are characterized by “stereotyped rigidity” and are to some degree maladaptive. Of course, this involves a subjective clinical judgment, such as analysts regularly make in treatment, and raises the question of whether the patient’s judgment or the analyst’s judgment shall be privileged. This definition should take into consideration Gill’s observation that there are often elements of plausibility in the patient’s responses to the analyst. Given the complexity of assessing “stereotyped rigidity,” analysts would have to undergo training in order to be able to achieve interrater reliability, especially if analysts of diverse orientations were included. Clearly, evaluating “transference” in the material of a single case has to be placed in some comparative perspective; to attempt such studies with large numbers of treated patients would be orders of magnitude more demanding. Therefore, if the intent is to study the causality in specifically psychoanalytic treatment (as defined by the presence of “transference”), the feasibility of doing so is greater in single-case studies than in group studies.

In addition, any psychoanalytic technique needs a strong focus on new experience to overcome the maladaptive patterns [18]. This kind of new experience must be fostered by a number of techniques, including supportive interventions that Schachter and Kächele [76] have termed Psychoanalysis-Plus. Processing the therapeutic relationship to a patient’s best use must be the clinical hallmark of good analytic work [77, 78]. How to evaluate the degree of new experience is still a formidable task that lies ahead. The investigation of the specimen case Amalia X has not yet come to an end.

As we have demonstrated, single-case research allows for a number of research methodologies to be implemented in order to better understand the universe each individual analytic dyad represents. “The careful scrutiny of the psychoanalytic process through concurrent use of multiple methodologies has created a comprehensive reference text that clinicians can use to improve their understanding of the mechanisms of change,” comments Fonagy [79] on the full length account of this research enterprise.

We would like to encourage other research groups to single out a carefully documented, tape-recorded case and focus on the various dimensions of study. We want to encourage other psychoanalysts to open the privacy of their clinical work in the endeavor to improve psychoanalysis and clinical work by allowing others in the scientific community to carefully scrutinize their analyses. We recommend the training of researchers who are also trained as clinicians and the training of clinicians who are also trained as researchers, so that they may learn to identify with both the clinical and research tasks. We need analysts and researchers with the ability to support long-term commitment to making slow but cumulative progress. Systematic investigations are dependent on teams supported by institutions which promote cooperation between analysts in practice and full-time researchers. Implementation of such research will help to move psychoanalysis creatively beyond its contemporary crisis.

References

1. Wallerstein RS, Sampson H. Issues in research in the psychoanalytic process. *Int J Psychoanal.* 1971;52:11–50.
2. Wallerstein RS. The trajectory of psychoanalysis: a prognostication. *Int J Psychoanal.* 2002;83:1247–63.
3. Gabbard G, Westen D. Rethinking therapeutic action. *Int J Psychoanal.* 2003;84:823–42.
4. Schachter J. Contemporary American psychoanalysis: a profession? Increasing the role of research in psychoanalysis. *Psychoanal Psychol.* 2005;22:473–92.
5. Michels R. The case history. *J Am Psychoanal Assoc.* 2000;48:355–75.
6. Dahl H, Kächele H, Thomä H, editors. *Psychoanalytic process research strategies.* Berlin/Heidelberg/New York/London/Paris/Tokyo: Springer; 1988.
7. Malcolm J. *Psychoanalysis: the impossible profession.* New York: Knopf; 1980.
8. Donnellan GJ. Single-subject research and psychoanalytic theory. *Bull Menninger Clin.* 1978;42:352–7.
9. Kächele H, Schachter J, Thomä H. From psychoanalytic narrative to empirical single case research, Implications for psychoanalytic practice. New York: Routledge; 2009.
10. Kächele H. Zur Bedeutung der Krankengeschichte in der Klinisch Psychoanalytischen Forschung. *Jahrbuch der Psychoanalyse.* 1981;12:118–77.
11. Kächele H, Thomä H, Ruberg W, Grünzig HJ. Audio-recordings of the psychoanalytic dialogue: scientific, clinical and ethical problems. In: Dahl H, Kächele H, Thomä H, editors. *Psychoanalytic process research strategies.* Berlin: Springer; 1988. p. 179–94.
12. Kazdin AE. *Single case research designs: methods for clinical and applied settings.* Oxford: Oxford University Press; 1982.
13. Kazdin AE. *Research design in clinical psychology.* Needham Heights: Allyn & Bacon; 2003.
14. Hillard RB. Single case methodology in psychotherapy process and outcome research. *J Consult Clin Psychol.* 1993;61:373–80.
15. Fonagy P, Moran G. Single case research. In: Miller N, Luborsky L, editors. *Handbook of psychodynamic treatment research.* New York: Basic Books; 1993.
16. Erikson EH. The dream specimen of psychoanalysis. *J Am Psychoanal Assoc.* 1954;2:556.
17. Kächele H. *Psychoanalytische Prozesse. Methodische Illustrationen und methodologische Reflexionen.* Munich: <http://edoc.ub.uni-muenchen.de/10558/>; 2009.
18. Thomä H, Kächele H. *Psychoanalytic practice. Vol. 1: Principles.* Paperback ed. New Jersey: Jason Aronson Inc.; 1994.
19. Thomä H, Kächele H. *Psychoanalytic practice. Vol. 2: Clinical studies.* Paperback ed. New Jersey: Jason Aronson Inc.; 1994.
20. Freud S. On the universal tendency to debasement in the sphere of love (Contributions to the psychology of love). Standard ed. 1912;11:177–90.
21. Thomä H, Kächele H. Comparative psychoanalysis on the basis of a new form of treatment report: the case Amalia X. *Psychoanal Inq.* 2007;27:650–89.

22. Wilson A. Multiple approaches to a single case: conclusions. *Int J Psychoanal.* 2004;85:1269–71.
23. Grawe K. Zurück zur psychotherapeutischen Einzelfallforschung. *Zeitschrift für klinische Psychologie.* 1988;17:4–5.
24. Luborsky L, Spence D. Quantitative research on psychoanalytic therapy. In: Bergin A, Garfield S, editors. *Handbook of psychotherapy and behavior change.* New York: Wiley; 1971. p. 408–38.
25. Mergenthaler E, Kächele H. The Ulm textbank management system: a tool for psychotherapy research. In: Dahl H, Kächele H, Thomä H, editors. *Psychoanalytic process research strategies.* Berlin/Heidelberg/New York/London/Paris/Tokyo: Springer; 1988. p. 195–212.
26. Mergenthaler E, Stinson CH. Psychotherapy transcription standards. *Psychother Res.* 1992;2:125–42.
27. Taubner S, Koch-Huebner I, Boellinger L, Kächele H, Cierpka M, Buchheim A, et al. Psychoanalysts and their patients as research subjects, submitted for publication.
28. Kächele H, Thomä H. Psychoanalytic process research: methods and achievements. *J Am Psychoanal Assoc.* 1993;41(Suppl):109–29.
29. Sargent H. Intrapsychic change: methodological problems in psychotherapy research. *Psychiatry.* 1971;24:93–108.
30. Dewald PA. The psychoanalytic process in adult patients. *Psychoanal Study Child.* 1978;33:323–31.
31. Lang FU, Pokorny D, Kächele H. Psychoanalytische Fallberichte: Geschlechtskonstellationen und sich daraus ergebende Wechselwirkungen auf Diagnosen im Zeitverlauf von 1969 bis 2006. *Psyche - Z Psychoanal.* 2009;63:384–98.
32. Tuckett D. The conceptualization and communication of clinical facts in psychoanalysis. *Int J Psychoanal.* 1994;75:865–70.
33. Simon J, Fink G, Endicott N, Gill M. Psychoanalytic research and the concept of analytic work. Brooklyn: Department of Psychiatry, Brookdale Hospital Center; 1968.
34. Dahl H. A quantitative study of psychoanalysis. In: Holt RR, Peterfreund E, editors. *Psychoanalysis and contemporary science.* New York: Macmillan; 1972. p. 237–57.
35. Thomä H, Mergenthaler E, Kächele H. The topic-index method for systematic process description. Heidelberg: *Dep Psychosomatic Medicine*; 1982.
36. Luborsky L. Principles of psychoanalytic psychotherapy, A manual for supportive–expressive treatment. New York: Basic Books; 1984.
37. Hohage R, Kübler JC. The emotional insight rating scale. In: Dahl H, Kächele H, Thomä H, editors. *Psychoanalytic process research strategies.* Berlin/Heidelberg/New York/London/Paris/Tokyo: Springer; 1988. p. 243–55.
38. Neudert L, Grünzig HJ, Thomä H. Change in self-esteem during psychoanalysis: a single case study. In: Cheshire NM, Thomä H, editors. *Self, symptoms and psychotherapy.* New York/Chichester: Wiley; 1987. p. 243–65.
39. Neudert L, Hohage R. Different types of suffering during a psychoanalysis. In: Dahl H, Kächele H, Thomä H, editors. *Psychoanalytic process research strategies.* Berlin/Heidelberg/New York: Springer; 1988. p. 227–41.
40. Leuzinger-Bohleber M, Kächele H. From calvin to freud: using an artificial intelligence model to investigate cognitive changes during psychoanalysis. In: Dahl H, Kächele H, Thomä H, editors. *Psychoanalysis process research strategies.* Berlin: Springer; 1988. p. 291–306.
41. Albani C, Pokorny D, Blaser G, König S, Thomä H, Kächele H. Study of a psychoanalytic process using the Core Conflictual Relationship Theme (CCRT) method according to the Ulm process model. *Eur Psychother.* 2003;4:11–32.
42. Jiménez JP, Pokorny D, Kächele H. Evolution of the reaction to breaks in the psychoanalytical process as an indicator of change. In: Kächele H, Schachter J, Thomä H, editors. *From psychoanalytic narrative to empirical single case research, Implications for psychoanalytic practice.* New York: Routledge; 2009. p. 312–26.
43. Albani C, Blaser G, Jacobs U, Jones E, Thomä H, Kächele H. Amalia X's psychoanalytic therapy in the light of Jones's psychotherapy process Q-sort. In: Leuzinger-Bohleber M, Target M, editors. *Outcomes of psychoanalytic treatments, Perspectives for therapists and researchers.* London/Philadelphia: Whurr Publishers; 2002. p. 294–302.
44. Hohage R. Empirische Untersuchungen zur Theorie der emotionalen Einsicht. Abteilung Psychotherapie, Habilitationsschrift. Universität Ulm; 1986.
45. Fonagy P, Target M, Steele M, Steele H. Reflective-functioning manual: for application to adult attachment interviews. London: In University College; 1998.
46. Cheshire NM, Thomä H, editors. *Self, symptoms and psychotherapy.* New York/Chichester: Wiley; 1987.
47. Kächele H, Deserno H. Macht und Ohnmacht in der psychoanalytischen Arbeit—eine Fallstudie. *Forum der Psychoanalyse.* 2009;25:161–83.
48. Kächele H, Eberhardt J, Leuzinger-Bohleber M. Expressed relationships, dream atmosphere and problem solving in Amalia's dreams – dream series as process tool to investigate cognitive changes. A single case study. In: Kächele H, Mergenthaler E, Krause R, editors. *Psychoanalytic process research strategies II.* Ulm: Ulmer Textbank; 1999. www.horstkaechele.de.
49. Luborsky L, Crits-Christoph P. Understanding transference. 2nd ed. New York: Basic Books; 1998.

50. French TM. The integration of behaviour, Basic Postulates, vol. 1. Chicago: University of Chicago Press; 1952.
51. Jones E. Therapeutic action: a guide to psychoanalytic therapy. Northvale: Jason Aronson; 2000.
52. Akhtar S. Diversity without fanfare: some reflections on contemporary psychoanalytic technique. *Psychoanal Inq.* 2007;27:690–704.
53. Levy RA, Ablon JS, Ackerman JA, Seybert C. The psychotherapy process Q-set and amalia X, session 152. In: Albani C, Ablon J, Levy R, Mertens W, Kächele H, editors. Der “Psychotherapie Prozess Q-Set” von Enrico E. Jones, Deutsche Version und Anwendungen. Ulm: Ulmer Textbank; 2008. p. 7–41.
54. Koerfer A, Neumann C. Alltagsdiskurs und psychoanalytischer Diskurs. Aspekte der Sozialisierung der Patienten in einen “ungewöhnlichen” Diskurstyp. In: Flader D, Grodzicki WD, Schröter K, editors. *Psychoanalyse als Gespräch Interaktionsanalytische Untersuchungen über Therapie und Supervision.* Frankfurt: Suhrkamp; 1982. p. 96–137.
55. Schafer R. A new language for psychoanalysis. New Haven: Yale University Press; 1976.
56. Beermann S. Linguistische Analyse psychoanalytischer Therapiedialoge unter besonderer Berücksichtigung passivischer Sprechmuster. Hamburg: Diplomarbeit; 1983.
57. Kächele H. Verbal activity level of therapists in initial interviews and long-term psychoanalysis. In: Minsell WR, Herff W, editors. *Methodology in psychotherapy research, Proceedings of the 1st European conference on psychotherapy research.* Frankfurt: Lang; 1983. p. 125–29.
58. Kächele H, Hölzer M, Mergenthaler E. The analyst’s vocabulary. In: Fonagy P, Cooper AM, Wallerstein RS, editors. *Psychoanalytic on the move: the work of Joseph Sandler.* London/New York: Routledge; 1999. p. 217–29.
59. Dahl H. The key to understanding change: emotions as appetitive wishes and beliefs about their fulfillment. In: Safran J, Greenberg L, editors. *Emotion, psychopathology and change.* New York: Guilford; 1991.
60. Hölzer M, Dahl H, Kächele H. A basic interpretative strategy in psychoanalytic treatments. *Psychother Res*, submitted for publication.
61. Mergenthaler E. Emotion–abstraction patterns in verbatim protocols: a new way of describing psychotherapeutic processes. *J Consult Clin Psychol.* 1996;64:1306–15.
62. Mergenthaler E. Psychoanalytische Prozessforschung: Emotions-/Abstraktions-Muster und das Therapeutische Zyklusmodell zur Untersuchung von Veränderungsprozessen. In: Giampieri-Deutsch P, editor. *Psychoanalyse im Dialog der Wissenschaften.* Stuttgart/Berlin/Köln: Kohlhammer; 2002. p. 301–15.
63. Werbart A. Review: minding the gap between clinical practice and empirical research in psychoanalysis: from psychoanalytic narrative to empirical single case research: implications for psychoanalytic practice. In: Kächele H, Schachter J, Thomä H, editors. *Int J Psychoanal* 2009;90:1459–66.
64. Luborsky L, Diguer L, Seligman DA, Rosenthal R, Krause ED, Johnson S, et al. The researchers’ own therapy allegiance: a “wild card” in comparisons of treatment efficacy. *Clin Psychol Sci Pract.* 1999;6:95–106.
65. Wepfer R, von Wyl A, Boothe B. Jakob – a tool for narrative analysis in process research. In: Kächele H, Mergenthaler E, Krause R, editors. *Psychoanalytic process research strategies II.* Ulm: Ulmer Textbank; 1999. www.horstkaechele.de.
66. Boothe B. Wie erzählt man einen Traum, diesen herrlichen Mist, wie porträtiert man seinen Analytiker? In: Wiegand MH, von Sprei F, Förstl H, editors. *Schlaf & traum: neurobiologie, psychologie, therapie.* Stuttgart: Schattauer; 2006. p. 159–69.
67. Spiegel U, Boothe B. Dream as prototypes of the “polyphonic novel of self” – a single case study (Amalia). In: *Fourth international conference of SPR.* Braga; 2006.
68. Lear J. Open minded: working out the logic of the soul. Cambridge: Harvard University Press; 1998.
69. De Maat S, de Jonghe F, Schoevers R, Dekker J. The effectiveness of long-term psychoanalytic therapy: a systematic review of empirical studies. *Harv Rev Psychiatry.* 2009;17:1–23.
70. Gill MM. Psychotherapy and psychoanalysis: a revision. *Int Rev Psychoanal.* 1984;2:161–79.
71. Gill MM. Transference. A change in conception or only in emphasis? *Psychoanal Inq.* 1984;4:489–523.
72. Winnicott DW. *Collected Papers: through paediatrics to psychoanalysis.* London: Tavistock; 1958.
73. Fosshage JJ. Psychoanalysis and psychoanalytic psychotherapy. Is there a meaningful distinction in the process? *Psychoanal Psychol.* 1997;14:409–25.
74. Cooper S. A disturbance in the field: essays in transference and countertransference. London: Routledge; 2010.
75. Sandell R, Lazar A, Grant J, Carlson J, Schubert J, Broberg J. Therapists’ attitudes and patient outcomes: II. Therapist attitudes influence change during treatment. *Psychother Res.* 2007;17:201–11.
76. Schachter J, Kächele H. The analyst’s role in healing: psychoanalysis-PLUS. *Psychoanal Psychol.* 2007;34:429–44.
77. Hill CE, Knox S. Processing the therapeutic relationship. *Psychother Res.* 2009;19:13–29.
78. Fonagy P. Blurb statement to Kächele. Schachter, Thomä; 2009.
79. Jiménez JP. Grasping psychoanalysts’ practice in its own merits. *Int J Psychoanal.* 2009;90:231–48.
80. Milrod B, Leon AC, Busch F, et al. A randomized controlled clinical trial of psychoanalytic psychotherapy for panic disorder. *Am J Psychiatry.* 2007;164:265–72.
81. Leichsenring F, Rabung S. Effectiveness of long-term psychodynamic psychotherapy. A meta-analysis. *J Am Med Assoc.* 2008;300:1551–65.
82. Shedler J. The efficacy of psychodynamic psychotherapy. *Am Psychol.* 2010;65:98–109.

Chapter 28

Combining Idiographic and Nomothetic Approaches to Single-Case Research

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Keywords Interaction structures • Long-term treatment • Psychodynamic psychotherapy • Psychotherapy Process Q-Set • Single-case empirical research • Therapeutic change • Transference-countertransference

Combining Idiographic and Nomothetic Approaches to Single-Case Research

Professional psychotherapy is supposedly distinguished from informal social support and other non-professional psychosocial interventions by its grounding in objective science. Yet, unbeknownst to the general public, many therapists pay very little attention to psychotherapy research [1]. Though there are probably many reasons for this paradox, surely one of them is the fundamental mismatch between state-of-the-art psychotherapy research and the realities of psychotherapy practice [2, 3]. The highest prestige is offered to psychotherapy studies involving random assignment of purportedly similar clients (i.e., those sharing the same single psychiatric diagnosis) to either the treatment of interest (usually brief and highly scripted) or some other presumably less effective condition (e.g., no treatment). These randomized controlled trials (RCTs) are designed to mirror pharmacologic studies in which medical patients randomly receive either a target drug or a presumably less effective alternative (e.g., placebo). Random assignment increases the likelihood that better outcomes in the target treatment group can be attributed to the treatment. For this reason, leading psychotherapy researchers advise therapists to restrict their practice to treatments that have been validated through RCTs [4].

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Though this recommendation may seem reasonable to some, experienced therapists frequently question it [5]. Such clinicians may wonder, for example, about the wisdom of likening psychotherapies to medications. Medications are typically standardized in such a way that the research treatment can be readily duplicated in clinical practice. Though RCTs of psychotherapy attempt to achieve this kind of standardization through scripted *therapy manuals*, experienced therapists recognize that psychotherapies are unique in ways that make it difficult to control the exact “ingredients” administered to any particular client. For instance, clients seen in private practice settings are likely to differ from their research counterparts in important ways such as having multiple diagnoses (or failing to meet full criteria for any psychiatric diagnosis) [6]. Also, because psychotherapies succeed (or fail) through a dynamic interplay of: (a) the therapist’s personality and/or his/her techniques, (b) the client’s special needs, capacities, and (c) the nature of the relationship between therapist and client [7, 8], it is not realistic to attempt to control all potentially relevant variables. Many clinicians are, therefore, reluctant to follow therapy manuals. They prefer, instead, to apply their clinical models in a flexible way [9, 10]. Moreover, many real-world psychotherapies employ techniques that are poorly represented in the RCT literature (e.g., psychodynamic therapy (PDT)) and are longer in duration than the typical randomized trial (e.g., years rather than months). For all of these reasons, psychotherapists have historically looked elsewhere for guidance about how to optimize their clinical results. *Case studies* have comprised a key source of wisdom capable of capturing the enormous variety and nuanced context of clinical work.

Although case studies have the advantage of retaining nuance and context, they can also have serious disadvantages for guiding clinical practice in a scientific direction. For example, many case studies present information selectively [11]. Case presentations may focus on the moments of treatment that support the clinician’s point of view and ignore or downplay disconfirming examples. Thus, case studies can fall prey to the risks of confirmatory biases, failing to provide adequate opportunity to falsify pre-existing theory thereby ultimately reinforcing erroneous beliefs. Fortunately, case studies can be designed to address this problem; information can be collected systematically so that confirmatory and contradictory evidence are equally likely to be detected. A second problem with typical case studies is that the stories they tell are usually unverifiable. Because of their highly sensitive nature, psychotherapy cases are rarely recorded verbatim. Instead, case studies are often derived from therapist notes, leaving them vulnerable to the well-established distortions of human memory [12]. This is not an insurmountable problem; it has become increasingly acceptable to record psychotherapies for research purposes (with client and therapist permission and subsequent steps to disguise identifying information). A third problem with case studies is that they usually cannot be used to draw persuasive generalizations about other cases [13]. This is a serious limitation given that one of the basic goals of science is to discover general principles. Though case studies are inherently limited in this way, they can be used to achieve a similar purpose. Namely, they can be used to test the applicability of general laws (e.g., those drawn from randomized trials) to the specific case. In so doing, they can function to bridge science and practice in a way that has the potential to increase the salience of psychotherapy research for psychotherapists.

Given the issues raised above, it seems that the goal of infusing psychotherapy practice with objective evidence would be facilitated by a psychotherapy research paradigm that (a) retains the context and nuance of case studies, (b) allows for the testing of general principles, (c) minimizes the usual shortcomings of case studies, and (d) approximates the causal inference afforded by randomized trials. This chapter offers such a paradigm. In the following pages, we will present details of a single case that was video recorded in its entirety and thus subject to verification. The resulting data were sampled systematically to avoid bias. Qualitative and quantitative methods were used to integrate clinical context with standardized reference points. Case-specific elements and general principles were examined and tested using advanced statistical methods that permit enhanced causal inference. This was achieved, in part, by using a psychometrically sound instrument for quantifying the therapist behaviors, client behaviors, and therapist–client interactions called the

Psychotherapy Process Q-Set (PQS) [14, 15]. The PQS was used to (a) describe the therapy process, (b) identify case-specific “interaction structures” between therapist and client (and determining whether interpretation of these structures predicts therapy progress), and (c) quantify the match between the actual therapy process and generalized ideal psychotherapy prototypes, thereby determining whether greater adherence to the prototypical ideal predicts therapy process. These applications are described in this chapter in detail.

Describing the Therapy Process

One of the first challenges confronting a psychotherapy research paradigm that aspires to be clinically relevant is developing a system to describe therapy process that is (a) comprehensive in terms of its coverage of salient therapist and client behaviors, (b) standardized yet flexible, and (c) readily comprehended by clinicians across a wide range of orientations. The PQS meets these challenges well. The PQS is a set of 100 items describing processes that might occur within a therapy session. The items were derived and selected empirically. They cover events characteristic of psychodynamic, cognitive-behavioral, humanistic, “and” other therapies. The items are written with minimal theory-specific jargon so they can be used to assess both “pure” and eclectic treatments. Trained judges reliably rate each PQS item both in terms of how well it characterizes a particular therapy session and in comparison to the other PQS items. This dual focus results in an assessment that retains much of the context that therapists use when considering their own cases.

Previous studies have found that the PQS reliably distinguishes different forms of therapy. It can do so at the level of the single session. One study showed that single sessions of therapy conducted by Fritz Perls (gestalt therapy), Albert Ellis (rational emotive therapy), and Carl Rogers (client-centered therapy) with the same patient (Gloria) yielded significantly different PQS profiles [16]. The PQS provides similar information at the level of the single case. Another study demonstrated that the ostensibly psychodynamic case of Ms. M was strongly characterized by some psychodynamic techniques on the one hand (e.g., linking the client’s current feelings to past situations) but diverged from orthodox psychodynamic technique on the other hand (e.g., the therapist was generally not neutral) [17]. The PQS also distinguishes brands of therapies within larger psychotherapy archives. Ablon and Jones used the PQS to differentiate the cognitive-behavioral therapy (CBT) from interpersonal (IPT) therapy in the *National Institute of Mental Health Treatment of Depression Collaborative Research Program* (NIMH TDCRP) randomized clinical trial [18]. Taken together, these studies show that the PQS provides a reliable language for describing therapy process of different orientations in terms that are easily understood by practicing therapists.

Interaction Structures: An Idiographic View of Therapeutic Process

The PQS can also be used to measure case-specific elements of therapy process called *interaction structures* [14, 19]. Interaction structures are the repetitive, slow-to-change, two-person patterns that reflect the psychological architecture (e.g., character structure/personality and defenses/coping mechanisms) of both therapists and patients. According to Jones, “Therapeutic action is located in the experience, recognition, and understanding by patient and therapist of these repetitive interactions” [14]. Jones’ interaction structure theory assumes that neither insight nor relationship alone brings about change in PDT. Instead, it argues that the most important insights are gleaned from the mutual exploration and shared understanding about interaction structures. The collaborative effort involved in identifying and considering interaction structures requires patients to develop awareness

about how clinicians think about them. It also demands that patients understand that their actions influence their therapists' experiences. Jones also notes that unexamined interaction structures can become sources of stalemate (especially in long-term treatments) because they are likely to simply repeat and leave patients vulnerable to recurrent symptomatology and clinical setbacks.

Interaction structure theory implies that examining the psychotherapeutic process through an idiographic lens, with the aim of identifying repeated interaction patterns, is a critical component of understanding therapeutic action. Interaction structures can be empirically identified by subjecting within-case PQS ratings to statistical analyses to reveal the natural clustering of therapist–client behaviors over time. To the extent that these patterns of interaction are discussed and understood in therapy, positive change should occur. In an early study exploring this methodology, Jones and his colleagues identified mutative patterns of interaction in the case of Ms. M (mentioned earlier) [17]. One such pattern emerged when the therapist departed from neutrality. In a follow-up analysis, Pole and Jones [20] showed that these departures from neutrality occurred in accordance with the case formulation [21] as the therapist aimed to challenge the client's dysfunctional beliefs. A sophisticated statistical technique called *time series analysis* (described in detail later) provided persuasive evidence that the interaction structure played a causal role in relieving Ms. M's symptoms [5, 22]. Importantly, this statistical technique was able to suggest causality without resorting to random assignment.

Two other case studies further illustrate interaction structure theory. One case found an interaction structure called “provoking rescue” that consisted of PQS items describing long silences in the hour, patient passivity, the patient's sense of inferiority and inadequacy, and the patient's over-reliance on the therapist. In response to this patient behavior, the therapist highlighted the repetitive pattern and encouraged the client to rescue them both from the long silences. Time series analyses showed that as patient and therapist began to understand the interaction structure, the patient's depression and level of daily functioning improved [19]. In a second case, interaction structures called “resistant and withdrawn” and “angry interaction” were likely to emerge when the client was highly symptomatic. However, the interaction structures were not fully examined in the therapy and thus (consistent with interaction structure theory) the case had a poor outcome [14].

In sum, PQS studies of interaction structure theory offer an empirical method for understanding case-specific repeated interactions. Evidence suggests that thorough examination of such repeated interactions in treatment can contribute to psychotherapeutic progress. However, this approach is limited with respect to being able to test general theories of therapeutic change.

Prototypes: A Nomothetic View of Therapeutic Process

The PQS can also be used to determine whether general principles have been followed within particular cases or groups of cases. Ablon and Jones [23, 24] developed PQS prototype methodology to assess the degree to which treatments adhere to what is theoretically prescribed. For instance, to what extent does real-world CBT follow optimal CBT processes? Prototype methodology involves obtaining PQS ratings of a hypothetical ideal session from groups of experts who differ in theoretical orientation. PQS items that are ranked similarly by experts within an orientation but differently by experts across orientations form PQS prototypes. These prototypes are then compared to PQS ratings of actual sessions. The primary aim of the prototypes is to determine the extent to which the actual therapy process conforms to its theoretical ideals. A secondary objective of prototype methodology is to determine whether therapies of one brand name contain process elements belonging to other theoretical orientations. For example, prototype methodology can ask whether a supposed psychodynamic treatment contains high levels of cognitive behavior therapy process. Finally, prototype methodology links process to outcome by determining the relationship between adherence to a particular prototype and the extent of therapeutic change.

Prototypes of several orientations including PDT, CBT, IPT, and control mastery theory (CMT) have been empirically constructed [23–27]. Studies following this methodology have sometimes yielded expected results. For example, archived CBTs have conformed more closely to the cognitive-behavioral prototype than the psychodynamic prototype [23] and greater adherence to the cognitive-behavioral prototype in such therapies predicted a wide range of positive outcomes [24]. However, these studies have sometimes yielded unexpected results. For instance, manualized IPTs from the NIMH TDCRP conformed more closely to the CBT prototype than the interpersonal psychotherapy prototype [24]. Also, greater adherence to the psychodynamic prototype predicted positive outcomes in an archived set of CBTs [23]. Moreover, in a naturalistic study of psychotherapy for panic disorder, psychodynamic clinicians were found to adhere more closely to CBT process than PDT process yet the CBT process was not predictive of outcome [25]. Prototype studies of single-case studies have yielded similar results [26–28].

As an empirical approach for studying psychotherapy, prototype methodology offers distinct advantages. It enables researchers to compare what therapists and patients actually do in the consulting room with what is theoretically prescribed. It assesses treatment fidelity without resorting to therapy manuals. Thus, it is useful for studying real-world treatments. Finally, when combined with time series analysis, it can also be used to make causal inferences about active ingredients of change, thereby determining whether general principles apply to particular cases. Prototype methodology is limited, however, in its capacity to capture the idiosyncratic process elements that make each psychotherapeutic treatment unique.

The Present Study

While other single-case studies have used either the interaction structure approach or the prototype approach, none have examined change processes through both lenses simultaneously. The complexities inherent in the process of psychotherapy, as well as in the endeavor to study it systematically and quantitatively, necessitate both nomothetic and idiographic levels of analysis. Thus, we undertook the present study in which we examined a single long-term psychodynamic treatment at both of these levels of analysis. The interaction structure component of the study was exploratory. It was guided by two research questions. First, what are the key interaction structures of the case? Second, did therapeutic exploration of the interaction structures promote therapeutic change? The prototype component of the study was confirmatory. It tested two hypotheses. First, we expected that the psychotherapeutic process would be characterized by greater adherence to ideal psychodynamic process than to other types of therapy process. Second, we expected that greater adherence to ideal psychodynamic process would predict psychotherapy progress (i.e., symptom reduction).

Method

Participants

Client. The client, pseudonym “Beth,” was a Caucasian in her mid-20s who struggled with episodes of depression throughout her life. Before seeking the long-term PDT described in this chapter, she had completed a brief CBT with some benefit. Nonetheless, at intake, she met full SCID-IV [29] criteria for current major depressive disorder and current generalized anxiety disorder.

Therapist. The therapist, Dr. A, was a psychologist with more than 30 years of clinical experience who described herself as psychodynamic and psychoanalytic in her theoretical and clinical orientations. Dr. A was asked to treat Beth exactly as if she were working outside of the research setting in her private practice.

Measures

Psychotherapy Process Q-set (PQS) [15]. Independent observers used the PQS to evaluate the therapy process in each session. The PQS consists of 100 items printed on individual cards describing three categories of therapy process (a) therapist actions and attitudes (e.g., PQS 67; “therapist interprets ward-off wishes, feelings or ideas”), (b) client actions and attitudes (e.g., PQS 71; “the patient is self-accusatory; expresses shame, or guilt”), and (c) therapist–patient interactions (e.g., PQS 74; “humor is used”). After watching a therapy session, raters order the PQS cards into nine piles, each describing the session on a continuum from least characteristic items (pile 1) to most characteristic items (pile 9). The number of cards in each pile is predetermined in order to achieve a normal distribution. Five cards are placed in the first and last piles (piles 1 and 9). Eighteen cards are placed in the middle pile (pile 5). The number of cards in each pile increases between piles 1 and 5 and then decreases between piles 5 and 9. Items are evaluated in relation to each other (ipsatively) rather than in relation to an objective standard (normatively). This approach forces raters to use all increments of the scale (including the extremes) rather than giving non-committal, neutral ratings. The final pile number to which each card is assigned is recorded and reflects how well that item characterizes the therapy process relative to the other items. In prior research, the PQS has shown good inter-rater reliability [15], construct validity [30], and discriminant validity [22]. For example, PQS items have been able to accurately describe the therapeutic alliance [31].

Overall Change Rating (OCR). The client completed this 9-point scale to rate her improvement in therapy on a scale from “very much worse” (−4) to “very much improved” (+4).

Beck Depression Inventory (BDI) [32]. This 21-item client self-report measure assesses the intensity of current depression symptoms. For example, one item reads, “I am so sad or unhappy that I can’t stand it.” Total scores range from 0 to 63. Scores of 10 or greater suggest depression of sufficient severity to warrant clinical attention. The BDI has been used for many decades as a standard screening tool for depression. It has shown very good reliability and validity (e.g., $0.65 < r_s < 0.79$) in previous research.

Automatic Thoughts Questionnaire (ATQ) [33]. This 30-item client self-report instrument assesses the frequency and intensity of negative thoughts about the self. For example, one item asks, “What’s wrong with me?” Because of its focus on cognitions, the ATQ has been used as a key outcome measure in CBT treatment studies. Scores range from 30 to 150. Prior research has reported an average score of 79.6 among depressed participants and 48.6 among non-depressed participants. Psychometric studies suggest that the ATQ shows adequate reliability ($r_s > 0.90$) and validity ($0.45 < r_s < 0.70$).

Social Adjustment Scale (SAS) [34]. This 42-item client self-report scale assesses functioning in six major domains: employment, social or leisure activities, relationship with extended family, intimate relationship, parental role, and membership in nuclear family. For example, one item asks, “Have you been able to do your work in the last 2 weeks?” Mean scores range from 1 to 5 with higher scores indicating greater dysfunction. Prior research has found an average score of 2.53 among severely depressed females and an average score of 1.61 among females in the general community. The internal consistency of the overall score has been reported to be $\alpha = 0.74$ and the test–retest reli-

ability is $\alpha=0.80$. The total score has shown validity correlations with psychiatric rating scales ranging from 0.56 to 0.85.

Symptom Checklist-90-Revised (SCL-90-R) [35]. This 90-item client self-report instrument addresses a wide range of psychiatric syndromes (e.g., depression, anxiety, interpersonal sensitivity, somatization, etc.). In addition to indicators of these syndromes, the SCL-90-R yields a global severity index (GSI), which provides an integrative summary of the severity of total psychiatric distress. This score can range from 0 to 4 with higher scores suggesting greater distress. Normative data suggests that whereas outpatient females show an average GSI score of 1.35, the average score for nonpatient females is 0.36. The SCL-90-R GSI has demonstrated validity in previous research (e.g., exhibiting 0.92 correlation with other self-report measures of global psychiatric distress). It has been used in numerous studies to assess psychotherapy change.

Procedure

Initial Intake. The intake process consisted of (a) written informed consent to participate in this study approved by the Institutional Review Board of The University of California, Berkeley; (b) an initial videotaped semi-structured interview; (c) a life-history interview addressing the history of the client's current complaint, her current life functioning, her relationship history, and her current psychiatric symptoms; and (d) a battery of self-report measures (described earlier).

Relevant History. Beth's parents divorced when she was 3 years old. Her mother died of a terminal illness when she was in her early teens. Beth's first depressive episode occurred in high school after she "came out" as a lesbian to her family and their negative reaction forced her back "into the closet." While in graduate school, Beth's lifelong dream to become a scientist eroded under tremendous performance pressure, fierce competition among her peers, and difficulty initiating independent projects. She withdrew from school, but her problems with productivity persisted. For example, she had not held a job for months when she sought the therapy described in this chapter. Beth characterized her state of mind in the following way, "I feel very depressed about the extreme lack of momentum in my professional life. I feel completely stuck... I am consumed with worry about what step I will take next in my life. I feel like I've lost my sense of purpose, my sense of me, and that things have lost meaning. I don't know what I'm going to do."

Shortly after leaving graduate school but prior to beginning therapy, Beth broke off a long-term romantic relationship. This failed relationship with her girlfriend seemed to echo the losses of Beth's early life including her parent's divorce and mother's death. In Beth's mind, these experiences reaffirmed her longstanding fear that all of her attachments were destined to fall apart. She appeared to defend against this fear by staying out of emotional contact, not only with others, but also with herself. Beth reported being unable to emotionally process her mother's dying and death while it was happening and when talking about these ostensibly traumatic and painful memories in the early stages of therapy, she continued to show no outward signs of emotion.

The Therapy. Records of this psychotherapy were drawn from the University of California, Berkeley Psychotherapy Research Program archive established by the late Dr. Enrico Jones. This archive was created to facilitate intensive study of a large sample of longer-term psychodynamic single cases. Beth's treatment occurred twice per week for 126 sessions. Every session was videotaped using a split screen to facilitate simultaneous viewing of the therapist and client for the subsequent rating of the therapy process. However, due to equipment failure, videotapes for two sessions (i.e., sessions 3 and 115) were unavailable for analysis.

Assessment of Psychotherapy Process

PQS Rating Procedure. Two independent raters randomly drawn from a pool of eight graduate students and doctoral level clinicians rated videotapes of every other session using the PQS. Though prohibitive cost prevented the rating of all sessions, these alternate session ratings served to systematically sample the therapy process as it unfolded over time. To establish reliability, at least two raters assessed the same sessions. When the reliability between two raters fell below $r=0.50$, a third rater was added. Regular calibration meetings were held with all eight raters to prevent rater drift. The average reliability of the PQS ratings of Beth's treatment was $\alpha=0.83$. This surpasses the acceptable minimum criterion for inter-rater reliability ($\alpha=0.70$) in psychotherapy process research [36].

Assessment of Psychotherapy Progress and Outcome. Beth completed the self-report rating scales (described earlier) at the beginning and end of therapy. She completed the SCL-90-R GSI every 16 sessions to assess her progress in reducing psychiatric symptoms over the course of therapy. At termination, she participated in an exit interview with an independent clinician. The goal of this interview was to offer Beth an opportunity to provide qualitative feedback about the aspects of treatment she found most and least helpful. Follow-up assessments (including the same battery of self-report questionnaires that Beth had completed at intake) were conducted 6 months, 1 year, and 2 years following termination.

Data Reduction and Preparation

Interaction Structures. In order to examine the unique patterns of interaction in Beth's therapy, the entire pool of 100 PQS items for each of the rated sessions ($N=61$) was subjected to a principal-components exploratory factor analysis. This technique reduces a large number of variables (i.e., PQS items) to smaller and more coherent clusters of related variables. The factor analyses for Beth's treatment yielded five factors that accounted for 37% of the variance in PQS ratings of the entire treatment. Alpha reliabilities were calculated for each factor to index the internal consistency of items comprising the factor. Factor scores were calculated for each factor in each session by averaging the ratings of the most strongly loading PQS items.

Adherence Scores. We used the prototypes of PDT, CBT, and IPT originally developed by Ablon and Jones [23]. Internationally recognized experts in psychodynamic ($n=11$), cognitive-behavioral ($n=10$), and interpersonal ($n=11$) therapy rated each of the 100 PQS items with regard to how well it characterized a hypothetical, ideal session of their respective schools of therapy. All experts were selected on the basis of demonstrated mastery of their orientation (e.g., numerous publications and decades of experience training novice therapists). The experts reported that the PQS items adequately captured their respective brands of therapy with no important omissions. The level of agreement within groups was high for the psychodynamic ($\alpha=0.94$), cognitive-behavioral ($\alpha=0.95$), and interpersonal ($\alpha=0.96$) experts. A Q-type principal components factor analysis was performed on the transposed database of expert ratings (in which the 21 evaluators were treated as variables and the 100 PQS items were treated as cases) followed by varimax rotation. Experts sharing the same orientation primarily loaded on the same factor indicating that the three prototypes of ideal psychotherapy process are distinct. Factor scores were assigned to each PQS item reflecting their relative importance to each prototype. Table 28.1 lists the ten most characteristic PQS items in each prototype. It is important to keep in mind, however, that each prototype contains all 100 PQS items but in different rank order depending on the relative importance assigned by the experts. Adherence scores representing the extent to which each session conformed to the ideal PDT, CBT, and IPT prototypes were calculated by correlating the 100 PQS factor scores for each prototype with the 100 mean PQS

Table 28.1 Ten most characteristic Psychotherapy Process Q-Set (PQS) items in cognitive-behavioral, psychodynamic, and interpersonal therapy prototypes

Most characteristic cognitive-behavioral items	Factor score	Most characteristic psychodynamic items	Factor score	Most characteristic interpersonal therapy items	Factor score
There is discussion of specific activities or tasks for the P to attempt outside of session (PQS#38) ^a	1.93	P's dreams or fantasies are discussed (PQS#90) ^a	1.71	P's interpersonal relationships are a major theme (PQS#63) ^a	2.22
Discussion centers on cognitive themes, e.g., ideas or belief systems (PQS#30) ^a	1.68	T is neutral (PQS#93) ^b	1.57	T emphasizes P's feelings in order to help P experience them more deeply (PQS#81) ^a	1.65
P's treatment goals are discussed (PQS#4) ^a	1.51	T points out P's use of defenses (PQS#36) ^b	1.53	P talks of feelings about being close to or needing someone (PQS#33) ^c	1.62
T encourages P to try new ways of behaving with others (PQS#85) ^b	1.49	T interprets transference (PQS#100) ^b	1.47	Love or romantic relationships are a topic of discussion (PQS#64) ^a	1.58
T actively exerts control over the interaction (e.g., structuring, introducing new topics) (PQS#17) ^b	1.45	T is sensitive to the P's feelings, attuned, empathic (PQS#6) ^b	1.46	T explains rationale behind technique or approach to treatment (PQS#57) ^b	1.55
T adopts a supportive stance (PQS#45) ^b	1.43	T interprets unconscious wishes, feelings, or ideas (PQS#67) ^b	1.43	Dialogue has a specific focus (PQS#23) ^a	1.39
Dialogue has a specific focus (PQS#23) ^a	1.38	T conveys nonjudgmental acceptance (PQS#18) ^b	1.38	Termination of therapy is discussed (PQS#75) ^a	1.32
T asks for more information or elaboration (PQS#31) ^b	1.37	P achieves a new understanding or insight (PQS#32) ^c	1.32	T is directly reassuring (PQS#66) ^b	1.29
P's recent life situation is emphasized in discussion (PQS#69) ^a	1.35	The therapy relationship is discussed (PQS#98) ^a	1.28	T draws attention to P's nonverbal behavior (PQS#2) ^b	1.27
T gives explicit advice and guidance (PQS#27) ^b	1.32	T communicates in a clear, coherent style (PQS#46) ^b	1.24	T makes interpretations referring to actual people in P's life (PQS#40) ^b	1.25

Note. Psychotherapy Process Q-Set (PQS) item numbers given in parentheses following PQS item content. Each prototype is actually composed of all 100 PQS items but with different factor scores reflecting the different emphasis given by the experts. The absence of a particular process in a given prototype in this table should not be taken to mean that the experts judged that process to be unimportant. It only means that the experts did not consider it among the ten most important features of the therapy. *T* therapist, *P* patient

^aPQS therapist–client interaction item

^bPQS therapist behavior item

^cPQS client behavior item

ratings of each actual session. All adherence scores were transformed from Pearson r scores into z scores to increase the normality of the data prior to statistical analysis.

Preparation for the Time Series Analyses. Certain data transformations were required in order to meet the assumptions of the bivariate time series analyses. First, the analysis assumes that each process observation will correspond with a contemporaneously measured progress observation. Measures of progress and process obtained at equal intervals each constitute a *time series*. In the present study, process observations (i.e., interaction structure factor scores or PQS adherence scores) were obtained for every completed session ($n=61$). Progress observations (SCL-90-R GSI scores) were obtained every 16th session ($n=8$). We followed a linear interpolation procedure to estimate missing progress observations corresponding to each process observation [17, 20, 27, 28]. The average of two consecutive observed symptom scores was used to estimate the missing midpoint between them. This midpoint score was then averaged with the preceding and following observed score to estimate additional missing data points between them. Because it is not known how well these estimated data points represent what the patient's symptom scores would have been if they were directly assessed (see the article by Pole and his colleagues [27] for evidence of the potential validity of this procedure), we refer to the resulting scores as "estimated" scores. Time series analyses also assume that the two time series are *stationary* (i.e., show the same mean and variability over time) or can be made stationary through transformation. Because the original data were not stationary (e.g., the psychiatric symptoms diminished over time), we transformed each series by subtracting each data point from the point that followed it to yield a new, slightly shorter, but stationary time series ($n=60$).

Data Analysis

The data analysis involved (a) quantitatively describing the therapy process, (b) defining the interaction structures, (c) determining the extent to which the therapy conformed to prototypes of ideal psychodynamic, cognitive-behavioral, and interpersonal therapy, (d) characterizing the extent of change and progress in the therapy, and (e) determining whether the interaction structures and adherence to the prototypes predicted estimated psychotherapy progress. To obtain a quantitative description of the psychotherapy process, we calculated the mean rating of each PQS item across the rated sessions. We then sorted these mean ratings in descending order to identify the ten most and least characteristic items. Interaction structures were identified by examining the item content of each factor for items describing both client and therapist behaviors and by examining transcripts with elevated factor scores to determine whether the interaction structures were actively discussed in the treatment. Prototype adherence scores were compared using paired t -tests. We examined Beth's qualitative and quantitative assessment data to determine whether she began treatment with clinically meaningful distress and ended treatment showing evidence of healthy functioning. We then closely charted the pattern of her progress in therapy as operationalized by her SCL-90-R GSI score over time. This measure was selected to maintain consistency with prior case studies conducted using this paradigm [17, 27]. We applied Gottman and Ringland's [37] bivariate time series analysis to determine whether the interaction structures and adherence to the prototypes influenced Beth's therapeutic progress. Because this statistical approach will be unfamiliar to most readers, we describe it in further detail here.

Gottman and Ringland's bivariate time series analysis is a method of testing the likelihood that one variable measured over time (e.g., adherence to the psychodynamic prototype) influences another variable (e.g., Beth's level of psychiatric distress) measured at the same time points. The logic of the procedure is based on the general principle that past behavior is a good predictor of future behavior. Thus, if one variable is able to predict the future of a second variable above and beyond what can be predicted from knowing the past of the second variable alone, then one can say that the first variable influences the second variable. Although the mathematical underpinnings of the procedure are

complex [27, 37], the analysis essentially compares the amount of variance explained by two regression models. One model attempts to explain future values of the target time series using past values of the other time series while controlling for past values of the target time series. The other model attempts to explain future values of the target time series with past values of the target time series alone. Comparisons of the variance left unexplained by each model are made using likelihood ratio tests, each yielding a Q statistic with a chi-square distribution evaluated at the $p=0.05$ significance level (two-tailed). A significant difference between these models indicates that the inclusion of the other series explains more variance than the target series can explain by itself and suggests that the target series is being influenced by the other series. For example, process (i.e., interaction structure or adherence) influences progress (e.g., estimated psychiatric symptom change). The bivariate time series analysis also checks the possibility that changes in progress may influence changes in the process. Thus, the analysis yields four possible outcomes (a) process influences progress, (b) progress influences process, (c) process influences progress and progress influences process, or (d) process neither influences nor is influenced by progress. These procedures were executed using BIVAR software [38].

Results

General Description of Therapy Process

Table 28.2 shows the most and least characteristic PQS items describing Beth's treatment in descending and ascending order (respectively). The following narrative describing these characteristics references the specific PQS-item numbers appearing in Table 28.2. However, the items are not

Table 28.2 Most and least characteristic Psychotherapy Process Q-Set items over the entire treatment

PQS-item #	Most characteristic item content	Mean	Min	Max
63	P's interpersonal relationships are major theme	7.34	3.50	9.00
67	T interprets ward-off wishes/feelings/ideas	7.32	4.50	9.00
69	P's current life situation is emphasized	7.23	3.50	9.00
86	T is confident/self-assured (vs uncertain/defensive)	7.22	4.50	8.50
6	T is sensitive to the patients feelings, attuned, empathic	7.19	3.50	9.00
50	T draws attention to feelings P regards unacceptable	7.11	4.00	9.00
62	T identifies recurrent theme in P's experience/conduct	7.08	3.50	9.00
88	P brings up significant issues and material	6.99	2.00	8.50
31	T asks for more information or elaboration	6.99	3.50	9.00
65	T clarifies/restates/rephrases P's communication	6.90	4.00	9.00
<i>Least characteristic item content</i>				
15	P does not initiate topics, is passive	1.67	1.00	5.00
9	T is distant/aloof (vs responsive/affectively involved)	1.86	1.00	3.50
89	T acts to strengthen defenses	2.03	1.00	5.00
25	P has difficulty beginning the hour	2.07	1.00	6.50
42	P rejects (vs accepts) T's comments/suggestions	2.20	1.00	7.00
14	P does not feel understood by T	2.53	1.00	6.50
83	P is demanding	2.57	1.00	5.00
20	P is provocative/tests limits of therapy relationship	2.61	1.00	6.00
77	T is tactless	2.69	1.00	6.50
12	Silences occur during the hour	2.78	1.00	7.00

Note. PQS item = Psychotherapy Q-Set item number. Ratings were on a scale of 1 (extremely uncharacteristic or negatively salient) to 9 (extremely characteristic or salient). Mean = the mean score across the 61 sessions of treatment. Min = the minimum rating given to the item over the 61 sessions. Max = the maximum rating given to the item over the 61 sessions. *T* therapist, *P* patient

Table 28.3 Key interaction structures in the case of Beth

PQS item no.	Item description	Loading
<i>Factor 1: patient's affective and cognitive distancing</i>		
87	Patient is controlling	0.75
7	Patient is anxious or tense (vs calm and relaxed)	0.65
56	Patient discusses experiences as if distant from feelings	0.65
58	Patient resists examining thoughts, reactions, or motivations	0.64
44	Patient feels wary or suspicious (vs trusting and secure)	0.61
39	There is a competitive quality to the relationship	0.51
15	Patient does not initiate topics, is passive	0.48
32	Patient achieves a new understanding or insight	−0.59
40	Therapist makes interpretations referring to actual people	−0.59
88	Patient brings up significant issues and material	−0.59
97	Patient is introspective, readily explores	−0.78
<i>Factor 2: therapist cutting through to affect</i>		
81	Therapist emphasizes the patient's feelings	0.61
3	Therapist's remarks are aimed at facilitating speech	0.54
31	Therapist asks for more information or elaboration	0.53
13	Patient is animated or excited	0.51
65	Therapist clarifies or restates patient's comments	0.48

Note. PQS Psychotherapy Process Q-Set

necessarily described in the same order that they appear in the table. The letter “*r*” following the PQS item number indicates that the item is being described in the reverse of its original wording.

The data suggest that interpersonal relationships were discussed frequently in Beth's treatment (PQS63). Dr. A often emphasized recent or current life events (PQS69) and also identified recurrent patterns in Beth's life experience or behavior (PQS62). Beth's therapist was confident and non-defensive (PQS86), genuinely responsive and affectively involved (PQS9, *r*), and kind and considerate (PQS77, *r*). Dr. A did not act to strengthen Beth's defenses or to suppress troublesome thoughts or feelings (PQS89, *r*). Rather, she drew Beth's attention to feelings, thoughts, and impulses that made her uncomfortable (PQS50) or that were otherwise out of her awareness (PQS67). When Dr. A clarified and restated Beth's communication (PQS65) or made statements that indicated an understanding of how Beth felt in certain situations (PQS6), Beth seemed to feel understood (PQS14, *r*).

Beth seemed highly motivated to participate in therapy. She began the therapy sessions without prompting or hesitation (PQS25, *r*), brought up issues relevant to her psychological conflicts (PQS88), and actively engaged in the therapeutic process (PQS15, *r*). For her part, Dr. A frequently asked questions designed to elicit information (PQS31), and there were few silences during the sessions (PQS12, *r*). Beth tended to agree with her therapist's remarks (PQS42, *r*) in a compliant and deferential way (PQS20, *r*). In fact, Beth seemed reluctant to make requests of her therapist (even when it might be appropriate to do so) (PQS83, *r*).

What Were the Key Interaction Structures?

Among the five factors emerging from the initial factor analysis of PQS session ratings, two met criteria for bona fide interaction structures (i.e., captured both therapist and client behaviors and were later shown to be actively discussed in treatment). Table 28.3 shows the items loading on these two factors. We labeled Factor 1: *Patient's Affective and Cognitive Distancing* ($\alpha=0.87$) and Factor 2:

Therapist Cutting Through to Affect ($\alpha=0.68$). Factor 1 captures Beth's tendency to behave in a controlling, resistant, anxious, distant, and suspicious manner. When Beth acted this way, the therapy relationship became competitive, and Dr. A directed her interpretations away from specific people in Beth's life and toward Beth's general interpersonal style. Factor 2 captures Dr. A's common intervention style of clarifying and restating Beth's communication, emphasizing Beth's feelings, and asking questions to elicit more information. This intervention style corresponded with increased client animation and excitement.

The following two verbatim excerpts, drawn from different sessions (both yielding high factor scores for these factors), poignantly illustrate these interaction structures. In the first excerpt from session 51, Beth began the hour by mentioning that she had recently been working. This was significant news because much of the therapy had been devoted to discussing Beth's conflict about seeking and maintaining employment. Finally engaging in work should have been a major accomplishment worthy of excitement. Yet, Beth presented this news in an emotionally detached way:

- Beth:** I'm not quite sure what I need to address today. I've been trying to think things over in my head today. Well I kind of... hmm... well... let's see. I've been feeling a little better this week because Julie volunteered my services at her place of work for which I've been getting paid this week.
- Dr. A:** Pr-etty abstract. (They laugh).
- Beth:** I know that was abstract.
- Dr. A:** Do you want me not to know?
- Beth:** No, not that.
- Dr. A:** How do you understand that?
- Beth:** <Beth talks in a detached way about the specifics the job rather than her feelings about working>
- Dr. A:** I'm still interested in the very first topic on the table. You said, "Julie volunteered me at the place where she works." Do you understand why you think that way? Why you're speaking that way to me? Why do you tell me in a way that lets me know you the least?
- Beth:** Well, I think it is sinuses or something making me slow. That was an extremely abstract comment.
- Dr. A:** Umm-hmm. It's how you pick to talk to me and I'm just kind of curious. It lets me know you the least.
- Beth:** Well, that's true. That's a very minimal amount of information. It's extremely abstract. I'm not sure why I would wish to introduce it so abstractly.
- Dr. A:** You are not on track right now. That's part of why you're here. Something's keeping you from focusing. I don't know whether minimizing and abstracting when you talk to me is part of it. I think it has got to contribute to keeping you a little afraid to focus on what you want.
- Beth:** By keeping things abstract...well touching on concrete things seems to bring up the emotion for me.

Instead of focusing on her positive feelings, Beth demonstrated behavior consistent with Factor 1. That is, she used abstractness to maintain distance from her own affect and from her therapist. Dr. A responded in a style consistent with Factor 2. Specifically, she drew attention to Beth's abstract way of sharing the news of finding enjoyable work. Dr. A helped Beth observe and reflect on this pattern as it unfolded in real time in their relationship. Moreover, Dr. A proposed that Beth's abstractness serves a defensive function, protecting her from focusing on what she wants. Beth accepted this interpretation and gained insight into the notion that her abstractness prevents her from experiencing her feelings.

In the next excerpt from session 75, Beth described an incident in which she and her girlfriend (pseudonym Julie) were asked by Julie's mother to refrain from displaying their affection for each other in public. The request seemed to come out of homophobia and clearly upset Julie. Beth failed to exhibit any sign of protest, which also upset Julie:

- Beth:** We talked about this last night, Julie and I did. She felt I didn't back her up at all because I was so concerned about being diplomatic.
- Dr. A:** But diplomatic means acquiescence? Because diplomatic is George Mitchell. There's a history of diplomacy that brings warring sides to begin to see each other. So that doesn't give a good name to diplomacy.
- Beth:** (Laughing) That's true. I know what diplomacy strives to do and I wanted to do that but I felt myself speak in a very small voice. I was afraid to even make eye contact with her mother.
- Dr. A:** I think you were terrified.
- Beth:** Yeah, I think that outweighs everything else.
- Dr. A:** Well, I think our job is to look at what the terror is about. I think you're rationalizing. I don't think you have to be in their face, crawl up their nose, and make trouble. But you have the idea that people will see their prejudices and accommodate and there's no evidence for that anywhere.
- Beth:** Right, well...
- Dr. A:** And you have Julie hurt and furious with you, which is frightening in and of itself.
- Beth:** It frightened me (laugh). I'm from an English background. I don't know we just seem kind of dispassionate in our arguments.
- Dr. A:** However, you hold within you all these feelings that just don't fade into nothing because they're not expressed... reaching for polite isn't doing it.

Beth's failure to show appropriate emotion is consistent with Factor 1. Consistent with Factor 2, Dr. A directed Beth's attention to her emotions. Illustrating the importance of discussing interaction structures, Beth agreed that emotion was, in fact, centrally important to her experience. Dr. A went further by suggesting that Beth's difficulty in experiencing emotion is not only defensive but also ineffective.

How Much Did the Treatment Adhere to the Prototypes?

Whereas the interaction structures provide a case-specific view of the therapy process, the prototypes create an opportunity to describe the therapy process in normative terms. Figure 28.1 depicts the extent to which Beth's treatment conformed to each of the three expert prototypes. Beth's treatment showed moderate conformity to the psychodynamic ($r=0.43$) and cognitive-behavioral ($r=0.38$) prototypes and low conformity with the interpersonal ($r=0.20$) prototype. Paired t -tests revealed that Beth's treatment conformed significantly more closely to both the psychodynamic prototype, $t(60)=9.69$, $p<0.001$, and cognitive-behavioral prototype, $t(60)=14.00$, $p<0.001$, than the interpersonal prototype. Though the average level of conformity to the psychodynamic prototype appeared to be higher than the average conformity to the cognitive-behavioral prototype, this difference did not quite reach the threshold for statistical significance, $t(60)=1.80$, $p=0.08$.

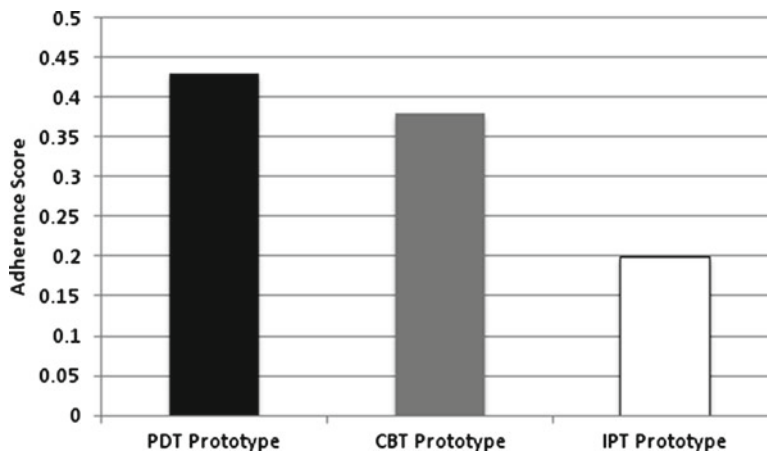


Fig. 28.1 Mean adherence to prototypes. Adherence scores can theoretically range from -1.00 (complete opposite therapy process) to $+1.00$ (perfect match with ideal therapy prototypes). *PDT* psychodynamic therapy, *CBT* cognitive-behavioral therapy, *IPT* interpersonal therapy. The psychodynamic and cognitive-behavioral prototypes were significantly different when compared with the interpersonal prototype. There was no statistically significant difference between the psychodynamic and cognitive-behavioral prototype

Table 28.4 Patient's scores on assessment measures

Measure	Pre-therapy	Termination	1-Year follow-up	2-Year follow-up
Beck depression inventory (0–63)	13	1	1	3
Automatic thoughts questionnaire (30–150)	48	30	30	30
Social adjustment scale overall (1–5)	2.0	1.7	1.7	1.6
Symptom checklist-90-R global severity index (0–4)	0.72	0.12	0.07	0.12

Was Beth's Treatment Effective?

At termination, Beth characterized the results of her treatment in the following way, “At this point in time, I feel like I am at a very good place in my life. I now have a terrific job and I am involved in a very wonderful relationship. I feel that I am once again my old self. I have my drive and ambition back, I am not afraid of risks, and I am working toward a goal which I deem to be important.” She gave herself an *OCR* of $+4$ = “very much improved” following therapy. Table 28.1 presents her scores on the standardized self-report measures at pre-therapy, termination, and follow-up. Her scores on the *BDI* suggest that she began therapy in the “mild to moderately” depressed range. She ended therapy in the “asymptomatic” range and maintained these gains into her follow-up assessments. Her pre-therapy scores on the *ATQ* were actually typical of non-depressed patients; nevertheless, her scores showed improvement at termination and follow-up. Her *SAS* score at the beginning of therapy was slightly below the expected mean for severely depressed women. By the end of therapy, it was only slightly above the mean for a nonpatients. Finally, at the beginning of therapy, her *SCL-90-R GSI* score was below the average for female outpatients. It continued to decline into the normal range by termination and post-therapy. See Table 28.4 for Beth's scores on assessment measures.

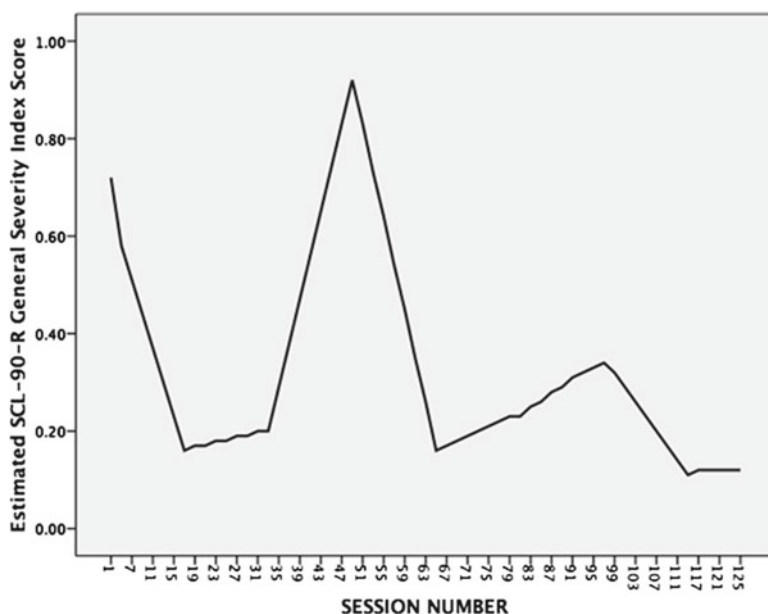


Fig. 28.2 Change in estimated psychiatric distress over time as assessed by the Symptom Checklist-90-Revised (SCL-90-R) self-report measure

Beth's progress in treatment is summarized by her estimated SCL-90-R GSI scores. Figure 28.2 depicts her progress over time. She reported a rapid decline in estimated psychiatric distress during the first 16 sessions of her treatment. There was a modest increase in her distress level by session 32 and then a sharp increase in symptoms by session 48. Her symptoms subsided dramatically by session 64, rose slightly until 96, and then declined to subclinical levels for the remainder of the treatment.

Did Change in the Interaction Structures Predict Therapy Progress?

We are now in a position to ask whether the elements of process outlined earlier (interaction structures and adherence scores) showed a statistical relationship with Beth's eventual improvement in estimated psychiatric distress. Figure 28.3 illustrates the results of the time series analyses examining the relationship between the Factor 1 and 2 interaction structures and estimated changes in Beth's psychiatric distress over time. Results revealed that changes in Beth's general psychiatric distress influenced her level of disengagement from her thoughts and feelings (i.e., Factor 1), $Q(2)=6.25, p=0.04$. They also revealed a bidirectional relationship between the Factor 2 interaction structure and Beth's estimated psychiatric distress scores. Specifically, changes in Beth's general psychiatric distress influenced Dr. A to focus on Beth's affect (Factor 2), $Q(10)=37.71, p<0.001$, and Dr. A's focus on Beth's affect influenced Beth's relief from general psychiatric distress, $Q(10)=24.1, p<0.01$.

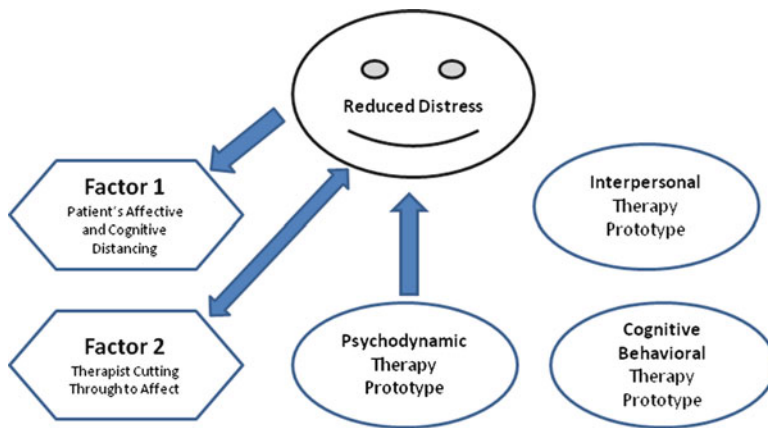


Fig. 28.3 Summary of time series analysis results. Beth's psychiatric distress significantly influenced her affective and cognitive distancing (Factor 1) and also influenced the therapist to hone in on Beth's affect (Factor 2). This intervention technique (Factor 2), as well as adherence to the psychodynamic prototype, significantly reduced Beth's psychiatric distress. The relationship between adherence to both cognitive-behavioral and interpersonal therapy prototypes and Beth's general psychiatric distress was not significant

Did Adherence to the Prototypes Predict Therapy Progress?

Similar analyses examining the relationship between fluctuations in adherence to the prototypes and changes in estimated psychiatric distress revealed that adherence to ideal psychodynamic treatment process significantly influenced reductions in Beth's estimated psychiatric distress, $Q(5)=12.1$, $p=0.03$. Neither variations in adherence to the cognitive-behavioral prototype, $Q(5)=9.04$, $p=ns$, nor variations in adherence to the interpersonal psychotherapy prototype, $Q(0)=0.0$, $p=ns$, significantly influenced Beth's general psychiatric distress. These findings are also depicted in Fig. 28.3.

Discussion

Beth was a young woman who came to therapy with mild depression and anxiety secondary to the loss of both her career path and her primary intimate relationship. From this study, we learned that Beth's therapy sessions predominantly focused on interpersonal themes and her present life circumstances. Dr. A was warm, empathic, and engaged but also active in her approach to challenging Beth's defenses and raising her consciousness about recurring patterns and threatening unconscious material. For her part, Beth was proactive in the therapy process and cooperative with her therapist. In normative terms, our study showed that Beth's treatment blended moderate characteristics of ideal psychodynamic and CBT in almost equal proportions. Embedded within this overall picture of the therapy process, we detected recurring patterns of interaction between Beth and her therapist. Namely, there was a tendency for Beth to withdraw from her affective experience and a tendency for Dr. A to direct Beth to focus on her feelings. When we examined the progress and outcome data, we found that Beth's progress was uneven but that she eventually achieved a positive outcome (as evidenced by standardized and qualitative data). Finally, the time series analyses showed (among other

things) that Beth's progress in therapy was influenced by greater adherence to ideal psychodynamic process and Dr. A's efforts to get Beth to attend to her feelings. Several of these findings warrant further discussion.

Consistent with interaction structure theory [14], Factor 1 (Patient's Affective and Cognitive Distancing) represents Beth's core defensive style and is captured nicely by the strongly loading PQS items: "Patient discusses experiences as if distant from her feelings." Other items loading on this factor such as "Patient is anxious or tense," "Patient resists examining thoughts, reactions, or motives," and "Patient does not initiate topics, is passive" indicate that Beth's ability to engage freely in the therapy was constricted when this type of process was present. It is worth noting that though this interaction structure was important to the therapy process, it was not necessarily prevalent. For example, Table 28.2 shows that Beth was rarely "passive" in the treatment. Yet, when she became so, her therapist became mobilized in a characteristic and repeated interaction style.

Factor 2 summarizes techniques that Dr. A used to break through Beth's emotional constriction and guardedness. Her approach is well represented by the highest loading PQS item on this factor: "The therapist emphasizes the patient's feelings." Dr. A did so, in part, by drawing Beth's attention to her tendency to describe her experiences in abstract and tangential ways. Yet, she also employed more subtle techniques captured by PQS items such as "Therapist clarifies or restates the patient's communications," "Therapist remarks are aimed at facilitating speech," and "Therapist asks for more information or elaboration." In all of these ways, Dr. A was able to place Beth's emotional experience in the forefront of their mutual focus.

With regard to the adherence to prototype findings, the first findings of note are (a) this ostensibly psychodynamic treatment on average showed only moderate correlations with the expert prototype of ideal PDT and (b) the treatment was found to contain almost as much ideal CBT process as ideal psychodynamic process. These findings are consistent with other studies from our group [18, 23, 24], indicating that clinicians do not hold exclusively to "pure" models as they work over time with patients. Instead, they tend to utilize a heterogeneous mix of treatment processes (often in response to idiosyncrasies in their clients' personalities and presenting problems). These findings also counter the erroneous assumption made in many psychotherapy studies that a therapy's brand label (e.g., psychodynamic psychotherapy) sufficiently characterizes its contents [25]. Finally, we note that even though the "focus on interpersonal relationships" was the single most characteristic descriptor of Beth's treatment and the most characteristic descriptor of ideal interpersonal psychotherapy (Table 28.1), Beth's treatment was not found to conform closely to the interpersonal psychotherapy prototype. This finding illustrates the multivariate nature of the prototypes. One must consider the relative weighting of all 100 PQS items to adequately understand each prototype and its likely match to actual therapy process.

Beth's pre-therapy scores on the standardized measures were notable because they mostly indicated that she did not begin therapy in a severely distressed state. Though it is possible that her relatively "normal" scores on these self-report measures resulted from her admitted tendency to under-report distress, it is just as likely that these scores reflect clinical reality. Many clients seek therapy for legitimate problems that do not quite reach the threshold of severe clinical disorders. There is too little empirical research documenting the benefits of therapy for clients like this. Evidence pointing to such benefits could be helpful in making the case for insurance coverage of psychotherapy interventions for milder conditions. Beth's scores raise other interesting possibilities about her case. For example, her ATQ scores were entirely in the normal range throughout the treatment. Because the ATQ specifically assesses depressogenic cognitions, one might expect these scores to be elevated like Beth's other depression scores. Yet, it is possible that Beth's normal ATQ scores demonstrate the benefit of her previous CBT. The CBT may have successfully reduced depres-

sogenic cognitions without addressing Beth's psychodynamic conflicts. This could also explain why the moderate CBT process in her "psychodynamic" treatment failed to contribute to additional progress.

There are several points to be made about the pattern of progress reflected in Beth's estimated psychiatric distress scores. First, it is striking that Beth showed such substantial relief within the first 16 sessions of her 126 sessions. This decrease is consistent with large bodies of psychotherapy research showing that depressed patients typically report immediate and significant symptomatic relief within such a period [39] but require more time to make deeper and longer lasting changes [40]. Second, one might ask why Beth's symptoms dramatically worsened in the middle of therapy. Our careful review of the transcripts accompanying these sessions suggested two possibilities. First, Beth began to talk extensively and emotionally about her mother's death for the first time during this period of worsening symptoms. It stands to reason that Beth would experience some increased psychological distress as she discussed this topic without her characteristic defensive emotional distancing. The second factor that may have contributed to Beth's increased distress was Dr. A's vacation between sessions 45 and 48. From a psychodynamic point of view, it is possible that Beth unconsciously experienced Dr. A's vacation (at her time of increased emotional vulnerability) as a repetition of the loss of her mother. Regardless of the true explanation for this increased distress, it is important to consider that such sharp elevations have been reported before in studies of longer therapies [17] and may indeed reflect the process of deep change that is unlikely to occur in briefer therapies.

Turning to the time series analysis results, we learned that Beth's defensive distancing resulted, in part, from her elevated psychiatric distress. Dr. A seemed to respond to Beth's heightened defensiveness and distress by focusing on her feelings, which in turn, appeared to reduce Beth's distress. Generating and regulating emotion in therapy has been increasingly documented in the broader theoretical and empirical literatures as an active change agent [41, 42]. Beth seemed to agree. When asked about the effective ingredients in her own treatment she answered, "My therapist had me talk in very concrete terms and get in touch with a lot of my feelings. Instead of talking of things that happened in my life as if they were events belonging to other people, I was able to talk about what was happening to me. I was able to talk about those things instead of spending all my energy staying away from it. She made me aware that I talked about my feelings in abstract ways and that without talking about them more concretely I would never be able to explore them and embrace them. I think this was a big part of what was helpful to me about our therapy and what helped me feel better."

The time series analyses also revealed other active ingredients of change. Although cognitive-behavioral and psychodynamic processes were fostered to a nearly equal degree in this psychotherapy, it was only the psychodynamic elements of the treatment process that influenced symptomatic improvement. This finding that adherence to psychodynamic process predicted progress is important for at least three reasons. First, it offers empirical support for the therapist's clinical model. One would expect PDT process to show a systematic relationship to therapy progress in a predominantly psychodynamic therapy. Second, it replicates a finding in one of our earlier case studies in which the adherence to the therapist's model also predicted progress in a long-term treatment [27]. Third, it provides broader empirical support for long-term PDT. Long-term psychodynamic treatments have generally been excluded from lists of recommended psychotherapies. This is not because studies show that they do not work, but rather because they have generally not been studied using randomized controlled designs [4, 6]. More recent guidelines for achieving evidence-based practice [43] recognize that many different research designs (including systematic case studies) can contribute to accumulating evidence for different brands of therapy. Thus, this study helps to fill a void.

Limitations and Strengths

Before closing, we wish to highlight a few of the key strengths and weaknesses that accompany this research. First, our single-case approach affords greater clinical detail and context than would normally be feasible in a group study. Yet, this comes at the price of questionable generalizability. That is, we have no real basis for estimating what (if anything) from this research will extend to other future cases. Though this peril exists to some extent in all research, group designs at least provide a statistical test of whether relationships observed in a sample are likely to extend to the population from which the sample was drawn. In our study, we were only able to statistically test whether the relationships observed in our sample of sessions were likely to extend to the entire treatment from which the sessions were drawn. To establish generalizability to a larger population of treatments, single-case research must rely on replication to a greater extent than group studies of psychotherapy [13]. It is, therefore, a key strength that the current study builds on an accumulating database of systematic case studies relating PQS measures of psychotherapy process with standardized measures of psychotherapy progress using time series analysis [17, 20, 27, 28].

The time series analysis is another strength of the present study and others that came before it. Case-based time series analyses have been recently identified as a powerful way to close the scientist-practitioner gap [44]. Gottman and Ringland's bivariate time series procedure permits inferences about causality that cannot be drawn from correlational statistics. Studies like ours that merely measure the psychotherapy process without manipulating it typically rely on correlational statistics to show relationships with outcome. However, correlational statistics cannot determine whether "x" causes "y," "y" causes "x," or some third variable explains the relationship between "x" and "y." The bivariate time series analysis procedure can determine whether outcome "y" is contingent on therapy process "x." However, it is still unable to rule out the kind of extraneous confounding variables that can be addressed using random assignment. Thus, the causal inferences yielded from time series analysis are not as strong as those that can be drawn from randomized trials. However, it is important to remember that randomized trials have their own problems accurately capturing psychotherapy as it is practiced in the real world. The conclusions that can be drawn from our particular application of the Gottman and Ringland procedure are further limited by the fact that a large proportion of the progress scores were estimates rather than observed scores. Progress scores were assessed less frequently than process scores out of concern for client fatigue and potential demand characteristics. We do not know whether or how seriously these factors have affected our findings. We recommend that future investigators attempt to obtain progress assessments to coincide with the process assessments unless empirical evidence suggests otherwise.

Perhaps, the most important strength of this study is its commitment to examining both idiographic (interaction structures) and nomothetic (prototypes) aspects of the psychotherapy change process. This commitment represents an effort to bridge the gap that has evolved between those who prioritize general vs case-specific ways of studying psychotherapy [45]. Bridging the gap between these two perspectives is critical. If we do not do this successfully, we run the "risk of being left either with rigorous studies of peripheral (but more easily operationalized) questions or with non-replicable, idiosyncratic, deeply textured studies that no one but clinical therapists and practitioners will appreciate or accept" [46]. Both scenarios threaten the ultimate well-being of psychotherapy research. In the first scenario, we fail to attend to the meaning and rich complexities which constitute psychotherapeutic treatments. In the second scenario, we neglect the importance of documenting the effectiveness of widely practiced but rarely studied forms of therapy (such as long-term PDT). One of the most important ways of bridging this gap is to recognize that idiographic and nomothetic approaches are not mutually exclusive [45]. The synergistic approach of this study involves a methodological pluralism that aims to remove long-term psychodynamic psychotherapies from the "endangered species" list so they can continue to occupy the important place they deserve among the treatment options available to patients.

References

1. Goldfried MR, Wolfe BE. Psychotherapy practice and research: repairing a strained alliance. *Am Psychol.* 1996;51:1007–1016.
2. Bohart AC. Paradigm clash: empirically supported treatments versus empirically supported psychotherapy practice. *Psychother Res.* 2000;10:488–493.
3. Persons JB. Psychotherapy outcome studies do not accurately represent current models of psychotherapy: a proposed remedy. *Am Psychol.* 1991;46:99–106.
4. Chambless DL, Ollendick TH. Empirically supported psychological interventions: controversies and evidence. *Annu Rev Psychol.* 2001;52:411–416.
5. Persons JB, Silberschatz G. Are results of randomized controlled trials useful to psychotherapists? *J Consult Clin Psychol.* 1998;56:126–135.
6. Westen D, Novotny CM, Thompson-Brenner H. The empirical status of empirically supported psychotherapies: assumptions, findings, and reporting in controlled clinical trials. *Psychol Bull.* 2004;130:631–663.
7. Lambert MJ. The individual therapist's contribution to psychotherapy process and outcome. *Clin Psychol Rev.* 1989;9:469–485.
8. Steering Committee. Empirically supported therapy relationships: conclusions and recommendations of the division 29 task force. *Psychother Theor Res Pract Training.* 2001;38:495–497.
9. Addis ME, Krasnow AD. A national survey of practicing psychologists' attitudes toward psychotherapy treatment manuals. *J Consult Clin Psychol.* 2000;68:331–339.
10. Bohart AC, O'Hara M, Leitner LM. Empirically violated treatments: disenfranchisement of humanistic and other psychotherapies. *Psychother Res.* 1998;8:141–157.
11. Pole N. Making the case for single case research. *Psychotherapy in Practice* 2001;10:19–21.
12. Geraerts E, Raymaekers L, Merckelbach H. Recovered memories of childhood sexual abuse: current findings and their legal implications. *Leg Crim Psychol.* 2008;13:165–176.
13. Gottman JM. N-of-one and N-of-two research in psychotherapy. *Psychol Bull.* 1973;80:93–105.
14. Jones EE. *Therapeutic action: a guide to psychoanalytic therapy.* Northvale: Jason Aronson; 2000.
15. Jones EE, Hall S, Parke LA. The process of change: the Berkeley Psychotherapy Research Group. In: Beutler L, Crago M, editors. *Psychotherapy research: an international review of programmatic studies.* Washington, DC: American Psychological Association; 1991. p. 98–106.
16. Pulos SM, Jones EE. A study of differential validity of the Psychotherapy Process Q-Sort. In: Paper presented at the annual meeting of the Western Psychological Association. San Diego; 1987.
17. Jones EE, Ghannam J, Nigg JT, Dyer J. A paradigm for single-case research: the time series study of a long-term psychotherapy for depression. *J Consult Clin Psychol.* 1993;61:381–394.
18. Ablon JS, Jones EE. Psychotherapy process in the NIMH Collaborative Research Program. *J Consult Clin Psychol.* 1999;67:64–75.
19. Jones EE, Price PB. Interaction structure and change in psychoanalytic psychotherapy. In: Bornstein R, Masling J, editors. *Empirical studies of the therapeutic hour.* Washington, DC: American Psychological Association; 1998. p. 27–62.
20. Pole N, Jones EE. The talking cure revisited: content analysis of a two-year psychodynamic psychotherapy. *Psychother Res.* 1998;8:171–189.
21. Fretter PB. A control-mastery case formulation of a successful treatment for major depression. In *Session: Psychologist Psychoanalyst* 1995;1:3–17.
22. Jones EE, Pulos SM. Comparing the process in psychodynamic and cognitive-behavioral therapies. *J Consult Clin Psychol.* 1993;61:306–316.
23. Ablon JS, Jones EE. How expert clinicians' prototypes of an ideal treatment correlate with outcome in psychodynamic and cognitive-behavioral therapy. *Psychother Res.* 1998;8:71–83.
24. Ablon JS, Jones EE. Validity of controlled clinical trials of psychotherapy: findings from the NIMH treatment of depression collaborative research program. *Am J Psychiatry.* 2002;159:775–783.
25. Ablon JS, Levy R, Katzenstein T. Beyond brand names of psychotherapy: identifying empirically supported change processes. *Psychother Theor Res Pract Training.* 2006;43:216–231.
26. Pole N, Ablon JS, O'Connor LE, Weiss J. Ideal control mastery technique correlates with change in a single case. *Psychother Theor Res Pract Training.* 2002;39:88–96.
27. Pole N, Ablon JS, O'Connor LE. Using psychodynamic, cognitive-behavioral, and control mastery prototypes to predict change: a new look at an old paradigm for long-term single case research. *J Couns Psychol.* 2008;55:221–232.
28. Serralta FB, Pole N, Nunes MLT, Eizirik CL, Olsen C. The process of change in brief psychotherapy: effects of psychodynamic and cognitive behavioral prototypes. *Psychother Res.* 2010;20:564–575.

29. First MB, Spitzer RL, Gibbon M, Williams JB. Structured clinical interview for DSM-IV axis I disorders. Washington, DC: American Psychiatric Press; 1997.
30. Jones EE, Cumming JD, Horowitz MJ. Another look at the nonspecific hypothesis of therapeutic effectiveness. *J Consult Clin Psychol.* 1988;56:48–55.
31. Soo-Hoo T, Jones EE, Pulos SM. An empirical investigation of the therapeutic alliance construct. In: Paper presented at the Society for Psychotherapy Research Conference. Berkeley; 1988.
32. Beck AT, Steer RA, Brown GK. Manual for the Beck depression inventory-II. San Antonio: Psychological Corporation; 1996.
33. Hollon SD, Kendall PC. Cognitive self-statements in depression: development of an automatic thoughts questionnaire. *Cognit Ther Res.* 1980;4:383–395.
34. Weissman M, Prusoff B, Thompson W, Harding P, Meyers J. Social adjustment by self-report in a community sample and in psychiatric outpatients. *J Nerv Ment Dis.* 1978;166:317–326.
35. Derogatis LR, Lipman RS, Rickels K, Uhlenhuth EH, Covi L. The Hopkins symptom checklist (HSCL): a self-report symptom inventory. *Behav Sci.* 1974;19:1–15.
36. Orlinsky DE, Howard KI. Process and outcome in psychotherapy. In: Garfield S, Bergin AE, editors. *Handbook of psychotherapy and behavior change.* New York: Wiley; 1986. p. 311–381.
37. Gottman JM, Ringland J. The analysis of dominance and bidirectionality in social development. *Child Dev.* 1981;52:393–412.
38. Williams EA, Gottman JM. A user's guide to the Gottman–Williams time-series analysis computer programs for social scientists. New York: Cambridge University Press; 1982.
39. Howard KI, Kopta SM, Krause MS, Orlinsky DE. The dose-effect relationship in psychotherapy. *Am Psychol.* 1986;41:159–164.
40. Howard KI, Lueger RJ, Maling MS, Martinovich Z. A phase model of psychotherapy outcome: causal mediation of change. *J Consult Clin Psychol.* 1993;61:678–685.
41. Cloitre M, Stovall-McCloug KC, Miranda R, Chemtob C. Therapeutic alliance, negative mood regulation, and treatment outcome in child abuse-related posttraumatic stress disorder. *J Consult Clin Psychol.* 2004;72:411–416.
42. Coombs MM, Coleman D, Jones EE. Working with feelings: the importance of emotion in both cognitive-behavioral and interpersonal therapy in the NIMH Treatment of Depression Collaborative Research Program. *Psychother Theor Res Pract Training.* 2002;39:233–244.
43. APA Presidential Task Force on Evidence-Based Practice. Evidence-based practice in psychology. *Am Psychol.* 2006;61:271–285.
44. Borckardt JJ, Nash MR, Murphy MD, Moore M, Shaw D, O'Neil P. Clinical practice as natural laboratory for psychotherapy research: a guide to case-based time-series analysis. *Am Psychol.* 2008;63:77–95.
45. Luyten P, Blatt SJ, Corveleyn J. Minding the gap between positivism and hermeneutics in psychoanalytic research. *J Am Psychoanal Assoc.* 2006;54:572–610.
46. Hauser S. Studying psychoanalysis: asking and answering the hard questions. *J Am Psychoanal Assoc.* 2006;54:561–569.

Chapter 29

A Session of Psychoanalysis as Analyzed by the Psychotherapy Process Q-Set: Amalia X, Session 152

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• Single-case research • Single-session process ratings • Treatment prototypes

Freud initiated the study of specimen reports of psychoanalytic work with the so-called Irma-dream [1]. This material has been re-analyzed a number of times (for example [2]). In the same vein, the Dora-case [3] has retained a prestigious pivotal position in availing itself to continuous re-elaboration and re-interpretation [4]. However, few detailed examples are available to extended scrutiny where “primary data” [5] are at hand. We have utilized primary verbatim data in our process analysis of a session of the psychoanalysis at process.

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A central difficulty for psychoanalytic research lies in designing quantitative methods that preserve the depth and complexity of clinical material while conforming to the requirements of empirical science. In order to use empirical data to test psychoanalytic constructs, clinical phenomena must be intersubjectively observable, which means that different judges can independently agree about their characteristics and whether or not they occur. Disagreements about the interpretation or meaning of the same case material are commonplace in clinical work and constitute important grounds for criticism of the scientific status of psychoanalytic methods for acquiring knowledge. A particular problem is that clinical observers may vary a great deal in the concepts they use and in their descriptive language. Observers of the same case material may not arrive at the same conclusions; indeed, they may not even consider the same dimensions of the psychotherapeutic process. The issue of handling differences in inference or judgment among clinical experts is particularly important since there are alternate theoretical models within psychoanalysis itself.

The Ulm study group on psychoanalytic process research in many details has analyzed a tape-recorded psychoanalytic treatment, the case of Amalia X [6, see Chap. 24]. The treating analyst himself considered the Session 152 as a specimen example of modern psychoanalytic technique when he presented this session to the participants of the International Psychoanalytic Congress in 2004 [7]. This session was debated by a fair number of experienced psychoanalysts [8]. Among those, the clinical evaluation by Akhtar [9] was especially strong in pointing out the key features of the analyst's technique in this session: "Dr. Thomä's technique shows flexibility, resilience, and broad-mindedness. It is centered upon helping the patient achieve ego freedom through interpretation and transference resolution. However, it incorporates a variety of listening attitudes and a broad range of interventions that can be seen as preparatory for, as well as in lieu of, the interpretive enterprise" [9, p. 691].

This session – available for further scrutiny to all researchers in the field¹ – provided a good opportunity to test the sensitivity of the Psychotherapy Q-Set developed by Jones [10].

Rating a psychotherapy session utilizing the Psychotherapy Process Q-Set (PQS) provides an empirical description of the process of that individual session that is suitable for quantitative analysis and offers process ratings as determined by the PQS. We first present an introduction to the PQS and a brief description of the prescribed approach for rating an hour. We then review our ratings of Session 152 of the aforementioned case and provide a more detailed narrative of our impression of the hour in the context of our rating with the PQS.

The Psychotherapy Process Q-Set

One solution to the consensus problem is to attempt to refine ordinary clinical judgment. An approach that does this in a sophisticated manner is Q-methodology [11, 12]. The Q-technique is a method of measurement with a broad range of potential applications, but it is particularly well suited for the description of qualitative data. A Q-sort consists of a set of items, each of which describes a significant psychological or behavioral feature of an individual or situation. The specific content of the items depends upon the particular objectives of the research and the nature of the individuals or situations to be studied. There is no standard Q-sort; rather, the goal is to provide a set of items that can capture as comprehensively as possible the critical dimensions of variation among cases under study.

The PQS [10] is a 100-item rating instrument designed to provide a basic language for the description and classification of treatment processes in a form suitable for quantitative analysis. The PQS

¹ www.horstkaechele.de, english section: All about Amalia X.

allows clinical judges to formalize and render explicit what usually remains informal, implicit, and intuitive, and helps clinical judges achieve reliable descriptions of complex treatment processes. It provides a standard format that all clinical judges can use to describe the material under study. The instrument was designed to be applied to a record of a single treatment hour as the unit of observation. The application of the Q-technique to a treatment hour in its entirety has the advantage of allowing clinical judges to study the material carefully for evidence supporting alternative conceptualizations and to assess the gradual unfolding of the meaning of events within the hour.

The 100 items that comprise the PQS represent an empirically guided selection from a pool of several hundred items garnered from previously existing process measures, as well as new items constructed by a panel of experts. Several versions of the Q-set were tested in a series of pilot studies conducted on scores of transcripts, videotapes, and audiotapes of psychotherapy and psychoanalytic treatment hours. Each item was individually discussed with respect to its clarity, its importance for psychotherapy and analysis, and its implications for the sufficiency of the total Q-set. Items were amplified or rewritten for conciseness and jargon, and ambiguous language was eliminated. Items were eliminated if they showed little variation over a wide range of subjects and therapy hours, were redundant, or had low inter-rater reliability. Whenever some facet of therapy process judged to be important proved not to be captured or expressed by existing items, item revisions were made or appropriate items were added. The Q-set captures a wide range of phenomena in the domain of analytic and therapeutic process, including transference manifestations, resistance, reconstruction, the therapist's activity (e.g., clarification, interpretation), and the patient's affective states, such as anxiety, depression, or other symptomatic behavior. The standard language provided by the Q-set, the careful definition of items, and its structured format all serve to guide clinical judgments in the direction of reliable, measurable statements.

The Q-method encompasses many of the operations the clinician performs in attempting to analyze the verbal meanings of the analyst–patient discourse. Holt [13] distinguishes several kinds of “internal analyses” of verbal texts that the clinical thinker might perform. These analyses include: summarizing content meanings by way of selection and abstraction; collating verbal messages by examining them for internal consistency and inconsistency; interpreting or translating the content of verbal messages; observing one's affective reaction to the verbal message, and discerning causal relations. Many of these operations are built into the Q-method. The clinician, for example, attempts to type or categorize the patient's behavior; the Q-sort similarly asks judges to identify the form or content of a communication and identify it with a conceptual system or code (the Q-sort). The clinician assesses the frequency with which a kind of event or behavior occurs, or its intensity; similarly, the Q-sort requires judges to rank order or scale the salience of a particular aspect of the therapeutic process. There is, in other words, a direct line of logical continuity from the qualitative classification of the clinical thinker to Q-sort ratings. The Q-sort simply attempts to codify and systematize processes of clinical inference and judgment. Incidentally, causal analysis, the most controversial and difficult to verify in the study of verbal meanings, is not an important aspect of the Q-method, since it is usually not essential in the description and construction of meaning for a given hour. When a causal statement is called for, it is usually interpersonal in nature, rather than an attempt to explain the patient's behavior in terms of underlying dynamic structure or inferred motives. In this case, it is readily deduced from overt behavior, as in the Q-item “When the interaction with the patient is difficult, the therapist accommodates in an effort to improve relations.”

The PQS can capture the uniqueness of each treatment hour while also permitting the assessment of the similarities or dissimilarities between hours and patients. It has been used in research involving group comparison designs, in which Q-ratings of groups of cases (or hours) selected on some dimension of interest are compared [14–17] as well as in $N=1$ designs [18, 19]. The instrument has demonstrated high levels of inter-rater reliability, item reliability, and concurrent and predictive validity across a range of studies and treatment samples. Inter-rater reliability, which is calculated by correlating the Q-sorts of multiple raters across all 100 items of the PQS, ranges from 0.83 to 0.89.

Table 29.1 Psychotherapy Process Q-Set distribution

Rating	Number of items	Category
9	5	Extremely characteristic or salient
8	8	Quite characteristic or salient
7	12	Fairly characteristic or salient
6	16	Somewhat characteristic or salient
5	18	Relatively neutral or unimportant
4	16	Somewhat uncharacteristic or negatively salient
3	12	Fairly uncharacteristic or negatively salient
2	8	Quite uncharacteristic or negatively salient
1	5	Extremely uncharacteristic or negatively salient

Rating Treatment Sessions Using the PQS

In this section, we present a sense of the practical requirements for rating. We do not believe that a simple review of this section suffices as necessary training in the use of the PQS; these comments are intended only to inform the reader how we have proceeded in our approach to rating Session 152 of Amalia X's treatment. We proceed from a general description of our thinking about rating with the PQS to the specifics of our approach, and we finish with our impression of the particular session we have rated.

After studying the transcript (or video- or audiotape) of a treatment hour, a clinical judge orders the 100 items of the PQS, each printed separately on cards to permit easy arrangement and re-arrangement. The items are sorted into nine piles on a continuum from least characteristic or negatively salient (category 1) to most characteristic or salient (category 9). The middle pile (category 5) is used for items deemed either neutral or irrelevant to the particular hour being rated. This distribution of items approximates a normal curve. See Table 29.1.

The reasons for utilizing a fixed distribution resembling a normal curve are provided at length by Block [12], but can be summarized briefly. First, the fixed distribution eliminates certain biases in rating procedure; some judges, for example, systematically avoid making extreme judgments while others dichotomize their judgments into one extreme or the other. Second, the fixed distribution ensures that judges will make multiple discriminations among items. By ensuring multiple discriminations, another common response bias, the "halo" effect, is reduced; that is, judges cannot simply group together all favorable or unfavorable items without making distinctions among them. Third, a distribution with relatively fewer items in the extreme categories throws into greater relief the most important features of the description; the extreme items effectively receive the greatest emphasis. Finally, if all Q-sorts have the same distribution, statistical analyses of the data are greatly facilitated.

When considering one's approach to ratings, it is also essential to recognize that the Q-sort is an ipsative method. Its items are ordered within a case, from those most characteristic of the therapy hour described to those least characteristic. The distinctiveness of this procedure is perhaps best understood by contrasting it with the more conventional normative mode of scaling typical of most psychological tests. In normative scaling, comparisons are made between individuals on some dimension of variation. If, for example, we have a scale of some psychological feature, such as level of anxiety, individuals are ordered relative to each other, or relative to a norm. It could then be said that patient A is more anxious than patient B, or that patient A is among the most anxious that a given therapist has seen. Ipsative scaling, on the other hand, takes no account of how an individual compares to others or to a norm (however derived); what matters is how the various dimensions to be described relate to each other within the case under study. For example, is patient A more insightful than he is anxious? Or is he more insightful than emotionally expressive? A judgment can be made, for example, whether the therapist has made more interpretations of defensive maneuvers than clarifying comments, or more frequent (or significant) transference interpretations than he

has defense interpretations within the hour. Each hour is consequently described by a particular patterning of the dimensions, i.e., the Q-sort items.

Each item of the PQS contains a description of the two opposite ends of the continuum along which the items are to be rated. It is important to note that placement in the uncharacteristic direction does not signal that a particular behavior or experience is irrelevant. On the contrary, an uncharacteristic ranking signals that the absence of the item is meaningful and important to capture in the Q-sort description. Most items have specific instructions that provide examples of the distinction between uncharacteristic and neutral ratings. For example, Q-item number 17 describes the therapist as “actively exerting control over the interaction, e.g., structuring and/or introducing new topics” when rated in the characteristic range. However, when rated in the uncharacteristic range, the item indicates that the therapist was “following the lead of the patient; helping the patient to follow his train of thought.” Only if the item were irrelevant to the description of the hour would it be placed in the neutral range.

Judges rate the frequency, intensity, and estimated importance or salience of each of the 100 statements. A coding manual [10] details instructions for Q-sorting and provides the items and their definitions, along with examples in order to minimize potentially varying interpretations of the items. The Q-items themselves are anchored, as far as possible, to behavioral and linguistic cues that can be identified in recordings of hours, and more abstract terms are avoided. For example, clinical judges are not asked to identify the presence or absence of a defense mechanism in the patient. The term “defense mechanism” connotes a type of mental functioning; it is a relatively abstract notion, and it is often difficult for clinicians to agree on the presence or absence of a particular “mechanism.” Instead, clinical judges are asked to notice whether or not the analyst *makes* a defense interpretation. The items are tied to actual behavior that can be identified in a transcript or other recording. Judges are trained to look for specific evidence.

When rating, judges are asked to take the position of a “generalized other,” i.e., an observer who stands midway between patient and therapist and who views the interaction from the outside. In placing each item, judges are instructed to ask themselves: Is this attitude, behavior, or experience clearly present (or absent)? If the evidence is not compelling, the judge is asked to search for specific evidence of the extent to which it is present or absent. Since the items are not closely bound to particular theoretical concepts, but rather to notions of analytic and therapeutic *process*, the influence of observers’ theory on their descriptions of the process is subdued within the framework provided by the Q-set. Although inference is sometimes needed for certain items, the inference emanates from observable behavior rather than a theoretical perspective. Therefore, the benefit of the PQS is that it describes what actually occurs or does not occur in a treatment hour and does not place itself in alliance with any set of techniques or theoretical approaches. We learn from the ratings what actually occurs in treatment hours rather than what any therapist or analyst believes should occur because of adherence to a preferred theory. No matter what one’s theoretical orientation is, whether psychoanalysis or cognitive behavioral therapy or interpersonal therapy, it is important to subdue one’s personal theoretical preference when rating. Raters can encounter psychotherapy sessions from all treatment orientations, and we ask ourselves to consider only the linguistic and behavioral cues of the session as data in the interest of impartial, scientific rating.

During and after an initial reading, listening, or viewing of a session, we note the critical content of the session but emphasize to a greater degree the process of the session, remembering that the PQS was created to help clinicians and researchers describe the critical process variables. We take notes during our reading, listening, or viewing of sessions to help with later rating. We find it useful to summarize the session to ourselves after reading. Again, we emphasize the process variables as well as note the content to recreate the session in our description of the hour. For example, we emphasize aspects of the patient’s (P) and analyst’s (A) contribution to the session as well as the interaction (P–A) that we have observed. Among other processes that the PQS assesses, we notice who initiates and controls during the session, what the patient’s affect is and whether the analyst comments on it during the hour, what the specific interventions of the analyst are and are not, whether

we feel the analyst understands the therapeutic process, whether the discussion is focused, whether the patient is resisting the analyst's attempts to do the work of the session, and how the patient and the analyst respond to and interact with one another. We also consider questions such as: Does P respond with deepening of material after an interpretation or is there silence or an increase in self-protection or withdrawal as a result? How does A proceed after P is increasingly reluctant to proceed or is confused? Does A adjust his style to accommodate P or does A continue with his/her chosen form of interventions? Does the session appear to deepen or develop in a productive manner? Is this because of the connection of P and A or does P have some resilience or momentum that seems independent of the connection with A in this hour? Is there data to suggest that P has been helped in this particular session?

In considering these questions and others related to specific PQS items, we think only of the hour under consideration. If, as raters, we are familiar with other hours of the same treatment, we try to exclude this knowledge and data from our immediate rating criteria. And of course, as raters, we are blind to the order of the hours, or where they fall in an extended treatment. We try to be aware of our own subjective reactions to A and P and separate these reactions from our consideration of the objective data while rating. We have found that raters' affective reactions to analysts need to be carefully self-monitored as they have the potential to bias one's ratings.

When conducting the actual rating procedure, the rater can choose between paper and electronic versions of the PQS, which has been translated into German, Japanese [20], Norwegian, Italian, Portuguese, and Spanish from the English. The electronic version is generally considered to be more convenient and efficient (and also reduces data entry labor and errors), but some raters prefer to see and feel items written on cards that are then distributed into the piles from 1 to 9. For those who proceed with paper, the original sorting after reading the treatment session under consideration is done by placing items in 1 of 3 piles – highly characteristic and salient, neutral, and saliently uncharacteristic. After this initial sorting, items are then distributed to the specific 1 to 9 piles based on the rater's determination of how characteristic and salient each is in the hour. If the electronic version is used, the rater can proceed in a similar fashion, placing items in 1 of 3 groupings to be distributed later. Once raters become more experienced with the measure, some prefer to place items in exact piles and then make necessary shifts according to the demands of the Q-sort distribution the second time through. The number of items in each pile is visible on the electronic Excel sheet. When a rater has reviewed ratings and completed his or her work, he or she assesses the ratings by reviewing the extreme rating piles (1,9), re-telling the story of the hour with these ten items and determining if the "story" of the hour as told by these items conforms to the rater's ultimate impression.

All of our sessions are rated by two autonomous raters who have been trained by one of the first two authors. Reliability between the ratings is then computed, and these ratings are only acceptable for use if they correlate at a level above 0.5. We generally find and prefer reliability well above 0.5, except for the more difficult sessions. When reliability is not achieved between two raters for any given session, an expert rater is enlisted to submit a rating to achieve reliability with one of the original session raters. The two reliable ratings are then item-averaged to create a single rating for research use. It is this item-averaged set of ratings for a session that is used in all subsequent data analysis.

Amalia X, Session 152

Thematic Impressions of the Hour

Our first impression of Session 152 of the analytic treatment of Amalia X is that the dialogue is complex, the associations very personal, and the exchange very intimate between a patient and analyst who have developed an excellent therapeutic alliance. In fact, this is a session requiring more

than one reading in order to feel confident in one's ratings. We experienced rating this hour as an entry into a very private world of dyadic meaning that requires careful attention to the process. For example, there are occasions when the patient initially resists an interpretation only to be followed by a shift in focus by A or P that deepens the dialogue. We have needed to be certain to follow the process of this particular hour carefully because of the quick recovery and deepening of analytic work which makes the session a strong and positive one; that is, the session achieves its goal of deepening exploration of P's unconscious feelings about the analyst.

The ratings (Tables 29.2 and 29.3) reflect our autonomous impressions that both P and A are active in the hour and make salient contributions to the process. We found that P's presentation of a dream (Q90) stimulates the process of the hour. There is a major emphasis by A on leading P to explore her unconscious (Q67, Q89), and therefore there is no attempt to clarify reality and fantasy with P (Q68). Although P exhibits some moments of resistance, P is engaged in the complementary analytic work of attempting to access her unconscious associations (Q97) within the context of the therapeutic relationship (Q98), within the transference. P is quite active and initiating within the hour (Q15), and A's interventions are attempts to facilitate P's speech (Q3) in a non-judgmental manner (Q18).

We found that the process of the hour proceeds well because A's empathy (Q6) reflects an understanding of P at a deep, unconscious level which allows P to be prompted successfully, most of the time, about her threatening and warded-off feelings (Q50). Because P does feel understood by A (Q14), this item (P does not feel understood by A) is rated saliently uncharacteristic. Because of A's empathy and his ability to understand P, P initiates topics (Q15), which also places this item as saliently uncharacteristic. An additional critical and saliently characteristic process variable is that A understands the therapeutic process (Q28). He allows P some room to resist while at the same time asking her to explore her unconscious. This flexibility leads to a deepening of associations and increasingly intimate exploration of the transference. P's feelings or perceptions are also linked to experiences of childhood (Q92), which helps P proceed with the exploration of her unconscious. In our judgment, she is able to proceed in this way because of A's ability to understand the meaning of her associations, which she experiences as empathic.

Interaction Structures

Factor analysis of many sessions of a treatment rated using the PQS can enable us to identify interaction structures – the repetitive, mutually influencing processes specific to each patient–analyst dyad that are slow to change but often linked to positive or negative outcome. However, in the case of Amalia X, Session 152, we only have one assessment point in time. Next, we discuss an example of what one might imagine to be a repetitive interaction structure in this case which, in our judgment, appears to contribute to P feeling helped in this hour and therefore suggests indication of positive outcome, assuming this interaction repeats throughout the treatment and is recognized and understood by the A and P together. Toward the beginning of the session, P is discussing the dream she had presented to A, and she then associates to it, initially speaking to herself:

- P: It was the devil's work, in German class you haven't been putting any, really genuine consideration into it. you teach English and earth science. You have as little to do with all of that as possible.//like 10 years ago. why is//? – I don't know either//? somehow I don't care. – and that, I mean really, is not normal for me. not to be afraid at all anymore.
- A: like in the dream?
- P: yes. yes, I've got to! somehow. it seems to me like – well, it's gotten to the point where [3], that in my mind I'm considering – hm -, that sometimes these last days I actually consider which convent I should go to. It seems so idiotic, and it does no good at all when I say it to myself.
- A: um-hmm.

Table 29.2 Most characteristic PQS items for Amalia X, Session 152

Item	Rating	Examples of salience from session
Item 90: Patient's dreams or fantasies are discussed	9	P: um-hmm. (2 min. pause) (groaning) last night I had a dream, towards morning, while the alarm clock was ringing. I'd been murdered with a dagger A: um-hmm P: but it was kind of, like in the movies – I had to stay lying face down for a long time, and had the dagger in my back and, then lots and lots of people came, – and, I'm not exactly sure anymore, keeping my hands perfectly still, somehow// A: um-hmm
Item 3: Analyst's remarks are aimed at facilitating patient speech	9	P: it was very embarrassing for me that my skirt had slipped up so high in back A: um-hmm P: and then a colleague of mine came, who I could easily see was from *5,382, which was my first position, and he pulled the dagger out of my back. and I remember [1] it was like a souvenir. and then a young couple came up, – I just remember that he was a Negro. and they cut off my hair and wanted, actually to make a wig out of it I think. And that seemed really dreadful to me. just pulled it all down and then they actually began to cut. and, then I got up, – and went to the hairdresser's. and I still had//I was A: so you could get up after all, + when you wanted to go to the hairdresser, ah (p. 2)
Item 67: Analyst interprets warded-off or unconscious wishes, feelings, or ideas	9	A: and then you would be assured, that then you'd, at least know, that, uh, I, uh, how shall I say it, I've out – held out, that, uh, I've been able to take it, that you, uh, that you, uh, um, that I've come through it intact. because you, somewhere there's this concern there, that I won't be able to take it. Is he, is he really strong enough, that he uh- P: no, that's not what I was hoping A: that he, well, that nothing will happen, that you won't - P: I don't find that appropriate A: um, that you won't draw me into it too P: into this delusion, you mean, in my mind A: um-hmm um-hmm (p. 8) In this example, the patient does not accept the analyst's interpretation. However, the item is rated based on the analyst making an interpretation whether the patient accepts it or not
Item 98: The analytic relationship is a focus of discussion	9	A: um-hmm, also. could it - P: could it A: perhaps also be me sitting behind you, – and saying wrong, wrong P: oh, you know, sometimes – I have the feeling – I'd like to rush at you, grab you by the neck, and hold you so tight, and then- A: hm P: then I think, he'd never be able to take it, all of a sudden he'd just drop dead A: hm P: and then I see you, somehow – burning too, or, or, I can't find words for it, I don't know. what I see or feel then
Item 18: Analyst conveys a sense of non-judgmental acceptance	8.5	A: I can't take it, that I, uh P: right A: can't take, can't take you, and P: right, me holding you right A: um-hmm (p. 6–7) (example continues in text) P: ...and then you could keep your dogmas A: yes P: then I wouldn't want, really to fight with you A: um-hmm P: that's true.//or tear your neck off A: yes, but then you wouldn't fertilize my, dogmas with yours, would you? P: no + I'd be against the enemy again, wouldn't I A: or move mine closer + move mine closer P: I'd have two! fronts. like just before A: move + mine, with these incursions into the mind your incursions into my mind, into my head... (p. 27)

(continued)

Table 29.2 (continued)

Item	Rating	Examples of salience from session
Item 6: Analyst is sensitive to the patient's feelings, attuned to the patient; empathic	8	A: of course. but as to distancing. but the first thing is to know, if something is going to break off, or, could, or if it, it uh, it'll be able to take it. or if a branch will break, break off, right, somehow there's a feeling – perhaps mixed up in this as well, that you'd like to take something with you, that you'd like to break off a branch P: yes A: break off a piece P: yes, it's your neck A: my neck? mm. mm. my head P: mm, um-hmm
Item 28: Analyst accurately perceived therapeutic process	7.5	A: um-hmm P: that's something I'm, often preoccupied with, your head A: will it stay on? you're preoccupied with my head often, really often P: yes, yes, incredibly often (p. 9) Here, the analyst makes an interpretation that is accepted by the patient as accurate and meaningful to her. Analyst and patient jointly explore the meaning of her fantasy, and the analyst consistently adapts to the changing needs of the patient and to the emergent process between them. This is only one example of the salience of the therapist's perception of the therapeutic process throughout the hour
Item 50: Analyst draws attention to feelings regarded by the patient as unacceptable (e.g., anger, envy, or excitement)	8	A: what was it a moment ago that had occurred to you about your dream P: oh, shit A: that you didn't want to say? please? hmm? P: oh just something or other, that might be in a + book./// A: about, about. + P: something or other, that might be in some textbook A: well, what is it then? P: (laughing) you know that perfectly well A: no, no, no P: no certainly you wouldn't know what kind of textbooks I read A: hmm hmm (p. 4) In this example, the analyst draws the patient's attention to unacceptable feelings. The patient resists but the item is rated only on the analyst's attempt to encourage the patient to attend to unacceptable feelings
Item 92: Patient's feelings or perceptions are linked to experiences from infancy or childhood	8	A: yes, yes, mm-hmm. well you see I think it's a very good thing, that you can laugh, and uh, since you might get the idea from my- not uh, -laughing too, that it wouldn't be good – that it isn't good, to laugh. that's the reason why I uh – really said, I said, I don't laugh enough P: So that's it A: and I do really do think, I don't laugh enough. uh, – and uh – your father didn't laugh enough P: he doesn't laugh at all A: and that is, there you have a negative model, uh - P: the most my father does is smile A: right P: he laughs when I can't laugh A: um-hmm P: but almost- as a rule that's the way it is A: um-hmm P: that is, when he laughs, I don't feel like it anymore. I feel like anything but that... P: that is a very old fear. that you won't be able to take it after all my father could never take anything A: yes P: you wouldn't believe how soft my father was A: um-hmm P: he couldn't take a thing A: but then that makes it all the more important to find out if my head is still really hard because that increases- uh, how hard your hold can be. Because if the head is hard, then it should still be--- in fact it should be easier, easier, to get – to find out, just exactly how hard it really is, you see...

Table 29.3 Least characteristic PQS items for Amalia X, Session 152

Item	Rating	Examples of salience from session with discussion
Item 89: Analyst acts to strengthen defenses	1	A: yes. yes, and taking hold was the also the issue with – with you, grabbing me by the neck, right P: yes A: and how I wouldn't be able to take it right? P: yes I was afraid of that. A: um-hmm, um-hmm P: that is a very old fear. that you won't be able to take it after all my father could never take anything
Item 14: Patient does not feel understood by analyst	1.5	A: yes P: you wouldn't believe how soft my father was A: um-hmm P: he couldn't take a thing A: but then that makes it all the more important to find out if my head is still really hard because that increases – uh, how hard your hold can be. Because if the head is hard, then it should still be –in fact it should be easier, easier, to get – to find out, just exactly how hard it really is, you see P: yes, and you can take hold harder, and A: exactly P: right A: um-hmm, um-hmm, um-hmm P: and fight better, right to the knife A: right. and then there would be something positive, one might say, to that dogmatism. - P: right A: something [17] to be gained from it. namely, that it isn't so easy – to knock over. that it holds firm to something right P: right. that it holds firm Here, the analyst's interpretation is aimed at getting the patient beyond intellectualizing. It is evident that the patient feels understood by this interpretation because she accepts it as accurate and meaningful to her. The analyst's repeated offering of interpretations that are accepted by the patient as meaningful illustrates the salience of the analyst's understanding of the therapeutic process (Item 28, rated 9)
Item 15: Patient does not initiate topics and is passive	1	A: and then on top of it in the dream you get stabbed, so uh, – are you dead or not dead P: but that is how it is too, right now A: um-hmm. um-hmm P: nothing is fun for me. Everything I do now is just mechanical. Even school is not really involving, just mechanical. Or when [5] I'm somewhere, I act all excited. well excited is a bit of an exaggeration but, at least./././././someone is always observing and censoring it and saying././././wrong it's all just wrong (50 s pause) at the moment I would believe nothing makes any sense. Before I'd believe that two and two makes four (p. 6) In this example, the patient takes a realization and develops it in depth on her own initiative. This active engagement and self-driven exploration is characteristic of the patient throughout the session
Item 68: Real vs fantasized meanings of experiences are actively differentiated	1.5	A: that then you, uh would actually have what you want, to have the knife, and uh, to be able to really get inside yourself- too. in order to get something out that would – or to get more out P: right and no, – up to now I always thought that, that would be possible, to some extent A: um-hmm

(continued)

Table 29.3 (continued)

Item	Rating	Examples of salience from session with discussion
Item 90: patient's dreams or fantasies are discussed		P: but since Sunday absolutely nothing has been possible anymore A: well, because since Sunday you've obviously been making a special effort, uh not to, – uh get uh, inside here. not to go after my neck and uh, – and try uh, – to – P: measure your head A: measure it, take it in your hand, and uh – take with you what's inside, in there and - (p. 12) A: to, to test the stability of my head, to see, just how big or little to make the hole isn't that right P: um-hmm A: but you would like to make a big one P: um-hmm A: and have easy access P: um-hmm A: not difficult access you'd like, with your hand, uh to be able to actually touch what is there not just see it with your eyes. with your eyes you don't see well anyway if a hole is just small isn't that so. with your eyes you don't see a lot either right if it's just a little hole right. so uh, I believe you'd like to make a rather large one uh - P: I'd even like to be able to [21], take a walk in your head A: right, um-hmm P: I would like! that A: yes, um-hmm P: and I'd even like to have a bench A: right, right. (p. 25) In both of these examples, the analyst chooses to pursue the patient's fantasy. The therapist helps the patient make meaning out of her fantasies rather than injecting reality into the session, as a therapist might do for a patient with less intact reality testing. These are just two examples of the approach the analyst takes throughout the session
Item 9: Analyst is distant, aloof 1 (vs responsive and affectively involved)		P: I was already on that you see on, Wednesday A: um-hmm. and that way also that way the intensification of your idea of entering the convent would be a way of challenging me to a fight P: um-hmm A: in order, to a fight, uh where you would be taken hold of too not just hold on yourself trying to see how, how P: yes A: how much I can take but where I finally! get a chance too! – to show in a fight just how! much it matters to me that you don't go to the convent P: to my mother A: but are preserved for life in this world P: well yes, possibly. I don't know A: stay on with us here so that you can give me your ideas too, that can fill my head with my with your thoughts more and P: oh I see A: and, and can give me really uh – fruitful, fruitful ideas. (p. 23) This is the clearest example of data to support the analyst's affective involvement because of the emphatics in the transcript. However, it is our opinion that the analyst's responsiveness and affective involvement are highly salient throughout the hour

(continued)

Table 29.3 (continued)

Item	Rating	Examples of salience from session with discussion
Item 52: Patient relies upon analyst to solve his/her problems	1	P: it just fascinates me. what's in it too, of course A: yes, yes, if you keep it intact for yourself, if it – stays there and you, uh, the P: yes, A: yes, if you keep it intact for yourself, if it – stays there and you, uh, then it's, you don't have it. he takes it with him, then it's, uh... P: then it's off A: it's off, right. and then, uh – then the convent is a way out, right. but just a way out, that's all P: another head A: in that case yes, and then – you might not have taken along what P: no A: what you – would like to take along with you, not taken out P: most of all what I'd still like to get inside of A: hmm. get inside -? P: I still want to A: or put inside? P: get inside, – get inside A: get inside, ok, um-hmm P: you see? that's so hard to say in front of a hundred eyes A: yes P: believed – what I could get out by getting inside [9] Throughout the session, the patient works hard in collaboration with the analyst to discover the personal meaning of her dream. This is a session in which the patient's consistent effort is very characteristic, salient, and definitive of the hour. No linguistic or behavioral data exists to suggest that the patient wants the analyst to solve her problems for her

PQS Psychotherapy Process Q-Set. P patient, A analyst

P: I'm genuinely glad to be at school in the morning. there I simply haven't got time for stuff like that. – somehow I protect myself against it with my routine, but – of course with brooding too, but as soon as I start thinking everything seems to get confused. I don't know, I really don't know. so I think, I'm crazy and then I think, I have guilt feelings and then I think, I uh. these last, – 6 years, I absolutely haven't//. I don't know, it's all so far gone. all of a sudden.

A: what was it a moment ago that had occurred to you about your dream.

P: oh, shit.

A: that you didn't want to say? please? hmm?

P: oh just something or other, that might be in a +book.///

A: about, about. +

P: something or other, that might be in some textbook.

A: well, what is it then?

P: (laughing) you know that perfectly well.

A: no, no, no.

P: no certainly you wouldn't know what kind of textbooks I r e a d.

A: hmm, hmm.

P: oh God. no, I [4], feel so lousy.

A: hm. (18 s pause).

P: so, now do you think that – that the dream is going to get me anywhere?///

- A: well, there certainly is + an, an uh, hm – immobility, a. – you were just, complaining that you're not getting anywhere, that you, uh, – well that is just the picture in the dream.
- P: uh +, but in the end I got up.
- A: yes. +
- P: like I was telling you, a roly-poly doll.
- A: but you went to the hairdresser.
- P: like some kind of roly-poly doll.
- A: hm.
- P: who just shakes it all off, and goes to the hairdresser can't think of anything better to do, not to the police either, though I'm not sure. I think, there were police there. on the one hand it was like a film set+ and on the other hand there were those.
- A: right. +
- P: absolutely real streets!, in reality. then I hear people coming and gawking. it's just that now I can't get any further. I get stuck deeper and deeper. and that//to be. and first it was the clock, and now it's the car, and it keeps going on that way.

What occurs here is that P is talking about her life in school as a teacher when A suggests that her experience in the dream is like her recent experience of teaching. P agrees and continues, A's non-judgmental comment (Q18) facilitating P's further exploration (Q3). Unexpectedly, A asks P to recall her avoidance of an earlier thought (Q50) and P resists expressing or exploring (Q58). A then adjusts his approach (Q47) and allows P her resistance and, after an 18-s silence, P initiates (Q15) further exploration on another topic by raising significant material (Q88). The fact that P engages A in consideration of another topic which demonstrates the resumption of mutual exploration into P's unconscious suggests that A has understood the therapeutic process for this patient in this hour (Q28). Presumably, but not for consideration in the rating process, A will address the resistance at another point in treatment as necessary.

This series of A and P process variables is repeated at other moments of Session 152 and proves to be constructive for this dyad in this hour. The session deepens over time with P revealing more of herself to A and accepting his interpretive interventions in the context of the transference relationship. We can only speculate what might have occurred if A had pointed out more strongly to P that she was avoiding some threatening thoughts and feelings, but we know empirically that A's flexibility helped P feel comfortable enough that she wanted to pursue her previously unconscious fantasies about A. Her aggression, envy, and longing, with associated fears and thoughts of escape, emerge later in the session. We speculate that factor analysis of a large sample of sessions from Amalia's treatment might reveal that the items described above cluster together throughout the treatment and that time series analysis might demonstrate empirically that the experience, recognition, and understanding of this interaction pattern would be correlated with positive outcome. In this specific hour, we did not find a negative interaction structure that would reflect unproductive process and be associated with negative outcome.

Assessing Analytic Process

A prototype of psychoanalytic process was created by Ablon and Jones [19] using expert ratings of the PQS. It has been demonstrated using multiple treatment samples that this prototype can be applied to observer ratings of treatment sessions to assess the degree to which analytic process was fostered. The hour of treatment that we are concerned with here, Amalia X, Session 152, has a robust correlation with the Analytic Prototype, 0.65, as might be expected, although we have found that treatment processes often do not conform to their brand names. In this case, the correlation with the prototype of analytic process confirms that A and P together established a very strong analytic

Table 29.4 Twenty most characteristic items of ideal analytic process and their ratings for Amalia X Session 152

PQS#	Item description	Session rating
90	P's dreams or fantasies are discussed	9
93	A is neutral	4
36	A points out P's use of defensive maneuvers, e.g., undoing, denial	5.5
100	A draws connections between the therapeutic relationship and other relationships	7.5
6	A is sensitive to the P's feelings, attuned to the P; empathic	8
67	A interprets warded-off or unconscious wishes, feelings, or ideas	9
18	A conveys a sense of non-judgmental acceptance	8.5
32	P achieves a new understanding or insight	6.5
98	The therapy relationship is the focus of discussion	9
46	A communicates with P in a clear, coherent style	5.5
50	A draws attention to feelings regarded by P as unacceptable (e.g., anger, envy, or excitement)	8
11	Sexual feelings and experiences are discussed	3
82	P's behavior during the hour is reformulated by A in a way not explicitly recognized previously	4.5
35	Self-image is a focus of discussion	5
91	Memories or reconstructions of infant and childhood are topics of discussion	6.5
92	P's feelings or perceptions are linked to situations or behavior of the past	8
62	A identifies a recurrent theme in P's experience or conduct	6
3	A's remarks are aimed at facilitating P's speech	9
79	A comments on changes in P's mood or affect	4
22	A focuses on P's feelings of guilt	5

process throughout the treatment. Being able to measure the degree to which analytic process is fostered in a treatment has obvious implications for teaching, accreditation, and research purposes. Table 29.4 contains the 20 most characteristic items of the prototype of analytic process and displays alongside our item-averaged rating for each of the items specific to Session 152.

Our ratings find several of the most characteristic analytic items to be most salient in this hour. For example, dreams or fantasies are discussed (Q90) and received the most characteristic rating from both raters because P's dream supplies the content for most of the hour's process, making the item saliently characteristic. A conveys a sense of non-judgmental acceptance (Q18) is also saliently characteristic because of its importance in facilitating P's willingness to search deeply into her unconscious associations. A does make a connection between the therapeutic relationship and other relationships, notably P's father (Q100), but this occurrence is not critical to the process and is not a major part of the hour.

However, not all of the most characteristic items of ideal analytic process were rated as characteristic and salient. We rated "A communicates with P in a clear, coherent style" (Q46) in the neutral range because, although it is characteristic, it is not as salient when compared to other process items that we wanted to capture with more extreme ratings. And we rated Item 11, "Sexual feelings and experiences are discussed," as uncharacteristic/negatively salient because P actively resists discussing the obvious sexual content of her associations and we wanted to capture this resistance with our rating.

Difficult Items to Rate

Accurate and reliable rating of psychotherapy sessions is a basic requirement for research using the PQS. Reliable ratings serve as the foundation from which conclusions about process correlates of outcome and the active ingredients of a treatment can be drawn. Moreover, correlational designs rely

on reliable ratings to uncover associations between variables of interest. Individual item rating dilemmas exist with almost all psychotherapy sessions, and in this section, we offer our thoughts about some of the items that were complex in Session 152 of Amalia X's treatment. The reader may find it useful to follow this discussion with the specific rating instructions found in the manual for the items in question. The items are presented in numerical order in the PQS rather than an order reflecting our assessment of level of difficulty.

Item 11: Sexual feelings or experiences are discussed. *Rating: 3*

Our item-averaged rating is 3, reflecting our determination that while discussion of sexual material is not characteristic in the session, P makes several references to sexual content without any direct mention. In fact, P actively resists mention of sexual content which makes the absence of the discussion more salient. If P had mentioned and then discussed sexual content, the rating would be in the characteristic range. If there had been no indirect or resisted sexual content, the rating would be in the neutral range.

This item needs to be distinguished from Item 19: There is an erotic quality to the therapy relationship. For Amalia Session 152, our item-averaged rating of item 19 was 6, reflecting the slight presence of an erotic quality to the therapy relationship existing simultaneously with the lack of discussion. The sexual component is unexpressed, perhaps unconscious, but clearly present in our judgment (pp. 15–17). There is a mildly sexualized quality to the interaction which, if it had been more extreme, would be rated higher reflecting greater salience.

Item 12: Silences occur during the hour. *Rating: 5*

Our item-averaged rating is 5, although there is an 18-s silence at one point in the session reflecting P's resistance to mentioning sexual content just prior to changing the subject. A then accepts her resistance, and we do not feel the silence deserves a higher rating because the session resumes its productive vitality and energy. Had the silence changed the flow of the session significantly, changed the process in a major way, the rating would be higher. There is also a 50-s silence which is followed by resumption of P's dialogue and then an interpretation by A that is accepted by P. Again, the silence does not signify a major shift in the flow of the session. The third silence which lasts 10 s midway through the session is P's way of shifting focus as well. If these silences reflected a rupture in empathy or suppressed aggression for example, we would rate this item higher. While one might argue that it is important to capture the presence of these silences, we did not feel they were particularly salient especially compared to other items we wanted to highlight in our ratings. Keep in mind that we are always rating in relation to other items as the PQS is an ipsative measure.

Item 42: P rejects (rather than accepts) A's comments and observations. *Rating: 2.5*

This is an extreme rating reflecting our belief that P's acceptance of A's comments is a salient process variable in this hour. Although P does reject A's comments at times (pp. 8, 24), the rejections are minor and the overwhelming data suggests P is very accepting of A's major ideas and interpretations, the more salient interventions. Had there been no rejections of A's comments by P, the acceptance of the major interpretations might have been captured with an even more extreme rating. If interpretations had been rejected more frequently, the rating would have been less saliently uncharacteristic, rated in the neutral range, or rated in the characteristic range.

Item 58: P resists examining thoughts, reactions, or motivations related to his or her role. *Rating: 3*
P's acceptance of the need to explore her reactions and motivations, especially within the transference, dominate the session. She initiates activity aimed at understanding her reactions to A, which leads to a deepening understanding of her unconscious wishes and therefore her own contributions to her life situation, problems, and strengths. Her resistance to expression of her sexual feelings and thoughts means that the proper rating here is moderately uncharacteristic rather than more extreme and therefore more salient rating.

Item 70: P struggles to control feelings or impulses. *Rating: 2.5*

In this case, P expresses herself freely and demonstrates anger (pp. 2, 6, 16), apathy (p. 4), envy (pp. 11, 19), guilt (p. 4), and embarrassment (p. 2) without attempts to control these feelings. The rating would be more extreme in the uncharacteristic direction if her affect was more powerfully expressed and her affective expression dominated the process. P does suppress her direct sexual thoughts, presumably accompanied by affect, but this appears minor in relation to the level of comfort she exhibits with her affective life in this session. We can infer that she is controlling shame, but the data is not clear enough to rate strongly based on this inference. There is no discomfort and subsequent attempt to control her affect exhibited in clear behavioral or linguistic cues.

Item 91: Memories or reconstructions of infancy or childhood are topics of discussion. *Rating: 6.5*

The actual mention of family figures occurs three times, but there is very little time spent in discussion of childhood or early experiences of life. Reference to childhood figures is made to explain current feelings with experiences from childhood (see Q92) rather than in discussion of P's time spent when younger. The averaged rating of 6.5 reflects the mention of father's lack of laughing (p. 13), father being "soft" (p. 20), and mother (in an unclear way to the raters) (p. 23) only in passing, with very little further discussion. The rating acknowledges the presence of the item's content, but signifies a lack of strong salience of childhood memories. This item needs to be distinguished from Item 92 which requires early memories to be actively linked, not merely mentioned or discussed, by A or P, to current feelings (see discussion to follow).

Item 92: P's feelings or perceptions are linked to situations or behavior of the past: *Rating: 8*

There are two occasions when P's feelings are linked to the past by A (pp. 13, 20). When A links his concern about P's perception about his laughing to her experience of her father as one who never laughed, our judgment is that P is influenced significantly by the interpretation. She resists immediate further exploration, wants to open the window, and then pursues issues around A's dogma and his adherence to a specific theoretical orientation. She later resumes her exploration of the transference but does not return to her relationship with her father. The interpretive comment clearly affected the process. Our rating of this item provides an example of how salience is not a proxy for frequency. As in this case, highly characteristic ratings can be used to highlight one or two crucial examples.

Item: 97: P is introspective, readily explores inner thoughts and feelings. *Rating: 7.5*

Our rating of 7.5 reflects our belief that P clearly pushes beyond ordinary constraints in her exploration of her conscious and unconscious thoughts. Despite the instances of her resistance to revealing thoughts with sexual content, the session is dominated by P's in-depth cooperation with A's attempts to facilitate her exploration of her feelings about the analyst, her transference. Our rating would be higher if she had not resisted exploration of her sexual thoughts in the transference, and of course lower if there had been less exploration of her inner thoughts.

The hour required a second reading by us to feel confident in our ratings given its complexity. We can only speculate that the entire treatment would also be characterized by a high degree of analytic process. Perhaps, future data analysis from more extensive PQS rating of the treatment would reveal several repetitive interaction structures that correlate with outcome. In this particular session, however, a specific set of interactions that serves the process well involves A allowing P some room to resist, minimal confrontation at these moments, before resuming productive inquiry and exploration. (We would like to refer the interested reader to a review of the book, *From Psychoanalytic Narrative to Empirical Single Case Research: Implications for Psychoanalytic Practice*, in which there is a detailed examination of the treatment of Amalia X, by A. Werbart, *International Journal of Psychoanalysis* 90:1,459–70.)

We remain curious whether different process variables would be more and less characteristic and salient at different stages of this lengthy and in-depth treatment. We have found in other research that treatments often do not adhere solely to processes associated with a single therapeutic orientation

[16, 17, 21]. Rather, the PQS is likely to determine that integrated treatment processes are present to varying degrees at different points in treatment as the process evolves over time. Of course, it is also possible that the characterization of the process remains consistent over time.

Enrico Jones designed the PQS to measure psychotherapy process before the current emphasis on the importance of understanding active ingredients in psychotherapy treatments that transcend brand names [17, 22]. He seemed to have predicted the future of research priorities. There is considerable research [23, 24, Chap. 1] that clearly demonstrates the effectiveness of psychodynamic psychotherapy as well as other modalities. Attention has now turned to research aimed at answering the more interesting and challenging question of “How does psychotherapy work?” The PQS is ideally suited to investigate this crucial question for psychodynamic and other psychotherapeutic interventions.

While the PQS is certainly ideally suited to single-case studies of long-term treatment [19, Chaps. 20 and 25], it has also produced a programmatic line of research into process correlates of outcome across a variety of short-term treatments including interpersonal and cognitive-behavioral therapy [15, 16, 21] and naturalistic samples of brief psychodynamic psychotherapy [17]. There are many exciting, future applications of the PQS. New research is already underway using the PQS alongside neuroimaging protocols to assess possible neural correlates of treatment processes. The PQS is also being used to assess the degree to which the use of the couch influences the development of analytic process. In addition, the PQS is being employed as a teaching tool in training programs to allow students to observe actual clinical processes and evaluate them empirically. Prototypes of different treatment processes, including the psychoanalytic process prototype reported in this chapter, are being used as adherence and competency measures.

With so much active research across the globe using the PQS, we have begun the process of revising the scoring manual and providing additional training aids to help new raters become more proficient raters as the integrity of the data and the ability to find important results rest on achieving reliable and valid ratings. As one can clearly see from this chapter, the PQS works hard to maintain the complexity of the clinical hour which, however, results in a complex rating process as well that must be conducted by judges with clinical experience who are sufficiently trained in the use of the measure. The future of psychoanalysis and psychoanalytic psychotherapy likely depends on our ability to study treatment processes and link them to outcome empirically. The PQS provides the technology to be able to do so.

References

1. Freud S. *The Traumdeutung*. Leipzig/Vienna: Franz Deuticke; 1900.
2. Erikson EH. The dream specimen of psychoanalysis. *J Am Psychoanal Assoc*. 1954;2:5–56.
3. Freud S. Fragment of an analysis of a case of hysteria. 7th ed. 1905. p. 7–122.
4. Sachs D. Reflection on Freud’s Dora case after 48 years. *Psychoanal Inq*. 2005;25:45–53.
5. Luborsky L, Spence DP. Quantitative research on psychoanalytic therapy. In: Bergin AE, Garfield SL, editors. *Handbook of psychotherapy and behavior change*. New York: Wiley; 1971. p. 408–38.
6. Kächele H, Albani C, Buchheim A, Hölzer M, Hohage R, Jiménez JP, et al. The German specimen case Amalia X: empirical studies. *Int J Psychoanal*. 2006;87:809–26.
7. Thomä H, Kächele H. Comparative psychoanalysis on the basis of a new form of treatment report. *Psychoanal Inq*. 2007;27:650–89.
8. Wilson A. Multiple approaches to a single case: conclusions. *Int J Psychoanal*. 2004;85:1269–71.
9. Akhtar S. Diversity without fanfare: some reflections on contemporary psychoanalytic technique. *Psychoanal Inq*. 2007;27:690–704.
10. Jones EE. *Therapeutic action*. Northvale: Jason Aronson; 2000.
11. Stephenson W. *The study of behavior: Q-technique and its methodology*. Chicago: University of Chicago Press; 1953.
12. Block J. *The Q-sort method in personality assessment and psychiatric research*. Palo Alto: Consulting Psychologists Press; 1978 [Original work published in 1961].

13. Holt RR. *Methods in clinical psychology, Predictions and research*, vol. 2. New York: Plenum; 1978.
14. Jones EE, Pulos SM. Comparing the process in psychodynamic and cognitive-behavioral therapies. *J Consult Clin Psychol.* 1993;61(2):306–16.
15. Ablon JS, Jones EE. Psychotherapy process in the NIMH Collaborative Research Program. *J Consult Clin Psychol.* 1999;67(1):64–75.
16. Ablon JS, Jones EE. Validity of controlled clinical trials of psychotherapy: findings from the NIMH Treatment of Depression Collaborative Research Program. *Am J Psychiatry.* 2002;159:775–83.
17. Ablon JS, Levy RA, Katzenstein T. Beyond brand names of psychotherapy: identifying empirically supported change processes. *Psychother Theor Res Pract Training.* 2006;43(2):216–31.
18. Jones EE, Windholz M. The psychoanalytic case study: toward a method for systematic inquiry. *J Am Psychoanal Assoc.* 1990;38:985–1015.
19. Ablon JS, Jones EE. On analytic process. *J Am Psychoanal Assoc.* 2005;53(2):541–68.
20. Ablon JS, Goodrich C. Foreword: Jones EE, *Therapeutic action: a guide to psychoanalytic therapy*: 1–3. London: Paterson Marsh; 2004.
21. Ablon JS, Jones EE. How expert clinicians' prototypes of an ideal treatment correlated with outcome in psychodynamic and cognitive-behavioral therapy. *Psychother Res.* 1998;8:71–83.
22. Blatt SJ. *Polarities of experience: relatedness and self-definition in personality development, psychopathology, and the therapeutic process*. Washington, DC: APA; 2008.
23. Levy RA, Ablon JS, editors. *The handbook of evidence-based psychodynamic psychotherapy*. Totowa: Humana Press; 2008.
24. Leichsenring FA. Review of efficacy and effectiveness studies in psychodynamic psychotherapy. In: Levy RA, Ablon JS, editors. *The handbook of evidence-based psychodynamic psychotherapy*. Totowa: Humana Press; 2008. p. 3–27.

Part V

Assessing Change

Chapter 30

Ten Diverse Outcome Measures for Psychodynamic Psychotherapy Research

Caleb J. Siefert and Jared A. DeFife

Keywords Outcome measures • Outcome research • Process research • Psychodynamic psychotherapy • Psychotherapy outcome • Treatment outcome

Introduction

Understanding the changes arising from psychotherapy is an important area considered by psychotherapy researchers across treatment orientations. This type of research focusing on treatment effects is referred to as outcomes research. When assessing treatment outcomes, it is important to select measures that evaluate the type of changes a given therapy is expected to bring about. Thus, it is important that psychodynamic psychotherapy researchers have instruments that measure constructs that are expected to change as a function of psychodynamic therapy. A number of measures have been developed precisely for this purpose. This has fostered the growth of multiple programs of research dedicated to studying psychodynamic theory, techniques, process, and outcomes [1, 2]. Such studies have helped to establish the overall efficacy and benefits associated with psychodynamic forms of treatment [3]. Outcomes research complements other forms of psychotherapy research associated with understanding therapy process, identifying what works best for whom, and determining what specific interventions are the active ingredients in facilitating specific psychological changes [4].

Traditional outcome measures have historically focused on symptoms. Treatments are expected to reduce symptoms and suffering in individuals seeking therapy for psychopathology. There are numerous measures typically employed to study symptom changes. Many of these are multi-item, multi-scale measures tapping a broad range of psychopathological symptoms and difficulties such as the Personality Assessment Inventory [5]. While psychodynamic psychotherapy has been associated with symptom relief, it also seeks to facilitate other changes such as personality change, changes in interpersonal functioning, improvements in coping abilities, and improved self-understanding and sense of coherence [1–4, 6–8]. Such changes are not always easily measured. However, a number of

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measures exist to capture such changes, and many of them have been developed by psychodynamic investigators for the purpose of outcomes research. In the remainder of this chapter, we provide a brief review of ten measures likely to be of use to psychodynamic psychotherapy researchers. We have included a range of measures that differ considerably with regard to method of measurement (e.g., self-report; expert coded), breadth of assessment (e.g., global character; specific construct), concept assessed, history of use in psychotherapy research, and requirements for training. For each measure reviewed, we have attempted to include a review of the purpose of the measure, discussion of the scales and scores the measure produces, information on administration (e.g., self-report; narrative based; interview based), details about each measure's psychometric properties, and, when applicable, how the measure has previously been used to study psychodynamic psychotherapy. This chapter is in no way comprehensive, as a number of appropriate measures are not reviewed. This chapter serves as a companion to an earlier chapter [9] that describes process measures relevant to psychodynamic psychotherapy research.

The Social Cognitions and Object Relations Scale – Global Rating Method (SCORS-G)

The Social Cognitions and Object Relations Scale – Global Rating Method (SCORS-G) [10, 11] is an observer and expert-rated coding system applied to narrative data. It quantifies individuals' internal representations of self and others, as well as tapping the cognitive, affective, and motivational elements associated with object relations. Changing internal representations and individuals' abilities to conceptualize the self, others, and relationships in general is often a goal of psychodynamic psychotherapy. The SCORS-G provides a method for quantifying these representations and capacities.

The original SCORS-G system used a Q-sort approach to code for four areas of object relations [10]. Hilsenroth and colleagues, however, recently developed a training protocol for an expert scoring method that built on the original work by Westen [10]. The manual created by Hilsenroth et al. [11] reviews changes, provides scoring instructions, includes specifics on how to set up a program for training coders, has examples of narrative content to be coded, and introduces specific target criteria for coders to meet prior to using the SCORS-G. It also includes detailed instructions for examining inter-rater reliability statistically. This version also included a total of eight domains [11]. The domains are as follows:

- Complexity of Representations (COM)
- Affective Quality of Representations (AFF)
- Emotional Investment in Relationships (EIR)
- Emotional Investment in Values and Moral Standards (EIM)
- Understanding of Social Causality (SC)
- Experience and Management of Aggressive Impulses (AGG)
- Self-esteem (SE)
- Identity and Coherence of Self (ICS)

While all domains are scored on 7-point scales, each has its own scale anchors. Lower scores are always indicative of less adaptive functioning. For example, for the Self-Esteem (SE) domain, a score of 1 indicates that the respondent views the self as loathsome, evil, rotten, contaminating, or globally bad. A score of 3 indicates that the respondent has low self-esteem or is unrealistically grandiose. A score of 5 indicates that a range of positive and negative feelings were used to describe the self. Finally, a score of 7 indicates that the respondent tends to have relatively positive feelings toward the self. Full descriptions of these domains, the global rating method, administration details,

scoring procedures, and training examples can be found in the manuals developed by Westen [10] and Hilsenroth et al. [11]. A copy of the SCORS coding form can be found in Appendix 27.1 of this chapter.

SCORS-G domain scores can be used at the domain level or at the global level [11]. Thus, if ten stories are used, the eight domains are coded for *each story*. Overall domain scores are then calculated by averaging across stories. Finally, these scores can then be aggregated to form an overall Global Rating Scale (GRS) score by combining scores across all domains. Originally developed for coding narratives produced in response to the evocative pictures, subsequent investigators have successfully extended the SCORS-G method to assess narratives produced for dream [12], psychotherapy interviews [13], and early memories [14]. The length of time required to collect and code narratives varies as a function of the data collection method used.

A number of independent investigators have demonstrated that once raters have been successfully trained, narratives can be reliably coded using the SCORS-G. Westen reported coefficient alphas ranging from 0.80 to 0.90 and strong inter-rater reliabilities for SCORS-G domains [10]. Additional investigations have produced similar results. For example, Stein et al. [13] obtained SCORS-G ratings for early memory narratives in a clinical sample and reported Intra-class Correlation Coefficients (ICCs) for the eight respective SCORS-G items ranged from good (e.g., 0.60) to excellent (e.g., 0.84). Ackerman et al. [15, 16] reported highly similar inter-rater reliability coefficients for SCORS-G ratings of narrative stories in clinical samples. Inter-rater reliability estimates across studies have generally been in the good to excellent range despite considerable differences in samples, levels of distress, and types of narrative data used [17].

The construct validity of the SCORS-G has been demonstrated in several ways [17]. SCORS-G ratings have shown relationships with other scales designed to assess problematic interpersonal functioning. SCORS-G ratings show convergence with similar rating scales tapping object representations, defense mechanisms, and behavior for psychiatric inpatients [18]. SCORS-G ratings also show convergence with self-report ratings for Axis II psychopathology [19]. Stein et al. [13] found that SCORS-G profiles for early memory narratives were related to self-reported interpersonal problems and clinician-rated global relational functioning at time of initial assessment for a clinical sample of patients seeking psychotherapy. Thus, SCORS-G ratings are related to clinician ratings for global relational and social functioning [13, 18] and self-report ratings for personality problems [13, 19].

SCORS-G profiles also differentiate among types of psychopathology. What is notable is that they differentiate between pathologies believed to differ with regard to object relations. For example, patients with borderline personality disorder (BPD) achieved lower SCORS-G ratings for complexity of others, emotional investments in relationships, affective quality of relationships, and greater need gratification as compared to patients without BPD and non-clinical controls [20]. Similarly, Ackerman et al. [21] found that patterns of object relations, as assessed by the SCORS-G, differentiated among different types of Cluster B pathology in a sample of outpatients seeking psychotherapy.

The SCORS-G has been utilized directly in psychotherapy research. Ford et al. [22] found that low pre-treatment SCORS-G ratings for overall quality of object relations was associated with less of a treatment response (i.e., less symptom reduction and improved quality of life) in inpatient therapy. Ackerman et al. [16] found that patients who had lower SCORS-G ratings for affective quality of object relations, but higher ratings for capacity to emotionally invest in relationships tended to stay in psychodynamic psychotherapy longer. Regarding sensitivity to change as a function of treatment, Fowler et al. [23] found that psychiatric inpatients receiving intensive psychodynamic psychotherapy over 16 months evidenced significant changes in the overall SCORS-G ratings as well as in the specific SCORS-G domains (COM, SC, SE, and ICS). Porcerelli et al. [18] reported similar results for inpatients receiving 15 months of intensive psychodynamic therapy at an independent facility. Such studies suggest that the SCORS-G is sensitive to change.

The SCORS-G has a number of strengths that make it appealing to psychodynamic psychotherapy researchers. It clearly measures constructs associated with object relations, and validity data to date strongly supports the convergent and construct validity of the tool. It provides an overall score as well as scores for specific areas of object relations. Psychometrics are strong and several respective investigators have reported good to strong inter-rater agreement at the item level. SCORS-G ratings can be obtained using a number of methods for soliciting narratives, though it is possible that method used may impact scoring [24]. SCORS-G ratings are not based exclusively on patient report. Thus, it may be particularly appealing for use in samples that may have difficulty accurately describing themselves or reporting on their personalities. On the other hand, the SCORS-G does require an investment of time in training and practice for raters to become reliable. There are also no available norms in general, and no available norms based on method of narrative collection. We are unaware of any studies examining test–retest stability for SCORS-G ratings.

The Shedler–Westen Assessment Procedure (SWAP)

The Shedler–Westen Assessment Procedure (SWAP) [8, 25] is an assessment instrument of personality psychopathology and health designed to provide clinicians of all theoretical orientations a standard “vocabulary” for case description [26]. It may be used to identify the long-standing and maladaptive cognitive, affective, relational, and behavioral patterns that treatment may seek to change. It also measures inner capacities and resources which promote healthy functioning. It is a measure that evaluates both broad and specific features of personality. Thus, it is likely to be of use to psychodynamic psychotherapy researchers interested in studying how character or structural capacities change from treatment.

The SWAP consists of 200 statements, each of which may describe a given patient very well, somewhat, or not at all. The clinician or expert rater ranks statements into eight categories from those that are most descriptive (assigned a value of 7) to those that are not descriptive (assigned a value of 0). Thus, the SWAP yields a score from 0 to 7 for each of 200 personality-descriptive variables. The “standard vocabulary” of the SWAP allows clinicians to provide in-depth psychological descriptions of patients in a systematic and quantifiable form and ensures that all clinicians attend to the same spectrum of clinical phenomena. SWAP statements are written in a manner close to clinical observation (e.g., “Tends to get into power struggles,” or “Is capable of sustaining meaningful relationships characterized by genuine intimacy and caring”), and statements that require inference about internal processes are written in clear, unambiguous language (e.g., “Tends to see own unacceptable feelings or impulses in other people instead of in him/herself”). Writing items in this jargon-free manner minimizes unreliable interpretive leaps and makes the item set useful to clinicians of all theoretical perspectives. A systematic Clinical Diagnostic Interview (CDI) [26–27] (see Chap. 28), which can be administered in approximately two and a half hours, yields sufficient patient information to score the SWAP reliably and validly. The interview can be used in either clinical or research contexts. When the interview is not used, clinicians can generally score the SWAP after 5 or more clinical contact hours with a patient.

SWAP profiles can be diagnostically scored using a matching procedure in which the patient’s profile is compared to 11 Personality Disorder Factors. These factors were derived through a large expert survey of clinicians who created SWAP profiles for ten Personality Disorder diagnoses [8, 25]. These clinicians also created SWAP profiles for healthy and adaptive functioning. This profile has become the “healthy functioning” profile. Table 30.1 includes examples of SWAP items comprising each of the Personality Disorder Factors. It should also be noted that there are alternative strategies for organizing and scoring the SWAP to assess various personality dimensions as opposed to specific personality disorders [27].

Table 30.1 SWAP personality disorder factors with example items

Personality disorder factors	Example items
Paranoid	Is suspicious; tends to assume others will harm, deceive, conspire against, or betray him/her. Tends to hold grudges; may dwell on insults or slights for long periods.
Schizoid	Appears to have little need for human company or contact; is emotionally detached or indifferent. Appears to have a limited or constricted range of emotions.
Schizotypal	When distressed, perception of reality can become grossly impaired (e.g., thinking may seem delusional). Lacks social skills; tends to be socially awkward or inappropriate.
Antisocial	Tends to engage in unlawful or criminal behavior. Tends to show reckless disregard for the rights, property, or safety of others.
Borderline	Emotions tend to change rapidly and unpredictably. Emotions tend to spiral out of control, leading to extremes of anxiety, sadness, rage, etc.
Histrionic	Expresses emotion in exaggerated and theatrical ways. Seeks to be the center of attention.
Narcissistic	Has an exaggerated sense of self-importance (e.g., feels special, superior, grand, or envied). Appears to feel privileged and entitled; expects preferential treatment.
Avoidant	Tends to feel he/she is inadequate, inferior, or a failure. Tends to feel like an outcast or outsider.
Dependent	Appears to fear being alone; may go to great lengths to avoid being alone. Tends to be ingratiating or submissive (e.g., consents to things he/she does not want to do, in the hope of getting support or approval).
Obsessive-compulsive	Tends to become absorbed in details, often to the point that he/she misses what is significant. Is excessively devoted to work and productivity to the detriment of leisure and relationships.
High functioning	Appreciates and responds to humor. Is able to form close and lasting friendships characterized by mutual support and sharing of experiences.

Because the SWAP is jargon free and clinically comprehensive, it has the potential to serve as a language for describing personality pathology that can be used by any skilled clinical observer. Studies demonstrate that experienced clinicians of all theoretical orientations understand the items and score them reliably. For example, a nationwide sample of 797 experienced psychologists and psychiatrists of diverse theoretical orientations, who had an average of 18 years practice experience post-training, used the SWAP to describe patients with personality pathology [8]. These experienced clinicians provided similar SWAP descriptions of patients with specific PDs regardless of their theoretical background, and 72.7% agreed with the statement “I was able to express most of the things I consider important about this patient” (the highest rating category). In a subsequent study using a sample of 1,201 psychologists and psychiatrists, 84% “agreed” or “strongly agreed” with the statement: “The SWAP allowed me to express the things I consider important about my patient’s personality.” Again, the ratings were unrelated to clinicians’ theoretical orientation.

Numerous studies have demonstrated the reliability and validity of SWAP data. In these studies, reliability of SWAP personality descriptions has generally ranged from 0.75 to 0.98 [8, 28–31]. The SWAP predicts a range of relevant external criteria, from those that are relatively objective to those that require greater inference. These include, for example, history of suicide attempts and psychiatric hospitalizations; adaptive functioning assessed by measures such as the Global Assessment of Functioning index; aggressive ward behavior; non-engagement in psychotherapy; family history variables such as psychosis in first- and second-degree relatives; and developmental variables, including being raised by a substance-abusing parent or guardian, childhood history of physical abuse; childhood history of sexual abuse, and problems with parental bonding and attachment [3, 8, 28–33]. Furthermore, the SWAP does not simply measure personality psychopathology, but also includes an empirically derived Healthy Functioning Index that defines and

operationalizes mental health in a manner consensually understood by clinical practitioners across theoretical orientations [3, 8, 25].

While the SWAP measures personality problems related to various forms of psychopathology and disruptive behavior as well as inner capacities and psychological strengths for sustaining mental health and well-being, few studies have utilized the SWAP's potential as a measure of change. Two studies, however, have yielded results which support the viability of the SWAP as a therapeutic outcome measure. The first is a single-case study of a woman diagnosed with BPD who was assessed with the SWAP by independent assessors (not the treating clinician) at the beginning of treatment and again after 2 years of psychodynamic therapy [28]. In addition to meaningful decreases in SWAP scales that measure psychopathology, the patient's score on the SWAP Healthy Functioning Index increased by approximately two standard deviations over the course of treatment and indicated that the patient showed a greater capacity for empathy and greater sensitivity to others' needs and feelings; increased ability to recognize alternative viewpoints, even when emotions ran high; greater ability to comfort and soothe herself; increased recognition and awareness of the consequences of her actions; and growth from the working through of painful past experiences.

The SWAP has also been used to compare a small sample of patients beginning psychoanalysis with a matched group of patients at the completion of psychoanalysis [34]. The group ending psychoanalysis had significantly lower scores for items assessing depression, anxiety, guilt, shame, feelings of inadequacy, and fears of rejection but significantly higher scores for SWAP items assessing adaptive strengths and well-being, including greater enjoyment of challenges and pleasure in accomplishments, ability to utilize talents and abilities, contentment in life's activities, empathy for others, and interpersonal assertiveness and effectiveness.

For a more technically thorough discussion of the psychometric strengths and weaknesses of the SWAP, see Westen and Shedler [36]. These authors elaborate on the Q-sort methodology, implications of the SWAP's fixed distribution ranking system, taxonomy, and scaling. Finally, the SWAP has not yet been applied as an outcome measure in large sample longitudinal or controlled clinical trials, although the studies discussed previously provide supporting evidence indicating both temporal stability and sensitivity to change. Despite these limitations, the SWAP is not only a useful tool for personality diagnosis and case conceptualization, but is also a viable option for studying meaningful changes in enduring patterns of functioning, both maladaptive and adaptive, over long-term treatment. It is likely to be particularly useful to researchers who are interested in how therapy can produce character change. Many of the features assessed by the SWAP are unlikely to change easily and are likely to be fairly stable over time. Thus, it may be most appropriate for researchers interested in studying how character changes over the course of treatment and/or researchers interested in how longer-term treatments facilitate changes to basic personality traits. The format of the SWAP and the level of detail also make it an extremely useful measure for quantifying clinical description. While capable of being used in any type of outcome research design, it has notable advantages over traditional outcome measures for understanding and describing patient change over the course of therapy. Thus, it is also highly useful for increasing the scientific integrity of single-case designs and clinical case studies.

The Defense Mechanism Rating Scales (DMRS)

Psychological defenses have been a staple of psychodynamic theory from its outset and are a frequent target of exploration and change in treatments. The Defense Mechanism Rating Scales (DMRS) [35] is an observer-rated measure that can be scored by a clinician or external rater. The authors of the DMRS, Perry and his colleagues, were also involved in the development of the qualitative Provisional Defense Axis in Appendix B of the DSM-IV [37], and thus it is of little surprise

Table 30.2 Defensive levels and their corresponding defenses

Defense level	Defenses included on this level
High adaptive level	Affiliation, altruism, anticipation, humor, self-assertion, self-observation, sublimation, suppression
Obsessional	Isolation, intellectualizing, undoing
Other neurotic	Repression, dissociation, reaction formation, displacement
Minor image distorting	Omnipotence, idealization, devaluation
Disavowal	Negation, projection, rationalization, autistic fantasy
Major image distorting	Splitting of others' image, splitting of self-image, projective identification
Action	Acting-out, passive aggression, hypochondriasis

that there are strong similarities between the DMRS and this axis [38]. Like many of the measures discussed, the DMRS can be employed in a variety of research designs. It is simultaneously a measure of personality function and an outcome measure. It can be used for group-design studies or in more granular studies focusing on a single individual. (See also Chap. 22.)

The DMRS includes 28 defenses that are hierarchically ordered into seven levels ranging from least to most mature. Table 30.2 displays the seven defensive levels and includes a list of the defenses included in that level.

The organization of the DMRS was based on a review of the prior literature on psychological defenses followed by systematic investigations linking defensive levels to measures of adaptiveness, pathology, and/or psychological defense [38–41]. The DMRS can be scored from narratives and is most often scored using psychotherapy session material. It provides an overall score for defensive functioning (Overall Defensive Functioning, ODF) that ranges from a 1 (least adaptive) to 7 (most adaptive). In addition, a score is provided for each specific defense level. This allows investigators to study change at the overall level and in specific areas of functioning.

Detailed descriptions of each type of defense and examples of how the defense is conceptualized can be found in the DMRS manual to help raters clearly score each defense and help distinguish among defenses [35]. To date, investigations into the reliability of the DMRS scores have generally been positive with reliability coefficients for ODF ranging from good to excellent across studies [35–41]. As would be expected, reliability coefficients have been slightly lower for individual defense scores, but still within the accepted range [41, 42]. Ratings for overall level of defensive functioning show a fair degree of stability over time as ODF have obtained an interclass *R* (*IR*) of 0.48 for a 5-week period [43].

The validity of DMRS has been established through a number of studies (for a review, see [35]). Lower levels of defensive functioning have been associated with high distress, personality pathology, and interpersonal difficulties [40, 41, 44]. A handful of studies have used the DMRS to study change in psychodynamic psychotherapies [42]. For example, Perry and Hoglend [39] found significant improvements in ODF for depressed individuals following psychotherapy. Similarly, in a study of 61 patients undergoing very brief psychodynamic investigations (i.e., four sessions), Drapeau and colleagues [45] found a significant increase in ODF and the use of defenses from the obsessional level. In a very recent study, significant changes in DMRS ODF scores were observed for a small sample of patients who completed psychoanalysis [46].

The DMRS has clearly defined defenses, can be learned fairly quickly, and provides scores at multiple levels (i.e., overall, defensive level, specific defense). It has been utilized in treatment research, and these studies serve as templates for future investigators. Though the DMRS has well-defined defenses, some familiarity with the concept and types of defenses is likely to be of benefit for investigators hoping to use this system. Some training is required to be able to use the measure effectively, and steps should be taken to ensure reliability of scoring prior to use. Future investigation examining how ratings of an individuals' defensive functioning vary as a result of method of

scoring (e.g., scoring interview vs scoring a narrated stories) would be of benefit in increasing the measures utility. In summary, the DMRS is likely to be appealing to investigators interested in learning how pre-treatment defensive functioning impacts treatment and outcome, as well as determining how psychotherapy changes defensive functioning over time.

The Inventory of Interpersonal Problems – Circumplex (IIP-C)

Changing interpersonal functioning is an important therapeutic target for a number of insight-oriented treatments. The Inventory of Interpersonal Problems (IIP) [47–49] is a self-report inventory for identifying problematic aspects of relational functioning. Thus, while related to measures of personality traits and indexes of interpersonal style, the IIP focuses on areas that are problematic. As such, it is similar to measures assessing symptoms and distress.

The original IIP contained 127 items comprising eight subscales forming octants along the interpersonal circumplex. However, the most widely used version of the test contains 64 items and is referred to as the Interpersonal Problems – Circumplex (IIP-C) [48, 49]. A number of additional short forms and derivative measures exist containing item sets designed to accomplish specific purposes (e.g., screen for personality disorders) or that map to a particular conceptual and/or data analytic approaches [50]. When selecting a version of the IIP to use in a research study, we strongly recommend reviewing the guidelines and advice put forth by Hughes and Barkham (pp. 491–492) [50] for selecting a version. We also suggest reviewing information by Gurtman [51] for selecting methods for scoring the IIP. For the remainder of this section, we focus on the IIP-C.

The 64 items for the IIP-C are organized into two item sets: things the respondent does too much (excesses; e.g., “It is hard for me to join in groups”) and things the respondent finds it hard to do (inhibitions; e.g., “I fight with other people too much”) [48]. Each item is rated on a scale ranging from 0 (not at all) to 4 (extremely). The IIP-C produces eight subscales. Table 30.3 presents the eight subscales as well as example items from each subscale.

Table 30.3 Example items from IIP-C subscales

Scale	Example items
Domineering	I am too aggressive toward other people. I try to control other people too much.
Vindictive	It is hard for me to trust other people. I want to get revenge against people too much.
Cold	It is hard for me to feel close to other people. It is hard for me to get along with other people.
Socially avoidant	It is hard for me to ask other people to get together. I feel embarrassed in front of other people too much.
Non-assertive	It is hard for me to tell a person to stop bothering me. It is hard for me to be assertive with another person.
Exploitable	I am too easily persuaded by other people. I let other people take advantage of me too much.
Overly nurturant	I try to please other people too much. I put other people’s needs before mine too much.
Intrusive	I want to be noticed too much. It is hard for me to stay out of other people’s business.

Adapted with permission of Taylor and Francis Group from [48]

The psychometric adequacy of the IIP-C has been well established. Internal consistency alpha coefficients for the various subscales range from 0.76 to 0.88 and test–retest reliabilities for scales have ranged from 0.58 to 0.84 [49]. Alden and colleague [48] reported that data derived from large non-clinical samples supported the circumplex structure of the IIP-C. Scales of the IIP-C have been consistently shown to converge with measures tapping similar constructs in clinical [51, 52] and non-clinical samples [48, 49].

The IIP-C has been used previously to study various aspects of psychotherapy process and treatment response [51, 53]. In fact, of all the measures reviewed in this chapter, the IIP-C has been the most frequently employed for the purpose of outcomes research. Høglend et al. [54] examined changes in interpersonal problems in a diverse clinical sample that completed a year of psychodynamic psychotherapy. They found that the overall amount of interpersonal problems reported on the IIP-C declined following psychodynamic treatment. Similarly, using a naturalistic sample of patients undergoing psychodynamic-interpersonal psychotherapy, Paley et al. [55] used an abbreviated form of the IIP-C, the IIP-32, and found that long-term treatment was associated with clinically significant improvement in interpersonal functioning as measured by this scale. Using a sample of generalized anxiety disorder (GAD) patients completing 16 sessions of supportive-expressive psychodynamically focused psychotherapy, Crits-Christoph et al. [56] found that treatment improved overall interpersonal functioning on the IIP-C and also found significant pre- to post improvements in specific subscales: Non-Assertive, Exploitable, Overly Nurturant, Socially Avoidant, and Intrusive. Thus, across independent labs and patient population, the IIP-C has shown sensitivity to change.

Clearly, there are several reasons that the IIP-C is frequently employed. First, it has strong psychometric properties, and independent researchers have repeatedly found the IIP-C to be reliable over time, sensitive to change, convergent with similar measures, and predictive of therapeutic outcomes and course. The IIP-C has been effectively employed with general clinical samples, specific clinical samples, and non-clinical samples. It has normative reference scores for both clinical and non-clinical populations. It is easy to administer and requires minimal training to score. Finally, it provides an overall assessment of interpersonal functioning as well as specific assessment of relational domains allowing for investigation of more global changes in interpersonal relating, specific areas of change, or both. The measure has very few drawbacks. Of course, like many self-report measures, the items do have a high degree of face validity, and it is easy to determine the intent of the item, possibly increasing the measure's vulnerability to faking. Also, like all of the self-report measures discussed in this chapter, the measure does not include any validity scales capable of detecting inconsistent, odd, or faked responding. Overall, the drawbacks to this measure are quite limited and the strengths many. Improvement in social and relational functioning has been cited as an important outcome of psychodynamic psychotherapy, and it is highly likely that the IIP-C will continue to be the self-report measure of choice for studying how psychodynamic psychotherapies lead to improvements in this domain.

Adult Attachment Interview (AAI)

A fundamental proposition of Attachment Theory is that experiences with caregivers influence future relationships, expectations of others, and views of the self, via the formation of internal representational models. George et al. [57] developed an interview procedure, the Adult Attachment Interview (AAI), for assessing “state of mind with respect to attachment” in adults. The AAI can be used for multiple purposes, one of which is to aid in understanding how psychotherapy can change attachment representations [58].

The AAI is a 1-hour semi-structured interview-based measure. The interview focuses on early attachment experiences as well as adult relational experiences. Respondents are encouraged to explore and discuss thoughts, feelings, and understandings for how past relational experiences have impacted them. The interviewer probes for supporting evidence to back up statements provided by the respondent. The AAI involves 20 questions with some standardized probes. For example, respondents are asked to provide five adjectives to describe their relationship with each parent and are then asked to provide evidence and relational experiences that support these descriptors. Consistent with attachment theory, they are also asked about how their parents responded to them when they were in need and are asked about experiences of loss, separation, and rejection. To properly administer the AAI, the interview must be conducted by a trained interviewer and is transcribed verbatim for coding. The transcriptions must be scored by an AAI expert coder who first produces subscale ratings that culminate in an attachment classification. The AAI classifies individuals as secure/autonomous, dismissing, enmeshed/preoccupied, unresolved/disorganized, or cannot classify [59]. The unresolved/disorganized rating may be given in addition to another pattern code or can be given as the primary pattern code.

Training in the coding of the AAI is quite rigorous, which likely accounts, in part, for the high quality of research that has been produced using this instrument. Coders are required to complete a minimum of 2 weeks of training and must obtain an 80% or greater agreement with 30 expert coded standard AAI transcripts [60]. Training is essential for this instrument as the unit of analysis is complex, analyzing structural features of language (e.g., coherence of the narrative) rather than the content itself. The actual coding of the AAI also involves notable time and resources often requiring 6–8 h to complete. Further, at this time, the AAI manual is only available to approved coders from the AAI Institute. Though the AAI is typically employed to code respondents into attachment groups and to assess some specific areas of functioning (e.g., coherence of narrative), there is also some evidence from taxometric analysis that attachment may be best represented dimensionally, and there are multiple means by which to score the measure [61].

The scale properties of the AAI have been substantially researched [60, 61] and are impressive, especially for a verbally elicited interview-based coding system. Over 10,000 AAI interviews have been conducted and coded, and there is extensive information on distributions and factors that impact attachment [62]. Test–retest reliabilities and inter-rater agreement have been found to be strong in several populations and across labs [63–65]. Further, attachment categorization via the AAI appears to be unrelated to non-attachment related memories, as well as other variables unrelated to attachment such as IQ, verbal abilities, and social desirability [63, 64]. AAI classification codes have been found to be stable over brief (several months) and long periods (several years) [62–66].

There is far too much validity research on the AAI to review here, and readers are referred to recent reviews [58, 60]. A brief review of some key findings follows. Parent AAI classifications, obtained prior to the birth of the infant, have been shown to predict the quality of subsequent infant–parent relationships [67]. In his meta-analysis of 18 studies, van IJzendoorn [68] found roughly 70% agreement between parent’s AAI classifications and their children’s attachment status. Waters and colleagues [65] have shown that infant ratings of attachment based on behavioral coding show strong agreement with adult attachment classifications made 20 years later using the AAI. An interesting note is that AAI ratings and classification are not always in strong agreement with self-report measures of adult attachment [61]. This may be partially the result of differences in measurement method as well as specific constructs tapped by the AAI.

Few studies have utilized the AAI to assess the effects of psychotherapy. However, two studies are notable. In a randomized control trial with patients diagnosed with BPD, Levy and colleagues [69] found that BPD patients in Transference-Focused Psychotherapy (TFP) were more likely to shift to a more secure attachment organization on the AAI following 12 months of treatment as compared to such patients receiving Dialectical Behavioral Therapy (DBT) or Modified Psychodynamic Psychotherapy. The AAI has also been used in single-case designs as well. For example, Gullestad [70]

presents pre–post AAI data on a single patient who underwent psychoanalysis four times a week, resulting in changes in a number of specific elements in his discourse from time 1 (pre) to time 2 (post) completion of the AAI.

The AAI is a powerful research instrument that has tremendous promise for psychodynamic psychotherapy research. Its psychometric properties are well established, and the authors have wisely developed a rigorous training process to ensure fidelity of measurement. This has culminated in an impressive series of validity studies that consistently link the AAI classification and scores to key variables (e.g., parent status is highly related to child attachment style). While many have pointed out that the measure is likely to have a number of clinical uses [71], outcome studies making use of the AAI continue to be somewhat rare. In part, this may reflect the fact that the AAI does involve a commitment in terms of time, resources, and effort in order to administer and score. Still, given its particular focus on internal representations, the AAI should be considered among the most appropriate outcome measures available for studying change in insight-oriented therapies.

The Reflective Functioning Scale (RFS)

The concept of reflective functioning arose, in part, from an intermingling of research from attachment theory and clinical observations and research focusing on individuals with notable difficulties in affect regulation, coping, identity, and interpersonal functioning. It refers to an individual's ability to understand others' reactions and behaviors in terms of underlying mental states (e.g., intentions; motivations; affect). This construct, also referred to as mentalization, is viewed by many as among the central benefits that can result from psychodynamic psychotherapy [71]. The Reflective Functioning Scale (RFS) was developed by Fonagy and colleagues [72] to assess the capacity for engaging in mentalization. It is scored based on coding narratives typically obtained from AAIs.

The RFS is an additional scale that can be used in collaboration with the AAI. Using verbatim AAI transcripts, trained coders give the respondent a single score ranging from 1 (very low) to 9 (very high) for reflective functioning. Though the AAI is typically employed for scoring the RFS, other authors have used alternative approaches [73]. The scale characteristics of the RFS have ranged from adequate to strong. For example, in initial investigations of the rater agreement, rater pairs consistently produced correlations of >0.80 [72]. Subsequent independent researchers trained in coding the RFS have also produced reliable scores. For example, Bouchard et al. [74] reported rating pair correlations of >0.80 using 22 AAI transcripts. Rudden et al. [73] reported inter-rater reliabilities in the excellent range (i.e., $ICC=0.74$) for this measure.

Evidence for the convergent validity of the RFS has been obtained from studies showing agreement with similar measures of mentalization or reflective abilities. For example, Bouchard et al. [74] showed that RFS scores were related to other narrative-based measures of mentalization. As would be predicted theoretically, RFS scores were negatively correlated with independent measures of less adaptive defenses and concreteness of narrative in this study. Regarding construct validity, Fonagy et al. [75] found that RFS scores mediated the relationship between parental attachment classification on the AAI and their children's attachment status. In this study, insecure parents who produced securely attached children tended to have higher RFS scores. Slade et al. [76] have provided data demonstrating that higher levels of reflective functioning in mothers are associated with more secure patterns of infant–mother attachments. Reflective functioning has also been linked to the development of pathology in theoretically predicted ways. For example, Fonagy et al. [77] found that patients with a trauma history and poor reflective functioning were at extremely high risk for BPD, while patients with a trauma history and higher levels of reflective functioning were at substantially lower risk.

Similar to the AAI, only a few studies have used the RFS to study treatment outcome. Levy and colleagues [69] found that, following a year of therapy, BPD patients in TFP were more likely to

evidence improved RFS scores as compared to such patients in supportive treatment or DBT. Rudden et al. [73] used the RFS to examine change in reflective functioning for a sample of patients randomly assigned to psychodynamic treatment for panic disorder or relaxation treatment. RFS ratings were not made based on AAI interviews, but were given in response to interview narratives derived from a shorter semi-structured interview that included the AAI demand questions. While changes in general RFS ratings were not found, changes in reflective functioning specific to panic symptoms were obtained.

Similar to the AAI, though the RFS has clear promise and application for the study of psychotherapy outcomes, its use has been somewhat limited. As such, it is difficult to assess this measure's ability to capture change. It was designed to be used with the AAI, and thus, as previously discussed, its limited use in outcome studies may reflect cost, time, and training necessary to employ this measure. Meehan et al. [78] have presented preliminary data for a recently developed 50-item expert-coding system based on the RFS, the Reflective Functioning Rating Scale (RFRS). The RFRS was developed to provide more granular assessment of factors contributing to reflective functioning and was also designed in a manner that would allow it to be used with a wider range of narrative-based data. A potential benefit of the RFRS is more items which will allow for better understanding of the measure's scale properties and over time may provide a more granular understanding of reflective functioning. Initial investigation into this measure appears very promising though further research is clearly necessary.

The Psychodynamic Functioning Scales (PFS)

The Psychodynamic Functioning Scales (PFS) is an expert-rated system for assessing important structural aspects of character. It was developed by Høglend et al. [7], who have also pioneered a number of research studies examining psychodynamic psychotherapy process and outcome. The PFS was developed, in part, in an attempt to create a measure that evaluated key clinical concepts in a manner that was relatively easy to score and that would be sensitive to detecting change from brief psychodynamic treatments. As its authors point out (p. 191), similar to other dynamically oriented scales, the PFS scales are intended to assess "internal predispositions, psychological resources, capacities, or aptitudes that can be mobilized by the individual to achieve adaptive functioning and life satisfaction."

The PFS contains six capacity scales that are rated by an interviewer or expert rater. The six capacity scales are listed here:

- Quality of Family Relationships
- Quality of Friendships
- Quality of Romantic Relationships
- Tolerance for Affects
- Insight
- Problem Solving Capacity

Similar to the Global Functioning scale of the DSM-IV [37], the PFS capacity scales are rated on a 1–100 scale, with higher scores being indicative of more adaptive functioning. Consistent with the goal of developing a scale sensitive enough for detecting changes as a function of "brief" dynamic therapy, ratings for each capacity are based on the individual's functioning for the past 3 months. In addition to specific domain scores, an overall score can be calculated by simply calculating the weighted average of the respective scale scores [4].

Thus far, studies using the PFS have suggested that the scales are psychometrically sound. Inter-rater agreement has been examined in multiple studies. Høglend et al. [7, 79] reported inter-rater reliability

estimates (i.e., ICCs) of 0.90 for agreement in average scores across three expert raters. To date, the use of the PFS has been limited to Høglend et al.'s study focusing on comparing psychodynamic psychotherapy outcomes for treatments with and without transference interpretations. These studies demonstrate the PFS's sensitivity to detecting changes from various forms of psychodynamic psychotherapy. For example, Høglend et al. [7] found that PFS scores for patients completing a year of psychodynamic psychotherapy with transference interpretations or psychodynamic psychotherapy without transference interpretations improved significantly over the course of treatment.

The PFS has a number of strengths: it measures constructs of clear importance to psychodynamic researchers, scale formats are straightforward, and scale content has been clearly defined by the authors. Data to date indicate that scales can be reliably scored, and the PFS has shown sensitivity to detecting changes as a function of therapy. The measure also has the advantage of being created by researchers highly experienced in studying psychodynamic psychotherapy. To date, it has been primarily used by labs associated with the authors who created the measure. It will be important for additional labs to examine the utility and psychometric adequacy of the instrument to better understand if its scale properties remain strong even when utilized by investigators less familiar with the measure's development. Given the relative newness of the PFS, this is to be expected, and initial data on the measure is very promising. Given the strengths of the PFS, particularly the clarity of the scales and ease of scoring procedures, we anticipate the measure will gain wider usage. The measure has potential as a highly useful outcome tool for studying change in a variety of therapies, including psychodynamic psychotherapy.

Karolinska Psychodynamic Profile (KAPP)

Throughout the psychodynamic literature, conceptualizations of the building blocks of character can be found. The Karolinska Psychodynamic Profile (KAPP) [6] is a structured interview-based procedure for assessing relatively stable character traits and modes of functioning [80]. It was created by Weinryb et al. [80]. In describing their aims, the KAPP's authors [80] state: "We wanted an instrument that could be useful for (a) the assessment of relatively stable modes of mental functioning and character traits with a focus on structure not on specific conflicts, defenses, wishes, or fears..." The measure was developed following a thorough review of the psychodynamic literature on character and thus is built to tap constructs expected to change as a function of psychodynamic psychotherapies.

The KAPP is composed of 18 independent single-item scales. Seventeen scales assess modes of mental functioning: Intimacy and Reciprocity, Dependency and Separation; Controlling Personality traits; Frustration Tolerance; Impulse Control; Regression in Service of the Ego; Coping with Aggressive Affects; Alexithymia; Normopathy; Bodily Appearance; Bodily Function; Bodily Image; Sexual Functioning; Sexual Satisfaction; Sense of Belonging; Feeling of Being Needed; and Access to Advice for Help. The final scale provides a more global index of personality organization (i.e., neurotic, borderline, psychotic; for detailed description of these scales see [80]). Each scale is rated by the interviewer and is given a score ranging from 1 to 3. Midpoint scores (i.e., 1.5 and 2.5) are also included resulting in a 5-point scale. Lower scores are indicative of more "normal" or "normal-neurotic" functioning. In contrast, ratings of two or greater suggest pathology. Ratings are made following an interview of the patient specifically designed to assess these areas of functioning. KAPP interviews require roughly 90–120 min [81, 82] and should be administered by a trained interviewer familiar with the system. The scoring system has also been employed to code data obtained via projective methods [83].

To date, a handful of published studies have examined the psychometrics of the KAPP. Interrater reliability for clinical and non-clinical groups has generally been in the acceptable range (i.e., ICCs > 0.70) or better [80, 83, 84] with agreement improving when raters are more experienced

and familiar with psychodynamic treatments and theory. Ratings across specific rating pairs have occasionally produced inconsistent agreement for some specific scales [80]. Haver et al. [85] failed to achieve reliability estimates within the accepted range for six scales. In reviewing these results, Weinryb et al. [80] provide explanations for these findings and suggestions for optimizing reliability among coders. Test–retest coefficients for a non-psychiatric sample of patients receiving surgery for ulcerative colitis who completed the KAPP on two occasions (mean interval of 22 months; range of 16–34 months) revealed good stability (i.e., median $r=0.57$ for sample) [86].

A limited number of studies have attempted to examine the convergent validity of the KAPP with other measures. To some extent, this is to be expected given the relative dearth of measures designed to assess character in a multi-faceted manner. Instead, the validity of the KAPP has been established in other ways. For example, KAPP ratings consistently discriminated surgical patients without a psychiatric diagnosis from patients who had a psychiatric diagnosis [86]. A small number of investigators have also used the KAPP to study treatment outcome. For example, Wilczek et al. [87] examined change in personality structure over the course of long-term (average length of treatment=3 years) psychodynamic psychotherapy. They found that treatment was associated with significant changes on eight KAPP subscales. In a fairly large sample of patients in treatment for personality disorders, Vinnars et al. [81] found significant changes in KAPP composite scales associated with object relations and ego functioning. Significant pre–post changes in KAPP scores have also been reported for patients undergoing treatment of eating disorders [88].

The developmental approach and focus of the KAPP is likely to make it of interest for psychodynamic investigators. Similar to the SWAP discussed previously, its focus on overarching conceptualizations of character and personality is likely to increase its utility for studying the ways in which psychodynamic psychotherapy fosters character change. The KAPP is likely to be particularly appealing for researchers investigating how therapy over time produces change in areas of character that tend to be relatively stable. The scales of the KAPP assess character traits that are often ignored by traditional outcome measures. These traits, however, are not expected to change easily or quickly. In other words, they tend to be relatively stable over time. Nonetheless, longer-term treatments often produce changes precisely in these areas. Thus, the KAPP may be especially useful for researchers interested in understanding how longer-term therapies produce changes that may be unlikely to be obtained in brief treatment formats. Despite these strengths, continued research to demonstrate that the scales can be reliably coded when the measure is used by independent research labs would be of benefit. Overall, the KAPP remains an interesting and balanced measure of character that has much to offer psychodynamic investigators.

Self-Understanding of Interpersonal Patterns: Revised (SUIP-R)

The Self-Understanding of Interpersonal Patterns – Revised (SUIP-R) [89, 90] is a 28-item self-report measure that assesses individuals' awareness and understanding of problematic relationship patterns and conflicts. The SUIP-R was developed by investigators at the University of Pennsylvania Medical Center who have been extensively involved in psychotherapy process and outcome research for quite some time, and the tool was developed to be consistent with modern psychodynamic models of change [90]. Though initially developed, in part, to investigate factors that may mediate or explain how changes occur as a result of different interventions, the SUIP-R measures the development of insight which is a construct expected to improve in insight-oriented psychotherapies.

The SUIP-R is a revision of the Self-Understanding of Interpersonal Patterns (SUIP) [89]. The original SUIP included 19 items comprising two scales: recognition and self-understanding. Items for the SUIP were generated from patients' descriptions of common problems, contributions from expert therapists, and the Core Conflictual Relationship Theme (CCRT) standard category list.

The revision that produced the SUIP-R resulted in the inclusion of nine more items to better capture the breadth of relationship patterns. It also involved some structural changes to the scales (e.g., self-understanding was rated on a 6-point and opposed to 4-point scale). SUIP-R items are written as interpersonal patterns that may or may not be relevant to the respondent's relationship. The following is an example of some SUIP-R items:

- I feel the need to “save” others when I see them having a tough time and therefore try to solve their problems for them.
- I feel the need to keep someone close, and do whatever is necessary to keep him/her with me even when they need to leave me.
- I need to feel free of responsibility, and I distance myself from someone I care about because they are too dependent on me.
- I want another person to accept me as I am, but I bottle up my feelings and do whatever the other wants when I feel like he/she is putting me down.

All 28 items are rated in a two-step fashion. First, for each relationship pattern, respondents indicate how pervasive the problem is and how much they understand it by circling as many of the seven descriptors accurately describing how the pattern functions in their life and their understanding of it. Descriptors are letters (e.g., a, b, c) anchored to statements such as “I do not feel and act this way in my current relationships” (a), “I feel and act this way with multiple people in my life” (c), “I am in part responsible for continuing to feel and act this way with multiple people” (e), and “when I recognize that I am feeling and acting this way, I am able to consider other ways of viewing the situation in the moment” (g). Next, respondents indicate how important this experience is in their current relationships using a scale ranging from 1 (Not Important) to 10 (Very Important).

The SUIP-R produces a single self-understanding score. For items in which the letter “a” is circled, the pattern is not relevant for the current relationship, and thus the item is not used to calculate a score. For all items that are relevant (i.e., the respondent circled “b” or higher), the scale is treated like a Likert scale where a “b” = 1, a “c” = 2, and so on. Since respondents are allowed to circle more than one letter, the letter with the highest value is used in the final analysis. The self-understanding score is calculated by averaging all of the items not coded “a” together. Finally, the SUIP-R has both time 1 and time 2 forms to simplify in pre–post assessments.

Early examinations into the SUIP-R's psychometric properties suggest that the scale has excellent internal consistency (Coefficient Alpha = 0.92) and reasonable stability over a 1 month period (test–retest reliability of $r = 0.76$). It is also important to note that the psychometric properties for the original SUIP were systematically evaluated through multiple studies. Expert raters agreed on the clarity and coverage of the SUIP, scales were found to have adequate internal consistency (i.e., coefficient alphas ranging from 0.79 to 0.88), and corrected item-scale correlations were generally in the accepted ranges in both clinical and non-clinical samples.

Early investigations also support the construct validity for the SUIP-R. In a large clinical sample, baseline SUIP-R scores had correlations of less than 0.10 at baseline with measures of anxiety, depression, interpersonal problems, and overall quality of life [89]. Again, these results are quite similar to previous studies examining divergence and convergence of the SUIP which also found little correlation between SUIP scores and global symptom measures. Similarly, SUIP-R residual change scores show small, non-significant correlations with compensatory skill acquisition and changes in self-image, again suggesting that the measure is distinct. Such data suggest that the SUIP-R is assessing a unique construct (i.e., insight) that is separate from psychiatric distress, self-image, or skill acquisition.

The SUIP-R's construct validity of the tool and sensitivity to change has been investigated by its authors. In a pooled sample of patients undergoing one of five different forms of psychotherapy, there was significantly more change for SUIP-R scores for patients in dynamically focused psychotherapies (as compared to cognitive-oriented therapies) in which increasing awareness of interpersonal patterns

was a goal [90]. These results replicated and extended prior work with SUIP which found, as predicted by theory, that individuals undergoing psychodynamic-oriented treatment for Generalized Anxiety Disorder evidenced significantly greater changes in SUIP-R scores compared to controls receiving medication though both groups experienced significant reduction of symptoms [89].

The SUIP-R is a highly flexible measure capable of being used for many purposes in psychotherapy research: pre–post change, prediction of process, assessing stages of change, and understanding factors that moderate response to treatment. In addition, Connolly-Gibbons and colleagues' systematic early investigations of the original measures psychometric adequacy and cross-correlates with other measures serve to more clearly define the construct assessed by the instrument and highlight its distinctiveness from similar constructs (e.g., Openness to Emotions). The measure is also relatively easy to administer and score, and places minimal burden on research participants. Finally, psychodynamic psychotherapy researchers are likely to find the model on which the measure is built to be appealing and familiar. The measure also faces the same challenges of many self-report scales and also does not include scales to assess for validity of response. Still, given the overall strengths of the measure and relative ease of administration, it has much to offer as a psychotherapy research tool.

The Central Relationship Questionnaire (CRQ)

Conflicts that are central to the individual often manifest themselves in an interpersonal manner. These conflicts often involve patterns of wishes, fears, expectations, and behavioral responses. Psychodynamic psychotherapy often aims at generating insight into these patterns to facilitate change. Barber et al. [91] developed a self-report measure, the Central Relationship Questionnaire (CRQ), as a means to more systematically quantify and understand these types of problems and changes while placing minimal burden on the examiner. Similar to the SUIP-R just discussed, the CRQ is based on Luborsky's CCRT [92]. A unique and interesting feature of the CRQ is that it can be used to understand changes in patterns within specific relationships.

The original CRQ contained 139 items. Based on psychometric investigations (discussion further on in this chapter) and logistical factors, McCarthy et al. [93] recently developed a version of the CRQ with 101 items that maintains the same factor structure, has some enhanced scale properties, and reduces item redundancy. When completing the CRQ, respondents are asked to rate each item based on their relationship with a specific target relationship (e.g., spouse; parent; romantic partner), and respondents are often asked to complete multiple CRQs focused on several respective relationships. Prior to completing the core items for the measure, respondents rate the target relationship by responding to questions about key descriptors (e.g., intimacy; closeness; authority; importance). Respondents are also asked to rate the quality of the target relationship at its best and worst. Three sets of items comprise the CRQ and these are consistent with the CCRT: Wishes, Response from Others, and Response to Self. The Wishes component contains items tapping wishes, needs, and desires and produces seven subscales (e.g., The wish to be in conflict; The wish to be Independent). The Response from Others component contains items evaluating typical responses from others that either prevent or help individuals obtain wishes, wants, and needs and also includes seven subscales (e.g., Other Hurts Me; Other Loves Me). The Response to Self component has eight subscales revealing various self and other directed responses (e.g., Feel Valued; Feel Disliked; Am Domineering; for a detailed description of subscales [94]).

The Wishes component item set begins with instructions orienting respondents to the nature of the items (i.e., "Below is a list of different wishes, needs, or desires that people often have of other people."). Respondents are then asked to rate each Wish item based on how typical they apply to the target relationship when the relationship is/was at its worst. It is important to recall that items are rated in response to a target relationship. Thus, they may be rated to describe the relationship with a

romantic partner, a parent, a sibling, or a close friend. For the purpose of this chapter, we have worded example items as if the target relationship to be rated was a romantic partner. Here are example items from the Wishes component:

- I wish for my partner to know that I am loyal.
- I wish to confide in my partner.
- I would like my partner to feel proud of her/his accomplishments.
- I wish to dominate my partner.

The Response from Other component item set begins with instructions asking respondents to consider how the person in the target relationship typically “responds to you.” Respondents are oriented to this section with the statement: “We often see people as responding to us in a way that either prevents us from getting what we want, or helps us to get what we want. Here is a list of possible ways that a romantic partner can respond to you.” Respondents are then asked to rate items for how typical they are when the relationship is/was at its worst. Response from Others component example items are presented here:

- My partner withdraws.
- My partner feels I am a special person.
- My partner controls me.
- My partner is emotionally close to me.

Finally, prior to completing the Response to Self component items, participants are oriented to this section with the statement: “Other people can deny your desires or meet your desires in responding to you. Below is a list of different ways that you might react when your romantic partner denies or meets your desires.” Respondents are then asked to rate items for how well they reflect their typical reactions when their partner denies or meets their desires when the relationship is/was at its worst. Following are example items from the Response to Self component worded as if the target relationship to be rated was a romantic partner:

- I accomplish my goals.
- I feel disliked.
- I avoid difficulties with my partner.
- I am confused by my relationship with my partner.

All items across scales are rated on a 7-point scale ranging from 1 (never true or typical of me) to 7 (always true or typical of me). Higher ratings indicate a greater presence of that Wish, Response from Other, or Response to Self within the target relationship. Roughly half of the CRQ subscales are positively valenced (i.e., affiliation; respect for self; respect for others; positive affect) and half negatively valenced (e.g., antagonism; lack of self-respect; failure to respect others; negative affect). The CRQ takes some time for a respondent to fill out, though the total time will depend on the number of relationships to be rated.

To date, a small number of detailed studies have examined the scale properties of the CRQ. The most extensive investigation of the scale made use of three samples: a large student sample; a clinical sample; and a retest sample [91]. Across samples, subscale internal consistency ratings were adequate (Alphas ranged from 0.78 to 0.95 for the Wishes component, 0.82 to 0.95 for the Response from Other component, and 0.71 to 0.94 for the Response to Self). Nineteen of twenty-two scales had alphas of >0.80. Corrected item-scale correlations were also in the acceptable range ranging from 0.44 to 0.90 for the Wishes component, 0.58 to 0.85 for the Response from Other component, and 0.42 to 0.87 for the Response from Self component. Test–retest reliability was established by comparing ratings of 54 non-clinical respondents over a 1-year period. Average test–retest reliability was >0.60 for all subscales. Subsequent scale analyses [94], conducted with a Swedish student sample, Swedish clinical sample, and a North American student sample, have revealed a pattern

of subscale correlations that was highly consistent with those originally reported by Barber and colleagues [91]. A more recent study also found that a revised CRQ with fewer items maintained a similar factor structure to the original and possessed similar, and in some cases stronger, psychometric properties [93].

Validity of the CRQ has been established by demonstrating that subscale ratings are associated with other measures of interpersonal problems, neuroticism, depression, and psychiatric symptoms. Additionally, as would be expected, clinical populations in distress produce higher scores on negatively valenced items (i.e., items tapping problematic relational patterns) than do non-clinical samples [91]. These findings have been replicated across two cultures [94]. Subscale interrelations provide some support for the three-component structure of the measure. To date, the CRQ has yet to be utilized as an outcome measure for psychotherapy. However, studies are currently underway to establish the measure's utility as a psychotherapy research tool and to evaluate sensitivity to change.

The CRQ provides a means for studying changes in relational patterns. The measure is still relatively new, and a revised version has recently been created. As such, further research regarding the scale properties, particularly for the revised measure, would be of benefit. The authors of the CRQ are currently in the process of assessing the utility of the instrument for psychotherapy research. The measure also contains many items requiring a fair amount of the respondents' time to complete. It is possible that this may limit the use of the tool. Nonetheless, changes in CCRTs are often a central part of what occurs in effective psychodynamic psychotherapy, as such the CRQ provides a means for assessing this key area of change. It is also one of the few tools of its kind available for assessing specific relationships.

Conclusions

When we initially set out to write this chapter, we had a handful of outcome measures in mind that focused on key psychodynamic constructs. However, we speculated that it might be necessary to borrow some measures from the field of social psychology to complete the mix. We quickly discovered that there are currently far more measures suitable for understanding change from psychodynamic psychotherapy than may have been anticipated. In fact, the topic may be more worthy of a book as opposed to a book chapter at this time. Thus, given limits of space and pages for this chapter, investigators may wish to examine similar reviews focusing on measures of attachment (e.g. [95]), measures of object relations (e.g. [17]), measures conceptualizing change in psychodynamic constructs (e.g. [96]), and measures of structural capacities (e.g. [97]). Koelen et al. [98] have also recently concluded a paper that reviews a number of measures that can be used in psychodynamic psychotherapy research as outcome measures or to predict psychotherapy process and/or treatment outcomes.

In addition to establishing treatment efficacy, outcome measures, such as the measures reviewed here, can also be employed in other types of research. The measurement of outcomes often complements the study of psychotherapy process. Assessing outcome is also essential for actively testing theories underlying treatment effects, the role of specific interventions, and the process of change in treatment [4]. After all, if an underlying presumption of a particular therapeutic approach or intervention is that it facilitates a particular type of change, then it will be necessary to determine if change in that domain occurs as a result of the treatment or intervention. In short, understanding the outcome of treatment can also aid in understanding the process of treatment and stages of change.

The range and sheer number of such measures says something about the health of the field overall. Given the number of options, psychodynamic investigators are now in a position where they can pick and choose instruments to suit their research purposes. In addition, they are now capable of

assessing constructs at multiple levels by making use of combinations of measurement methods to study explicit and implicit mechanisms of change. For example, observer-rated measures, self-report measures, and projective-narrative-based measures may all assess slightly different aspects (e.g., implicit; explicit) of a construct (e.g., object relations) allowing for investigations of some of the smaller nuances of change. It is an exciting period of time for psychodynamic researchers, and the growth of theory specific outcome measures continues to be an important part of the field's growth.

References

1. Wallerstein RS. Psychoanalytic therapy research: it's coming of age. *Psychoanal Inq.* 2003;23:375–404.
2. Wallerstein RS, Fonagy P. Psychoanalytic research and the IPA: history, present status and future potential. *Int J Psychoanal.* 1999;80:91–109.
3. Shedler J. The efficacy of psychodynamic psychotherapy. *Am Psychol.* 2010;65(2):98–109.
4. Høglend P, Bøgwald KP, Amlo S, Marble A, Ulberg R, Sjaastad MC, et al. Transference interpretations in dynamic psychotherapy: do they really yield sustained effects? *Am J Psychiatry.* 2008;165:763–71.
5. Morey C. Personality assessment inventory professional manual. 2nd ed. Odessa: Psychological Assessment Resources; 2007.
6. Weinryb RM, Rössel RJ. Karolinska psychodynamic profile – KAPP. *Acta Psychiatr Scand.* 1991;83:1–23.
7. Høglend P, Bøgwald KP, Amlo S, Heyerdahl O, Sørbye O, Marble A, et al. Assessment of change in dynamic psychotherapy. *J Psychother Pract Res.* 2000;9:190–9.
8. Westen D, Shedler J. Revising and assessing axis II. Part 1: Developing a clinically and empirically valid assessment method. *Am J Psychiatry.* 1999;156:258–72.
9. Siefert CJ, DeFife JA, Baity MR. Process measures for psychodynamic psychotherapy. In: Levy RA, Ablon JS, editors. *Handbook of evidence-based psychodynamic psychotherapy: bridging the gap between science and practice.* Totowa: Humana Press; 2009. p. 157–78.
10. Westen D. Social cognition and object relations scale: Q-sort for projective stories (SCORS-G-Q). Unpublished manuscript. Cambridge, MA: Cambridge Hospital and Harvard Medical School; 1995.
11. Hilsenroth M, Stein M, Pinsker J. Social cognition and object relations scale: global rating method (SCORS-G-G). Unpublished manuscript. Garden City: The Derner Institute of Advanced Psychological Studies, Adelphi University; 2004.
12. Eudell-Simmons EM, Stein M, DeFife JA, Hilsenroth M. Reliability and validity of the social cognition and object relations scale (SCORS-G) in the assessment of dream narratives. *J Pers Assess.* 2005;85:325–33.
13. Stein M, Hilsenroth M, Pinsker-Aspen J, Primavera L. Validity of DSM-IV axis V global assessment of relational functioning scale. *J Nerv Ment Dis.* 2009;197:50–5.
14. Slavien JM, Stein M, Pinsker-Aspen J, Hilsenroth M. Early memories from outpatients with and without a history of childhood sexual abuse. *J Loss Trauma.* 2007;12:435–51.
15. Ackerman SJ, Hilsenroth M, Clemence AJ, Weatherill R, Folwer JC. The effects of social cognition and object representation on psychotherapy continuation. *Bull Menninger Clin.* 1999;64:386–408.
16. Ackerman SJ, Hilsenroth M, Clemence AJ, Weatherill R, Fowler JC. Convergent validity of Rorschach and TAT scales of object relations. *J Pers Assess.* 2001;77:295–306.
17. Huprich SK, Greenberg RP. Advances in the assessment of object relations in the 1990s. *Clin Psychol Rev.* 2003;23:665–98.
18. Porcerelli JH, Shahar G, Blatt SJ, Ford RQ, Mezza JA, Greenlee LM. Social cognition and object relations scale: convergent validity and changes following intensive inpatient treatment. *Pers Individ Dif.* 2004;41:407–17.
19. Porcerelli JH, Cogan R, Hibbard S. Cognitive and affective representations of people and the MCMI-II personality psychopathology. *J Pers Assess.* 1998;70:535–40.
20. Westen D, Lohr N, Silk KR, Gold L, Kerber K. Object relations and social cognition in borderlines, major depressives, and normals: a thematic apperception test analysis. *Psychol Assess.* 1990;2:355–64.
21. Ackerman SJ, Clemence AJ, Weatherill R, Hilsenroth MJ. Use of the TAT in the assessment of DSM-IV cluster B personality disorders. *J Pers Assess.* 1999;73(3):422–42.
22. Ford JD, Fisher P, Larson L. Object relations as a predictor of treatment outcome with chronic posttraumatic stress disorder. *J Consult Clin Psychol.* 1997;65:547–59.
23. Fowler JC, Ackerman SJ, Speanburg S, Bailey A, Blagys M, Conklin AC. Personality and symptom change in treatment-refractory inpatients: evaluation of the phase model of change using Rorschach, TAT, and DSM-IV axis V. *J Pers Assess.* 2004;83:306–22.

24. Fowler C, Hilsenroth MJ, Handler L. Two methods of early memories data collection: an empirical comparison of the projective yield. *Assessment*. 1996;3:63–71.
25. Westen D, Shedler J. Revising and assessing axis II. Part 2: Toward an empirically based and clinically useful classification of personality disorders. *Am J Psychiatry*. 1999;156:273–85.
26. Shedler J, Westen D. The Shedler–Westen assessment procedure (SWAP-200): making personality diagnosis clinically meaningful. *J Pers Assess*. 2007;89:41–55.
27. Westen D, Muderrisoglu S. Reliability and validity of personality disorder assessment using a systematic clinical interview: evaluating an alternative to structured interviews. *J Pers Disord*. 2003;17:350–68.
28. Lingardi V, Shedler J, Gazzillo F. Assessing personality change in psychotherapy with the SWAP-200: a case study. *J Pers Assess*. 2006;86(1):23–32.
29. Marin-Avellan L, McGauley G, Campbell C, Fonagy P. Using the SWAP-200 in a personality-disordered forensic population: is it valid, reliable and useful? *J Crim Behav Ment Health*. 2005;15:28–45.
30. Bradley R, Hilsenroth M, Guarnaccia C, Westen D. Relationship between clinician assessment and self-assessment of personality disorders using the SWAP-200 and PAI. *Psychol Assess*. 2007;19(2):225–9.
31. Russ E, Heim A, Westen D. Parental bonding and personality pathology assessed by clinician report. *J Pers Disord*. 2003;17:522–36.
32. Martin-Avellan LE, McGauley G, Campbell C, Fonagy P. Using the SWAP-200 in a personality-disordered forensic population: is it valid, reliable and useful? *Crim Behav Ment Health*. 2005;15(1):28–45.
33. Shedler J, Westen D. Refining personality disorder diagnoses: integrating science and practice. *Am J Psychiatry*. 2004;161:1350–65.
34. Cogan R, Porcerelli J. Clinician reports of personality pathology of patients beginning and patients ending psychoanalysis. *Psychol Psychother Theor Res Pract*. 2005;78(2):235–48.
35. Perry JC. *Defense mechanism rating scales (DMRS)*. 5th ed. Cambridge, MA; 1990.
36. Westen D, Shedler J. Personality diagnosis with the Shedler–Westen Assessment Procedure (SWAP): Integrating clinical and statistical measurement and prediction. *Journal of Abnormal Psychology*. 2007;116:810–22.
37. American Psychiatric Association. *Diagnostic and statistical manual of mental disorders*. 4th ed. Washington, DC: American Psychiatric Association; 1994.
38. Perry JC, Beck SM, Constantinides P, Foley JE. Studying change in defensive functioning in psychotherapy using the defense mechanism rating scales: four hypotheses, four cases. In: Levy RA, Ablon JS, editors. *Handbook of evidence-based psychodynamic psychotherapy*. Totowa: Humana Press; 2009.
39. Perry JC, Høglend P. Convergent and discriminant validity of overall defensive functioning. *J Nerv Ment Dis*. 1998;186(9):529–35.
40. Blais MA, Conboy CA, Wilcox N, Norman DK. An empirical study of the DSM-IV defensive functioning scale in personality disordered patients. *Compr Psychiatry*. 1996;37:435–40.
41. Hilsenroth MJ, Callahan KL, Eudell EM. Further reliability, convergent and discriminant validity of overall defensive functioning. *J Nerv Ment Dis*. 2003;191:730–7.
42. Perry JC, Henry M. Studying defense mechanisms in psychotherapy using the defense mechanism rating scales. In: Hentschel U, Smith G, Draguns J, Ehlers W, editors. *Defense mechanisms: theoretical, research, and clinical perspectives*. Amsterdam: Elsevier; 2004. p. 165–92.
43. Perry JC. A pilot study of defenses in adults with personality disorders entering psychotherapy. *J Nerv Ment Dis*. 2001;189:651–60.
44. DeFife JA, Hilsenroth MJ. Clinical utility of the defensive functioning scale in the assessment of depression. *J Nerv Ment Dis*. 2005;193(3):176–82.
45. Drapeau M, De Roten Y, Perry JC, Despland J-N. A study of stability and change in defense mechanisms during a brief psychodynamic investigation. *J Nerv Ment Dis*. 2003;191(8):496–502.
46. Roy CA, Perry JC, Luborsky L, Banon E. Changes in defensive functioning in completed psychoanalyses: the Penn psychoanalytic treatment collection. *J Am Psychoanal Assoc*. 2009;57(2):399–415.
47. Horowitz LM, Rosenberg SE, Baer BA, Ureño G, Villaseñor VS. Inventory of interpersonal problems: psychometric properties and clinical applications. *J Consult Clin Psychol*. 1988;56(6):885–92.
48. Alden LE, Wiggins JS, Pincus AL. Construction of circumplex scales for the inventory of interpersonal problems. *J Pers Assess*. 1990;55(3–4):521–36.
49. Horowitz LM, Alden LE, Wiggins JS, Pincus AL. *Inventory of interpersonal problems*. San Antonio: Psychological Corporations; 2000.
50. Hughes J, Barkham M. Scoping the inventory of interpersonal problems, its derivatives and short forms: 1988–2004. *Clin Psychol Psychother*. 2005;12(6):475–96.
51. Gurtman MB. Interpersonal problems and the psychotherapy context: the construct validity of the inventory of interpersonal problems. *Psychol Assess*. 2006;8(3):241–55.
52. Haggerty G, Hilsenroth MJ, Vala-Stewart R. Attachment and interpersonal distress: examining the relationship between attachment styles and interpersonal problems in a clinical population. *Clin Psychol Psychother*. 2009;16(1):1–9.

53. Ruiz MA, Pincus AL, Borkovec TD, Echemendia RJ, Castonguay LG, Ragusea SA. Validity of the inventory of interpersonal problems for predicting treatment outcome: an investigation with the Pennsylvania Practice Research Network. *J Pers Assess.* 2004;83(3):213–22.
54. Høglend P, Bøggwald K-P, Amlo S, Marble A, Ulberg R, Sjaastad MC, et al. Transference interpretations in dynamic psychotherapy: do they really yield sustained effects? *Am J Psychiatry.* 2008;165(6):763–71.
55. Paley G, Cahill J, Barkham M, Shapiro D, Jones J, Patrick S, et al. The effectiveness of psychodynamic-interpersonal therapy (PIT) in routine clinical practice: a benchmarking comparison. *Psychol Psychother Theor Res Pract.* 2008;81(2):157–75.
56. Crits-Christoph P, Gibbons MBC, Narducci J, Schamberger M, Gallop R. Interpersonal problems and the outcome of interpersonally oriented psychodynamic treatment of GAD. *Psychother Theor Res Pract Train.* 2005;42(2):211–24.
57. George C, Kaplan N, Main M. Adult attachment interview protocol. 3rd ed. Unpublished manuscript. Berkeley: University of California; 2006.
58. Steele H, Steele M. Clinical applications of the adult attachment interview. New York: Guilford Press; 2008.
59. Hesse E. The adult attachment interview: historical and current perspectives. In: Cassidy J, Shaver PR, editors. *Handbook of attachment: theory, research, and clinical applications.* New York: Guilford Press; 1999. p. 395–433.
60. Hesse E. The adult attachment interview: protocol, method of analysis, and empirical studies. In: Cassidy J, Shaver PR, editors. *Handbook of attachment: theory, research, and clinical applications.* 2nd ed. New York: Guilford Press; 2008. p. 552–98.
61. Roisman GI, Fraley RC, Belsky J. A taxometric study of the adult attachment interview. *Dev Psychol.* 2007;43(3):675–86.
62. Bakermans-Kranenburg MJ, van IJzendoorn MH. The first 10,000 adult attachment interviews: distributions of adult attachment representations in clinical and non-clinical groups. *Attach Hum Dev.* 2009;11(3):223–63.
63. Bakermans-Kranenburg MJ, Van IJzendoorn MH. A psychometric study of the adult attachment interview: reliability and discriminant validity. *Dev Psychol.* 1993;29(5):870–9.
64. Sagi A, van IJzendoorn MH, Scharf M, Koren-Karie N, Joels T, Mayseless O. Stability and discriminant validity of the adult attachment interview: a psychometric study in young Israeli adults. *Dev Psychol.* 1994;30(5):771–7.
65. Waters E, Hamilton CE, Weinfield NS. The stability of attachment security from infancy to adolescence and early adulthood: general introduction. *Child Dev.* 2000;71(3):678–83.
66. Allen JP, McElhaney KB, Kuperminc GP, Jodl KM. Stability and change in attachment security across adolescence. *Child Dev.* 2004;75(6):1792–805.
67. Main M, Hesse E, Kaplan N. Predictability of attachment behavior and representational processes at 1, 6, and 19 years of age: the Berkeley longitudinal study. In: Grossmann KE, Grossmann K, Waters E, editors. *Attachment from infancy to adulthood: the major longitudinal studies.* New York: Guilford Publications; 2005. p. 245–304.
68. van IJzendoorn M. Adult attachment representations, parental responsiveness, and infant attachment: a meta-analysis on the predictive validity of the adult attachment interview. *Psychol Bull.* 1995;117(3):387–403.
69. Levy KN, Meehan KB, Kelly KM, Reynoso JS, Weber M, Clarkin JF, et al. Change in attachment patterns and reflective function in a randomized control trial of transference-focused psychotherapy for borderline personality disorder. *J Consult Clin Psychol.* 2006;74(6):1027–40.
70. Gullestad SE. The adult attachment interview and psychoanalytic outcome studies. *Int J Psychoanal.* 2003;84(3):651–68.
71. Jurist EL. Mentalized affectivity. *Psychoanal Psychol.* 2005;22(3):426–44.
72. Fonagy P, Steele M, Steele H, Target M. Reflective function manual for application to adult attachment interviews. London: University College London; 1997.
73. Rudden M, Milrod B, Target M, Ackerman S, Graf E. Reflective functioning in panic disorder patients: a pilot study. *J Am Psychoanal Assoc.* 2006;54(4):1339–43.
74. Bouchard MA, Target M, Lecours S, Fonagy P, Tremblay LM, Schachter A. Mentalization in adult attachment narratives: reflective functioning, mental states, and affect elaboration compared. *Psychoanal Psychol.* 2008;25(1):47–66.
75. Fonagy P, Steele M, Steele H, Moran GS. The capacity for understanding mental states: the reflective self in parent and child and its significance for security of attachment. *Infant Ment Health J.* 1991;12(3):201–18.
76. Slade A, Grienberger J, Bernbach E, Levy D, Locker A. Maternal reflective functioning, attachment, and the transmission gap: a preliminary study. *Attach Hum Dev.* 2005;7(3):283–98.
77. Fonagy P, Leigh T, Steele M, Steele H, Kennedy R, Mattoon G, et al. The relation of attachment status, psychiatric classification, and response to psychotherapy. *J Consult Clin Psychol.* 1996;64(1):22–31.
78. Meehan KB, Levy KN, Reynoso JS, Hill LL, Clarkin JF. Measuring reflective function with a multidimensional rating scale: comparison with scoring reflective function on the AAI. *J Am Psychoanal Assoc.* 2009;57(1):208–13.
79. Bøggwald K-P, Dahlbender RW. Procedures for testing some aspects of the content validity of the psychodynamic functioning scales and the global assessment of functioning scale. *Psychother Res.* 2004;14(4):453–68.

80. Weinryb RM, Rössel RJ, Gustavsson JP, Åsberg M, Barber JP. The Karolinska psychodynamic profile (KAPP): studies of character and well-being. *Psychoanal Psychol.* 1997;14(4):495–515.
81. Vinnars B, Thormählen B, Gallop R, Norén K, Barber J. Do personality problems improve during psychodynamic supportive–expressive psychotherapy? Secondary outcome results from a randomized controlled trial for psychiatric outpatients with personality disorders. *Psychother Theor Res Pract Training.* 2009;46(3):362–75.
82. Heikkilä J, Karlsson H, Taiminen T, Lauerma H, Ilonen T, Leinonen KM, et al. Psychodynamic personality profile in first-episode severe mental disorders. *Acta Psychiatr Scand.* 2004;109(3):187–93.
83. Weinryb RM, Rössel RJ, Åsberg M. The Karolinska psychodynamic profile: II. Interdisciplinary and cross-cultural reliability. *Acta Psychiatr Scand.* 1991;83(1):73–6.
84. Weinryb RM, Busch M, Gustavsson JP, Saxon L, Skarbrandt E. Reliability of the Karolinska psychodynamic profile (KAPP) among patients with and without psychoactive substance abuse disorders. *Psychother Psychosom.* 1998;67(1):10–6.
85. Haver B, Svanborg P, Lindberg S. Improving the usefulness of the Karolinska psychodynamic profile in research: proposals from a reliability study. *Acta Psychiatr Scand.* 1995;92(2):132–7.
86. Weinryb RM, Gustavsson JP, Åsberg M, Rössel RJ. Stability over time of character assessment using a psychodynamic instrument and personality inventories. *Acta Psychiatr Scand.* 1992;86(2):179–84.
87. Wilczek A, Barber JP, Gustavsson JP, Åsberg M, Weinryb RM. Change after long-term psychoanalytic psychotherapy. *J Am Psychoanal Assoc.* 2004;52(4):1163–84.
88. Fassino S, Daga GA, Delsedime N, Busso F, Pierò A, Rovera GG. Baseline personality characteristics of responders to 6-month psychotherapy in eating disorders: preliminary data. *Eat Weight Disord.* 2005;10(1):40–50.
89. Connolly Gibbons MB, Crits-Christoph P, Shelton RC, Hollon S, Kurtz J, Barber JP. The reliability and validity of a measure of self-understanding of interpersonal patterns. *J Couns Psychol.* 1999;4:472–82.
90. Connolly Gibbons MB, Crits-Christoph P, Barber JP, Wiltsey Stirman S, Gallop R, Goldstein LA, et al. Unique and common mechanisms of change across cognitive and dynamic psychotherapies. *J Consult Clin Psychol.* 2009;77:801–13.
91. Barber JP, Foltz C, Weinryb RM. The Central Relationship Questionnaire: initial report. *J Couns Psychol.* 1998;45(2):131–42.
92. Luborsky L. Principles of psychoanalytic psychotherapy: a manual for supportive–expressive (SE) treatment. New York: Basic Books; 1984.
93. McCarthy KS, Gibbons MB, Barber JP. The relation of rigidity across relationships with symptoms and functioning: an investigation with the revised Central Relationship Questionnaire. *J Couns Psychol.* 2008;55(3):346–58.
94. Weinryb RM, Barber JP, Foltz C, Göransson SGM, Gustavsson JP. The Central Relationship Questionnaire (CRQ): psychometric properties in a Swedish sample and cross-cultural studies. *J Psychother Pract Res.* 2000;9(4):201–12.
95. Bartholomew K, Shaver PR. Methods of assessing adult attachment: do they converge? In: Simpson JA, Rholes WS, editors. *Attachment theory and close relationships.* New York: Guilford Press; 1998. p. 25–45.
96. Blatt SJ, Auerbach JS. Psychodynamic measures of therapeutic change. *Psychoanal Inq.* 2003;23(2):268–307.
97. Huber D, Henrich G, Klug G. The scales of psychological capacities: measuring change in psychic structure. *Psychother Res.* 2005;15(4):445–56.
98. Koelen JA, Luyten P, Eurelings-Bontekoe EHM, Diguier L, Vermote R, Lowyck B, et al. The impact of personality organization on treatment response and the therapeutic process. Unpublished manuscript.

Appendix 30.1 The Social Cognition and Object Relations: Global Rating Scale

Complexity of representation of people: 1= is egocentric, or sometimes confuses thoughts, feelings, or attributes of the self and others; 3= tends to describe people's personalities and internal states in minimally elaborated, relatively simplistic ways, or splits representations into good and bad; 5= representations of the self and others are stereotypical or conventional, is able to integrate both good and bad characteristics of self and others, has awareness of impact on others; 7= is psychologically minded, insight into self and others, differentiated and shows considerable complexity

1 2 3 4 5 6 7

Affective quality of representations: (i.e., what the person expects from relationships, and how he/she tends to experience significant others and describe significant relationships): 1= malevolent, abusive, caustic; 3= largely negative or unpleasant, but not abusive; 5= mixed, neither primarily positive nor primarily negative (needs to have some positive to be scored 5); 7= generally positive expectations of relationships (but not Pollyannaish), a favorable and affirmative view of relationships Note: where affective quality is absent, bland, or limited, code 4

1 2 3 4 5 6 7

Emotional investment in relationships: 1= tends to focus primarily on his/her own needs in relationships, has tumultuous relationships, or has few if any relationships; 3= somewhat shallow relationships, or only alludes to others; 5= demonstrates conventional sentiments of friendship, caring, love, and empathy; 7= tends to have deep, committed relationships with mutual sharing, emotional intimacy, interdependence, and respect, positive connectedness and appreciation of others Note: where only one character is described and no relationship is depicted, code 2

1 2 3 4 5 6 7

Emotional investment in values and moral standards: 1= behaves in selfish, inconsiderate, self-indulgent or aggressive ways without any sense of remorse or guilt; 3= shows signs of some internalization of standards (e.g., avoids doing "bad" things because knows will be punished for them, thinks in relatively childlike ways about right and wrong, etc.), or is morally harsh and rigid toward self or others; 5= is invested in moral values and tries to live up to them; 7= thinks about moral questions in a way that combines abstract thought, a willingness to challenge or question convention, and genuine compassion and thoughtfulness in actions (i.e., not just intellectualized) Note: where no moral concerns are raised in a particular story, code 4

1 2 3 4 5 6 7

Understanding of social causality: 1= narrative accounts of interpersonal experiences are confused, distorted, extremely sparse, or difficult to follow, limited awareness and coherence; 3= understands people in relatively simple, but sensible ways, or describes interpersonal events in ways that largely make sense but may have a few gaps or incongruities; 5= tends to provide straightforward narrative accounts of interpersonal events in which people's actions result from the way they experience or interpret situations; 7= tends to provide particularly coherent narrative accounts of interpersonal events, and to understand people very well, understands the impact of their behavior on others and others behavior on them Note: where subject describes interpersonal events as if they just happen, with little sense of why people behave the way they do (i.e., allogical rather than illogical stories that seem to lack any causal understanding), code 2

1 2 3 4 5 6 7

Experience and management of aggressive impulses: 1=physically assaultive, destructive, sadistic, or in poor control of aggression, impulsive; 3=angry, passive-aggressive, denigrating, or physically abusive to self (or fails to protect self from abuse); 5=avoids dealing with anger by denying it, defending against it, or avoiding confrontations; 7=can express anger and aggression and assert self appropriately Note: if no anger content in the story, code 4

1 2 3 4 5 6 7

Self-esteem: 1=views self as loathsome, evil, rotten, contaminating, or globally bad; 3=has low self-esteem (e.g., feels inadequate, inferior, self-critical, etc.) or is unrealistically grandiose; 5=displays a range of positive and negative feelings toward the self; 7=tends to have realistically positive feelings about him/herself

Note: needs to have some positive to be scored a 5 or above

1 2 3 4 5 6 7

Identity and coherence of self: 1=fragmented sense of self, has multiple personalities; 3=views of, or feelings about, the self fluctuate widely and unpredictably; unstable sense of self; 5=identity and self-definition are not a major concern or preoccupation; 7=feels like an integrated person with long-term ambitions and goals

Note: ambiguity about a goal is still considered a goal and may be scored in the higher range

1 2 3 4 5 6 7

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Chapter 31

Empirically Informed Clinical Interviewing for Personality Disorders

Jared A. DeFife and Drew Westen

Keywords Case formulation • Diagnosis • Personality disorders • Shedler–Westen Assessment Procedure (SWAP) • Systematic interview

Introduction

Individuals with diagnosed personality disorders constitute a sizable proportion of patients receiving outpatient psychodynamic therapy [1, 2]. Beyond the DSM-IV diagnosable conditions, personality is still a significant diathesis for psychopathology [3] and plays a predominant role in how patients use and respond to psychotherapy [4, 5]. How can clinicians gather information about personality functioning and psychopathology in a way that is both empirically reliable and clinically sensible?

Here is where we run into the perpetual tension between clinical research and practice. To increase internal validity, researchers seek ways to standardize information under controlled conditions and using replicable protocols. To increase practical utility, practitioners must heed their unique interactions with uniquely individual patients. While researchers need to respect the fact that like snowflakes, no two patients are exactly alike, clinicians need to be aware that like discriminating between a light flurry and a blizzard, personality constellations can be usefully quantified and categorized.

In this chapter, we review the debate around the use of structured clinical diagnostic interviews and clinical observation for the diagnosis of personality disorders. We propose that a systematic clinical interview approach blending an organized approach to functional assessment with the observational methods that clinicians most commonly use in everyday practice can generate reliable and valid information about patient functioning. We start by looking at the costs and benefits of diagnosing personality. Then, we examine the arguments for using a structured diagnostic interview and some of its limitations. Finally, we review an alternative systematic clinical interview approach and demonstrate how it can be used to generate case formulation, facilitate clinical communication, and support the early therapeutic process.

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Why Diagnose?

Recently, a group of clinician researchers obtained pilot data from a medical chart review in their psychotherapy clinic. In contrast to research survey findings that Axis II disorders are “among the most frequent disorders treated by psychiatrists” [6, p. 1911] and despite a reasonable sample size, the researchers found zero personality disorder diagnoses recorded. They had stumbled upon a veritable Bermuda Triangle of personality pathology.

So where did all the Axis II patients go? Perhaps the clinic therapists were valiant vanquishers of all interpersonal problems, or, conversely, so poor at managing relational problems that all of their personality disordered patients quickly left treatment. May be selection bias was the culprit, either due to some thorough and draconian clinical screening process or because only the “healthy” patients agreed to participate in the research protocol. Any of these explanations were possible, albeit unlikely. The clinicians were gifted, to be sure, but hardly divine healers. The clinic catered to numerous patients with severe and long-standing social/occupational problems, and no diagnostic screening process was in place other than the weighing of typical factors such as therapist availability and clinical risk management negotiated at most every outpatient facility.

While Axis II pathology had been effectively ruled out in a number of the cases, it appeared that most patients at the clinic had been stricken with a particularly pernicious case of an Axis II disorder known as “deferred.” A discussion with the clinicians quickly revealed four major concerns: (1) worries about labeling patients and how they would be treated by later therapists or other health care providers who might access the medical record, as if making an Axis II diagnosis were tantamount to branding one’s patient with a diagnostic scarlet letter, (2) fears of a negative therapeutic reaction if a patient found out they had been assigned a personality diagnosis, (3) that not only are Axis II disorders not-billable to managed organization insurance payers, but also scary stories spread about how some patients were actually denied coverage of therapeutic services because their insurance providers deemed personality disorders as “untreatable,” and (4) problems with the current DSM-IV diagnostic nosology which did not seem to quite “fit” their patients.

Each of the apprehensions mentioned previously are legitimate and also common [7, 8]. Stories abound of patients glibly dismissed or harshly condemned with diagnostic labels. One therapist was disturbed to receive a referral from a general practitioner rather indecorously describing the patient as a “prattling histrionic.” Despite the fact that the wording probably reflected more poorly on the referring physician, the phrase left an indelible mark on the therapist who found it difficult to shake the thought before first meeting with the patient. “The abuse of psychodiagnostic language is thus easily demonstrated,” writes McWilliams [7], “that something can be abused, however, is not a legitimate argument for discarding it” (p. 7).

Even put to the best of uses, psychiatric terminology can be inherently pathologizing. The level of visceral reaction to such labels varies by individual and also by certain diagnoses. Some individuals find it better to be labeled as “bipolar” than “borderline” and more people find it easier to see themselves as “avoidant” than “narcissistic.” Even the term “personality disorder” seems to connote some archaic insinuations of moral turpitude or characterological weakness. On the other hand, diagnosis can have the opposite effect, normalizing thoughts and feelings that have been regarded as crazy or unusual. The term “borderline,” for example, can be demonizing, but collaborative discussions of what borderline personality disorder actually means has left some individuals feeling like others have some framework for understanding their inner turmoil, that they are not alone in their struggles, and that hope exists in the availability of specialized treatments for the disorder.

One of the continuing controversies facing the framers of DSM-5 is in identifying what disorders to include in the revision, which leaves many falsely endowing the manual with special abilities to separate “normal” from “abnormal” behavior. The official naming of a disorder carries massive implications for guiding future research efforts, pharmaceutical development, and health care policy. The fact that some insurance companies discriminate based on the presence of certain diagnostic

conditions does not mean that the best answer to such abuses is to remain silent, acting as if personality disorders do not exist in common clinical practice. Without a standardized diagnostic system for personality disorders, clinicians would be left without a guiding light for treatment evaluation, coordination, and planning while researchers would have no common language for studying personality disorder etiology, impact, and treatment.

A Diagnostic System for Personality Diagnosis

Of course, we are already mostly wandering around in the dark when it comes to our current diagnostic system. Four major criticisms have been posited with the current Axis II model: arbitrary polythetic-categorical criterion sets, within category heterogeneity, co-morbidity, and failure to capture important sub-threshold information of clinical importance [9, 10].

A problem with polythetic-categorical criteria sets, where one has to cross an arbitrary threshold of symptom numbers, is that they falsely dichotomize a phenomenon that is not generally dichotomous in nature and give credence to quantity over quality of symptomatology. Furthermore, to truly adhere to the DSM-IV diagnostic system means individual decision markers and counting each of 79 distinct diagnostic items. Most therapists do not follow this model to the letter, instead implicitly matching their evaluation of the patient to an internalized model prototype or representation [10]. A dimensional approach to personality diagnosis is advocated for research [11–13] and clinical purposes [14–16], contributing to the likelihood that a dimensional approach will be employed in DSM-5 [17].

Another difficulty with polythetic-categorical criteria sets is the allowance for within-group heterogeneity. Where one person meets five criteria qualifying for diagnosis, another may meet that same diagnostic threshold by meeting criteria for a near entirely different subset of symptoms. For example, where one patient may match the more malignant/exploitative criteria for Narcissistic Personality Disorder without genuine care for others, another could exhibit patterns of grandiosity which serve as defensive protection against feelings of shame and inadequacy. Many personality disorders can be broken down into distinctly observable subtypes [18–21], and even amorphous individual diagnostic criteria such as “identity disturbance” can exhibit multidimensionality [22, 23].

Diagnostic co-morbidity across Axis II disorders is exceedingly high. Kreuger and Bezdjian [9] note that use of the term “co-morbidity” isn’t even appropriate to capture the problem as it denotes overlap of two items; they suggest that use of the term “multi-morbidity” may actually be more accurate. A patient meeting diagnostic criteria for a single personality disorder often qualifies for about four to six and the Personality Disorder NOS is used with alarming frequency [2, 6, 24, 25]. At the same time, the majority of patients seen by therapists for personality problems warranting clinical attention are not captured by DSM-IV diagnostic categories [2]. For example, problems with intimacy, chronic fears of abandonment, and work inhibitions might not approach clinical levels of a personality disorder diagnosis, but may all be significant diatheses for depression which are left poorly accounted for in current diagnostic practices. The lack of specificity and comprehensiveness of the existing system muddies the diagnostic waters instead of clarifying them. Not surprising, then, that clinicians find little benefit in applying Axis II description for their patients.

The best current estimation is that DSM-5 will move to some form of dimensional diagnostic system [17]. What the actual content of that system will involve is still unclear, but appears likely to include some form of prototype diagnosis. A prototype matching system would resemble DSM-II’s paragraph-long, narrative descriptions of disorders; would be developed through empirical selection of diagnostic criteria that was the goal of DSM-III through DSM-IV; and would involve a dimensional rating system not previously employed in DSM. Using this procedure, clinicians rate the overall similarity or “match” between a patient and the prototype using a 5-point scale, taking the prototype *as a whole* rather than counting a laundry list of individual symptoms (Box 31.1).

Box 31.1 Prototype Diagnosis of Antisocial-Psychopathic Personality Disorder

Patients who match this prototype tend to be deceitful, to lie and mislead people. They take advantage of others, have minimal investment in moral values, and appear to experience no remorse for harm or injury caused to others. They tend to manipulate others' emotions to get what they want; to be unconcerned with the consequences of their actions, appearing to feel immune or invulnerable; and to show reckless disregard for the rights, property, or safety of others. They have little empathy, and seem unable to understand or respond to others' needs and feelings unless they coincide with their own. Individuals who match this prototype tend to act impulsively, without regard for consequences; to be unreliable and irresponsible (e.g., failing to meet work obligations or honor financial commitments); to engage in unlawful or criminal behavior; and to abuse alcohol. They tend to be angry or hostile; to get into power struggles; and to gain pleasure or satisfaction by being sadistic or aggressive toward others. Patients who match this prototype tend to blame others for their own failures or shortcomings, and to believe their problems are caused by external factors. They have little psychological insight into their own motives, behavior, etc. They may repeatedly convince others of their commitment to change but then revert to previous maladaptive behavior, often convincing others that "this time is really different."

1 Little or no match (description does not apply)	
2 Some match (patient has <i>some features</i> of this disorder)	
3 Moderate match (patient has <i>significant features</i> of this disorder)	Features
4 Good match (patient <i>has</i> this disorder; diagnosis applies)	Diagnosis
5 Very good match (patient <i>exemplifies</i> this disorder; prototypical case)	

Prototype diagnosis is designed to maximize diagnostic accuracy while taking into consideration the cognitive characteristics of human clinicians [26–28]. Rather than memorize symptom lists with arbitrary and variable cutoffs across disorders, diagnosticians can form mental representations of coherent syndromes, in which signs and symptoms may be linked by meaningful functional relations [29]. A prototype diagnostic system demonstrates significant levels of reliability, shows convergent and discriminant validity, and is preferred by clinicians over alternative systems [28, 30–33].

How to Diagnose?

To be useful for clinical practice, diagnostic assessment procedures need to yield information that is reliable across raters, stable (yet sensitive to change), valid, pragmatic, and clinically meaningful. Structured diagnostic interviews such as the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II [34]) or the ICD-10 International Personality Disorders Examination (IPDE [35]) involve asking patients or research participants direct questions about specific diagnostic criteria. While some interviews allow for brief open-ended follow-up questions, these interviews rely on the examinee's explicit endorsement for scoring each criterion.

Structured diagnostic interviews have made possible tremendous advances for systematizing research since their emergence around DSM-III [36–41]. The standardization of the diagnostic process from these interviews is proposed to increase reliability of diagnostic categorization, improve comprehensiveness of clinical assessment, and remove biases from clinicians' judgments. Some suggest that these interviews should be more extensively employed in clinical practice and training [42, 43].

On the other hand, structured interview methods exhibit a number of particular shortcomings when applied to personality disorder diagnosis. While these interviews do purportedly improve reliability issues [43–46], they also demonstrate lower than ideal validity, clinician preference, and clinical utility ratings.

Concordance of structured clinical interviews with other diagnostic standards is modest. Some researchers have compared interview diagnoses against the LEAD-standard (longitudinal expert evaluation using all available data; [47]) for which multiple members of a clinical team with knowledge of the patient from different settings meet to arrive at a consensus diagnosis. Like other methods, the LEAD-standard has limitations, but its advantages are that it assesses behaviors and traits characteristic of patients over time and in various contexts and can reduce the effects of state-dependent responding evident in questionnaire responses on one particular occasion. Comparisons between structured interview and LEAD diagnoses show weak concordance [48, 49]. The two most widely used structured interviews (the SCID-II and the IPDE) show moderate convergence to each other (kappas from 0.14 to 0.66), but less of a relationship with LEAD diagnosis (kappas 0.03–0.60 for the SCID-II, –0.01 to 0.41 for the IPDE, and a median kappa of 0.25 for both measures). Across studies, the median kappa tends to be closer to 0.30 with the median *r* assessing convergence of dimensional diagnoses around 0.40 [50].

Structured personality disorder interviews also show particularly low associations with self-report personality disorder measures [50–54], a finding particularly unusual given that structured interviews ultimately rely on patient reports of their own symptoms and relational patterns. Validity evidence on structured interviews for Axis I and Axis II disorders differs substantially in this respect. SCID diagnoses for Axis I tend to be strongly associated with other interview and self-report measurements [46].

The process by which clinicians actually make personality diagnoses differs substantially from the methods used in structured interviews [55]. Regardless of theoretical orientation, clinicians report that they do not exclusively or even primarily rely on asking direct questions about specific diagnostic criteria (although they certainly do not discount such a method). Table 31.1 illustrates clinicians' perceived importance and reliance on five different methods for diagnosing personality disorders. Instead, clinicians primarily rely on and value their direct observations of the patient both in terms of listening to their patients' narratives of relationships with significant others and observing in-session behaviors and interactions.

Some might suggest that clinicians' preference for and reliance on such unstandardized observations only strengthens the argument for increased implementation of structured diagnostic methods. A recent monograph which drew a significant amount of popular media attention suggested that clinicians are so faulty in their thinking, so caught up in their own biases, and so unscientific in their outlook that only programs with extensive research training should be accredited for practice and that clinicians should be mandated to practice only from detailed treatment manuals that restrict use of

Table 31.1 Clinician ratings of importance and reliance on five methods for diagnosing personality disorders

	Importance rank (<i>N</i> =30)		Reliance rating (<i>N</i> =51)	
	Mean	SD	Mean	SD
Listening to the way patient describes interactions with significant others	1.20	0.48	1.10	0.41
Observing patient's behavior	1.87	0.57	1.22	0.50
Speaking with significant others	3.63	0.89	5.20	1.52
Asking direct questions derived from DSM-IV	3.37	0.93	5.31	1.71
Administering questionnaires	4.67	0.48	6.51	0.86

Importance ranking is on a 1–5 scale; lower scores indicate a higher ranking. Reliance rating is on a 1–7 scale; lower scores indicate a higher rating

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informed clinical judgment [56]. Clinicians are targeted for blame when moderate statistical relationships between clinician diagnoses and structured interviewer diagnoses appear, although clinicians have paradoxically been implicated for both underdiagnosing a host of disorders while at the same time overpathologizing their patients [43, 57–59]. Most of the findings discussed previously, however, point to significant problems with our current diagnostic system for personality disorders and limitations in the commonly used methods for diagnosing personality disorders. In contrast to the moderate relationships observed between structured diagnostic assessments and patient-report measurements, therapist assessments of adaptive functioning, developmental relationship quality, and social/occupational performance are highly related to patients' ratings of the same variables [60–62].

A further benchmark for evaluating a diagnostic approach involves evaluating its ability to offer clinically meaningful information. Marshall et al. [63] and Suppiger et al. [42] investigated clinician and patient reactions toward implementing structured diagnostic interviews. Both studies found that clinicians rate the interviews as more detrimental to the therapeutic process than do patients, but that structured interviews are actually both acceptable to patients and non-intrusive to the therapeutic process. What the two studies failed to highlight from their findings was how *useful* and *facilitating* the interviews were for patients and therapists. In the Marshall et al. [63] study, patients and therapists rated structured interviews as only “slightly” helpful and facilitative of the therapeutic process. Patients in the Suppiger et al. [42] study rated the structured interviews as highly satisfying and agreed with statements that their interviewers took them seriously and were helpful. However, patients less than slightly agreed that the interviews helped them achieve a better understanding of themselves, and interviewers almost completely agreed that patients saw their problems as more differentiated than the interviews accounted for.

When it comes to the assessment of personality disorders, the most commonly used structured diagnostic interviews fail to demonstrate adequate validity with other measurements of the same constructs, are widely disparate with clinicians' typical and preferred practice methods, and are experienced by patients and therapists as only slightly improving clinical understanding and facilitating therapeutic process. Ironically, a push toward rigidly standardized methods of “evidence-based personality assessment” may have the unintended consequence of moving clinicians further away from effective clinical practice.

Diagnosis Versus Clinical Formulation

The greatest shortcoming in contemporary personality diagnosis is how far removed the process has become from clinical formulation. Whether a diagnostic system is categorical or dimensional, multi-morbid or discriminately distinctive, it ultimately offers only a static snapshot of observable behavior.

Diagnostic classification fails to capture a dynamic understanding of how characteristic personality patterns emerge, under which conditions, for what purposes, and to what degree they are employed effectively. In an effort to address shortcomings of existing diagnostic classification systems, psychodynamic researchers and clinicians developed the *Psychodynamic Diagnostic Manual* (PDM [64]) “that attempts to characterize an individual's full range of functioning – the depth as well as the surface of emotional, cognitive, and social patterns” (p. 1). The manual offers a multidimensional approach to nosology assessing for manifest symptom presentation, personality patterns, and level of mental functioning (encompassing capacities such as affect regulation, defensive processes, and the ability to form and maintain interpersonal relationships).

Westen [65, 66] offers an outline of variables essential to measure in a comprehensive formulation of the cognitive, affective, interpersonal, motivational, and behavioral aspects of personality. Presented in Table 31.2, the model is both idiographic and nomothetic, as it identifies individual difference variables and organizes them theoretically, providing a concept of personality structure that accounts for both individual processes as well as it applies across diagnostic groupings of people.

Table 31.2 Domains of personality functioning in a comprehensive personality assessment

I.	Psychological resources
a.	Cognitive functions
1.	Intellectual functioning; verbal and nonverbal skills; memory
2.	Cognitive style
3.	Coherence or disorder of thought processes
4.	Expectancies and belief systems
b.	Affective experience
1.	Intensity of affective experience
2.	Variability or lability of affect
3.	Tendency to experience positive and negative affect
4.	Tendency to experience particular affects
5.	Consciousness of affective experience
6.	Capacity for experiencing ambivalent emotions
c.	Affect regulation
1.	Conscious coping strategies
2.	Defenses
3.	Repertoire of affect-regulatory behavior
d.	Behavioral resources
1.	Behavioral skills
2.	Behavioral style
II.	Motives
a.	Fears
b.	Wishes
c.	Values
d.	Conflicts among fears, wishes, and values
e.	Consciousness of dominant motives
f.	Notable compromise formations
III.	Experience of the self and others and capacity for relatedness
a.	Cognitive structure of representations of self and others
1.	Complexity
2.	Differentiation of different representations from each other
3.	Integration of diverse elements
b.	Affect-tone of relationship schemas; expectations in different types of relationships
c.	Capacity for emotional investment in relationships
1.	Developmental level
2.	Style (e.g., attachment status)
d.	Capacity for investment in values and moral standards
e.	Understanding of social causality
1.	Logic and accuracy
2.	Level of inference (internal motives or external behavior)
f.	Dominant interpersonal concerns: chronically activated interpersonal wishes, fears, and schemas
g.	Management of aggressive impulses
h.	Self-structure
1.	Sense of self-continuity or coherence; sense of self as thinker, feeler, and agent; experience of self as continuous over time
2.	Conscious and unconscious representations
3.	Self-with-other schemas
4.	Self-esteem
5.	Feared, wished-for, ought, and ideal self- representations
6.	Self-presentation
7.	Identity
i.	Social skills and interpersonal behavior

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The model points to three questions to be considered for a comprehensive assessment of an individual's personality. *First, what cognitive, affective, and behavioral resources does the person have at his or her disposal to meet internal and external demands?*

In the cognitive domain, people differ in their intellectual skills, the extent to which they think in global or specific ways, the accuracy and intactness of their thought processes, and the schemas they use to process information. Affectively, people vary in the intensity and lability of their affect states, their tendency to experience various affect states, their consciousness of their emotional experience, and the processes they use to regulate their emotions (notably their conscious coping strategies and unconscious defensive processes). People also differ in their behavioral resources, that is, the skills they possess (such as athletic ability) and their behavioral style (such as extroversion or impulsivity), which is one of the aspects of personality most adequately assessed by self-report trait measures. *The second question regards what motivates the person: What does the person wish for, fear, and value, and to what extent are these motives conscious and mutually compatible?*

Humans differ from many animal species whose actions are rigidly controlled by hypothalamic drive states and midbrain mechanisms that automatically produce behavior under certain eliciting conditions. In humans, instead, the driving forces are more likely to be affects and the cognitive-affective representations that encode feared, wished-for, and valued states (such as those associated with moral or esthetic values) along associative networks. Thus, when a person finds herself in a situation reminiscent of a previously anxiety provoking event, he or she may begin to become anxious, whether or not she is aware of the cause (because associative thought is a form of implicit memory), and try to escape the anxiety by leaving, distracting, etc.

Similarly, a person pursues a romantic relationship with someone because he imagines doing so will feel gratifying in various ways, terminating it when he or she no longer feels that way unless other countervailing motives (such as guilt or fear of aloneness) intervene. Because these motivational processes typically arise in an environment that is only partially planned (for example, by socialization agents in childhood), and because some motives inherently conflict with others (such as wishes to become sexually involved with a friend's spouse if the spouse is attractive and willing – Moses could have saved himself the trouble of picking up the tablets if intrapsychic conflict were avoidable), people will experience conflicts among hundreds or thousands of quasi-independent motivational dynamisms.

Since empirical data have now confirmed Freud's most fundamental hypothesis, that much of mental life is unconscious and that this extends to motivational processes [67–70], the assessment of motives requires a dual assessment of those motives that are conscious and those that are not, as well as of the ways people forge compromises among competing and collaborative motives to maximize their satisfaction (called compromise formations; [71]). *The third question is more interpersonal: What is the person's experience of the self and others and capacity to relate to others in fulfilling and intimate ways?*

For example, how complexly does the person view the self and others, and does the degree of complexity vary under different circumstances [72, 73]? Does the person expect relationships with others to be enriching or dangerous, and does this vary under different circumstances or with different categories of people? To what extent does the person view others as tools to be used for gratification or self-soothing, or as independent others with their own needs and subjectivities with whom one can develop deep intimacy, commitment, and interdependence? (In some respects, this third set of variables is simply a more fine-grained examination of variables addressed in the first two questions as applied to the interpersonal domain, but distinguishing them seems useful, as this domain is so central to human experience and personality).

A fourth question one might add pertains to how each of the variables defined by these questions developed in a given individual; that is, *how specific developmental experiences interacted with temperamental proclivities at different points in the lifespan to create, maintain, or alter personality processes.*

Systematic Clinical Interview

Reframing the diagnostic *process* so that it is maximally useful remains an issue. Because clinician diagnoses are themselves often unreliable, reverting to unstructured clinical observation is not a recommended solution. The diagnostic process needs to retain maximal clinical utility and flexibility while also maintaining degrees of standardization and empirical sensibility. In contrast to a structured diagnostic interview, a *systematic clinical interview* is designed to blend the methods on which clinicians typically rely and value, including observing patients' interactions in the consulting room and listening to their narratives about their lives, while offering a systematic guideline for obtaining information from which to draw inferences about their characteristic behaviors, affective states, conscious coping strategies, emotional regulation processes, cognitive patterns, and implicit/explicit motivations as outlined earlier.

Arguably, the pioneer of this format was Karl Menninger, who stated that the primary task of the examiner is to "collect observations...in some systematic way that will insure orderliness on the one hand, and thoroughness on the other" and that a "psychological examination report (of personality) is made up of a combination of raw data obtained by the examiner, inferences and conclusions from those data, and inferences and conclusions from other data reported either by the patient or by others who have observed him" [74, p. 600]. He believed that the systematic organization of those data relies on either an implicit or explicit theory of personality.

Examples of the theory-driven systematic clinical interview include ones offered in Saul's "The Psychoanalytic Interview" [75] and Anna Freud et al.'s "Metapsychological Assessment of the Adult Personality" [76]. Their models suggested systematic assessment of presenting problems, description of the patient as observed directly by the clinician during the interview, family background, and possible environmental stressors. Their main approaches to the interview, however, focused on theory-driven assessments of drives, ego capacities, regressions and fixations, incompatible drive conflicts, and suitability for analytic process. Harry Stack Sullivan [77] presented the process of detailed inquiry and also highlighted the interpersonal factors present in the psychiatric interview. Nancy McWilliams [7] offers a contemporary example of this diagnostic outline highlighting demographics, presentation, mental status, developmental milestones, current adaptive functioning, and inferences about self and other representations. Similar themes and organization appear across these various forms of psychodynamically informed interviews, and they offer great clinical utility.

We present a similar evaluation format in the Clinical Diagnostic Interview (CDI [78]), available at www.psychsystems.net. Although the CDI includes some direct questions (e.g., about characteristic moods: "Do you often feel sad?"; subclinical thinking disturbances: "Do you ever have strange thoughts or feelings that come into your head, like sensing that another person is in the room, or suddenly seeing images or hearing voices?"; etc.), it does not primarily ask individuals to simply describe their personality characteristics and traits. Rather, it asks them to tell narratives about their lives and relationships which allow for systematic clinical judgments about their characteristic ways of thinking, feeling, regulating emotions, self/other representations, etc. For example, the interview asks "to describe a specific encounter with your mother, something that stands out. It can be an incident that's typical of your relationship, really meaningful, really good, really bad – whatever comes to mind." It is largely a narrative-based interview, eliciting relational narratives that involve family, friends, lovers and co-workers and which requires clinical inferences based on what subjects say, the way they say it, and what they do not say that seems implicit. Furthermore, the systematic interview questions are not organized around the specific diagnostic criteria of the DSM-IV PDs (e.g., direct questions asking whether the patient feels entitled or likes to be the center of attention). Table 31.3 presents the synopsis of CDI queries, forming the basic skeleton of the interview and the script around which interviewers can improvise.

The CDI is available in forms tailored for adult patient, non-patient, adolescent, and forensic populations. In addition to its utility across populations, the interview is designed for clinical or

Table 31.3 Synopsis of questions from the clinical diagnostic interview

-
1. Could you tell me about yourself and what brought you here?
 2. Can you tell me about your childhood – what was it like growing up?
 3. Can you tell me about your relationship with your mother? What was (is) she like as a person, and what was she like as a parent? Now I'd like you to describe a specific encounter with your mother, something that stands out. It can be an incident that's typical of your relationship, really meaningful, really good, really bad – whatever comes to mind
 4. Could you tell me about your relationship with your father?
 5. Do you have brothers and sisters? Could you tell me a little bit about them and your relationships with them? Was there anyone else who was really important to you as a child or teenager?
 6. What was school like for you?
 7. What were your friendships like when you were a kid, and what are they like now? Who are your closest friends now? Could you tell me about your relationship with one of them – what is it like?
 8. Can you tell me about your romantic relationships – what have they been like? Are you currently married or involved with someone? Could you tell me about the relationship? How is your sex life? Are there things that make you uncomfortable sexually, or have led to friction in your relationships? Is there anything about your sexual attitudes or behavior that other people might consider unusual?
 9. Could you tell me about your work history? What do you do now, and what have you done before?
 10. Do you have children? Can you tell me a little bit about them, and about your relationships with them?
 11. Now I'd like you to think of a really difficult, stressful, or upsetting time in the last year or two, and tell me about it
 12. Can you tell me about your relationship with your therapist?
 13. Now I'd like to finish up with a few more questions about your mental and physical health, and the ways you feel, think, and see yourself
 - (A) Do you often feel sad? Anxious? Ashamed or embarrassed? Guilty? Angry?
 - (B) How about positive feelings, like happiness or pride?
 - (C) Do you ever get overwhelmed by your feelings?
 - (D) Are there times when you try to shut off your feelings entirely, or when you just feel numb?
 - (E) Have you ever had trouble with alcohol or drugs?
 - (F) How does your body hold up under stress? Do you often get sick or have headaches, stomach problems, backaches, etc.? How is your health in general?
 - (G) How do you usually feel about yourself? Do your feelings about yourself change a lot? What do you most like and dislike about yourself?
 - (H) Have you ever hurt yourself, tried to kill yourself, or thought seriously about suicide?
 - (I) Do you ever feel like you don't know who you are, or like the different sides of you don't fit together?
 - (J) Do you ever feel like you're outside your body, or that you're somehow separate from the things around you, like you're looking at them through a pane of glass?
 - (K) Are you a superstitious person? Do you have any beliefs that other people would find unusual? Do you believe in ESP, or believe that people can read other people's minds? Do you ever have strange thoughts or feelings that come into your head, like sensing that another person is in the room, or suddenly seeing images or hearing voices?
 15. I've asked you a lot of questions. How has this been? Is there anything we haven't covered that's really important in understanding you as a person? Is there anything else you'd like to add, or anything you'd like to ask?
-

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research purposes, and can be used to assess both Axis I and Axis II syndromes by applying specific instruments to it such as the SWAP-II [79] or diagnostic prototypes [26, 30, 32, 80].¹ The interview is *systematic* without being clinically *binding*, with open areas for probing as appropriate based on the interviewer's clinical skill, empathy, and hypotheses that emerge over the course of the interview. Also, while the instrument is not theory *neutral*, it is not theory *specific*. By evaluating the

¹ While the CDI offers direct questions about pertinent symptoms and personality problems, it cannot be used to apply DSM-IV diagnostic algorithms for each disorder, which require direct inquiry about the nature, length, and duration of hundreds of symptoms for disorders that may or may not be clinically relevant.

range of cognitive, affective, interpersonal, motivational, and behavioral aspects of personality free of clinical jargon, the interview can be accepted across brands of theoretical orientation. Finally, our lab has conducted empirical reliability and validity evaluations of information obtained from the interview and developed a process for generating detailed clinical case conceptualizations, both of which we detail later in the chapter.

A few studies have assessed the inter-rater reliability and interviewer–therapist validity coefficients on measures rated using information obtained from the CDI.² The first used the Affect Regulation and Experiences Q-Sort (AREQ; [81]). The average correlation of AREQ profiles obtained by two clinician-judges observing the same videotaped CDI interview was $r=0.64$ (Spearman–Brown corrected reliability for the average rating of the two raters was $r=0.78$). The average correlation for profiles between the CDI interviewer and the patient’s therapist was $r=0.62$.

Two other studies used the CDI [82, 83] for rating the SWAP-200 personality assessment Q-sort [79, 84] and dimensional ratings of DSM-IV personality disorder criteria. The SWAP is a set of personality descriptive statements (items), each of which may describe a given patient well, somewhat, or not at all. A clinical assessor sorts the statements into eight categories based on the degree to which the statements describe the patient, from 7 (highly descriptive) to 0 (not descriptive). Because the items are written in clinical language and describe personality functions (e.g., ways in which the person regulates or fails to regulate impulses, emotions, self-esteem), they can be used to create narrative descriptions of patients in plain clinical language, allowing not only quantitative score profiles but also interpretive reports written in the language of the instrument itself (i.e., without the slippage of meaning that may occur when self-report items are translated into clinical diagnostic constructs; [66, 85, 86]).

Both SWAP ratings and DSM-IV scores from the CDI yielded median convergent inter-rater reliability coefficients at $r=0.81$. Furthermore, convergent validity coefficients between CDI interviewers and therapists were impressively high (SWAP median $r=0.82$; DSM-IV median $r=0.74$). The DSM-IV rating results were particularly telling, as agreement was substantially higher than that typically seen between structured clinical diagnostic interviewers and therapists. Furthermore, adaptive functioning measures such as the DSM-IV Global Assessment of Functioning Scale correlated highly among CDI interviewers and therapists ($r_s>0.70$). These results provide convincing support for both the reliability and validity of personality disorder and adaptive functioning information obtained from a systematic clinical interview in contrast to existing structured diagnostic personality interviews.

Case Illustration

To illustrate the comparison of information obtained from a structured diagnostic and systematic clinical interview, we present a brief case illustration. The case is taken from an ongoing multisite investigation comparing alternative dimensional approaches for personality diagnosis. In this study, participants complete both the Structured Clinical Interview for DSM-IV disorders (SCID-I and II) and CDI with separate interviewers. Participants’ outpatient psychotherapists also provide clinical data through survey questionnaires and the SWAP-II Q-sort (the latest edition of the SWAP instrument incorporating minor item-level revisions [79]).

²Reliability and validity coefficients depend on both the psychometric properties of the instrument used as well as the quality of information obtained from an interview. We present this information in support of the CDI and in the context of the other advantages already described for the systematic clinical interview process.

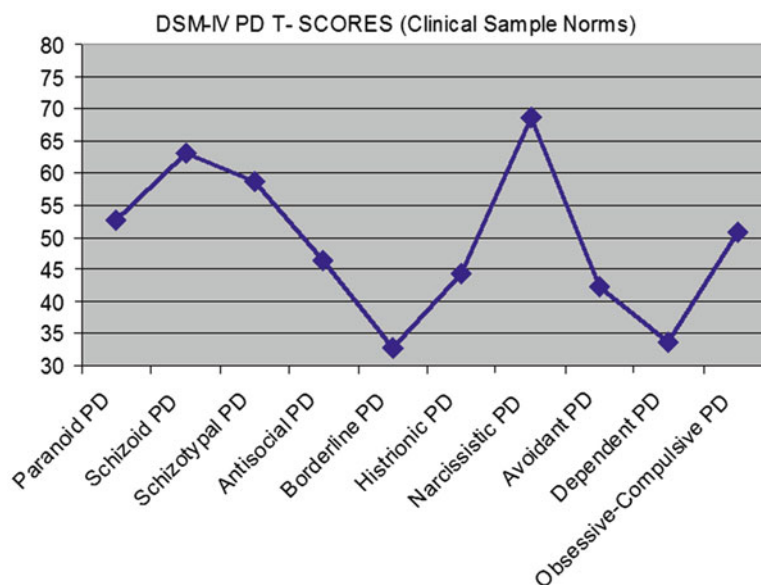


Fig. 31.1 Clinical diagnostic interviewer SWAP-II trait scores

Mr. Y is a 32-year-old single heterosexual Caucasian male seen in weekly individual psychotherapy for a little over 1 year. He has no history of psychiatric hospitalizations or suicide attempts. His therapist reported diagnoses of Adjustment Disorder and Narcissistic Personality Disorder with a GAF score of 55 (indicating moderate symptoms or difficulties in social/occupational functioning).

According to the SCID interviewer, the patient met criteria for Anxiety Disorder NOS and a lifetime history of Anorexia Nervosa (not current). According to the SCID-II, Mr. Y met no more than one criterion for any single Axis II disorder, though the interviewer scored him positively for Personality Disorder NOS.

Mr. Y's SCID-rated GAF score was 80 (indicating that where symptoms are present, they are transient and expectable reactions to interpersonal stressors, with no more than slight impairment in social/occupational functioning).

The Clinical Diagnostic Interviewer completed a SWAP-II scoring for Mr. Y. SWAP-II personality trait and personality disorder scorings are presented in Figs. 31.1 and 31.2. Mr. Y had clinically elevated levels of trait narcissism, emotional avoidance, and eating disturbance, with some prevalent features of psychological health. The SWAP-II's dimensional personality disorder scores indicate a prominent elevation for Narcissistic Personality Disorder, with Schizoid/Schizotypal features. The therapist's SWAP-II trait and personality disorder scores correlated with the CDI interviewer at $r=0.76$. The CDI interviewer's scores appear to corroborate the therapist's diagnosis of Narcissistic Personality Disorder and indicate eating disturbance problems as reflected in the SCID-I's diagnosis of a prior history of Anorexia Nervosa. Note that both the therapist and CDI interviewer concordantly rate a much greater presence of personality disturbance than is apparent from the SCID-II interviewer. In terms of adaptive functioning, the CDI interviewer's GAF score rating of 62 (mild-to-moderate difficulties) was much closer to the therapist's rating of 55 than to the SCID-II interviewer's rating of 80.

Clearly, the CDI interviewer and therapist were picking up valuable clinical information about Mr. Y's characteristic modes of relating to others through his relational narratives and clinical interactions which were grossly overlooked by the direct questions probing for specific and self-reported symptoms posed in the SCID interview (e.g., "Are you NOT really interested in other people's problems

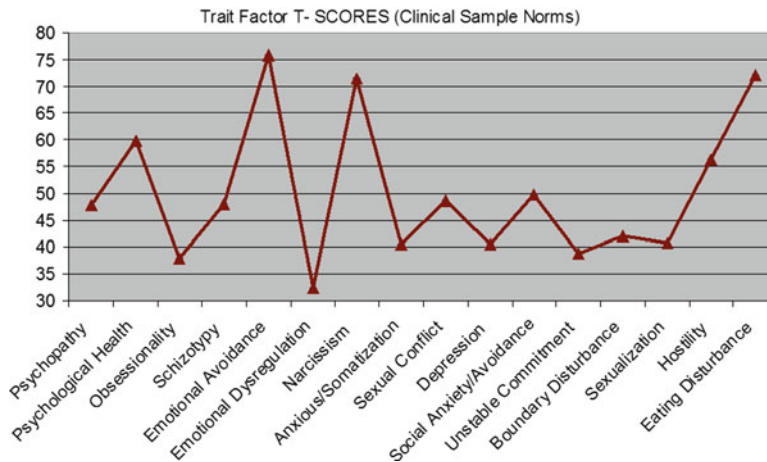


Fig. 31.2 Clinical diagnostic interviewer's SWAP-II ranked DSM-IV personality disorder scores

and feelings?”). The dimensional personality diagnostic system also accounted for gradations among personality disorder features (particularly narcissism and schizoid/emotional avoidance), whereas the SCID-II results in the sufficiently vague categorization of Personality Disorder NOS.

The following two case formulations for Mr. Y compiled from the contrasting interview methods should illustrate the paucity of clinical information obtained from the SCID-II compared to the rich narrative description afforded from the CDI and SWAP ratings.

A composite of all the positively rated SCID-II items shows only that Mr. Y is inhibited in new interpersonal situations because of feelings of inadequacy, complains of being misunderstood and unappreciated by others, shows arrogant or haughty behaviors or attitudes, deliberately destroyed someone else's property before the age of 15, perceives attacks on his character which are not readily apparent to others, and is quick to react angrily or counterattack.

Another narrative description was compiled by listing the SWAP-II items ranked by the Clinical Diagnostic Interviewer in the highest (most descriptive) three categories (categories 5, 6, and 7) of the Q-sort. The items are reprinted near verbatim, with only some minor grammatical changes to aid the flow of the narrative:

Mr. Y's sexual orientation is central to his identity or sense of self. While Mr. Y tends to repress or “forget” distressing events, or distort memories of distressing events beyond recognition, he appears to have come to terms with painful experiences from the past, has found meaning in, and grown from such experiences. He is articulate and is capable of using his talents, abilities, and energy effectively and productively.

He is occasionally liked by others, but lacks close friendships and relationships and assumes the role of an outcast or outsider. He is frequently angry or hostile and feels misunderstood, mistreated, or victimized. Feelings of unhappiness, depression, or despondency are prevalent, and his appearance or manner can seem “off,” odd or peculiar.

He seeks to be the center of attention, but is critical of others and appears unable to describe important others in rich and three-dimensional ways. While he has the capacity to recognize alternative viewpoints of others, he seems to have little empathy, as if unable or unwilling to understand or respond to others' needs or feelings.

Mr. Y seems conflicted about authority (e.g., feeling he must submit, rebel against, win over, defeat, etc.) and believes he can only be appreciated by, or should only associate with, people who are high-status, superior, or otherwise “special.” Dismissive, haughty, or arrogant, he has an exaggerated sense of self-importance (e.g., feels special, superior, grand, or envied). At times he is able to assert himself effectively and appropriately when necessary, but he frequently gets into power struggles.

Exhibiting a limited or constricted range of emotions, he prefers to see himself as logical, rational, and uninfluenced by emotion. He prefers to operate as if emotions were irrelevant or inconsequential. He tends to think in abstract and intellectualized terms, and is invested in seeing and portraying himself as emotionally strong, untroubled, and emotionally in control, despite clear evidence of underlying insecurity, anxiety, or distress. He appears to have a deep sense of inner badness; sees self as damaged, evil, or rotten to the core. Similarly, he has a disturbed or distorted body-image (e.g., may see self as unattractive, grotesque, disgusting, etc.) and tends to restrict food intake perhaps even to the point of being underweight and malnourished.

Mr. Y's case illustration vividly demonstrates the wealth of clinically useful information obtained from the systematic CDI. The CDI elicited a portrait of Mr. Y that much more closely matched up with the clinical picture observed by his therapist after over a year of their working together. Many of Mr. Y's characteristic modes of relating were overlooked by the SCID. Existing standardized and structured clinical interviews are constrained by their reliance on patient responses to direct questions assessing circumscribed symptoms.

Conclusion

Individuals with personality disorders and subclinical personality problems constitute a large portion of patients seeking psychotherapy. These maladaptive patterns of motivation, cognition, affect regulation, behavior and interpersonal relatedness are integrally related with the diathesis and maintenance of mood, anxiety, impulse, and somatic disorders. Unfortunately, personality conceptualization has been relegated to the backseat of clinical diagnosis (literally as an afterthought to "higher order" Axis I conditions). Clinicians are reluctant to implement the existing personality diagnostic system with its laundry list of symptoms, cumbersome algorithms, and limited clinical utility. Researchers are skeptical of the limitations in the reliability and specificity of Axis II.

Psychodynamic thinkers have a rich history for exploring the foundational roots of personality development and a unique appreciation for the role of personality features in the therapeutic process. However, psychodynamic clinicians and researchers are bereft not only of an empirically sound and clinically useful diagnostic system, but also of a systematic method for eliciting and organizing patient narratives. Structured clinical interviews such as the SCID and IPDE may be helpful for standardizing the diagnostic process, but are ill-favored by clinicians and may overlook a great deal of information about patient functioning which is valuable for informing therapeutic work.

We have presented three approaches to improve the reliability of the diagnostic process while preserving the clinical utility of an in-depth individual case formulation. The outline for a functional personality assessment offers a blueprint of the functional domains (such as cognition, motivation, behavioral controls, modes of relatedness, etc.) necessary to explore in completing a comprehensive and meaningful clinical conceptualization. The systematic CDI provides a roadmap for that exploration by focusing on eliciting an individual's detailed relational narratives, as opposed to the constraints imposed by the current standard structured interviews which focus on direct questioning of discrete psychiatric symptoms. Finally, information obtained from a systematic exploration of relational narratives can be reliably categorized with psychometrically sound methods such as prototype diagnosis and instruments such as the SWAP Q-sort; furthermore, this quantification of interview material need not be divorced from the development of a conceptually rich case formulation.

The use of the CDI embodies the ideals of clinically informed research contributing to empirically informed practice. By studying and incorporating the methods on which clinicians actually rely on everyday (i.e., attention to patient relational narratives and direct behavioral observations in the therapeutic process), the CDI yields information which is psychometrically sound for empirical investigation, diagnostically practical, and clinically meaningful.

References

1. Friedman RC, Bucci W, Christian C, Drucker P, Garrison III WB. Private psychotherapy patients of psychiatrist-psychoanalysts. *Am J Psychiatry*. 1988;155(12):1772-4.
2. Westen D, Arkowitz-Westen L. Limitations of Axis II in diagnosing personality pathology in clinical practice. *Am J Psychiatry*. 1998;155:1767-71.
3. Tackett JL, Balsis S, Oltmanns TF, Krueger RF. A unifying perspective on personality pathology across the life span: developmental considerations for the fifth edition of the diagnostic and statistical manual of mental disorders. *Dev Psychopathol*. 2009;21(Special Issue 03):687-713.
4. Cromer T, Hilsenroth M. Patient personality and outcome in short-term psychodynamic psychotherapy. *J Nerv Ment Dis*. 2010;198(1):59.
5. Wilczek A, Weinryb R, Gustavsson P, Barber J, Schubert J, Asberg M. Symptoms and character traits in patients selected for long-term psychodynamic psychotherapy. *J Psychother Pract Res*. 1998;7(1):23.
6. Zimmerman M, Rothschild L, Chelminski I. The prevalence of DSM-IV personality disorders in psychiatric outpatients. *Am J Psychiatry*. 2005;162(10):1911-8.
7. McWilliams N. *Psychoanalytic diagnosis*. New York: Guilford; 1994.
8. Westen D. Case formulation and personality diagnosis: two processes or one? In: Barron J, editor. *Making diagnosis meaningful*. Washington, DC: American Psychological Association; 1998. p. 111-38.
9. Krueger R, Bezdjian S. Enhancing research and treatment of mental disorders with dimensional concepts: toward DSM-V and ICD-11. *World Psychiatry*. 2009;8(1):3-6.
10. Shedler J, Westen D. Refining personality disorder diagnoses: integrating science and practice. *Am J Psychiatry*. 2004;161:1350-65.
11. Brown T, Barlow D. Dimensional versus categorical classification of mental disorders in the fifth edition of the diagnostic and statistical manual of mental disorders and beyond: comment on the special section. *J Abnorm Psychol*. 2005;114(4):551.
12. Krueger R, Skodol A, Livesley W, Shrout P, Huang Y. Synthesizing dimensional and categorical approaches to personality disorders: refining the research agenda for DSM-V Axis II. *Int J Methods Psychiatr Res*. 2007;16(1):65.
13. Kupfer DJ, First MB, Regier DA, editors. *A research agenda for DSM-V*. Washington, DC: American Psychiatric Association; 2002.
14. Rottman B, Ahn W, Sanislow C, Kim N. Can clinicians recognize DSM-IV personality disorders from five-factor model descriptions of patient cases? *Am J Psychiatry*. 2009;166(4):427.
15. Skodol AE, Oldham JM, Bender DS, Dyck IR, Stout RL, Morey LC, et al. Dimensional representations of DSM-IV personality disorders: relationships to functional impairment. *Am J Psychiatry*. 2005;162(10):1919-25.
16. Spitzer RL, First MB, Skodol AE. Clinical acceptability of five dimensional systems for personality diagnosis: a pilot study. Unpublished manuscript. Department of Psychiatry, Columbia University; 2006.
17. Skodol A, Bender D. The future of personality disorders in DSM-V? *Am J Psychiatry*. 2009;166(4):388-91.
18. Blagov P, Westen D. Questioning the coherence of histrionic personality disorder: borderline and hysterical personality subtypes in adults and adolescents. *J Nerv Ment Dis*. 2008;196(11):785.
19. Bradley R, Zittel C, Westen D. Borderline personality disorder in adolescence: phenomenology and subtypes. *J Child Psychol Psychiatry*. 2005;46:1006-19.
20. Hicks BM, Markon KE, Patrick CJ, Krueger RF, Newman JP. Identifying psychopathy subtypes on the basis of personality structure. *Psychol Assess*. 2004;16(3):276-88.
21. Russ E, Bradley R, Shedler J, Westen D. Refining the narcissistic diagnosis: defining criteria, subtypes, and endophenotypes. Unpublished manuscript. Emory University; 2005.
22. Westen D, Betan E, DeFife JA. Identity disturbance in adolescence: Associations with borderline personality disorder. *Development and Psychopathology*. 2011;23(1):305-13.
23. Wilkinson-Ryan T, Westen D. Identity disturbance in borderline personality disorder: an empirical investigation. *Am J Psychiatry*. 2000;157:528-41.
24. Amies P. Psychotherapy patients: are they "the worried well"? *Psychiatr Bull*. 1996;20(3):153-6.
25. First M. Mutually exclusive versus co-occurring diagnostic categories: the challenge of diagnostic comorbidity. *Psychopathology*. 2005;38:206-10.
26. Westen D, Bradley R. Prototype diagnosis of personality. In: Strack S, editor. *Handbook of personology and psychopathology*. New York: Wiley; 2005. p. 238-56.
27. Westen D, Heim AK, Morrison K, Patterson M, Campbell L. Classifying and diagnosing psychopathology: a prototype matching approach. In: Beutler L, Malik M, editors. *Rethinking the DSM: psychological perspectives*. Washington, DC: APA; 2002. p. 221-50.
28. Westen D, Shedler J. A prototype matching approach to diagnosing personality disorders toward DSM-V. *J Pers Disord*. 2000;14:109-26.

29. Ahn W. Effect of causal structure on category construction. *Mem Cognit.* 1999;27(6):1008–23.
30. Ortigo KM, Bradley B, Westen D. An empirically based prototype diagnostic system for DSM-V and ICD-11. In: Millon T, Krueger R, Simonsen E, editors. *Contemporary directions in psychopathology: scientific foundations of the DSM-V and ICD-11*. New York: Guilford; 2010. p. 374–90.
31. Spitzer R, First M, Shedler J, Westen D, Skodol A. Clinical utility of five dimensional systems for personality diagnosis: a “consumer preference” study. *J Nerv Ment Dis.* 2008;196:356–74.
32. Westen D, DeFife JA, Bradley B, Hilsenroth MJ. Prototype personality diagnosis in clinical practice: A viable alternative for DSM-5 and ICD-11. *Professional Psychology: Research and Practice.* 2010;41(6):482–87.
33. Westen D, Heim A, Morrison K, Patterson M, Campbell L. Simplifying diagnosis using a prototype-matching approach: implications for the next edition of the DSM. In: Beutler LE, Malik ML, editors. *Rethinking the DSM: a psychological perspective*. Washington, DC: American Psychological Association; 2002. p. 221–50.
34. First MB, Spitzer RL, Gibbon M, Williams JBW. *Structured clinical interview for DSM-IV personality disorders (SCID-II)*. Washington, DC: American Psychiatric; 1997.
35. Loranger AW, Janca A, Sartorius N, editors. *Assessment and diagnosis of personality disorders: The ICD-10 international personality disorder examination (IPDE)*. Cambridge, UK: Cambridge University; 1997.
36. First MB, Spitzer RL, Gibbon M, Williams JBW, Davies M, Borus J, et al. The structured clinical interview for DSM-III-R (SCID). Part II: Multi-site test-retest reliability study. *J Pers Disord.* 1995;9:92–104.
37. Gibbon M, Spitzer R, Williams J, Benjamin L. *Structured clinical interview for DSM-IV axis II personality disorders: SCID-II*. Washington, DC: American Psychiatric Publishing; 1997.
38. Gunderson JG, Kolb JE, Austin V. The diagnostic interview for borderline patients. *Am J Psychiatry.* 1981;138:896–903.
39. Loranger A, Susman VL, Oldham JM, Russakoff M. *Personality disorders examination (PDE) manual*. Yonkers: DV Communications; 1998.
40. Pfohl B, Blum N, Zimmerman M. *Structured interview for DSM-IV personality*. Washington, DC: American Psychiatric Press; 1997.
41. Zanarini MC, Frankenberg F, Chauncey D, Gunderson JG. The diagnostic interview of personality disorders: interrater and test-retest reliability. *Compr Psychiatry.* 1987;28:467–80.
42. Suppiger A, In-Albon T, Hendriksen S, Hermann E, Margraf J, Schneider S. Acceptance of structured diagnostic interviews for mental disorders in clinical practice and research settings. *Behav Ther.* 2009;40(3):272–9.
43. Wood JM, Garb HN, Lilienfeld SO, Nezworski M. Clinical assessment. *Annu Rev Psychol.* 2002;53:519–43.
44. Farmer R, Chapman A. Evaluation of DSM-IV personality disorder criteria as assessed by the structured clinical interview for DSM-IV personality disorders. *Compr Psychiatry.* 2002;43(4):285–300.
45. Rogers R. *Handbook of diagnostic and structured interviewing*. New York: Guilford Press; 2001.
46. Rogers R. Standardizing DSM-IV diagnoses: the clinical applications of structured interviews. *J Pers Assess.* 2003;81(3):220–5.
47. Spitzer RL. Psychiatric diagnosis: are clinicians still necessary? *Compr Psychiatry.* 1983;24:399–411.
48. Pilkonis PA, Heape CL, Proietti JM, Clark SW, McDavid JD, Pitts TE. The reliability and validity of two structured diagnostic interviews for personality disorders. *Arch Gen Psychiatry.* 1995;52:1025–33.
49. Skodol AE, Oldham JM, Rosnick L, Kellman D, Hyler S. Diagnosis of DSM-III-R personality disorders: a comparison of two structured interviews. *Int J Methods Psychiatr Res.* 1991;1:13–26.
50. Clark LA, Livesley WJ, Morey L. Personality disorder assessment: the challenge of construct validity. *J Pers Disord.* 1997;11:205–31.
51. Barber JP, Morse JQ. Validation of the Wisconsin personality disorders inventory with the SCID-II and PDE. *J Pers Disord.* 1994;8:307–19.
52. Hills HA. Diagnosing personality disorders: an examination of the MMPI-2 and MCMI-II. *J Pers Assess.* 1995;65: 21–37.
53. Hyler SE, Skodol AE, Kellman HD, Oldham JM, Rosnick L. Validity of the personality diagnostic questionnaire-revised: comparison with two structured interviews. *Am J Psychiatry.* 1990;147:1043–8.
54. Renneberg B, Chambless DL, Dowdall DJ, Fauerbach JA, Gracely EJ. The structures clinical interview for DSM-III-R, Axis II and the Millon Clinical Multiaxial Inventory: a concurrent validity study of personality disorders among anxious outpatients. *J Pers Disord.* 1992;6:117–24.
55. Westen D. Divergences between clinical and research methods for assessing personality disorders; implications for research and the evolution of Axis II. *Am J Psychiatry.* 1997;154:895–903.
56. Baker TB, McFall RM, Shoham V. Current status and future prospects of clinical psychology: toward a scientifically principled approach to mental and behavioral health care. *Psychol Sci Public Interest.* 2009;9(2):67–103.
57. Garb HN. *Studying the clinician: judgment research and psychological assessment*. Washington, DC: American Psychological Association; 1998.
58. Hansen S, Munk-Jørgensen P, Guldback B, Solgård T, Lauszus K, Albrechtsen N, et al. Psychoactive substance use diagnoses among psychiatric in-patients. *Acta Psychiatr Scand.* 2000;102(6):432–8.

59. Zimmerman M, Mattia JJ. Axis I diagnostic comorbidity and borderline personality disorder. *Compr Psychiatry*. 1999;40(4):245–52.
60. DeFife JA, Drill R, Nakash O, Westen D. Agreement between clinician and patient ratings of adaptive functioning and developmental history. *American Journal of Psychiatry*. 2010;167(12):1472–78.
61. Hilsenroth MJ, Ackerman SJ, Blagys MD, Baumann BD, Baity MR, Smith SR, et al. Reliability and validity of DSM-IV axis V. *Am J Psychiatry*. 2000;157(11):1858–63.
62. Hilsenroth MJ, Baity MR, Mooney MA, Meyer GJ. DSM-IV major depressive episode criteria: an evaluation of reliability and validity across three different rating methods. *Int J Psychiatry Clin Pract*. 2004;8(1):3–10.
63. Marshall R, Spitzer R, Vaughan S, Vaughan R, Mellman L, MacKinnon R, et al. Assessing the subjective experience of being a participant in psychiatric research. *Am J Psychiatry*. 2001;158(2):319.
64. Psychodynamic Diagnostic Manual Task Force, editor. *Psychodynamic diagnostic manual*. Silver Spring: Alliance of Psychoanalytic Organizations; 2006.
65. Westen D. A model and a method for uncovering the nomothetic from the idiographic: an alternative to the five-factor model? *J Res Pers*. 1996;30:400–13.
66. Westen D, Gabbard GO, Blagov P. Back to the future: personality structure as a context for psychopathology. In: Krueger RF, Tackett JL, editors. *Personality and Psychopathology*. New York: Guilford; 2006.
67. Bargh J, Chartrand T. The unbearable automaticity of being. *Am Psychol*. 1999;54(7):462–79.
68. McClelland DC, Koestner R, Weinberger J. How do self-attributed and implicit motives differ? *Psychol Rev*. 1989;96:690–702.
69. Shedler J, Mayman M, Manis M. The illusion of mental health. *Am Psychol*. 2003;48:1117–31.
70. Westen D. The scientific status of unconscious processes: is Freud really dead? *J Am Psychoanal Assoc*. 1999;47:1061–106.
71. Brenner C. *The mind in conflict*. New York: International Universities Press; 1982.
72. Leigh J, Westen D, Barends A, Mendel MJ, Byers S. The assessment of complexity of representations of people using TAT and interview data. *J Pers*. 1992;60(4):809–37.
73. Woike B, Aronoff J. Antecedents of complex social cognitions. *J Pers Soc Psychol*. 1992;63(1):97–104.
74. Menninger K. Recording the findings of the psychological examination (“mental status”). *Am J Psychiatry*. 1952;108(8):600–9.
75. Saul L. The psychoanalytic diagnostic interview. *Psychoanal Q*. 1957;26:76–90.
76. Freud A, Nagera H, Freud W. Metapsychological assessment of the adult personality – the adult profile. *Psychoanal Study Child*. 1965;20:9–41 [PEP Web].
77. Sullivan H, Perry H, Gawel M. *The psychiatric interview*. New York: WW Norton; 1970.
78. Westen D. *Clinical diagnostic interview*. Emory University. Unpublished manual. www.psychsystems.net/; 2004.
79. Westen D, Shedler J. Personality diagnosis with the Shedler–Westen assessment procedure (SWAP): integrating clinical and statistical measurement and prediction. *J Abnorm Psychol*. 2007;116:810–22.
80. Westen D, Shedler J, Bradley R. A prototype approach to personality diagnosis. *Am J Psychiatry*. 2006;163:838–48.
81. Westen D, Muderrisoglu S, Fowler C, Shedle J, Koren D. Affect regulation and affective experience: individual differences, group differences, and measurement using a Q-sort procedure. *J Consult Clin Psychol*. 1997;65:429–39.
82. Westen D, Muderrisoglu S. Reliability and validity of personality disorder assessment using a systematic clinical interview: evaluating an alternative to structured interviews. *J Pers Disord*. 2003;17:350–68.
83. Westen D, Muderrisoglu S. Clinical assessment of pathological personality traits. *Am J Psychiatry*. 2006;163:1285–7.
84. Shedler J, Westen D. Refining the measurement of Axis II: a Q-sort procedure for assessing personality pathology. *Assessment*. 1998;5:333–53.
85. Lingardi V, Shedler J, Gazzillo F. Assessing personality change in psychotherapy with the SWAP–200: a case study. *J Pers Assess*. 2006;86(1):23–32.
86. Shedler J, Westen D. The Shedler–Westen assessment procedure (SWAP): making personality diagnosis clinically meaningful. *J Pers Assess*. 2007;89(1):41–55.

Chapter 32

The Structured Interview of Personality Organization (STIPO): An Instrument to Assess Severity and Change of Personality Pathology

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Keywords Borderline • Diagnosis • Kernberg • Personality organization • Severity • STIPO

Introduction

The assessment and diagnosis of personality disorders for clinical intervention and research purposes is at crossroads. The diagnostic criteria for the personality disorders in DSM-IV TR Axis II are a listing of symptoms in search of a unifying assessment of personality dysfunction. The utilization of the diagnosis of these criteria has resulted in an advance in the reliability of personality disorders, but it has become evident that there are numerous difficulties in the personality disorder diagnoses made by the criterion-based, atheoretical approach of Axis II. The major problem involves the heterogeneity of the patient groups selected by the categorical system without any rating of severity of dysfunction. While a categorical approach to diagnosis focuses on the presence or absence of the disorder, based on a number of fulfilled criteria or symptoms, a dimensional approach also assesses the severity of symptoms or dimensions of personality pathology. As patients seen in clinical practice tend to present with different levels of severity of pathology, a dimensional approach provides the clinician with a diagnosis more reflective of the clinical picture, which also includes an assessment of strengths and

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deficits on each of the dimensions. The clinical usefulness of the categorical system has been seriously questioned [1]. The proposed changes in DSM-V define personality disorders as a failure to develop self-identity and capacity for adaptive interpersonal functioning, focus on the assessment on personality disorder prototypes, and provide a severity rating of personality disorder functioning. These proposed changes are congruent with the object relations view of personality pathology and call attention to the need for reliable diagnostic instruments based on psychodynamic object relations theory. In this chapter, we describe such an instrument, which provides evaluation of core dimensions of personality functioning emphasized by the DSM V Personality Disorders Task Force (www.dsm5.org).

In sharp contrast to the atheoretical approach of DSM Axis II, clinical researchers have enunciated various theoretical approaches to the nature of the personality disorders in order to guide assessment and focus intervention with these patients. Psychodynamic clinicians have utilized object relations theory [2–4] and its derivative, attachment theory [5], to understand the serious difficulties that personality disordered patients experience in the representation and understanding of self and others and the related behavioral difficulties in interpersonal behavior.

This chapter describes a semi-structured interview that was shaped by an object relations theory of personality pathology in its conception, item selection, and scoring scheme. We present an object relations view of personality organization with its levels of severity of personality pathology, early attempts to construct a clinical interview to assess this pathology, and the development of a semi-structured interview called the Structured Interview for Personality Organization (STIPO) [6] for the clinical and research assessment of personality pathology. We hope to demonstrate, by use of clinical examples, the necessity of assessing the severity of the personality disorder, not just the type or category (e.g., borderline personality disorder) for clinical assessment and treatment planning. The criteria used for this object relations-based clinical interview are degree of identity diffusion, use of primitive versus advanced defenses, amount of aggression as well as degree of impairment of reality testing, and integration of moral values. A typical question from the STIPO, focusing on the assessment of identity integration versus identity diffusion, is the following: “Would you say that your sense of who you are, or of what kind of person you are, changes across different situations or time?” In addition to assessing these areas of personality pathology by a host of questions, the focus on severity of pathology in these key functional areas is central to measuring the impact of treatment in clinical research.

Object Relations Orientation to Personality Pathology

Kernberg et al. [2–4] have articulated a model of personality pathology based on contemporary, psychodynamic object relations theory. This approach combines a dimensional view of severity of personality pathology with a categorical or prototypic classification based on descriptive traits consistent with the DSM-IV-TR Axis II. Within the object relations model of personality pathology, determination of the level of personality organization provides an assessment of severity of personality pathology. Level of personality organization carries prognostic implications and can be used to guide differential psychotherapeutic treatment planning. Kernberg’s model of personality pathology is organized around the core concept of identity, and he divides personality disorders into those characterized by consolidated identity and those characterized by pathology of identity formation (often referred to as the syndrome of identity diffusion). Table 32.1 summarizes how structural criteria relate to levels of personality organization according to Kernberg’s model.

The neurotic level of personality organization (NPO), along with the normal personality, is characterized by a fully consolidated identity. Consolidated identity is associated with an experience of self and of others that is stable, well differentiated, complex, realistic, and coherent. In contrast, the borderline level of personality organization (BPO) is characterized by the syndrome of identity diffusion. Poorly consolidated identity is associated with an experience of self and others that is

Table 32.1 Structural criteria and level of personality organization

Structural criteria	Normal personality organization	Neurotic personality organization	Borderline personality organization
Identity integration	Consolidated identity	Consolidated identity	Identity diffusion
Object relations	Lasting and deep relations with others	Deep relations; focused conflicts with selected others	Varies across levels of BPO: troubled interpersonal relations
Defensive operations	Advanced defenses; flexibility	Advanced defenses, rigidity	Primitive defenses
Aggression	Anger modulated	Inhibited aggression	Varies across levels of BPO: self/other directed aggression
Moral values	Stable, independent, individualized	Guilt; inflexibility	Varies across levels of BPO: contradictory values; absence of certain values
Reality testing	Intact reality testing	Intact reality testing	Intact reality testing, some impairment of social reality testing

unstable, superficial, poorly differentiated (black and white), distorted, and discontinuous. In the object relations theory model, lower-level, splitting-based defenses (e.g., splitting, idealization/devaluation, projective identification, denial) are responsible for maintaining the fragmented and poorly integrated experience of self and others that color the subjectivity of the individual with poorly integrated identity. In contrast, consolidated identity in the neurotic personality disorders is associated with the predominance of repression-based and mature defensive operations like intellectualization, reaction formation, and sublimation. Individuals organized at a BPO are distinguished from those with atypical psychotic disorders by virtue of having intact reality testing. However, clinically significant pathology of identity formation is associated with deficits in the ability to accurately infer the motivations and internal states of others, sometimes referred to as the capacity for mentalization [7], and to accurately read social cues. These deficits are associated with some impairment of social reality testing in individuals organized at a BPO. In contrast, social reality testing is highly developed in individuals organized at a neurotic level, as well as in the normal personality.

The borderline level of personality organization (BPO), characterized by identity pathology, predominance of lower-level, splitting-based defenses and deficits in social reality testing, covers a relatively broad spectrum of psychopathology. At the higher end of the BPO spectrum, patients have some capacity for dependent, albeit troubled, relationships, generally have relatively intact or only minor pathology of moral functioning, and are not overtly aggressive in most settings. In contrast, individuals at the lower end of the BPO spectrum have severe pathology of object relations, clinically significant deficits in moral functioning, and are overtly aggressive. Whereas individuals in the high BPO group have a relatively favorable prognosis in structured treatments, those in the low BPO group are far more challenging to treat and have a more guarded prognosis.

The neurotic level of personality organization (NPO) is distinguished from the normal personality on the basis of rigidity of personality functioning. Whereas the normal personality is able to flexibly and adaptively manage external stressors and internal conflicts, the neurotic personality tends to rely on rigid and to some degree, maladaptive responses, reflecting the impact of neurotic-level, repression-based defenses on psychological functioning. As in the healthy/normal personality, individuals organized at a neurotic level have the capacity for full, deep and mutual relationships, though individuals in the NPO spectrum may have difficulty combining intimate relations with sexuality. Moral functioning is consistent and fully internalized in the neurotic personality, but may be excessively rigid, leading to a propensity to excessive self-criticism.

Determination of level of personality organization can guide differential treatment planning. Psychodynamic intervention with high-level personality functioning (neurotic organization) is constructed differently [8] than intervention with patients at a level of BPO [9] (Table 32.2). Individuals

Table 32.2 Treatment differences related to level of personality organization

Neurotic personality organization	Borderline personality organization
Use of treatment frame	Treatment frame includes a carefully articulated treatment contract
Therapist operates from a stance of therapeutic neutrality	Therapist deviations from therapeutic neutrality are used in certain crises
Therapeutic techniques of clarification, confrontation, interpretation	More extensive use of clarification to set the stage for interpretation
Focus on present, related to past	Focus on the present

organized at a level of NPO have a very favorable prognosis and can benefit from relatively unstructured treatments. These patients typically do not have difficulty establishing and maintaining a therapeutic alliance, and transference distortions tend to be slowly developing, consistent, and subtle. In contrast, individuals organized at a borderline level, particularly those in the low borderline spectrum, require a highly structured treatment setting. These individuals have great difficulty establishing and maintaining a therapeutic alliance; transference distortions tend to be rapidly developing, highly affectively charged and extreme, often leading to disruption of the treatment.

In the next section, the development and psychometric properties of the Structured Interview of Personality Organization (STIPO) are described, followed by demonstration of its utility with clinical examples.

STIPO: Development and Psychometric Properties

Brief History of the STIPO

Utilizing an object relations approach to personality pathology, Kernberg [10] conceptualized the structural interview, a clinical interview that was designed to evaluate not only the patients' symptoms and areas of difficulty, but also the level of personality organization. At that time, Kernberg conceived of the structural interview in the context of existing psychodynamic interviews. A number of analytic authors had constructed modified psychiatric interviews that concentrated on the patient–therapist interaction as a major source of information [11–14]. Deutsch [15] advocated interviewing that would reveal the unconscious connections between current difficulties and the patient's past. MacKinnon and Michels [16, 17] described an evaluation that uses the patient–therapist interaction to reveal character patterns useful for diagnosis. Kernberg's structural interview was a further extension of these procedures in order to focus on the patient's conflicts in such a way to create tension so that the patient's predominant defensive and structural organization of mental functioning emerges and the structural diagnosis of personality organization can be made. This reference to the structural interview as going beyond fact finding to creating tension in which the patient's organized mental functioning is revealed is reminiscent of the Adult Attachment Interview (AAI) and its presumed capacity to stimulate the attachment system [18].

The yield of the structural interview depends upon the clinical acumen and skill of the interviewer. The interviewer must make sophisticated decisions about which areas of the patients' functioning to evaluate in detail. The detailed examination of the patient's relations with others provides the interviewer with an opportunity to observe the patient's functioning in a tense situation. There is no scoring system, and the interviewer must make subjective judgments about the patients' degree of personality pathology and level of personality organization. A video demonstration of the structural interview is available (Symfora tapes: Master clinicians at work; www.symfora.nl). With its dependence on interviewer skill, flexibility in interview questions, and absence of an objective scoring

Table 32.3 STIPO domains and subdomains

Domain	Subdomain	Example item
Identity	Capacity to invest in work/ studies and recreation	How stable have your work goals and ambitions been – do they frequently change?
30 items	Sense of self	How would you describe yourself to me so that I get a live and full of picture of the kind of person you are?
	Sense of others	Are you able to understand well what people are feeling or thinking based on their behavior, or on the way they act?
Object relations	Interpersonal relations	Tell me about your friendship; what do you share with one another that makes it a friendship?
22 items	Intimate relationships and sexuality	Did the relationship involve trust and disclosure, or would you say that you are cautious and guarded with your partner?
	Internal working model of relationships	Do you have the experience of feeling surprised or disappointed when people don't seem to recognize your value or status?
Primitive defenses		About people whom you know well, would you say that your feelings change quickly or frequently?
11 items		
Coping/rigidity		When it comes to stressful or troubling situations that you are powerless to change, are you able to put it out of your mind until later, or does it nag at you?
10 items		
Aggression	Self-directed aggression	Do you at times do things that seem unwise and potentially dangerous to yourself, such as having unprotected sex, heavy drinking or drug use?
12 items		
	Other-directed aggression	Do you lose your temper with others?
Moral values		When faced with a situation that clearly goes against what you know to be right, do find yourself having a struggle over what to do?
8 items		
Reality testing		Do you sometimes have distrustful or suspicious thoughts or feelings, for example, that your partner or friend is lying to you, or cheating on you?
7 items		

system, it is difficult to ascertain inter-rater reliability. These shortcomings of a sophisticated clinical interview led to the construction of the STIPO.

What the STIPO loses in the subtle interview maneuvers of an experienced clinician, the STIPO gains in the psychometric properties of the instrument. With its structured questions, equally structured probes following vague or imprecise patient answers, and a structured scoring system, the STIPO lends itself to investigation of its reliable administration and scoring. The STIPO interview, instructions, and score form are available for download from the Internet, both in English and German [cf. 6].

Description of the STIPO

Content

The STIPO contains 100 items covering seven domains of functioning (1) identity, (2) quality of object relations, (3) primitive defenses, (4) coping and rigidity, (5) aggression, (6) moral values, and (7) reality testing.¹ Three of the domains have ratings on important subdomains (Table 32.3).

¹ The item structure of the STIPO is currently being analyzed. The STIPO version described here and used in the following patient examples consists of 100 items and seven domains. A shortened version available for download [6] consists of 87 items and six domains. After examination of the item structure, a final version will be made available online.

Six of these domains of functioning are central to the Kernberg theory of personality organization. The additional domain, coping and rigidity, was added to help distinguish between normal and neurotic personality organization.

The scoring system embedded in the STIPO enables the clinician to create a dimensional rating of health-severity in each of the seven domains. The rating of severity is quite consistent with other researchers who have noted that severity of personality pathology is more important for treatment planning than type of personality disorder style [19]. In addition, the profile of dimensional ratings on the seven domains provides a method of judging the proximity of the individual patient's profile to theoretically derived prototypes of neurotic, high borderline and low borderline organization.

Format

The format of the STIPO involves standard questions, and additional probes that can be used when the answers are not clear or detailed enough to rate. An example is a question regarding the sense of others: "Do you find that people's responses to you surprise you, for example, do you have the experience of people regularly becoming angry or upset with you without you knowing why?" If this is endorsed, the additional probe "Can you describe the types of problems you experience with your close friends?" is given to clarify the severity of this problem. Then, the standardized format and scoring system allows the interviewer to rate the subject's responses (0, 1, or 2) as the interview proceeds. A score of zero reflects the absence of pathology in the characteristic being assessed by a given question, two reflects the clear presence of pathology in the characteristic being assessed, and a score of one represents an intermediate status in which some pathology in the characteristic being assessed is reflected in the response. These ratings of each question are then followed by summary 5-point ratings of each of the seven domains of functioning mentioned above. The two rating systems complement each other; the item-based rating system stays close to the individual's responses, whereas the 5-point rating system allows the interviewer to input his clinical impression. For both rating systems, we have found satisfactory inter-rater reliability [20, 21]. The scores in Table 32.5 and the personality profiles in Fig. 32.2 demonstrate the use of these clinically oriented ratings. Using the clinical 5-point ratings, the interviewer can construct a profile of personality organization of the subject, based on the seven domains. The three primary domains of Identity, Primitive Defenses, and Reality Testing are used to make a structural diagnosis as described by Kernberg [10]. Patients can be classified as falling into normal, neurotic, or borderline range of organization. Based on the STIPO dimensional ratings, this categorization can be made, distinguishing normal, neurotic 1, neurotic 2, and borderline personality organization, which is differentiated into three levels according to severity: Borderline 1, 2, and 3. Subjects falling into normal and neurotic 1 group have consolidated identity; show no use of primitive defenses or disturbance in reality testing. Patients falling into neurotic 2 group have some degree of superficiality in sense of self and/or others and might show some use of primitive defenses. Patients located at BPO are divided according to severity of pathology into BP1, BP2, and BP3. Ranging from BP1 to BP3, there is an increase in levels of identity diffusion, use of primitive defense mechanisms, overt manifestations of aggression, disturbance of object relations, and diminished use of internal standards of morality. Essentially, lower scores indicate lower pathology and higher scores indicate higher pathology.

The format of the STIPO is carefully modeled on the International Personality Disorder Examination (IPDE) constructed by our Cornell colleague, Dr. Armand Loranger. Dr. Loranger served as a consultant to the construction of the STIPO.

Yield

The yield or product from the STIPO can be compared to that provided by more conventional semi-structured interviews of Axis II pathology such as the Structured Clinical Interview for DSM Axis II Disorders (SCID-II). The yield or product from the SCID-II is a diagnosis of one or more of the ten personality disorders as described by DSM-Axis II. In contrast, the yield of a STIPO interview is dimensional ratings of seven domains of personality functioning. Scores on these seven domains provide a profile of the patients' functioning which ranges from areas of adequate to inadequate functioning. The resulting profile can be used to assist the interviewer to assess the closeness of the patient to prototypic descriptions of patients at a neurotic-, high-, or low-level borderline organization [22]. This approach to personality assessment is consistent with object relations theory and is also consistent with the direction that the DSM-V committee is taking on the reshaping of the DSM system [23].

Psychometric Properties

Overview

A preliminary psychometric report in a diverse sample of mixed personality pathology demonstrated that the STIPO can be administered in a reliable fashion and that its component scales evidence a degree of convergent and discriminant validity [20]. Although preliminary reliability data are available for all seven STIPO scales, the focus of this initial study was on the three primary STIPO domains, Identity, Primitive Defenses, and Reality Testing, insofar as those domains, according to Kernberg's theory, are central to the determination of personality organization. The 142-person sample included a mix of inpatients ($n=30$) and outpatients from various sources ($n=112$). Thirty-eight percent of the participants were male and 62% female, with ages ranging from 20 to 55 years and a mean age of 32 years. The majority of participants had a clinician-assigned primary diagnosis, the most common diagnosis being some affective disorder. Additionally, a significant percentage of the sample evidenced clinically meaningful levels of personality pathology as measured by clinician-assigned diagnoses and self-reports of personality disorder traits.

Reliability

The seven STIPO scales demonstrated generally sound internal consistency, with coefficient alpha estimates ranging from 0.63 (Reality Testing) to 0.92 (Quality of Object Relations) and a mean alpha of 0.83. Inter-rater reliability was calculated from a subset of the clinical population sampled in this study, and Intraclass Correlation Coefficients [24] were acceptable for all STIPO domains, with values ranging from 0.84 to 0.97 and a mean ICC of 0.92, demonstrating that the scoring system can be reliability employed by raters with various levels of training.

Validity

Validity findings from this initial psychometric study of the STIPO reveal that the STIPO Identity and Primitive Defenses domains, as expected, are related to constructs closely linked to personality disorders, including personality disorder traits themselves, in line with previous research findings involving the same model of personality [25]. A hierarchical multiple regression analytic strategy

was selected, following the model articulated by Darlington [26], allowing for the simultaneous entry of the three primary STIPO scales as a single block of variables after statistically controlling for demographic variables (age, gender, education, and recruitment). This model was employed in separate analyses for each of several validity measures, including measures of affect, aggression, cognitive disturbance, and personality disorder trait scores. This analytic method was chosen because it would allow us to examine both the overall contribution of the STIPO domains as a group, but also the unique predictive contributions of each individual STIPO domain. Results indeed revealed a differential pattern of prediction, suggesting some measure of discriminant validity among the STIPO scales.

Measures of Affect

Applying the aforementioned multiple regression model in separate analyses to measures of negative and positive affect resulted in an increment of variance for the block of the three primary STIPO scales of 36% for negative affect ($p < 0.001$), and 12% for positive affect ($p < 0.001$) after controlling for demographic variables and recruitment site. The Identity domain was positively associated with negative affect and inversely related to positive affect, suggesting a moderate link between the STIPO Identity domain and measures of affect.

Measures of Aggression

Additional and similarly modeled regression analyses were conducted for a set of measures of aggression, including the Aggression scale from the Schedule for Nonadaptive and Adaptive Personality (SNAP) [27], the Buss–Durkee [28] Irritability and Assault scales, and the IPO [29] Aggression domain. The overall regression model resulted in significant increments in variance explained by the STIPO domains over and above the demographic variables entered as a first step, ranging from 21% (SNAP Disinhibition and SNAP Aggression; $p < 0.001$) to 42% (Buss–Durkee Irritability; $p < 0.001$), for each of the four measures. For the majority of the aggression measures, the STIPO Primitive Defenses domain was found to uniquely contribute significant portions of variance explained.

Measures of Cognitive Impairment

The relationship between measures of cognitive impairment and the STIPO domains was also assessed. Despite an increment in variance explained in these measures by the block of STIPO domains after controlling for demographic variables, no clear pattern of prediction of variance in cognitive impairment by specific STIPO scales was revealed [20].

Personality Disorder Traits

The last set of regression analyses sought to determine the extent to which the three primary STIPO domains, hypothesized by Kernberg as being linked to the DSM personality disorders [2, 10], were predictive of actual measures of DSM personality disorder traits as well as the types of interpersonal difficulties characteristic of the personality disorders. In order to aggregate the personality disorder trait data derived from the SNAP [27] into meaningful composites, we computed scores from the personality disorder trait indices that correspond to the Cluster A (odd, eccentric), Cluster B (erratic, impulsive), and Cluster C (anxious, avoidant) personality disorders in the DSM-IV (the composites were simple sums of the traits for each of the personality disorders in clusters A, B, and C). We also

conducted regression analyses using as a dependent measure the total score from the IIP-PD, a measure of interpersonal dysfunction that has been shown to be highly predictive of personality disorder diagnoses [30, 31]. The regression model specified above, which involved the simultaneous entry of the three STIPO domains as predictor variables after controlling for demographic variables, was carried out for each of the personality trait clusters and the IIP-PD total score in order to determine the unique contribution of the three STIPO domains to prediction of each of these validity measures. As expected, the STIPO domains yielded a significant increment in variance explained after controlling for demographic variables for each of the three personality disorder cluster indices: 29% for cluster A ($p < 0.001$); 23% for cluster B ($p < 0.001$); and 17% for cluster C ($p < 0.001$). A significant increment of 42% of variance ($p < 0.001$) was also explained by the STIPO scales in the IIP-PD scores. A varied pattern of unique contribution by the STIPO domains to the prediction of the personality disorder traits was observed, with the STIPO Identity and Reality Testing domains each uniquely predicting variance in cluster A, the Primitive Defenses domain uniquely contributing to the explanation of variance in cluster B, and the Reality Testing domain uniquely predicting variance in cluster C.

Clinical Application of the STIPO: Assessing Severity of Personality Pathology

The STIPO can be used as a clinical tool to assess levels of severity of personality pathology across normal, neurotic, and borderline personality organization. In a study using the English version of the STIPO, based on the domain ratings of the STIPO, a prototypical profile of BPO was developed and tested in its ability to discriminate between BPO and non-BPO [22]. The presence of severe identity diffusion, use of primitive defenses as well as disturbed object relations, along with overall maintained reality testing differentiated between patients located at low BPO and non-BPO. Individuals with ratings that were close to a prototypical profile of BPO, consisting of ratings of 3 or higher in the domains “Sense of Self” and “Sense of others,” 4 or higher in “Object Relations” and “Primitive Defenses,” showed more pathology in variables closely associated with borderline pathology, for example negative affect and aggression. Similarly, an inverse relation between the profiles of individuals with BPO-prototypical ratings and variables of positive affect was found, e.g., serenity. In addition, the use of primitive aggression and the deterioration of moral values were helpful in differentiating between higher-level and lower-level BPO [20].

In a treatment study examining 104 patients with Borderline Personality Disorder, the STIPO was employed and compared to results from the SCID-I and SCID-II as well as indicators of clinical severity of the disorder (suicide attempts, self-harming behavior, health service utilization) [32]. Specific patterns were found, demonstrating the ability of the STIPO to assess levels of severity. The patient group with one or more comorbid DSM-personality disorders showed more pathology in the STIPO domains and overall level of personality organization than the patient group with the sole diagnosis of BPD (e.g., Identity: $M = 3.88$ versus $M = 3.59$, $t = -2.13$, $p < 0.04$). Similar results were found for individuals with at least one suicide attempt versus no suicide attempts, and also for patients with a history of emergency room visits versus those without emergency room visits. Moreover, correlational analyses showed that several indices of personality pathology, for example the number of BPD criteria, were meaningfully associated with more pathology in the STIPO domains of Identity, Primitive Defenses, Coping, Aggression, and with the overall level of personality organization (cf. Table 32.4). In sum, these results demonstrate the clinical usefulness of the STIPO in that patients with clinically more severe disorders revealed a more impaired level of personality organization [33]. Three case examples of patients at different levels of pathological personality organization, from the same study, display the clinical use of the STIPO (Table 32.5). Examples from specific STIPO sections were chosen to show differences between levels of severity within the realm of borderline personality organization.

Table 32.4 Correlations between STIPO domains and measures of Axis II pathology ($N=104$)

STIPO domain	Identity	Object relations	Primitive defenses	Coping and rigidity	Aggression	Moral values	Reality testing	Overall level of personality organization
Number of BPD criteria	0.30**	0.16	0.32**	0.27**	0.31**	0.06	0.17	0.29**
Number of suicide attempts	0.13	0.21*	0.29**	0.25**	0.49***	0.17	0.11	0.30**
Number of self-harming behaviors	0.21*	0.08	0.29**	0.27**	0.28**	0.04	0.15	0.22*
Number of emergency room visits	0.19*	0.28**	0.20*	0.22*	0.29**	0.07	0.15	0.27**
Number of days in psychiatric hospitalizations	0.14	0.33**	0.18	0.35***	0.22*	0.01	0.15	0.29**

Note: STIPO domain scores: 5-point scale, ranging from 1 (absence of pathology) to 5 (severe pathology) (Pearson correlations); Overall level of personality organization: 6-point scale, ranging from 1 (normal PO) to 6 (borderline personality organization, level 3) (Spearman correlations)

* $p<0.05$; ** $p<0.01$; *** $p<0.001$

Table 32.5 Patient scores across the seven STIPO domains

	Identity diffusion	Object relations	Defenses	Coping	Aggression	Moral values	Reality testing
Patient 1	5	4	5	4	4	4	3
Patient 2	3	4	5	4	4	3	3
Patient 3	3	2	3	3	2	2	1

Patient 1

Patient 1 is a 21-year-old female office assistant who had been hospitalized after a suicide attempt, and was interviewed with the STIPO as part of the initial assessment for the randomization in an RCT for the treatment of BPD [32]. She met criteria for four personality disorders on the SCID-II: borderline, histrionic, passive-aggressive, and paranoid personality disorder. During the interviewing process, she was very impatient and hostile. She reported having had numerous short-term jobs without the possibility of pursuing longer-term job goals, but was very enthusiastic about her hobbies in her spare time.

Examples from the Identity Domain

One of the central questions of the STIPO for the assessment of identity diffusion is for the subject to describe herself (question 12). She answered: “Well, I am not very tolerant, ehm, curious. Mhm, stupid. Sometimes. Hmm,... well, I have no idea, I don’t know. I know these were only negative things. I also am fast in my perception... am tidy. Sometimes I can be funny...” Probed about a more detailed description of what made her unique, she repeated, “No idea!” Asked if she felt that it was difficult to describe herself, she answered “Yes, I don’t know why.” Her answer indicated a very meager and fragmented representation of herself as a whole person, using superficial terms and difficulties in presenting examples and facets about her.

Another example from the Identity section is the question: “Do you enjoy spending time alone – would you say that it makes you feel free and relaxed when you’re on your own, or do you tend to

become anxious, or confused about who you are?” The patient replied “Yes, when I am alone, I don’t have any feelings anymore. I feel nothing. (Interviewer: Every time you are alone?) Yes. I don’t sense anything anymore. And being alone starts for me the moment my boyfriend is not at home... as soon as he returns home, feelings return.” She adds that being alone leads to severe discomfort and/or anxiety.

When asked about her interactions with and perception of others, the patient described serious difficulties in understanding others and trying to imagine what others might think about her. Each of these questions was scored with a “2,” indicating significant to severe and pervasive difficulty estimating how others view her, and preoccupation with a fear of people’s opinions of her changing rapidly and unpredictably. Both the Identity subdomains “sense of self” and “sense of others” were scored with a clinical overall rating indicating severe pathology in the realm of identity.

Examples from the Primitive Defenses Domain

When asked about the nature of her relationships with others (question 56), the patient answered: “Trust.... I always think I trust someone, then something happens, and I realize it is not a person I can trust. Then my feelings for the person change completely.” Asked if this was the case only with specific people or in all relationships, she confirmed that it happened in most relationships (“my friends change frequently, my family is a single disappointment, and at work I have often seen how many faces my colleagues have”). The item was rated with a 2, indicating an unstable view of relationships and unpredictable shifts in view of others based on idealization/devaluation.

Part of an inquiry on the use of projective identification (question 60), “When you are feeling disrespected or slighted by someone do you tend to withdraw, or is it your tendency to get angry, to provoke people right back?” was answered: “Of course I do, that is the only way I can react, and sometimes I know it is not right. I hurt others in situations like those. I don’t know why my friends are still friends with me.” Again, a score of 2 was chosen according to the anchor “Vulnerable and sensitive to lack of respect/disregard; perceives lack of respect or disregard frequently and in different circumstances; responds to even slight provocation with hostility and overt verbal or/physical aggression.”

Examples from the Aggression Domain

In response to questions probing instances of self-directed aggression, the patient described having tried to commit suicide, having consumed party drugs for several years regularly, and practicing unprotected sex. The section “self-directed aggression” was rated as serious disturbance. On a question concerning other-directed aggression (question 80), the patient revealed the following, “A couple of weeks ago, I hit a foreign woman, because she tried to approach my boyfriend... her own fault if she doesn’t respect me....” She reported not being concerned about the person (“I’m not interested how she did afterwards”) and not having felt any remorse.

In sum, this patient presented with severe pathology in nearly all STIPO domains. A high degree of identity diffusion, pervasive use of primitive defenses, disturbed object relations as well as severe self- and other-directed primitive aggression, and finally a lack of integrated moral values (antisocial features) indicate that her level of personality organization is in the severely disturbed realm, i.e., Borderline 3. This patient’s STIPO profile, based on the 5-point clinical ratings, is shown in Table 32.5 as the most severely disturbed patient (Borderline 3).

Patient 2

Patient 2 is a 35-year-old female salesperson who had been hospitalized due to repeated self-mutilation, temper outbursts toward her husband and daughter, and an eating disorder. She was diagnosed with borderline, histrionic, and passive-aggressive personality disorders on the SCID-II. In the STIPO, she reported hardly ever feeling her normal self and urgently wanting to change her life and finding more stability.

Examples from the Identity Domain

The patient described a continuous commitment toward work and good relationships with her colleagues but stated that “I am always under pressure to show good work results and get respected by others.” She described herself (question 13) with the following: “I feel different when I am together with a friend or with other people, I have different faces. (Do you play a role in these different situations?) I always play a role. I never show my real face, how I really am. Nobody really knows how I am. (Would friends who know you in one context be surprised to see what you were like in a different context?) Yes, they wouldn’t really recognize me.” Reported marked shifts in sense of self across situations were rated with a score of 2.

In addition to the request for self description, the description of others is a central question on the STIPO. The patient described her husband as “... a wonderful person; he means the world to me. He does everything for me, nobody else does that. That is why I value him so much. Personal conversations with him are very good. If something goes against what he likes, he gets very aggressive. He has changed over time – he used to react differently to me than in the past. He tells me he is embarrassed of me, for example after a recent dinner party. (What makes him different from other people?) That he gets along very well with children, they all love him. What I am bothered by is that he is very jealous and very egoistic. A lot has changed last year. I think that is it.” A rating of 1 was given to reflect her somewhat superficial description of others. A rating of 3 was given for the overall identity section, and this patient’s more severe difficulties in self-perception were rated with a 4, whereas the problems in object perception with a 3.

Examples from the Object Relations Domain

Over the last 5 years, the patient described having relatively good friendships (score of 3) and good work relations. Throughout these years, she repeatedly had long-term extra-marital affairs, but always returned to her husband.

On a query about trust and disclosure in the relationship with her husband (question 37), she answered as follows: “I can depend on him, but he cannot depend on me. I can trust my husband, but don’t know what he does behind my back. And with me cheating on him, it is not really a trustful relationship.” A score of 2 reflects her significant problems in interdependence and intimacy.

Examples from the Aggression Domain

The patient describes neglecting her physical health, cutting her arms and legs regularly, and regular use of cannabis. She also reported having unprotected sex. Two suicide attempts within the last 5 years that were rather serious were scored with an overall rating of 5 for the section “self-directed aggression.” In terms of other-directed aggression, the patient described regular temper outbursts

toward daughter and husband, but no physical attacks or intimidation. To a question about dangerous sexual behavior (question 82), she describes: “With my last partners, I enjoyed cutting them with a scalpel during sex. They did not enjoy it, but they had to accept it. I would prefer doing this with all my partners, but my husband does not want that (yet).” This behavior is scored in the severe range. An overall score of 4 was chosen for the section aggression.

Overall, this patient’s personality pathology can be summarized at the level Borderline 2: Moderate identity diffusion, difficulties in interpersonal relationships, in particular within romantic relationships, circling around need-fulfillment with impaired empathy, maladaptive coping, and aggression primarily self-directed and as part of a sexual perversion in the other-directed realm. Her moral values appear poorly integrated and poorly internalized (e.g., lying regularly without remorse) and Reality Testing is impaired only by regular dissociation, but no other perceptual distortions (cf. Table 32.5 for the STIPO patient profile).

Patient 3

Patient 3 is a 26-year-old female student, who met criteria for BPD and no other personality disorder on the SCID-II, and was also interviewed with the STIPO. She was seeking psychotherapy primarily due to difficulties maintaining contact with her friends and relationship difficulties.

Examples from the Identity Domain

This patient showed good commitment to her studies and to a part-time job in a department store. In her free time, she was able to engage in specific interests and enjoy them. She described a rather coherent perception of self across time and situations. For example, on a question about the capacity to enjoy time alone, she responded, “When I feel good, I enjoy it, but when I am not doing well, I get anxious. Sometimes I need my boyfriend to be with me to feel stronger.” A score of 1 was given as she described some discomfort or anxiety associated with being alone. Her perception of others, also reflecting on others’ feelings and thoughts, was not too disturbed. For example on a question about perceiving cues in social situations (question 29), she observed, “usually I realize when I did something that is totally off, but it happens every once in a while. Especially with people I know well.” For this item, a score of 1 on the 3-point scale was chosen due to some, but not severe impairment. An overall score of 3 was given for the identity section to reflect moderate identity disturbance.

Examples from the Primitive Defenses Domain

Asked about erratic behavior (question 54), she replied “this happens sometimes, but not frequently. When I have really counted on something I can be very mad and my boyfriend cannot always understand why I react so strongly.” On a question concerning the use of defensive idealization and devaluation, the patient described “regarding my boyfriend, sometimes I am so tired of him I wish I didn’t have to see him anymore. And at other times, I really think he is the best thing that happened to me. But that doesn’t happen too often and really only with him.” This answer provides evidence of some tendency to use this form of primitive defensiveness. Overall, a score of 3 reflects this patient’s mixed pattern of endorsement of primitive defenses, shifts in perception of self and others that are not pronounced, and limited impairment in functioning due to use of primitive defenses.

Examples from the Aggression Domain

To a question (question 75) inquiring about risky and dangerous behaviors, she answered: “I don’t really do anything that is risky, only sometimes I hit the wall with my fist when I am angry. And when I drink alcohol, I ride my bike. But nothing else.” (Score 1: Some, infrequent risk-taking behavior as described). She described having cut herself in the past, but not within the last 5 years. No other-related aggression, neither overtly nor through intimidation were endorsed by the patient. An overall score of 2 was chosen, corresponding to the anchor describing self-neglect, minor self-destructive behaviors, and controlling interpersonal style.

In summary, this patient is located at level 1 (Borderline 1), the least disturbed level of borderline personality organization. The primary areas of difficulty are in her sense of self and others, and a mixed pattern of defense mechanisms, with some albeit moderate splitting. She describes long-term commitments (boyfriend, friends) which have some degree of conflict, primarily centered on self-disclosure. Aggression is self-directed and she describes only slight impairment in the utilization of moral values (cf. Table 32.5 for the STIPO patient profile).

Degrees of Patient Pathology and Treatment Planning

All three of these patients met criteria for BPD and require a structured treatment addressed at behavioral change (e.g., Dialectical Behavior Therapy (DBT [34]) and personality change (e.g., Mentalization-Based Treatment (MBT [35]) or Transference-Focused Psychotherapy (TFP [9])). However, while all three patients meet the criteria for the BPD disorder, they vary substantially in the severity of their personality pathology. This difference in extent and severity of personality pathology is reflected most directly in the severity scores on the domains of the STIPO and indirectly in the comorbid personality diagnoses on SCID-II.

The use of the STIPO in treatment planning adds value to the multiple personality diagnoses found on the SCID-II from a number of perspectives. Axis II and the instrument structured according to the criteria, SCID-II, are formulated to suggest separate personality disorders, but the extensive comorbidity of patients suggests otherwise. A number of the Axis II personality disorder categories lack construct validity. The theoretical background of the STIPO is more consistent with a view of personality pathology that envisions a number of key patient functional areas (identity formation, quality of relations with others including intimate romantic and sexual relations, development of an internal sense of morality, control and modulation of aggression) that can vary in degree of disturbance across individuals. The severity of disturbance in these key areas of personality functioning is directly relevant to the focus and process of psychotherapeutic intervention and change.

One could anticipate a number of difficult issues that might arise in the treatment of patient 1. Patient 1 is a patient with borderline personality disorder with a high severity of pathology. The severity of pathology is evident across all domains of functioning. A clear and firmly orchestrated treatment contract is needed, so that both therapist and patient have guidelines to follow if and when the patient becomes suicidal and/or self-destructive. Her level of self- and other-directed aggression suggests that a treatment choice could be made between TFP and DBT. She might enter a therapeutic relationship with suspicion and mistrust of the therapist and find it difficult to imagine that another person might desire to help her without reciprocal demands. Her mistrust in the therapist and therapy could manifest in denigration of both, and hostile and irritable episodes.

In contrast to patient 1, patient 2 has some strength in interpersonal relations, with long-standing friends and an enduring, but conflicted, relationship with her husband. She is a patient with borderline personality disorder with a moderate range of severity. She has serious deficits in self-directed

aggression, poor coping with stress, and inadequate relations with others. Her sense of self, captured in the Identity domain, is better than patient 1, as is her sense of moral values.

Patient 3 is the least severe of the three patients with borderline personality disorder. Compared to the other two patients, she has relatively good object relations, aggression is not an issue, and she has a sense of moral values. One could consider a treatment choice between the more structured TFP and the less structured dynamic treatment for high-level personality organization [8]. With this patient, a depressive transference could be expected, manifested by a clinging and dependent behavior toward the therapist.

For all three patients, a structured dynamic treatment, such as TFP or MBT, could be chosen that focuses on the patients' internal representations of self and others. The focus of these treatments is based on the hypothesis that disturbed internal representations direct interpersonal behavior that is dysfunctional. The STIPO domains of identity and object relations directly assess representations of self and other. In addition, the STIPO domains of moral values and aggression further explicate how the individual modifies his/her behavior toward others with varying degrees of aggression and use of a moral code.

These three cases exemplify the range of borderline pathology that can be described differentially by the STIPO. Combining the STIPO with other diagnostic instruments, e.g., the SCID-II or IPDE, provides a multidimensional diagnosis that describes both severity of pathology and makes it possible to use information on personality style and traits for treatment planning. From the perspective of the DSM, the number of comorbid diagnoses can be seen as an index of Axis II pathology. In the three described cases, all patients meet diagnostic criteria for the diagnosis of BPD. The number of additional personality disorder diagnoses corresponds roughly to the level of severity in the STIPO. Thus, the STIPO can help distinguish between levels of severity and help develop foci for treatment. Clearly, the first patient, who also presented four comorbid SCID-II Axis II disorders, also was located at the most severely disturbed level of personality organization in the STIPO. Regarding therapy, this patient is expected to present with difficulties around aggression within and outside of therapy and is likely to benefit from a treatment with a clearly formulated frame and structure. For patient 2, with two Axis II disorders, the difficulties lie less in other-directed and more in self-directed aggression, and in unstable relationships. Patient 3, who only met criteria for one SCID-II personality disorder (BPD), is located at higher-level BPO based on the STIPO. Here the treatment foci could be primarily her romantic relationship and sense of self and others. Overall, in comparison to patients 1 and 2, she is expected to show greater self-reflection and readiness to commit to relationships as well as to therapy (cf. overall score of 2 in object relations). In sum, the STIPO profiles and levels of borderline pathology correspond to severity of pathology according to SCID-II and assist the therapist in making conclusions regarding treatment choices and prognosis.

Clinical Application of the STIPO: Using the STIPO as a Measure of Change

The usefulness of the STIPO as a measure to assess changes in personality organization is currently being examined. In an RCT comparing the efficacy of TFP to treatment by experienced community psychotherapists in a sample of 104 BPD patients, the STIPO was used as an outcome instrument [32]. The time frame in the STIPO usually refers to the prior 5 years. However, in order to assess changes within 1 year of treatment, we chose the last month as the time frame for the second STIPO interview. Using this measure, significant changes after 1 year of psychotherapy were found at the level of personality organization. In this analysis, the overall level of personality served as the outcome variable, using the STIPO levels of personality organization on a 6-point categorical scale, ranging from normal (1) to Neurotic 1 (2), Neurotic 2 (3), Borderline 1 (4), Borderline 2 (5) to Borderline 3 (6). In both treatment groups, the mean for the level of personality organization pathology decreased

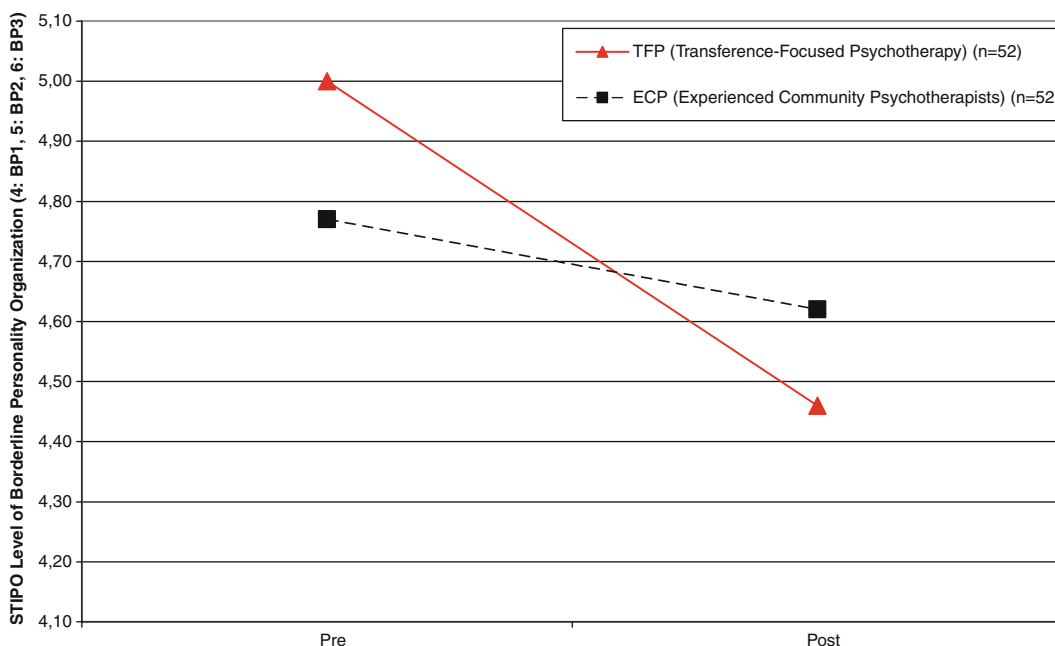


Fig. 32.1 Changes in STIPO level of personality organization after 1 year of psychotherapy (group comparison)

after 1 year of therapy (Fig. 32.1). This was the case both for patients in TFP (pre: $M=5.00$, $SD=0.56$; post: $M=4.46$, $SD=0.67$; $d=1.0$, $p<0.001$) and for patients in the community psychotherapist group (pre: $M=4.77$, $SD=0.58$; post: $M=4.62$, $SD=0.53$; $d=0.3$, $p=0.004$), with a significant superiority for the TFP group ($F=12.136$; $df=1, 101$; $p=0.001$) [32]. A more detailed analysis of changes in the individual STIPO domains is currently ongoing.

To illustrate the use of the STIPO for assessing change in personality, the changes by one of the patients from this study will be described. Patient 1, whose STIPO profile was discussed in the previous section, was re-assessed after 1 year of TFP. On the SCID-II, she no longer met criteria for BPD (3 of 9) nor for histrionic, passive-aggressive, or paranoid personality disorder. This change in personality disorder criteria corresponds to the changes manifested in the clinical interview situation as well as on the STIPO. Asked if she was still in treatment, she replied “Yes, and I will not let go of my therapist!” indicating some positive attachment toward her therapist, but also a continuing felt need for therapy. She experienced the therapist as being strict with her, but also understanding and patient with her. Apparently, following a clear treatment frame as established by her TFP-therapist helped with her impulsivity and acting-in. This patient’s life situation had changed substantially. She had married her partner and had become pregnant. She spoke with increased positive affect about the people in her life, and, although she remained hostile toward some (e.g., coworkers), she seemed softer when mentioning her husband.

Examples from the Identity Domain

The patient described some increased awareness about herself and her internal processes. Asked about her sense of self across time (question 13), she replied: “I think I am more grown up now. I am more myself. Five years ago I was more like a child, 2 years ago I was a mess, but within the last

months I have become more myself. (Does the passage of time or the series of events in your life feel like a steady flow, or would you say that it feels choppy or broken up?) It feels more like a set of stairs, steadily getting better and clearer.” Asked about the experience of being alone (question 16), she said “I really enjoy it. Nobody is there to bother me. That is different now; I can sit on the couch and am very relaxed. Most of the time it is great....” This item was scored with a 1, indicating some discomfort or anxiety associated with being alone and minor avoidance of being alone. She described her partner as follows: “He is a very funny guy, but also he can be extremely boring. That is not because he is stupid or slow – he simply is very balanced: Just the opposite of me. But sometimes he can be hilarious. What is very special about him is his patience. He was courting me for months, even while I had another boyfriend. In retrospect I realized that it must have hurt him that I had another partner and was not interested in him, but at that time I did not realize that. But he simply stayed persistent because he wanted me. I am very proud of him and happy to have him as my husband.” This slightly superficial and self-referential description was scored a 1, as it is considered not that elaborated, but some descriptors could be given. The subdomain concerning sense of self was scored a 3, the subdomain concerning sense of others a 4, reflecting a rather superficial perception of others while her sense of self across time and situations was considered moderately discontinuous.

Examples from the Primitive Defenses Domain

Asked about “Primitive Projection” (Item 53), “Do you tend to keep information about yourself from others? Would you consider yourself someone who is cautious about what other people know about you; would you call yourself “guarded”?” She replied, “My husband is the only person in front of whom I don’t have secrets. With the other people I don’t know, there is so much that is none of their business.” A score of 1 was chosen, reflecting some discomfort with disclosure and openness in relationships in which it is typical to be unconcerned and unguarded. She describes behaving quite erratically (score of 2 in item 54), but with no persistent use of idealization and devaluation. “Only with shoes, my opinion changes drastically, not with other things. With people? I usually trust my husband, but if I had the sense he was not honest, that would be the end. There would be no love left! (...) Some people I used to hate in the past, I don’t think they are that bad anymore...” Scores of 1 were chosen for items 55 and 56, showing some tendency to idealization and devaluation. The section Primitive Defenses was rated with an overall 3, showing a mixed pattern of endorsement of primitive defensive operations.

Examples from the Aggression Domain

The patient reported no self-directed aggression within the last months, including an absence of suicide attempts, drug use, or self-mutilation. She did neglect her physical health by not going for regular check-ups and exhibited some risky behavior such as excessive use of alcohol (before the pregnancy). This was scored 1 (Question 74 Self Neglect, 75 Risky Behavior), and she was given an overall score of 2 on the 5-point scale. Asked about temper outbursts (Question 79) she replied: “I often yell at others, actually every time I see my mother-in-law... How I feel afterwards? Good!” A score of 1 was given (“Some problems with temper, e.g., occasional outbursts of yelling and screaming; may be limited to certain relationships”). Her answer to question 84, “Do you like it if other people are afraid of you? Do you ever do things that make others afraid of you so that you will then be able to control them?” was “I like it when others are afraid of me, although I do nothing. My husband says he never wants to be close to me when I really get mad! But it is not on purpose if others

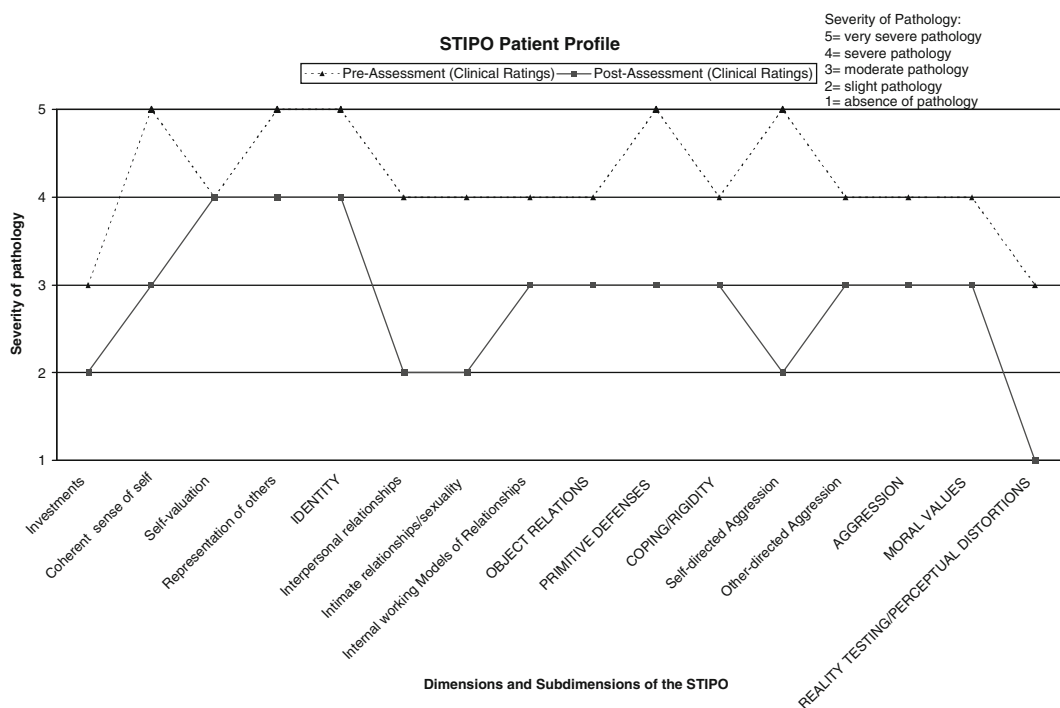


Fig. 32.2 STIPO patient profile before and after 1 year of psychotherapy

are afraid of me...” An overall score of 3 on the 5-point scale, corresponding with the anchor “Loss of control with verbal aggression; some pleasure in controlling and intimidating others” was chosen for other-directed aggression and an overall score of 3 was chosen to reflect that aggressive behaviors may be predominantly self-directed and include hostile verbal aggression.

After 1 year of psychotherapy, the STIPO demonstrated that the patient had changed substantially in several personality domains. The stark identity diffusion that had been prominent at baseline had changed insofar as her sense of herself had become more stable, she was able to reflect on changes she had gone through and become more aware that she was provoking interpersonal conflicts. She still used primitive defenses like idealization/devaluation, but in combination with more adaptive defenses. She described a rather constant attachment to her partner and realized that this had changed. She now missed him and would prefer him to be with her more often but was able to tolerate his absence more than in the past. Overall, decrease of identity diffusion, more constant attachments and interpersonal relationships, a more mixed pattern of defenses and less aggression against self and others (also shown in a less controlling interpersonal style) as well as an increased capacity for guilt reflect a change of personality organization. The overall level of personality organization has moved from borderline 3 to borderline 2. Figure 32.2 shows the personality profile at baseline (Pre-Treatment Assessment) and after 1 year of therapy (Post-Treatment Assessment).

A retrospective account of patient 1’s treatment by the male therapist provides some perspective on the process. The therapist describes a protracted period in which the patient attacked the treatment and the therapist with somewhat dramatic affective storms. The therapist remained in therapeutic neutrality, and from that therapeutic position pursued the contradiction between her faithful appearance for sessions and her attack on the treatment. Only after a long time did the patient begin to trust the therapist’s consistent intent to help her face her difficulties.

Discussion

A Theoretical Assessment Compared to Theoretical Assessment

The DSM description of a personality disorder is based on lists of symptoms, traits, and problematic behaviors. This list adheres closely to reportable and observable behaviors with the intent of ensuring reliability of assessment. This symptom-oriented description/assessment of personality disorders is not guided by a theory of personality or an articulated theory of the personality disorders.

The advantage of a theory-driven assessment is that the theory provides a guide for efficient use of assessment time. A theory-guided assessment also ensures that in the limited time, one assesses essential areas of personality and personality disorder functioning. For example, current theories of personality indicate that the major areas to consider are cognitive-affective units [36, 37], behavior, and the person's unique pattern of relating to and seeking out certain environments. A theory-guided assessment of essential areas of personality functioning can subsequently and logically lead to focused interventions on the areas of dysfunction. For example, if in the initial diagnosis, a high level of identity diffusion is found, indicated by a severe deficit in sense of self and others, this could provide a focus of treatment.

STIPO Compared to Similar Instruments

A number of outcome measures relevant to psychodynamic research have been developed and validated (see Chap. 27). Possibly, the most similar clinical interview and scoring system to the STIPO is the Clinical Diagnostic Interview (CDI) [38, 39] which focuses on reasons for treatment, symptoms, and interpersonal interaction patterns. It is a systematic diagnostic interview that can be administered in two and a half hours. The interview yields the clinical information necessary to utilize the SWAP-200 reliably. The SWAP-200 [40] is an assessment instrument that consists of 200 statements which may describe a patient very well, somewhat, or not at all. The statements reflect content capturing personality traits in non-clinical populations, and interpersonal pathology consistent with personality disorders; coping, defense, and affect-regulatory mechanisms, as well as symptoms such as anxiety and depression. Utilizing the information from the CDI, the clinician describes the patient with the 200 SWAP items based on a Q-sort method which requires the clinician to distribute the 200 items into a fixed distribution, i.e., a set number that are least and most descriptive of the individual [40]. The SWAP distribution provides the clinician with dimensional scores for each of the personality disorders described in DSM. In addition, a narrative case description is generated that can be used for case conceptualization and treatment planning.

The AAI is a structured interview with a complicated scoring system organized to assess attachment style [18]. In contrast to the STIPO, the AAI is not designed to provide a treatment guide for therapeutic intervention with the personality disorders, as the AAI has a narrower focus. Apart from the scores that the AAI provides from the burdensome and complicated scoring system, the interview offers rich clinical material from the subject; especially about the subject's representations of interactions with intimate others. A major portion of the AAI asks the subject for adjectives to describe his/her relations with mother and father. Examples of interactions exemplifying the adjectival description are then requested. These answers are, in fact, mental representations of self and others that could become foci of treatment intervention.

The Operationalized Psychodynamic Diagnostics (OPD-2;[41]), devised by a group of psychodynamic clinicians in Germany, is an instrument consisting of four psychodynamic axes as well as

the ICD-10 as a fifth axis: (1) experience of illness and prerequisites for treatment, (2) interpersonal relations, (3) conflicts, (4) psychic structure, and (5) psychic and psychosomatic disorders (ICD-10 diagnoses). The axis that most closely relates to the STIPO is the fourth axis which comprises dimensions of self and other representation, attachment, affect differentiation, or impulse regulation. It was developed to be used for all levels of personality pathology, whereas the STIPO focuses specifically on the nuances and levels of personality organization. Two ongoing studies are examining the interface between OPD-2 and STIPO in a clinical and a non-clinical population (Hörz, Rentrop, Doering).

Use of the STIPO for Treatment Planning and Change

The diagnosis of personality disorders by categories or types without taking into consideration the dimension of severity of dysfunction is a serious limitation of DSM-IV and leaves a blind area for treatment planning. One unfortunate result of this deficiency in DSM diagnosis is that existing psychotherapy treatment trials do not take into account the severity of the personality dysfunction in data analysis. We have designed the STIPO using a psychodynamic object relations model to assess seven key domains of personality functioning: Identity, Object Relations, Primitive and Advanced Defenses, Aggression, Moral Values, and Reality Testing. The resulting profile of scores in seven areas of functioning can be used to match prototypic models of neurotic personality functioning, as well as various levels of borderline personality organization and functioning.

The development of the STIPO was based on a sophisticated clinical interview. The semi-structured nature of the STIPO has resulted in reliable use of the instrument, as we have described in this chapter. The interview also has construct validity, as manifested in its correlation with related constructs [20, 33]. Our use of the STIPO in a randomized clinical trial of TFP compared to treatment provided by community expert therapists has demonstrated that the STIPO can be used effectively to measure patient change in treatment [32]. In this study, the overall level of personality organization improved significantly after 1 year of treatment. The patient example described earlier shows how the individual STIPO domains captured clinical change as well, for example, improvement in object relations, less self-directed aggression, and also use of less primitive defense operations after 1 year of treatment.

Patients assessed by the STIPO who share the diagnosis of borderline personality disorder are clearly quite different in severity of dysfunction. The domains of functioning assessed in the STIPO are central to an understanding of the patients' internal representations of self and others and provide information on the quality of interpersonal relations in reference to friendships, family relations, and intimate romantic and sexual relations. These dimensions of personality functioning correspond with the general diagnostic criteria for personality disorders proposed by the DSM-V Workgroup (www.dsm5.org), i.e., impaired sense of self-identity and difficulties in interpersonal functioning with several specific features, and examination of the STIPO domains will predict whether or not a person meets these criteria for a DSM-V personality disorder. Overall, the STIPO can be seen as an important step forward for diagnosis and focused treatment planning, providing structured assessment of personality pathology guided by modern object relations theory and congruent with recent developments in the diagnostic classification of personality disorders. The STIPO provides the clinician with a detailed picture of the patient's strengths and deficits in several core domains of personality functioning and can be used to guide differential treatment planning and to identify specific foci for clinical intervention.

References

1. Verheul R. Clinical utility of dimensional models for personality pathology. In: Widiger TA, Simonsen E, Sirovatka PJ, Regier DA, editors. *Dimensional models of personality disorders: refining the research agenda for DSM-V*. Washington, DC: American Psychiatric Association; 2006. p. 203–18.
2. Kernber OF, Caligor E. A psychoanalytic theory of personality disorders. In: Lenzenweger M, Clarkin JF, editors. *Major theories of personality disorder*. New York: Guilford; 2005. p. 114–56.
3. Caligor E, Clarkin JF. An object relations model of personality and personality pathology. In: Clarkin JF, Fonagy P, Gabbard G, editors. *Psychodynamic psychotherapy for personality disorders: a clinical handbook*. Washington, DC: American Psychiatric Publishing; 2010. p. 3–36.
4. Clarkin JF, Lenzenweger MF, Yeomans F, Levy KN, Kernberg OF. An object relations model of borderline pathology. *J Pers Disord*. 2007;21:474–99.
5. Fonagy P, Luyten P, Bateman A, Gergely G, Strathearn L, Target M, et al. Attachment and personality pathology. In: Clarkin JF, Fonagy P, Gabbard G, editors. *Psychodynamic psychotherapy for personality disorders: a clinical handbook*. Washington, DC: American Psychiatric Publishing; 2010. p. 37–88.
6. Clarkin JF, Caligor E, Stern BL, Kernberg OF. Structured Interview of Personality Organization (STIPO). Unpublished manuscript. New York: Personality Disorders Institute, Weill Medical College of Cornell University; 2004. Download at: <http://www.borderlinedisorders.com/mental-health-professionals-index.php#stipo>. German translation by Doering S., Universität Wien, download at: <http://www.meduniwien.ac.at/hp/psychoanalyse/forschung/diagnostik-downloads/diagnostik-der-persoenslichkeitsorganisation/>.
7. Fonagy P, Gergely G, Jurist EL, Target M. *Affect regulation, mentalization and the development of the self*. New York: Other Press; 2002.
8. Caligor E, Kernberg OF, Clarkin JF. *Handbook of dynamic psychotherapy for higher level personality pathology*. Washington, DC: American Psychiatric Publishing Inc; 2007.
9. Clarkin JF, Yeomans FE, Kernberg OF. *Psychotherapy for borderline personality: focusing on object relations*. Washington, DC: American Psychiatric Publishing; 2006.
10. Kernberg O. *Severe personality disorders: psychotherapeutic strategies*. New Haven: Yale University Press; 1984.
11. Whitehorn J. Guide to interviewing and clinical personality study. *Arch Neurol Psychiatry*. 1944;52:197–216.
12. Powdermaker F. The techniques of the initial interview and methods of teaching them. *Am J Psychiatry*. 1948;104:642–6.
13. Fromm-Reichmann F. *Principles of intensive psychotherapy*. Chicago: University of Chicago Press; 1950.
14. Sullivan H. *The psychiatric interview*. New York: Norton; 1954.
15. Deutsch F. *Applied psychoanalysis*. New York: Grune & Stratton; 1944.
16. MacKinnon R, Michels R. *The psychiatric interview in clinical practice*. Philadelphia: Saunders; 1971.
17. MacKinnon R, Michels R, Buckley P. *The psychiatric interview in clinical practice*. 2nd ed. Washington, DC: American Psychiatric Publishing; 2006.
18. Hesse E. The adult attachment interview: protocol, method of analysis, and empirical studies. In: Cassidy J, Shaver PR, editors. *Handbook of attachment: theory, research, and clinical applications*. 2nd ed. New York: Guilford Press; 2008. p. 552–98.
19. Verheul R, Andrea H, Berghout CC, Dolan C, Busschbach JJV, van der Kroft P, et al. Severity indices of personality problems (SIPP-118): development, factor structure, reliability, and validity. *Psychol Assess*. 2008;20:23–34.
20. Stern BL, Caligor E, Clarkin JF, Critchfield KL, Hörz S, Maccornack V, et al. Structured Interview of Personality Organization (STIPO): preliminary psychometrics in a clinical sample. *J Pers Assess*. 2010;92:35–44.
21. Hörz S, Stern B, Caligor E, Critchfield K, Kernberg OF, Mertens W, et al. A prototypical profile of borderline personality organization using the Structured Interview of Personality Organization (STIPO). *J Am Psychoanal Assoc*. 2009;57:1464–8.
22. Hörz S. *A prototype of borderline personality organization – assessed by the Structured Interview of Personality Organization (STIPO)*. Hamburg: Kovac; 2007.
23. Oldham JM. Psychodynamic treatment planning and the official diagnostic system: toward DSM-V. In: Clarkin JF, Fonagy P, Gabbard G, editors. *Psychodynamic psychotherapy for personality disorders: a clinical handbook*. Washington, DC: American Psychiatric Publishing; 2010. p. 439–37.
24. Shrout PE, Fleiss JL. Intraclass correlations: uses in assessing rater reliability. *Psychol Bull*. 1979;86:420–8.
25. Lenzenweger MF, Clarkin JF, Kernberg OF, Foelsch PA. The Inventory of Personality Organization: psychometric properties, factorial composition, and criterion relations with affect, aggressive dyscontrol, psychosis proneness, and self-domains in a nonclinical sample. *Psychol Assess*. 2001;13:577–91.
26. Darlington RB. *Regression and linear models*. New York: McGraw-Hill; 1990.
27. Clark LA. *Schedule for nonadaptive and adaptive personality (SNAP)*. Minneapolis: University of Minnesota Press; 1999.

28. Buss A, Durkee A. An inventory for assessing different kinds of hostility. *J Consult Clin Psychol.* 1957; 21:343–8.
29. Clarkin JF, Foelsch PA, Kernberg OF. The Inventory of Personality Organization. White Plains: The Personality Disorders Institute, Weill College of Medicine of Cornell University; 2001.
30. Pilkonis PA, Kim Y, Proietti JM, Barkham M. Scales for personality disorders developed from the inventory of interpersonal problems. *J Pers Disord.* 1996;10:355–69.
31. Stern BL, Kim Y, Trull TJ, Scarpa A, Pilkonis PA. Inventory of interpersonal problems personality disorder scales: operating characteristics and confirmatory factor analysis in nonclinical samples. *J Pers Assess.* 2000;74: 459–71.
32. Doering S, Hörz S, Rentrop M, Fischer-Kern M, Schuster P, Benecke C, et al. Transference-focused psychotherapy v. treatment by community psychotherapists for borderline personality disorder: randomized controlled trial. *Br J Psychiatry.* 2010;196:389–95.
33. Hörz S, Rentrop M, Fischer-Kern M, Schuster P, Kapusta N, Buchheim P, et al. Strukturniveau und klinischer Schweregrad der Borderline Persönlichkeitsstörung (personality structure and clinical severity of borderline personality disorder). *Z Psychosom Med Psychother.* 2010;56:136–129.
34. Linehan MM. Cognitive-behavioral treatment of borderline personality disorder. New York: Guilford; 1993.
35. Bateman A, Fonagy P. Psychotherapy for borderline personality disorder: mentalization-based treatment. Oxford: Oxford University Press; 2004.
36. Mischel W, Shoda Y. A cognitive-affective system theory of personality: reconceptualizing situations, dispositions, dynamics, and invariance in personality structure. *Psychol Rev.* 1995;102:246–68.
37. Mischel W, Shoda Y. Toward a unified theory of personality: integrating dispositions and processing dynamics within the cognitive-affective processing system. In: John OP, Robins RW, Pervin LA, editors. *Handbook of personality: theory and research.* 3rd ed. New York: Guilford; 2008. p. 208–41.
38. Westen D. Clinical diagnostic interview manual; 2002. <http://www.psychsystems.net/lab>.
39. Westen D, Muderrisoglu S. Assessing personality disorders using a systematic clinical interview: evaluation of an alternative to structured interviews. *J Pers Disord.* 2003;17:351–69.
40. Shedler J, Westen D. The Shedler–Westen assessment procedure (SWAP): making personality diagnosis clinically meaningful. *J Pers Assess.* 2007;89:41–55.
41. OPD Task Force. Operationalized psychodynamic diagnostics (OPD). Manual of diagnosis and treatment planning. Kirkland: Hogrefe & Huber; 2008.

Appendices

Appendix IA Psychotherapy Process Q-Set Coding Manual (Adult)

Originally Developed by Enrico E. Jones¹

Revised Herewith by the Psychotherapy Research Program at Massachusetts General Hospital (J. Stuart Ablon, Raymond A. Levy, John M. Kelley, Ira Lable, Helen Riess, Robert S. Abernethy III, Jeremy P. Nahum, Carolina Seybert, Ingrid Erhardt, Julie Ackerman)

The Psychotherapy Process Q-Set (Adult), a measure of psychotherapy process originally created by Enrico Jones over many years of studying recorded psychotherapy sessions, is included in this Appendix in revised form. After in-depth use of the measure over several years by members of the Psychotherapy Research Program (PRP), we agreed that a revision aimed at clarifying the original intent of Dr. Jones would be helpful to its continued use around the world. The measure has been translated into German, Italian, Portuguese, Japanese, and Norwegian, and as we taught others to utilize the measure, we felt clarification would be helpful. None of the revisions changed the intent of any item. The revisions were consensually agreed upon after hours of discussion. There is an updated rating sheet that is available by contacting either Dr. Ablon or Dr. Levy. An extensive introduction to the measure and a summary of its use over 25 years of research is available in chapters found in this volume.

The purpose of the 100 items of the Psychotherapy Process Q-Set is to provide a basic language for the description and classification of therapy process. While built on general assumptions of psychotherapy as an interpersonal process, it is intended to be neutral with respect to any particular theory of therapy and should permit the portrayal of a wide range of therapeutic interactions. It is hoped that the use of a standard language and rating procedure will provide the means for systematically characterizing patient–therapist interaction. Rather than focusing on small segments of patient or therapist communications, raters Q-sort entire therapy sessions, allowing judges a greater opportunity to capture events of importance, and providing them with the possibility of rating assimilated or digested impressions of therapy process. The general purpose of the instrument is to provide a meaningful index of the therapeutic process which may be used in comparative analyses or studied in relation to pre-and post-therapy assessments.

¹ University of California, Berkeley, April, 1985, and Published in *Therapeutic Action: A Guide to Psychoanalytic Therapy* by Enrico R. Jones. Northvale, NJ: Jason Aronson, 2000. Revised with permission.

Although all of the instructions for using the PQS are included here, the nuances of accurate rating require specific training and discussion. While new raters can typically attain reliability among themselves by learning the measure on their own and practicing ratings, the subtleties of the rating process often result in invalid ratings. For this reason, it is critical that new raters compare their ratings to those of master raters so as to ensure their validity. Training from master raters is recommended and typically required before new raters can attain adequate reliability with master raters.

After studying the process data and arriving at some formulation of the material, look through the 100 items. Sort these statements into nine categories, placing at one end those items you believe to be the *most characteristic* with respect to your understanding of the material, and, at the other end, those items you believe to be *most uncharacteristic* with reference to your formulation.

A convenient method of sorting is to first form three categories of items – those items deemed characteristic, those items deemed uncharacteristic, and those items that are relatively unimportant to the session. No attention need be paid to the number of items falling into each of these three groupings at this time. When the three categories of items have been created, they can be further divided, this time into their proper proportions. The number of items to be placed in each category is:

Category	Number of cards	Label of category
9	5	Extremely characteristic or salient
8	8	Quite characteristic or salient
7	12	Fairly characteristic or salient
6	16	Somewhat characteristic or salient
5	18	Relatively neutral or unimportant
4	16	Somewhat uncharacteristic or negatively salient
3	12	Fairly uncharacteristic or negatively salient
2	8	Quite uncharacteristic or negatively salient
1	5	Extremely uncharacteristic or negatively salient

You may feel some discomfort at the constraints imposed upon you by the Q-set items and the sorting procedure. As is true of other systems of content analysis, the Q-set is designed to reduce complex interaction to manageable proportions, and to achieve research economy. No instrument of this kind perfectly fits or captures all therapeutic interactions. It should also be noted that assignment of a fixed number of items to each category has been shown empirically to be a more valuable procedure than the situation in which a clinician can assign any number of items to a category. The Q-items themselves represent a good deal of reflection and advice. While not all characteristics or events of a particular therapy can be expressed by the extremeness of placement of certain statements, they can be captured by a conjunction of two or more of the items. The intent of the Q-set is to allow the description of dimensions of psychotherapy process by means of the suitable placement of items and the configuration of statements that is consequently built.

The Q-set comprises three types of items: (1) items describing patient attitude and behavior or experience; (2) items reflecting the therapist actions and attitudes; and (3) items attempting to capture the nature of the interaction of the dyad, or the climate or atmosphere of the encounter. The definitions, or descriptions, of the items in this manual and the examples provided are intended to minimize potentially varying interpretations of the items. It should be carefully studied, and the full rating description of each item should be used when rating, rather than just the item name. Judges are asked to take the position of a “generalized other,” i.e., an observer who stands mid-way between patient and therapist and who views the interaction from the outside. In placing each item, raters should ask themselves: Is this attitude, behavior, or experience clearly present (or absent)? If the evidence is not compelling, raters should ask themselves: To what extent is it present or absent? Search for *specific* evidence. Try to be as open-minded and objective as possible. Avoid, for example, judgments of whether a particular therapist activity is effective or ineffective, or desirable or undesirable from a particular theoretical orientation. Be aware of preconceived ideas you may have

about “ideal” therapeutic interactions. In particular, try not to be influenced by your personal reactions to either therapist or patient; for example, avoid the tendency for your ratings to be influenced by whether you would like to have this person as your therapist, or by how you might react to the patient if you were the therapist.

Raters are sometimes uncertain as to whether a particular item should be placed in the *relatively neutral* or *unimportant* category, or in one of the categories reflecting that it is *uncharacteristic* of the hour. An item should be placed in the *neutral* category when it is truly irrelevant or inconsequential in relation to the interaction. A more extreme placement of the item in the *uncharacteristic* direction signals that the absence of a particular behavior or experience is salient and should be captured in the Q-set description of the hour. In other words, an event whose absence would be important to mark in order to achieve a more complete description of the hour can be captured by an item placement in an uncharacteristic rather than neutral category. Many items have specific instructions about this in their definitions.

Raters may occasionally feel that there is insufficient evidence to make a judgment of this kind (as well as to make other kinds of item placements) with good confidence. Also, there are several items in which both the characteristic and uncharacteristic ends of the continuum are represented in a single hour. In these cases, the rater must determine whether one end of the continuum is significantly more salient than the other and rate the item accordingly. Otherwise, a rating in the neutral range is appropriate. However, extensive work has already demonstrated that with patience and care, high inter-rater reliability of Q-descriptions can be achieved.

Adult Psychotherapy Q-Set: Items and Definitions

- Item 1: Patient expresses, verbally or nonverbally, negative feelings (e.g., criticism, hostility) toward therapist (vs. makes approving or admiring remarks).
Place toward *characteristic* end if patient expresses, verbally or nonverbally, feelings of criticism, dislike, envy, scorn, anger, or antagonism toward therapist. For example, patient rebukes therapist for failing to provide enough direction in the therapy.
Place toward *uncharacteristic* end if patient expresses, verbally or nonverbally, positive or friendly feelings about therapist, e.g., makes what appear to be complimentary remarks to therapist.
- Item 2: Therapist draws attention to patient’s nonverbal behavior, e.g., body posture, gestures, tone of voice.
Place toward *characteristic* end if therapist draws attention to patient’s nonverbal behavior, such as facial expressions, blushes, or body movements. For example, therapist points out that although patient says he or she is angry, the patient is smiling.
Place toward *uncharacteristic* end if there is little or no focus on nonverbal behavior.
- Item 3: Therapist’s remarks are aimed at facilitating patient speech.
Place toward *characteristic* end if therapist’s responses or behavior indicate that he or she is listening to the client and encouraging him or her to continue, such as: um-hmm, yeah, sure, right, and the like.
Place toward *uncharacteristic* end if therapist does not respond in such a manner as to facilitate patient talk (does not refer to questions, exploratory comments).
- Item 4: The patient’s treatment goals are discussed.
Place toward *characteristic* end if there is talk about what the patient wishes to achieve as a result of therapy. These wishes or goals may refer to personal or “inner” changes (for example, “I started therapy in order to get over my depressions”) or change in life circumstances (“I wonder if therapy will result in my getting married”).

Place toward *uncharacteristic* end if there is no reference or allusion by therapist or patient to the possible consequences of the therapy.

Item 5: Patient has difficulty understanding the therapist's comments.

Place toward *characteristic* end if patient seems confused by therapist's comments. This may be defensive or a result of therapist's lack of clarity. For example, patient repeatedly says "What?" or otherwise indicates that he or she doesn't know what the therapist means. Place toward *uncharacteristic* end if patient readily comprehends therapist's comments.

Item 6: Therapist is sensitive to the patient's feelings, attuned to the patient; empathic.

Place toward *characteristic* end if therapist displays the ability to sense the patient's "private world" as if it was his or her own; if the therapist is sensitive to the patient's feelings and can communicate this understanding in a way that seems attuned to the patient, e.g., therapist makes a statement that indicates an understanding of how the patient felt in a certain situation.

Place toward *uncharacteristic* end if therapist does not seem to have a sensitive understanding of patient's feelings or experience.

Item 7: Patient is anxious or tense (vs calm and relaxed).

Place toward *characteristic* end if patient manifests tenseness or anxiety or worry. This may be demonstrated by direct statements, e.g., "I feel nervous today," or indirectly by stammers, stuttering, etc., or other behavioral indicators.

Place toward *uncharacteristic* end if patient appears calm or relaxed or conveys a sense of ease.

Item 8: Patient is concerned or conflicted about his or her dependence on the therapist (vs comfortable with dependency, or wanting dependency).

Place toward *characteristic* end if patient appears concerned about dependency, e.g., shows a need to withdraw from the therapist, or in some manner reveals a concern about becoming dependent on the therapy.

Place toward *uncharacteristic* end if patient does not convey concern about dependency. This may take the form of expressions of helplessness; or the patient may appear either comfortable or gratified by a dependent relationship with the therapist.

Place toward the neutral range if patient experiences a sense of relative independence in the therapy relationship.

Item 9: Therapist is distant, aloof (vs responsive and affectively involved).

Place toward *characteristic* end if therapist's stance toward the patient is cool, formal, and detached, or marked by emotional retreat or withdrawal.

Place toward *uncharacteristic* end if therapist is genuinely responsive and affectively involved.

Item 10: Patient seeks greater intimacy with the therapist.

Place toward *characteristic* end if patient appears to either wish or attempt to transform the therapy relationship into a more social or personal and intimate relationship. For example, patient expresses concern about the therapist; or attempts to gain knowledge of the therapist's personal life.

Place toward *uncharacteristic* end if patient does not appear to seek greater closeness with the therapist.

Item 11: Sexual feelings and experiences are discussed.

Place toward *characteristic* end if the patient's sexuality is discussed. This can take the form of a discussion of sexual problems, or the patient's sexual feelings or fantasies or actual sexual experiences. For example, patient talks of wanting to have sex with a romantic partner more frequently.

Place toward *uncharacteristic* end if patient does not discuss sexual or erotic material.

Item 12: Silences occur during the hour.

Place toward *characteristic* end if there are many periods of silence during the hour, or a few extended periods of silence.

Place toward *uncharacteristic* end if there are few silences.

Item 13: Patient is animated or excited.

Place toward *characteristic* end if patient directly expresses, or behaviorally displays a feeling of excitation or appears aroused in some way. For example, patient becomes animated in response to therapist's interpretation.

Place toward *uncharacteristic* end if patient appears bored, dull, or lifeless.

Item 14: Patient does not feel understood by therapist.

Place toward *characteristic* end if patient expresses concern about feeling misunderstood by the therapist or assumes that the therapist cannot understand his or her experience or feelings. For example, a widow doubts the therapist's ability to understand her plight since he has never been in her situation.

Place toward *uncharacteristic* end if patient somehow conveys the sense that the therapist understands his or her experience or feelings. For example, patient comments, in response to therapist's remarks, "Yes, that's exactly what I mean."

Item 15: Patient does not initiate or elaborate topics.

Place toward *characteristic* end if patient does not initiate or elaborate topics for discussion, brings up problems, or otherwise fails to assume some responsibility for the hour. For example, patient states that he or she doesn't know what to talk about.

Place toward *uncharacteristic* end if patient is willing to break silences, or supplies topics either spontaneously or in response to therapist's probes, and actively pursues or elaborates them.

Item 16: There is mention or discussion of body functions, physical symptoms, or health.

Place toward *characteristic* end if discussion emphasizes somatic concerns or physical symptoms. For example, patient may complain of fatigue or illness, or of having headaches, menstrual pains, poor appetite, and the like.

Place toward *uncharacteristic* end if physical complaints are not an important topic of discussion. A more extreme, uncharacteristic placement indicates that the absence of discussion is salient.

Item 17: Therapist actively exerts control over the interaction (e.g., structuring, introducing new topics).

Place toward *characteristic* end if therapist intervenes more than is usually expected in the therapeutic context. Do not rate on the basis of perceptiveness or appropriateness of interventions. For example, rate as *very characteristic* if therapist is so active that he or she frequently interrupts to ask questions or make a point.

Place toward *uncharacteristic* end if therapist intervenes relatively infrequently, and makes little effort to structure the interaction; or if therapist tends to follow the lead of patient, e.g., allowing patient to introduce main topics for discussion and subsequently helping patient to follow his or her train of thought.

Item 18: Therapist conveys a sense of nonjudgmental acceptance. (N.B. Placement toward *uncharacteristic* end indicates disapproval, lack of acceptance).

Place toward *characteristic* end if therapist refrains from overt or subtle negative judgments of the patient; "unacceptable" or problematic behavior of the patient may be explored

while conveying the sense that the patient is worthy. Therapist displays “unconditional positive regard.”

Place toward *uncharacteristic* end if therapist’s comments or tone of voice conveys criticism, a lack of acceptance, or objection to the patient’s behavior. A more extreme placement indicates therapist communicates that patient’s character or personality is somehow displeasing, objectionable, or disturbed.

Item 19: There is an erotic quality to the therapy relationship.

Place toward *characteristic* end if the therapy relationship seems somehow sexualized. This could range from the presence of a warm, erotically tinged relationship to coy or seductive behavior on the part of the patient, to overtly stated wishes for sexual gratification. For example, patient talks of sexual experiences in such a way as to invite the sexual interests of the therapist.

Place toward *uncharacteristic* end if therapy relationship seems basically unsexualized; a more extreme placement in this direction indicates that patient (or therapist) avoid topics or behavior which might be viewed as betraying a sexual interest; or, that there is an attempt to manage or suppress erotic feeling.

Item 20: Patient is provocative, tests limits of the therapy relationship. (N.B. Placement toward *uncharacteristic end* implies patient behaves in a compliant manner).

Place toward *characteristic* end if patient seems to behave in a manner aimed at provoking an emotional response in the therapist. For example, patient may invite rejection by the therapist by behaving in a way which might anger him or her, or by violating one or another aspect of the therapy contract.

Place toward *uncharacteristic* end if patient is particularly compliant, deferential, or seems to be playing the role of the “good patient” as a way of courting the therapist.

Item 21: Therapist self-discloses.

Place toward *characteristic* end if therapist reveals personal information, or personal reactions to the patient. For example, therapist tells patient where he or she grew up, or tells the patient “I find you a very likable person.”

Place toward *uncharacteristic* end if therapist refrains from such self-disclosure. More extreme placement in this direction indicates therapist does not self-disclose even when patient exerts pressure for therapist to do so. For example, therapist does not answer question directly when patient asks whether the therapist is married.

Item 22: Therapist focuses on patient’s feelings of guilt.

Place toward *characteristic* end if therapist focuses on, or somehow draws attention to, patient’s guilty feelings, particularly when there is an intent to help alleviate such feelings. For example, therapist remarks that patient appears to feel guilty when she occasionally does not respond to one of her daughter’s incessant requests for help.

Place toward *uncharacteristic* end if therapist does not emphasize patient’s feelings of guilt.

Item 23: Dialogue has a specific focus.

Place toward *characteristic* end if when reflecting upon the hour the rater can identify a single or several clear foci. For example, the foremost topic of the hour was the patient’s feeling that throughout the course of his life, and in many different ways, he has failed to live up to his father’s expectations of him.

Place toward *uncharacteristic* end if discussion or dialogue seems somewhat diffuse.

Item 24: Therapist's own emotional conflicts intrude into the relationship.

Place toward *characteristic* end if therapist appears to respond to the patient in a somehow ineffective or inappropriate way, and when this response does not stem solely from the therapy encounter, but conceivably derives from the therapist's own emotional or psychological conflicts (e.g., countertransference reaction). For example, therapist seems to avoid or shows personal interest in certain affects or issues which the patient expresses or needs to express.

Place toward *uncharacteristic* end if therapist's personal emotional responses do not intrude in the therapy relationship inappropriately.

Item 25: Patient has difficulty beginning the hour.

Place toward *characteristic* end if patient manifests discomfort or awkwardness in the initial moments or minutes of the session. For example, there is a lengthy silence or the patient says "Well, I don't know what to talk about today."

Place toward *uncharacteristic* end if patient begins hour directly without lengthy pauses, difficulty beginning, or prompting questions from the therapist.

Item 26: Patient experiences discomforting or troublesome (painful) affect during the session.

Place toward *characteristic* end if patient experiences discomforting or troublesome affect. Placement toward the extreme ends indicates intensity of affect.

Place toward *uncharacteristic* end if patient does not experience troublesome feelings.

Item 27: Therapist gives explicit advice or guidance (vs defers even when pressed to do so).

Place toward *characteristic* end if therapist gives explicit advice or makes particular suggestions which patient is then free to accept or ignore. For example, therapist says, "You know, you might find it helpful to consult a lawyer about how to handle your inheritance." Or therapist might guide patient to consider a range of options and to explore each alternative. For example, therapist may point out possibilities the patient overlooks and direct patient to explore possible consequences of each line of action.

Place toward *uncharacteristic* end if therapist refrains from giving advice; extreme placement in this direction indicates that the therapist does not supply such guidance despite pressure from the patient to do so, or when it might be useful to do so.

Item 28: Therapist accurately perceives the therapeutic process.

Place toward *characteristic* end if the therapist seems to accurately perceive the patient's emotional state, intent of his or her speech, or experience of the therapy relationship. This should be inferred from the therapist's comments, interventions, or general stance toward the patient. Judgment should be independent of the type of therapy (i.e., cognitive-behavioral, psychoanalytic) being conducted; rather the rater should attempt an assessment of the process observed in this particular hour.

Place toward *uncharacteristic* end if the therapist appears in some manner to misperceive the patient's emotional state, the intent of his or her speech, or the nature of the interaction between them, or if the therapist tends to inaccurately formulate the problem.

Item 29: Patient talks of wanting to be separate or distant from someone (excludes therapist).

Place toward *characteristic* end if patient talks about wanting greater distance or a sense of independence from someone (excludes therapist) e.g., states wish to finally be free of his or her parents' influence.

Place toward *uncharacteristic* end if patient does not talk of wanting to be separate, independent, or detached.

- Item 30: The content of the session centers on cognitive themes, i.e., ideas or belief systems.
Place toward *characteristic* end if dialogue emphasizes particular conscious ideational themes, beliefs, or constructs used to appraise others, the self, or the world. For example, therapist suggests they look more closely at a patient's idea or belief that unless he accomplishes everything he attempts perfectly, he is worthless.
Place toward *uncharacteristic* end if there is little or no discussion of such ideas or constructs.
- Item 31: Therapist asks for more information or elaboration.
Place toward *characteristic* end if the therapist asks questions designed to elicit information, or presses the patient for a more detailed description of an occurrence. For example, therapist asks about the patient's personal history, or inquires what thoughts went through the patient's mind when he or she met an acquaintance by chance on the street.
Place toward *uncharacteristic* end if therapist does not actively elicit information.
- Item 32: Patient achieves a new understanding or insight.
Place toward *characteristic* end if a new perspective, or new connection or attitude, or ward-off content emerges during the course of the hour. For example, following the therapist's remark, the patient appears thoughtful and says, "I think that's true. I had never really thought about the situation that way before."
Place toward *uncharacteristic* end if no evidently new insight or awareness emerges during the hour.
- Item 33: Patient talks of feeling close to or wanting to be close to someone (excludes therapist).
Place toward *characteristic* end if patient talks about being, or wanting to be, close or intimate with someone (excluding therapist). For example, patient states he or she is lonely, and would like to be with someone.
Place toward *uncharacteristic* end if patient does not make statements about being or wanting to be close and intimate.
- Item 34: Patient blames others, or external forces, for difficulties.
Place toward *characteristic* end if patient tend to externalize, blaming others or chance events for difficulties. For example, patient claims his or her problems with work stem from the fact that he or she has had bad luck with employees.
Place toward *uncharacteristic* end if patient tends to assume responsibility for his or her problems, e.g., noting that his or her unhappiness in romantic relationships may be the result of choosing unsuitable partners.
- Item 35: Self-image is a focus of the session.
Place toward *characteristic* end if a topic discussed by the patient and/or the therapist is the patient's concept, feelings, attitudes, or perceptions of himself or herself, whether positive or negative. For example, patient talks of how it is sometimes difficult (to her) to stand up for herself because she then experiences herself as being too aggressive.
Place toward *uncharacteristic* end if images of the self play little or no part in the dialogue.
- Item 36: Therapist points out patient's attempts to ward off awareness of threatening information or feelings.
Place toward *characteristic* end if a major topic is defensive maneuvers (e.g., undoing, denial) used by the patient to ward off awareness of threatening information or feelings. For example, the therapist points out how the patient is compelled to profess love for his father directly after having made critical remarks about him.

Place toward *uncharacteristic* end if this sort of interpretation of defenses plays little or no role during the hour.

Item 37: Therapist behaves in a teacher-like (didactic) manner.

Place toward *characteristic* end if therapist's attitude or stance toward patient is like that of a teacher to a student. This can be judged independently of specific content, i.e., therapist can impart information to make suggestions without behaving in a didactic or teacherly way, and alternative interpretations can be offered in the form of instruction.

Place toward *uncharacteristic* direction if therapist does not assume a tutor-like role in relation to the patient.

Item 38: There is discussion of specific activities or tasks for the patient to attempt outside of session.

Place toward *characteristic* end if there is discussion of a particular activity the patient might attempt outside of therapy, such as testing the validity of a particular belief or behaving differently than he or she might typically do, or reading books. For example, there is talk about the patient facing a feared situation or object that he or she usually avoids.

Place toward *uncharacteristic* end if there is no talk about the patient attempting particular actions of this sort outside of therapy.

Item 39: There is a competitive quality to the relationship.

Place toward *characteristic* end if either patient or therapist seems competitive with the other. This may take the form of boasting, "one-upping," or putting the other down. For example, the patient suggests that therapists live a cloistered life while he or she is out living and working in the real world.

Place toward *uncharacteristic* end if there is little or no feeling of competitiveness between patient and therapist.

Item 40: Therapist makes interpretations referring to actual people in the patient's life (N.B. Placement toward *uncharacteristic end* indicates therapist makes general or impersonal interpretations.)

Place toward *characteristic* end if therapist's interpretations refer to particular people the patient knows. For example, therapist says, "you felt hurt and angry when your mother criticized you."

Place toward *uncharacteristic* end if interpretations do not refer to particular people, or refer to other aspects of the patient's life. For example, therapist comments, "You seem to be inclined to withdraw when others become close."

Item 41: Patient's aspirations or ambitions are topics of the session.

Place toward *characteristic* end if patient talks about life projects, goals, or wishes for success or status. For example, patient talks about his or her hopes to become a lawyer and earn a substantial income.

Place toward *uncharacteristic* end if patient shows a constriction of future expectations, whether in the form of realistic planning or wishful thinking.

Item 42: Patient rejects (vs accepts) therapist's comments and observations.

Place toward *characteristic* end if patient typically disagrees with or ignores therapist's suggestions, observations, or interpretations. For example, after the therapist made a major interpretation, the patient casually remarked that he or she didn't think that was quite it.

Place toward *uncharacteristic* end if the patient tends to agree with therapist's remarks.

Item 43: Therapist suggests the meaning of others' behavior.

Place toward *characteristic* end if therapist attempts to interpret the meaning of the behavior of people in the patient's life. For example, the therapist suggests that the patient's romantic partner has problems with intimacy.

Place toward *uncharacteristic* end if therapist does not make comments about the meaning of the behavior of others.

Item 44: Patient feels wary or suspicious of the therapist (vs trusting and secure).

Place toward *characteristic* end if patient appears, wary, distrustful, or suspicious of the therapist. For example, patient wonders whether the therapist really likes him or her, or if there is another, hidden meaning in the therapist's remarks.

Place toward *uncharacteristic* end if patient seems to be trusting and unsuspicious.

Item 45: Therapist adopts supportive stance.

Place toward *characteristic* end if therapist assumes a supportive, advocate-like posture toward the patient. This may take the form of approval of something the patient has done, or encouraging, for example, the patient to assert him or herself. Or the therapist may agree with the patient's positive self-statement, or emphasize the patient's strengths, e.g., "You did this in the past, and you can do it again."

Place toward *uncharacteristic* end if therapist tends not to assume a supportive role of this sort.

Item 46: Therapist communicates with patient in a clear, coherent style.

Place toward *characteristic* end if therapist's language is unambiguous, direct, and readily comprehensible. Rate as very *characteristic* if therapist's verbal style is evocative, and marked by a freshness of words and phrasing.

Place toward *uncharacteristic* end if therapist's language is diffuse, overly abstract, jargon-laden, or stereotypic.

Item 47: When the interaction with the patient is difficult, the therapist accommodates in an effort to improve relations.

Place toward *characteristic* end if therapist appears willing and open to compromise and accommodation when disagreement occurs, or when conflicts arise in the dyad. For example, when the patient becomes annoyed with the therapist, he or she makes some effort to mollify the patient.

Place toward *uncharacteristic* end if therapist does not exert an effort to improve matters when the interaction becomes difficult.

Item 48: The therapist encourages independence of action or opinion in the patient.

Place toward *characteristic* end if therapist urges patient to think for him or herself and to take action based on what he or she thinks best. For example, therapist notes that he has now heard from the patient what her mother and colleagues think she should do, but it's not clear what she wants or thinks.

Place toward *uncharacteristic* end if therapist does not introduce the issue of independence or initiative as a topic.

Item 49: The patient experiences ambivalent or conflicted feelings about the therapist.

Place toward *characteristic* end if patient expresses mixed feeling about the therapist or if the patient's overt verbalizations about the therapist are incongruent with the tone of his or her behavior or general manner, or if there seems to be some displacement of feelings. For example, the patient cheerfully agrees with the therapist's suggestions, but then goes on to express hostility toward people who tell him or her what to do.

Place toward *uncharacteristic* end if there is little expression of patient ambivalence toward therapist.

- Item 50: Therapist draws attention to feelings regarded by the patient as unacceptable (e.g., anger, envy, or excitement.)
Place toward *characteristic* end if therapist comments upon or emphasizes feelings that are considered wrong, inappropriate, or dangerous by the patient. For example, therapist remarks that patient sometimes feels a jealous hatred of his more successful brother.
Place toward *uncharacteristic* end if therapist tends not to emphasize feeling reactions that the patient finds difficult to recognize or accept.
- Item 51: Therapist condescends to or patronizes the patient.
Place toward *characteristic* end if therapist seems condescending toward patient, treating him or her as if less intelligent, accomplished, or sophisticated. This may be inferred from the manner in which therapist delivers comments, or offers advice.
Place toward *uncharacteristic* end if therapist conveys by his or her manner, tone of voice, or comments that he or she does not assume an attitude of superiority.
- Item 52: Patient relies upon therapist to solve his/or her problems.
Place toward *characteristic* end if patient appears to present problems to the therapist in a manner which suggest a hope or expectation that the therapist will offer specific suggestions or advice in the way of a solution. For example, patient states uncertainty as to whether or not to break up with a romantic partner and asks the therapist what he or she should do. Note that the appeal for a solution need not be explicitly stated but may be implied by the manner in which the patient discusses the problem.
Place toward *uncharacteristic* end if patient does not appear explicitly or implicitly to rely on the therapist to solve problems.
- Item 53: Patient is concerned about what therapist thinks of him or her.
Place toward *characteristic* end if patient seems concerned with what the therapist might think of his or her behavior, or is concerned about being judged. For example, the patient might comment, "You are probably thinking that was a stupid thing to do." Rater may also infer this from patient behavior, e.g., patient boasts of accomplishments in order to favorably impress the therapist.
Place toward *uncharacteristic* end if patient does not seem concerned with the kind of impression he or she is creating, or appears unworried about being judged by therapist.
- Item 54: Patient expresses himself or herself in a clear and organized fashion.
Place toward *characteristic* end if patient expresses him or herself in a manner which is easily understandable, and relatively clear and fluent.
Place toward *uncharacteristic* end if patient's speech is characterized by rambling, frequent digression, or vagueness. This can sometimes be judged by the rater's inability to readily follow the connections between topics the patient discusses.
- Item 55: Patient conveys positive expectations about therapy.
Place toward *characteristic* end if patient expresses the hope or expectation that therapy will be of help. A more extreme placement in this direction indicates that the patient expresses unrealistically positive expectations, i.e., therapy will solve all of his or her problems and will be a protection against future difficulties. For example, client may convey hope that therapy will provide quick results.
Place toward *uncharacteristic* end if patient expresses criticisms of therapy, e.g., conveys a sense of disappointment that therapy is not more effective or gratifying. A more extreme placement indicates patient expresses skepticism, pessimism, or disillusionment about what can be accomplished in therapy.

Item 56: Patient discusses experiences as if distant from his or her feelings.

Refer to patient's attitude toward the material spoken, how much he or she appears to care about it, as well as how much overt affective expression there is.

Place toward *characteristic* end if patient displays little concern or feeling, and is generally flat, impersonal, or half-heartedly indifferent (tension may or may not be apparent).

Place toward *uncharacteristic* end if affect is apparent and patient is emotionally involved with the material. Place toward *very uncharacteristic* end if patient expresses sharp affect, or outbursts of emotion, and deeply felt concern.

Item 57: Therapist explains rationale behind his or her technique or approach to treatment, or suggests that the patient use certain techniques.

Place toward *characteristic* end if therapist explains some aspect of the therapy to the patient. For example, therapist may reply in response to a direct question or request by the patient that he or she prefers not to answer immediately, since this would provide a better opportunity to explore thoughts or feelings associated with the question. Also includes the therapist answering questions about treatment process.

Place toward *uncharacteristic* end if little or no explanation is made by the therapist to explain the rationale behind some aspect of the treatment, even if there is pressure, or there may be some utility in doing so.

Item 58: Patient does not examine thoughts, reactions or motivations related to his or her role in creating or perpetuating problems.

Place toward *characteristic* end if patient is reluctant to examine his or her own role in perpetuating problems, e.g., by balking, avoiding, blocking, or repeatedly changing the subject whenever a particular topic is introduced.

Place toward *uncharacteristic* end if patient actively contemplates, or is able to pursue, trains of thoughts regarding his or her role in creating or perpetuating problems.

Item 59: Patient feels inadequate and inferior (vs effective and superior).

Place toward *characteristic* end if patient expresses feelings of inadequacy, inferiority, or ineffectiveness. For example, patient states that nothing he attempts really turns out the way he hopes it will.

Place toward *uncharacteristic* end if patient expresses a sense of effectiveness, superiority, or even triumph, e.g., recounts personal achievements, or claims attention for a personal attribute or skill.

Item 60: Patient has cathartic experience (N.B. rate as *uncharacteristic* if emotional expression is not followed by a sense of relief).

Place toward *characteristic* end if patient gains relief by giving vent to suppressed or pent-up feeling. For example, patient cries intensely over the death of a parent, and then tells the therapist he or she feels better or appears to feel better as a result of expressing feelings.

Place toward *uncharacteristic* end if the experience of strong affect is not followed by a sense of relaxation or relief.

Rate as neutral if cathartic experience plays little or no role in the hour.

Item 61: Patient feels shy and embarrassed (vs unselfconscious and assured).

Place toward *characteristic* end if patient appears shy, embarrassed, or not self-assured, or at the extreme, humiliated or mortified.

Place toward *uncharacteristic* end if patient appears unselfconscious, assured, or certain of him or herself.

- Item 62: Therapist identifies a recurrent theme in the patient's experience or conduct.
Place toward *characteristic* end if therapist points out a recurrent pattern in the patient's life experience or behavior. For example, therapist notes that patient repeatedly seeks out unavailable sexual partners.
Place toward *uncharacteristic* end if therapist does not identify such a theme or recurrent pattern.
- Item 63: Patient's interpersonal relationships are a major theme.
Place toward *characteristic* end if a major focus of discussion is the patient's social or work relationships, or personal, emotional involvements (*excludes* discussion of therapy relationship [see Item 98] and *excludes* discussion of love or romantic relationships [see Item 64]). For example, patient discusses at some length his or her distress over conflicts with a boss.
Place toward *uncharacteristic* end if a good portion of the hour is devoted to discussion of matters that are not directly connected to relationships, e.g., the patient's compulsion to work, or drive to achieve, or his/or her preoccupation with food and eating.
N.B.: Item does not refer to discussion of relationships in the distant past. (See Item 91, Memories or reconstructions of infancy and childhood are topics of discussion.)
- Item 64: Feelings about romantic love relationships are a topic of the session.
Place toward *characteristic* end if romantic or love relationships are talked about during the hour. For example, patient talks about feelings toward a romantic partner.
Place toward *uncharacteristic* end if love relationships do not emerge as a topic.
- Item 65: Therapist restates or rephrases the patient's communication in order to clarify its meaning.
Place toward *characteristic* end if one aspect of the therapist's activity is restating or rephrasing the patient's affective tone, statements, or ideas in a somewhat more recognizable form in order to render their meaning more evident. For example, therapist remarks, "What you seem to be saying is that you're worried about what therapy will be like."
Place toward *uncharacteristic* end if the therapist seldom employs this kind of clarifying activity during the hour.
- Item 66: Therapist is directly reassuring (N.B. Place in *uncharacteristic* direction if therapist tends to refrain from providing direct reassurance).
Place toward *characteristic* end if therapist attempts to directly allay patient's anxieties and instill hope that matters will improve. For example, therapist tells patient there is no reason for worry; he or she is sure the problem can be solved.
Place toward *uncharacteristic* end if the therapist tends to refrain from providing direct reassurance of this kind.
- Item 67: Therapist draws the patient's attention to wishes, feelings, or ideas that may not be in awareness.
Place toward *characteristic* end if therapist draws the patient's attention to feelings, thoughts, or impulses that may not be clearly in awareness. Rater must attempt to infer the quality of mental content (i.e., the extent to which it is in awareness) from the context of the hour (excludes interpretation of defensive maneuvers: see Item 36).
Place toward *uncharacteristic* end if therapist focuses on material that appears to be clearly in the conscious awareness of the patient.
- Item 68: Real vs. fantasized meanings of experiences are actively differentiated.
Place toward *characteristic* end if therapist or patient notes differences between patient's fantasies about an occurrence and the objective reality. For example, therapist points out

that although the patient may have harbored death wishes toward the deceased, he or she did not, in reality, cause the heart attack. Distortions and erroneous assumptions should also be included, e.g., therapist asks where patient got that idea when he or she repeatedly describes the world as dangerous.

Place toward *uncharacteristic* end if little of the activity of the therapy hour is concerned with distortions of reality.

Item 69: Patient's current or recent life situation is emphasized in the session.

Place toward *characteristic* end if patient or therapist emphasizes very recent or current life events. For example, patient talks about depression over a spouse's recent death.

Place toward *uncharacteristic* end if discussion of current life situation is not an important aspect of the hour.

Item 70: Patient struggles to control feelings or impulses.

Place toward *characteristic* end if patient attempts to manage or control strong emotions or impulses. For example, patient fights to hold back tears while obviously distressed.

Place toward *uncharacteristic* end if patient does not attempt to manage or control emotions or impulses.

Item 71: Patient is self-accusatory; expresses shame or guilt.

Place toward *characteristic* end if patient expresses self-blame, shame, or guilt. For example, that patient claims that if he or she had paid more attention to a spouse's low moods, the spouse might not have committed suicide.

Place toward *uncharacteristic* end if patient does not make statements reflecting self-blame, a sense of shame, or pangs of conscience.

Item 72: Patient understands the nature of therapy and what is expected.

Placement toward *characteristic* end reflects the extent to which the patient appears to comprehend what is expected of him or her in the situation and what will happen in therapy.

Placement toward *uncharacteristic* end suggests that the patient is uncertain, confused or misunderstands his or her role in therapy and what is expected in the situation.

Item 73: The patient is committed to the work of therapy.

Place toward *characteristic* end if patient seems committed to the work of therapy. May include willingness to make sacrifices to continue this endeavor, in terms of time, money, inconvenience; may also include genuine desire to understand more about the self in spite of the psychological discomfort this may entail. For example, a patient was so interested in beginning treatment that he or she was willing to give up a weekly golf game to keep his/her appointments.

Place toward *uncharacteristic* end if patient seems ambivalent about therapy, or unwilling to tolerate the emotional hardships that therapy might entail. May be expressed in terms of complaints about the expense of therapy, in scheduling conflicts, or statements of doubt about the effectiveness of treatment, or uncertainty about wanting to change.

Item 74: Humor is used.

Place toward *characteristic* end if therapist or patient displays humor during the course of the hour. This may appear as a defense/coping mechanism in the patient; or the therapist may use wit or irony to make a point or to facilitate development of a working relationship with the patient. For example, patient demonstrates an ability to laugh at herself or her predicament.

Place toward *uncharacteristic* end if the interaction appears grave, austere, or somber.

Item 75: Termination of therapy is mentioned or discussed.

Place toward *characteristic* end if patient or therapist talks of the end of therapy. Includes all reference to termination, i.e., whether it is wished for, feared, or threatened.

Place toward *uncharacteristic* end if discussion of termination seems to be avoided. For example, the upcoming termination is mentioned, but neither patient nor therapist pursues the subject.

Rate as neutral if no reference to termination is made.

Item 76: Therapist suggests that patient accept responsibility for his or her problems.

Place toward *characteristic* end if therapist attempts to convey to the patient that he or she must take some action, or change somehow, if his or her difficulties are to improve. For example, therapist comments, "Let's look at what you may have done to elicit that response (from another person)."

Place toward *uncharacteristic* end if therapist's actions are in general not aimed at persuading patient to assume greater responsibility.

Item 77: Therapist is tactless.

Place toward *characteristic* end if therapist's comments seem to be phrased in ways likely to be perceived by the patient as hurtful or derogatory. This lack of tact or sensitivity may not be a result of therapist's annoyance or irritation, but rather a result of lack of technique, polish, or verbal facility.

Place toward *uncharacteristic* end if therapist's comments reflect kindness, consideration, or carefulness.

Item 78: Patient seeks therapist's approval, affection, or sympathy.

Place toward *characteristic* end if patient behaves in a manner that appears designed to make therapist like him or her, or to gain attention or reassurance.

Place toward *uncharacteristic* end if patient does not behave in this fashion.

Item 79: Therapist comments on changes in patient's mood or affect that occur during the hour.

Place toward *characteristic* end if therapist makes frequent or salient comments about shifts in the patient's mood or quality of experience during the hour. For example, therapist notes that in response to his comments, patient has shifted from a "devil may care" attitude to feeling hurt but working more seriously on his or her problems.

Place toward *uncharacteristic* end if therapist tends not to comment on changes in patient's states of mind during the hour.

Item 80: Therapist presents a specific experience or event in a different perspective.

Place toward *characteristic* end if therapist restates what the patient has described in such a way that the patient is likely to look at the situation differently ("reframing" or "cognitive restructuring"). A new (and usually more positive) meaning is given to the same content. In rating this item, a particular event or experience that has been "reframed" should be identified. For example, After a patient berates him or herself for having started an ugly quarrel with a romantic partner, the therapist says that this is his or her way of expressing what he or she needs in that relationship.

Place toward *uncharacteristic* end if this does not constitute an important aspect of the therapist's activity during the hour.

Item 81: Therapist emphasizes patient feelings in order to help him or her experience them more deeply.

Place toward *characteristic* end if therapist stresses the emotional content of what the patient has described in order to encourage the experience of affect. For example, therapist suggests that the interaction the patient has just described in a story-telling manner probably made her or him feel quite angry.

Place toward *uncharacteristic* end if therapist does not emphasize the experience or affect, or appears interested in patient's objectified descriptions.

Item 82: The patient's behavior during the hour is reformulated by the therapist in a way not explicitly recognized previously.

Place toward *characteristic* end if therapist makes frequent or a few salient comments about the patient's behavior during the hour in a way that appears to shed new light on it. For example, therapist suggests that the patient's late arrival for the hour may have a meaning; or therapist notes that whenever the patient begins to talk about emotional topics, he or she quickly shifts to another focus.

Place toward *uncharacteristic* end if therapist tends not to reformulate the patient's behavior during the session.

Item 83: Patient is demanding.

Place toward *characteristic* end if patient makes multiple demands/requests of the therapist or pressures therapist to meet a specific request. For example, patient makes multiple demands such as evening appointments, medication, or requests more structure or more activity on therapist's part.

Place toward *uncharacteristic* end if patient is reluctant or hesitant to make usual or appropriate requests of the therapist, e.g., fails to ask for another appointment despite a schedule conflict with another, highly important event.

Item 84: Patient expresses angry or aggressive feelings.

Place toward *characteristic* end if patient expresses resentment, anger, bitterness, hatred, or aggression verbally or nonverbally (N.B. excludes such feelings directed at therapist: see Item 1).

Place toward *uncharacteristic* end if the verbal or nonverbal expression of such feelings does not occur.

Item 85: Therapist encourages patient to try new ways of behaving with others.

Place toward *characteristic* end if therapist suggests alternative ways of relating to people. For example, therapist asks patient what he thinks might happen if he were to be more direct in telling his mother how it affects him when she nags. More extreme placement implies that the therapist actively coaches patient on how to interact with others, or rehearses new ways of behaving with others.

Place toward *uncharacteristic* end if therapist tends not to make suggests about how to relate to others.

Item 86: Therapist acts confident or self-assured (vs uncertain or defensive).

Place toward *characteristic* end if therapist's manner indicates a feeling of confidence and competence.

Place toward *uncharacteristic* end if therapist appears uncertain, embarrassed, or at a loss.

Item 87: Patient is controlling.

Place toward *characteristic* end if patient exercises a restraining or directing influence in the hour, e.g., patient dominated the interaction with compulsive talking, or interrupted the therapist frequently.

Place toward *uncharacteristic* end if patient does not control the interaction, working with therapist in a more collaborative fashion.

Item 88: Patient brings up significant issues and material.

Place toward *characteristic* end if the rater judges that what the patient brings up and talks about during the hour is importantly related to patient's psychological conflicts, or are topics of real concern.

Place toward *uncharacteristic* end if discussion seems unrelated to or somehow removed from issues of central concern.

Item 89: Therapist intervenes to help patient avoid or suppress disturbing ideas or feelings.

Place toward *characteristic* end if therapist's stance is characterized by a calm, attentive compliance intended to avoid upsetting the patient's emotional balance or to strengthen the patient's defenses.

Place toward *uncharacteristic* end if therapist does not act to shore up defenses or suppress troublesome thoughts or feelings.

Item 90: Patient's dreams or fantasies are mentioned or discussed.

Place toward *characteristic* end if a topic of discussion is dream content or fantasy (day-dreams or night-dreams) material. For example, patient and therapist explore the possible meanings of a dream the patient had the night before starting therapy, or the patient talks of what life would have been like if she'd chosen a different romantic partner.

Place toward *uncharacteristic* end if there is little or no discussion of dreams or fantasy during the hour.

Item 91: Memories or reconstructions of infancy and childhood are topics of discussion.

Place toward *characteristic* end if some part, or a significant part, of the hour is taken up by a discussion of childhood or memories of early years of life.

Place toward *uncharacteristic* end if little or no time is devoted to a discussion of these topics.

Item 92: Patient's feelings or perceptions are linked to situations or behavior of the past.

Place toward *characteristic* end if several links or salient connections are made between the patient's current emotional experience or perception of events with those of the past. For example, therapist points out (or patient realizes) that current fears of abandonment are derived from the loss of a parent during childhood.

Place toward *uncharacteristic* end if current and past experiences are discussed, but not linked.

Place toward neutral category if these subjects are discussed very little or not at all.

Item 93: Therapist refrains from stating opinions or views of topics the patient discusses.

Place toward *characteristic* end if therapist tends to refrain from stating opinions or views of topics patient discusses. Therapist assumes role of neutral commentator, and the patient's view of matters is made pre-eminent in the dialogue. For example, therapist asks how it would be for the patient if she, as the therapist, approved of his expressing his anger, and subsequently inquires how it would be for him if she disapproved.

Place toward *uncharacteristic* end if therapist expresses opinions, or takes positions either explicitly or by implication. For example, therapist tells patient that it is very important that he learn how to express his anger; or comments that the relationship the patient is in right now is not a very good one, and that she should consider getting out of it.

N.B.: A stance of neutral commentator is not synonymous with passivity or disengagement. The therapist can be active and affectively engaged and still maintain a neutral stance.

Item 94: Patient feels sad or depressed (vs joyous or cheerful).

Place toward *characteristic* end if patient's mood seems melancholy, sad, or depressed.

Place toward *uncharacteristic* end if patient appears delighted or joyful or somehow conveys a mood of well-being or happiness.

Item 95: Patient feels helped by the therapy.

Place toward *characteristic* end if patient somehow indicates a sense of feeling helped, relieved, or encouraged by the way the therapy is progressing.

Place toward *uncharacteristic* end if patient feel discouraged or frustrated with the way therapy is progressing (N.B.: Item does not refer to events outside of therapy.)

Item 96: There is discussion of scheduling of hours, or fees.

Place toward *characteristic* end if therapist and patient discuss the scheduling or re-scheduling (times, dates, etc.) of a therapy hour; or if there is discussion of the amount of fee, time of payment, and the like.

Place toward *uncharacteristic* end if these topics are not taken up.

Item 97: Patient is introspective, readily explores inner thoughts and feelings.

Place toward *characteristic* end if patient appears unguarded, and relatively unblocked. In this instance, the patient pushes beyond ordinary constraints, cautions, hesitations, or feelings of delicateness in exploring and examining thoughts and feelings.

Place toward *uncharacteristic* end if patient's discourse appears hesitant or inhibited, shows constraint, reserve or a stiffening of control, and does not appear loose, free, or unchecked.

Item 98: The therapy relationship is a focus of discussion.

Place toward *characteristic* end if therapy relationship is discussed. For example, therapist calls attention to features of the interaction or interpersonal process between the patient and him or herself.

Place toward *uncharacteristic* end if therapist or patient does not comment on the nature of transactions between them, i.e., focuses on content.

Item 99: Therapist raises questions about the patient's view (vs validates the patient's perceptions).

Place toward *characteristic* end if therapist somehow raises a question about the patient's view of an experience or an event. For example, therapist might say "How is that so?" or "I wonder about that," or simply utter an "Oh?" This item does not refer to interpretations or reframing in the sense of providing a new or different meaning to the patient's discourse, but instead refers simply to somehow raising a question about the patient's viewpoint.

Place toward *uncharacteristic* end if therapist somehow conveys a sense of agreement, concurrence with, or substantiation of the patient's perspective. For example, therapist says, "I think you're quite right about that" or "You seem to have a good deal of insight into that."

Item 100: Therapist draws connections between the therapeutic relationship and other relationships.

Place toward *characteristic* end if therapist makes comments linking the patient's feelings about the therapist and feelings toward other significant individuals in his or her life. Includes current relationships, and past or present relationships with parents (transference/parent link). For example, therapist remarks that she thinks the patient is sometimes afraid she will criticize her just as her mother does.

Place toward *uncharacteristic* end if therapist's activity during the hour does not attempt to link the interpersonal aspects of therapy with experiences in other relationships.

Appendix IB Child Psychotherapy Q-Set Coding Manual

Celeste Schneider and Enrico E. Jones

The 100 items of the Child Psychotherapy Process Q-Set (CPQ) provide a basic language for the description and classification of therapy process in child treatments. The CPQ is intended to be pantheoretical with respect to any particular theory and should permit the portrayal of a wide range of events, interventions, and process in therapy. It is hoped that the use of a standard language and rating procedure will provide the means for systematically characterizing child–therapist interactions. Raters Q-sort entire therapy sessions, rather than small segments of child or therapist communication. The general purpose of the instrument is to provide a meaningful index of the therapeutic process, which may be used in comparative analyses or studied in relation to pre-and post-therapy assessments.

The procedure is relatively simple. After studying a therapeutic session and arriving at some formulation of the material, sort the cards into a row of nine categories. At one end of the row, place those cards you believe to be the most characteristic with respect to your understanding of the material. At the other end, place those cards you believe to be most uncharacteristic with reference to your description.

A convenient method of sorting is to first form three stacks of cards – those items deemed characteristic being placed on one side, those items deemed uncharacteristic being placed on the other side, and those cards remaining falling in between. When the three piles of cards have been assembled, they can be further divided into the proportions indicated for each descriptive category. The number of cards to be placed in each category is:²

Category	No. of cards	Label of category
9	5	Extremely characteristic or salient
8	8	Quite characteristic or salient
7	12	Fairly characteristic or salient
6	16	Somewhat characteristic or salient
5	18	Relatively neutral or unimportant
4	16	Somewhat uncharacteristic or negatively salient
3	12	Fairly uncharacteristic or negatively salient
2	8	Quite uncharacteristic or negatively salient
1	5	Extremely uncharacteristic or negatively salient

Raters may occasionally feel that there is insufficient evidence to make a judgment with confidence or may feel some discomfort at the constraints imposed by the sorting procedure. The Q-items themselves represent a good deal of reflection and advice; however, as is true of other systems of content analysis, the Q-sort is designed to reduce complex interaction to manageable proportions and to achieve research economy. No instrument of this kind perfectly fits or captures all the possible events in a therapy session. It should also be noted that assignment of a fixed number of cards to each category has been shown empirically to be a more valuable procedure than the situation in which a clinician can assign any number of cards to a category.

The Q-sort is composed of three types of items: (1) items describing child emotion states and behavior or experience; (2) items reflecting the therapist actions and attitudes; and (3) items attempting to capture the nature of the interaction of the dyad, the climate, or atmosphere of the encounter.

²This material originally was part of the Dissertation of Celeste Schneider on The Child Psychotherapy Q-Set Manual. ProQuest Dissertation Abstracts, 2003. Copyright © Celeste Schneider. With permission.

The manual should be carefully studied, as the descriptions and examples of the items are intended to minimize potentially varying interpretations. Raters are asked to take the position of a “generalized other,” i.e., an observer who stands mid-way between child and therapist and who views the interaction from the outside. In placing each item, ask yourself: Is this attitude, behavior, or experience clearly present (or absent)? If the evidence is not compelling, ask yourself: To what extent is it present or absent? Try to be as open-minded and objective as possible, focusing on the behavioral and linguistic cues presented in the clinical material. Search for specific evidence. Try not to be influenced by your personal reactions to either therapist or child. Avoid, for example, judgments of whether a particular therapist activity is effective or ineffective, or desirable or undesirable from a particular theoretical point of view.

Raters are sometimes uncertain as to whether a particular item should be placed in the relatively neutral or unimportant category, or in one of the categories reflecting that it is uncharacteristic of the hour. An item should be placed in the neutral category when it is a relatively irrelevant or inconsequential aspect of a particular therapy session. Place an item in the uncharacteristic category rather than the neutral category if the absence of a particular event is important to mark in order to achieve a more complete description of the hour. A more extreme placement of the item in the uncharacteristic direction signals that the absence of a particular behavior or experience is remarkable. Many items have specific instructions about this in their definitions. Extensive research employing Q-methodology has demonstrated that, with patience and care, Q-ratings capture meaningful descriptions of experience in the consulting room and achieve high inter-rater reliability.

Child Psychotherapy Q-Set: Items and Definitions

- Item 1: Child expresses negative feelings (e.g., criticism, hostility) toward therapist [vs expresses approval or admiration].
Place toward *characteristic* direction if child expresses criticism of the therapist, or feelings of dislike, scorn, anger, or antagonism. For example, child attributes undesirable traits to the therapist, saying that the therapist is ugly, mean, stupid, or kicks therapist.
Place toward *uncharacteristic* direction if child expresses positive or friendly feelings toward therapist, e.g., expresses love or affection for the therapist.
- Item 2: Therapist comments on the child’s nonverbal behavior (e.g., body posture, gestures).
Place toward *characteristic* direction if therapist draws attention to child’s nonverbal behavior, such as facial expressions, blushes, or body movements. Exclude child’s play. For example, therapist remarks that the child is spinning round and round in circles, therapist notes child’s twiddling fingers.
Place toward *uncharacteristic* direction if there is little or no focus on obvious, repetitive, or problematic nonverbal behavior.
- Item 3: Therapist’s remarks are aimed at encouraging child’s speech.
Place toward *characteristic* direction if therapist encourages child to express herself verbally. This refers to remarks aimed at eliciting verbalizations and not simply to general exploratory comments and questions. The therapist might encourage the child to talk rather than act, or ask, “can you talk about that?” or encourage the child to describe difficult thoughts or ideas. For example, therapist encourages a child who is afraid of the dark to say to herself, “I am a brave girl, I can take care of myself in the dark.”
Place toward *uncharacteristic* direction if therapist does not actively encourage child’s verbalizations, interrupts, or excessively reframes child’s statements.

- Item 4: There is discussion of why child is in therapy.
Place toward *characteristic* direction if there is talk about why the child is in therapy. For example, the therapist asks if the patient understands why he was brought to therapy, or discusses therapeutic goals.
Place toward *uncharacteristic* direction if there is no reference or allusion to the reasons for therapy by either therapist or child. For example, child queries therapist regarding why he must continue sessions, and therapist does not respond with specific reasons as to why child is there.
- Item 5: Child has difficulty understanding the therapist's comments.
Place toward *characteristic* direction if child seems confused or fails to understand therapist's comments. This may be the result of therapist's lack of clarity, or a defensive response by the child. For example, the child asks "What?" or otherwise indicates that she doesn't know what the therapist means.
Place toward *uncharacteristic* direction if child readily demonstrates comprehension of therapist's comments.
- Item 6: Therapist is sensitive to the child's feelings.
Place toward *characteristic* direction if therapist is sensitive to the child's feelings and can communicate this understanding in a way that seems attuned to the child. For example, therapist makes a statement that indicates an understanding of how the child felt in a certain situation.
Place toward *uncharacteristic* direction if therapist does not respond to child in a way that conveys attunement. For example, child's shyness is criticized by therapist as avoidance.
- Item 7: Child is anxious and tense [vs calm and relaxed].
Place toward *characteristic* direction if child exhibits tension, anxiety, or worry. This may be demonstrated in either speech or play. For example, child appears halting and timid.
Place toward *uncharacteristic* direction if child appears calm or relaxed or conveys a sense of ease even while addressing uncomfortable topics.
- Item 8: Child is curious.
Place toward *characteristic* direction if child exhibits curiosity or interest in surroundings, such as interest in toys in the room, or the thoughts, feelings, or behaviors of others, including the therapist's. For example, child asks numerous questions about other children under the therapist's care.
Place toward *uncharacteristic* direction if child does not seem curious. For example, child lacks interest in surroundings, or understanding something or someone better.
- Item 9: Therapist is nonresponsive [vs affectively engaged].
Place toward *characteristic* direction if therapist's stance toward the child is cool, formal, and detached, or marked by emotional retreat or withdrawal.
Place toward *uncharacteristic* direction if therapist is responsive and affectively involved during interactions with the child.
- Item 10: Child seeks greater intimacy with the therapist.
Place toward *characteristic* direction if child appears to wish for a more intimate relationship. For example, child expresses concern about the therapist; expresses a wish to see the therapist more often; or seeks greater physical closeness by sitting close to or hugging the therapist.
Place toward *uncharacteristic* direction if child remains distant, or avoids greater intimacy or closeness.

Item 11: Sexual feelings or thoughts emerge.

Place toward *characteristic* direction if the child's sexual ideas, wishes, or fantasies are discussed; or expressed in play or behavior.

Place toward *uncharacteristic* direction if child does not express sexual ideas or feelings; or if sexual thoughts seem to be avoided or suppressed.

Item 12: Therapist models unspoken or unelaborated emotions.

Place toward *characteristic* direction if therapist uses own affect and emotional tone when addressing the child's emotional states. For example, when the child describes burying a beloved pet without feeling, the therapist says sadly, "that makes me really upset, I feel like crying."

Place toward *uncharacteristic* direction if therapist responds to child's unspoken or unelaborated emotions with ideational or explanatory statements. For example, when child discusses loss of a pet without affect, therapist says I think you are sad.

Item 13: Child is animated or excited.

Place toward *characteristic* direction if child appears excited or aroused in some way. For example, child becomes animated and talkative in response to therapist's comment.

Place toward *uncharacteristic* direction if child appears bored, dull, lifeless, or subdued. For example, when therapist greets child, he shrugs his shoulders and sluggishly sits and stares.

Item 14: Physical symptoms or health are discussed.

Place toward *characteristic* direction if discussion emphasizes somatic concerns or physical symptoms. For example, child may complain of fatigue; or of having headaches, stomachaches, and the like.

Place toward *uncharacteristic* direction if child exhibits somatic distress, but does not present it for discussion.

Item 15: Child makes physical contact with the therapist.

Place toward *characteristic* direction if child touches the therapist (e.g., rubs against, hugs, pushes, kicks).

Place toward *uncharacteristic* direction if child keeps a physical distance from therapist. For example, child pulls back as therapist approaches.

Item 16: There is discussion or evidence of bodily functions (e.g., bowel movements).

Place toward *characteristic* direction if there is discussion or enactment through play of bodily functions. Bodily functions may include micturition, bowel movements, or the function of sexual organs.

Place toward *uncharacteristic* direction if discussion of body functions is actively avoided, or not discussed when this topic emerges in play or behavior. For example, child asks to be excused to use the restroom twice during the hour, and the therapist does not address this event.

Item 17: Therapist actively exerts control over the interaction (e.g., structuring, introducing new topics).

Place toward *characteristic* direction if therapist imposes structure on the direction of the interaction. For example, therapist introduces a theme for play, suggests that the child take on a specific role, or engages in the play to impose new themes, teach the child skills or alternative ways of behaving.

Place toward *uncharacteristic* direction if therapist intervenes relatively infrequently, or makes little effort to structure the interaction. For example, therapist tends to follow the lead of child, by allowing him to introduce main topics, or to structure his own play.

Item 18: Therapist is judgmental and conveys lack of acceptance.

Place toward *characteristic* direction if therapist's comments or tone of voice convey irritation, criticism, or a lack of acceptance. For example, therapist communicates that child's behavior is somehow displeasing, objectionable, or disturbing.

Place toward *uncharacteristic* direction if therapist refrains from overt or subtle negative judgments of the child. For example, problematic behavior of the child is explored while still conveying to the child that she is worthy.

Item 19: Child asks for advice or information.

Place toward *characteristic* direction if child asks therapist for advice or information to help him understand or perform a task. For example, child asks therapist how to resolve a conflict with his peers.

Place toward *uncharacteristic* direction if child avoids asking for advice or information. For example, child refuses or rejects therapist's offered suggestions, advice, or information after having presented a problematic situation.

Item 20: Child is provocative; challenges the therapist or rules and boundaries of the therapy hour.

Place toward *characteristic* direction if child seems to behave or speak in a manner aimed at provoking the therapist or challenging the apparent rules and boundaries of the therapy hour. For example, after therapist points out that a pen may mark the desk if not careful, child continues to "toy" with the pen, appearing to have the intention of provoking limit-setting, disapproval, irritation, or rejection.

Place toward *uncharacteristic* direction if child appears not to engage the therapist in an emotionally provocative way, or does not challenge the bounds of the therapy.

Item 21: Therapist self-discloses.

Place toward *characteristic* direction if therapist reveals personal information, or personal reactions to the child. For example, therapist tells child where she grew up, or tells child, "I have a son about your age."

Place toward *uncharacteristic* direction if therapist refrains from such self-disclosure even when child exerts pressure for therapist to do so. For example, therapist does not answer question directly when child asks if the therapist is married.

Item 22: Child expresses fears of being punished or threatened.

Place toward *characteristic* direction if child expresses verbally, or in play, fears that he will be punished, or that someone or something is a potential source of pain, injury, danger, harm, or evil.

Place toward *uncharacteristic* direction if child expresses expectation of being praised or protected.

Item 23: Therapy session has a specific focus or theme.

Place toward *characteristic* direction if interaction is kept to a single or a few primary foci. For example, child plays out or conveys repetitively his desire to be the sole object of another's attention.

Place toward *uncharacteristic* direction if multiple topics are discussed, or if interaction seems to lack direction or focus, or seems somewhat diffuse.

Item 24: Therapist's emotional conflicts intrude into the relationship.

Place toward *characteristic* direction if therapist's responses convey the therapist's own emotional or psychological experience or conflicts. For example, when child laughs at something disturbing, therapist replies, "we don't joke about things like that."

Place toward *uncharacteristic* direction if therapist restrains from responding personally to provocation and disturbing material. For example, if child directs sarcasm at therapist's appearance, therapist is quiet or says, "I am bothering you today."

Item 25: Child has difficulty leaving the session.

Place toward *characteristic* direction if child manifests discomfort or awkwardness at the conclusion of the session. For example, child prolongs discussion or play once the end of the hour is announced; child refuses to leave.

Place toward *uncharacteristic* direction if child ends the hour with considerable ease. For example, child dashes for the door when therapist announces the end of the hour.

Item 26: Child is socially misattuned or inappropriate.

Place toward *characteristic* direction if child misses or misreads social cues or gestures of the therapist or exhibits awkward social exchanges with others. For example, when the therapist greets child with a friendly hello, child is unresponsive or moves ahead to an idiosyncratic or inappropriate subject.

Place toward *uncharacteristic* direction if child is attentive about social interactions. For example, when therapist shifts in chair toward the end of the session, child asks, "is the time up?"

Item 27: There is a focus on helping the child plan behavior outside the session.

Place toward *characteristic* direction if therapist offers explicit guidance or suggests how the child behaves with others. For example, therapist encourages child to put homework in knapsack by the front door every evening so he will not forget to take it to school; therapist asks child what he thinks might happen if he were to directly tell a parent how he feels when that parent nags him.

Place toward *uncharacteristic* direction if therapist refrains from guiding child in the planning of his behavior despite requests or pull from the child to do so.

Item 28: Therapist accurately perceives the therapeutic process.

Place toward *characteristic* direction if the therapist conveys an accurate assessment of the child's experience of the therapy relationship. For example, when the child states he wishes to leave, but physically lingers in the session, the therapist finds a way to respond to the child's mixed feelings.

Place toward *uncharacteristic* direction if the therapist appears to misperceive the child's emotional state, the intent of his speech, the nature of the interaction between them, or to misperceive the problem.

Item 29: The quality of child's play is fluid, absorbed (vs fragmented, sporadic).

Place toward *characteristic* direction if child is engaged in activities, or shows sustained focus.

Place toward *uncharacteristic* direction if child shifts from one activity to the next without a sustained focus in such a manner that no activity develops into something that can be understood or followed. For example, child spends a few moments with building blocks, then moves to the playing with puppets, and on to leafing through books with no apparent narrative informing the play.

Item 30: Child's aspirations or ambitions are themes.

Place toward *characteristic* direction if child discusses life goals or future. For example, child talks about her hopes of becoming a doctor, mommy, or firefighter.

Place toward *uncharacteristic* direction if child shows or talks about a constriction of future expectations, whether in the form of realistic planning or wishful thinking.

Item 31: Therapist asks for more information or elaboration.

Place toward *characteristic* direction if the therapist asks questions designed to elicit information, or presses the child for a more detailed description of an occurrence. For example, therapist asks about the child's personal history, or queries what thoughts went through her mind on the first day of school.

Place toward *uncharacteristic* direction if therapist does not actively elicit information from the child, or fails to follow up on vague or uncertain communication.

Item 32: Child achieves a new understanding or insight.

Place toward *characteristic* direction if a new perspective, attitude, or warded-off content emerges during the course of the hour. For example, following the therapist's remark, the child acknowledges his role in difficulties with his siblings.

Place toward *uncharacteristic* direction if child resists looking at issues from a new perspective, or different vantage point.

Item 33: Child expresses feelings about needing someone or being close to someone.

Place toward *characteristic* direction if child expresses wishes about being close or intimate with someone (excluding therapist). For example, child indicates he is lonely, wants a best friend.

Place toward *uncharacteristic* direction if child makes statements or expresses feelings about wanting to be distant, separate, or not needing someone.

Item 34: Child blames others, or external forces, for difficulties.

Place toward *characteristic* direction if child tends to externalize or blame others or uncontrollable influences for difficulties. For example, child breaks a toy and blames the therapist for buying flimsy toys.

Place toward *uncharacteristic* direction if child takes appropriate responsibility for own actions or position. For example, child says he did poorly on a test because he failed to study, or takes responsibility for breaking the therapist's vase.

Item 35: Child's self-image is a theme.

Place toward *characteristic* direction if child's feelings, attitudes, and perceptions of self are a theme (whether positive or negative). For example, child claims that she is really good at sports, but not very smart when it comes to schoolwork; or discusses themes relating to gender identity.

Place toward *uncharacteristic* direction if the child's self-image is avoided or has little or no part in dialogue or play when expected.

Item 36: Therapist points out child's use of defenses.

Place toward *characteristic* direction if therapist identifies the way the child wards off awareness of threatening information or feelings. For example, when child quits game as she is losing, therapist points out that she is quitting because she is trying to move away from the feelings coming up in the game; as therapist is talking to the child, child covers ears and makes noises drowning out the therapist's voice, and therapist points out that the child is trying to block out something uncomfortable.

Place toward *uncharacteristic* if interpretation of defenses plays little or no role during the hour.

Item 37: Therapist behaves in a didactic manner.

Place toward *characteristic* direction if therapist's attitude or stance toward child is like that of a teacher to a student. For example, therapist models being at ease in anxiety-provoking situations or educates the child about his symptoms.

Place toward *uncharacteristic* direction if therapist avoids explicit instruction or education in favor of more exploratory or metaphoric statements. For example, therapist uses imagery or a story instead of explanation.

- Item 38: Therapist and child demonstrate a shared vocabulary or understanding when referring to events or feelings.

Place toward *characteristic* direction if child and therapist use idiosyncratic or unique words in a similar manner. For example, child says "I am having those tippy feelings again," and later the therapist refers to how bothersome tippy feelings feel to the child.

Place toward *uncharacteristic* direction if child and therapist struggle to understand one another's language and meanings. For example, child describes feelings of being in a tunnel when scared, and therapist speaks in terms of anxieties and negative thoughts, leaving out the child's words.

- Item 39: Child is competitive, rivalrous with the therapist.

Place toward *characteristic* direction if the child seems competitive with the therapist. For example, the child insists on winning, or brags that she is smarter than the therapist.

Place toward *uncharacteristic* direction if child avoids or does not seem able to imagine competing with the therapist. For example, child wishes to halt a game the moment before she wins to let the therapist catch up with her.

- Item 40: Child communicates without affect.

Place toward *characteristic* direction if child speaks or presents information in a monotone or affectless manner.

Place toward *uncharacteristic* direction if child's communications are affect-laden. For example, child expresses different affects through a varied voice range, make-believe characters, or postures.

- Item 41: Child does not feel understood by the therapist.

Place toward *characteristic* direction if child conveys the feeling of being misunderstood, or assumes that the therapist cannot understand him. For example, child doubts that the therapist can understand his position because he is an adult and not a child.

Place toward *uncharacteristic* direction if child conveys the sense that the therapist understands his experience or feelings. For example, in response to therapist's remark, child queries "how did you know?", and elaborates feelings.

- Item 42: Child ignores or rejects therapist's comments and observations.

Place toward *characteristic* direction if child typically disagrees with, ignores, or rejects therapist's suggestions, observations, or interpretations. For example, after the therapist makes an interpretation, the child remarks in response to therapist's remarks, "just forget about it," covers ears, or talks over the therapist.

Place toward *uncharacteristic* direction if the child responds with more elaborated play, comments, or associations to therapist's remarks.

- Item 43: Therapist suggests the meaning of the behavior of others.

Place toward *characteristic* direction if therapist attempts to interpret the meaning of the behavior of people in the child's life. For example, the therapist suggests reasons for a parent's behavior or the meaning of the behavior of a character in a story.

Place toward *uncharacteristic* direction if therapist does not make comments about the meaning of the behavior of others when the child queries the therapist.

Item 44: Child feels wary or suspicious (vs trusting and secure).

Place toward *characteristic* direction if child appears wary, distrustful, or suspicious of others, including the therapist. For example, child claims that the therapist doesn't really care about her, and is spending time with her because her parents are making him do so.

Place toward *uncharacteristic* direction if child seems to be trusting, unsuspicious, and secure in her relationship with others, including the therapist.

Item 45: Therapist tolerates child's strong affect or impulses.

Place toward *characteristic* direction if therapist allows expression of strong affect without modification either verbally or through action.

Place toward *uncharacteristic* direction if therapist disapproves, or attempts to manage, re-direct, or inhibit child's strong impulses expressed verbally or behaviorally.

Item 46: Therapist interprets the meaning of child's play.

Place toward *characteristic* direction if therapist clarifies, explains the meaning, or conveys the significance of the child's play. For example, therapist points out that the child's act of banging to force puzzle pieces together may have something to do with his frustration that he cannot make his parents reunite.

Place toward *uncharacteristic* direction if therapist avoids interpreting the meaning of the child's play, even when the play is clearly linked to a meaningful event or feeling.

Item 47: When the interaction with the child is difficult, the therapist accommodates the child.

Place toward *characteristic* direction if therapist appears open to compromise and accommodation when disagreement occurs, or when conflicts arise in the dyad. For example, when the child becomes annoyed with the therapist, he makes some effort to understand or align with the child. For example, when the child is upset with therapist, therapist states, "I can see I have done something to upset you."

Place toward *uncharacteristic* direction if therapist does not exert an effort to improve matters, or to soothe the child when the interaction becomes difficult. For example, therapist does not alter his stance even when child becomes increasingly distressed.

Item 48: Therapist sets limits.

Place toward *characteristic* direction if therapist defines parameters regarding the behavior or actions of the child. For example, therapist encourages the child to hit a doll instead of her, or outlines the rules of conduct for the session.

Place toward *uncharacteristic* direction if therapist appears uncomfortable with child's behavior and refrains from intervening or responding.

Item 49: Child conveys or expresses mixed or conflicted feelings about the therapist.

Place toward *characteristic* direction if child expresses mixed feelings about the therapist, or if the child's overt verbalizations about the therapist are incongruent with the tone of his behavior or general manner, or displays rapid shifts in sentiment. For example, the child says he hates the therapist but offers affectionate gestures.

Place toward *uncharacteristic* direction if child expresses consistent sentiments toward therapist during the hour. Feelings may be positive or negative.

Item 50: Therapist draws attention to feelings regarded by the child as unacceptable (e.g., anger, envy, or excitement).

Place toward *characteristic* direction if therapist comments upon or emphasizes child's feelings that are considered inappropriate, wrong, or dangerous by the child. For example, therapist remarks that child sometimes feels jealousy toward her more successful brother.

Place toward *uncharacteristic* direction if therapist avoids focus on feelings or reactions that the child finds difficult to recognize or accept.

Item 51: Child attributes own characteristics or feelings to the therapist.

Place toward *characteristic* direction if child attributes desirable or undesirable characteristics or feelings to the therapist that appear to be reflective of the child's sense of self or state. For example, child loses game of cards and calls therapist stupid.

Place toward *uncharacteristic* direction if child acknowledges her own characteristics or feelings.

Item 52: Therapist makes explicit statements about the end of the hour, upcoming weekend, or holiday.

Place toward *characteristic* direction if the therapist alerts or prepares child for approaching separation. For example, therapist lets child know it is time to clean up because their time together is about to end.

Place toward *uncharacteristic* direction if there is mention of an impending separation without discussion or avoidance of elaboration by the therapist.

Item 53: Child conveys awareness of own internal difficulties.

Place toward *characteristic* direction if child verbalizes or expresses through play, awareness of his difficulties or conflicts. For example, child acknowledges acting mean when sad or angry.

Place toward *uncharacteristic* direction if child seems to be unaware or lacking in knowledge of his internal difficulties.

Item 54: Child is clear and organized in verbal expression.

Place toward *characteristic* direction if child expresses herself in a manner that is easily understandable and relatively clear and fluent.

Place toward *uncharacteristic* direction if child rambles, frequently digresses, or is vague.

Item 55: Therapist directly rewards desirable behaviors.

Place toward *characteristic* direction if therapist verbally praises or rewards child for desirable behaviors. For example, therapist gives a sticker to child when she achieves a goal.

Place toward *uncharacteristic* direction if therapist does not attempt to shape or reward behavioral changes.

Item 56: Child is distant from his or her feelings.

Place toward *characteristic* direction if child displays little concern or feeling, and is generally flat, impersonal, or half-heartedly indifferent.

Place toward *uncharacteristic* direction if affect and import are apparent, but well modulated and balanced by cooler material, or if child expresses sharp affect, or outbursts of emotion, and deeply felt concern.

Item 57: Therapist attempts to modify distortions in child's beliefs.

Place toward *characteristic* direction if therapist encourages child to alter maladaptive thoughts or beliefs. For example, when the child states that all the kids in his class hate him, the therapist encourages the child to talk back to that hurtful thought.

Place toward *uncharacteristic* direction if therapist accepts child's distortions without comment or challenges to child's stated view when thoughts or ideas are incomplete or implausible.

Item 58: Child appears unwilling to examine thoughts, reactions, or motivations related to problems.

Place toward *characteristic* direction if child is reluctant or resists examining her own role in perpetuating problems. For example, child balks, avoids, blocks, or repeatedly changes the subject whenever a particular topic is introduced.

Place toward *uncharacteristic* direction if child actively contemplates, or is able to pursue trains of thought that might be emotionally stressful or unsettling. For example, the child explores inner thoughts and feelings with ease.

Item 59: Child feels inadequate and inferior (vs effective and superior).

Place toward *characteristic* direction if child expresses feelings of inadequacy, inferiority, or ineffectiveness. For example, child states that nothing he attempts really turns out the way he hopes it will.

Place toward *uncharacteristic* direction if child expresses a sense of effectiveness, superiority, or triumph. For example, child recounts personal achievements, or claims attention for a personal attribute or skill.

Item 60: Therapist is protective of the child.

Place toward *characteristic* direction if the therapist protects the child from harm or negative consequences. For example, therapist encourages the child to think of other ways to behave in certain situations in order to avoid physical or psychic pain.

Place toward *uncharacteristic* direction if therapist does not intervene around child's unsafe or risk-taking behavior. For example, therapist does nothing when child climbs on to a wobbly table.

Item 61: Child feels shy and embarrassed (vs un-self-conscious and assured).

Place toward *characteristic* direction if child appears timid, self-conscious, ill at ease, embarrassed.

Place toward *uncharacteristic* direction if child appears un-self-conscious, assured, at ease, or certain of himself, even when faced with a situation that could elicit self-doubt.

Item 62: Therapist points out a recurrent theme in the child's experience or conduct.

Place toward *characteristic* direction if therapist points out a recurrent pattern in the child's life experience or behavior. For example, therapist points out child's repeated forgetfulness around taking homework to school, or recurrent themes of anger, violence, and sadness in artwork or play.

Place toward *uncharacteristic* direction if therapist does not identify an existing or evident theme or recurrent pattern.

Item 63: Child explores relationships with significant others.

Place toward *characteristic* direction if child explores or is curious about experiences of relating to significant others. For example, child inquires, I wonder if my rudeness is making my mother sad as well as angry.

Place toward *uncharacteristic* direction if talk of relationships is avoided or reported without elaboration or curiosity.

Item 64: Child draws therapist into play.

Place toward *characteristic* direction if child actively includes the therapist in play. For example, child ascribes roles for the therapist to play.

Place toward *uncharacteristic* direction if child does not include the therapist in play, or organizes play in such a way that excludes the therapist.

Item 65: Therapist clarifies, restates, or rephrases child's communication.

Place toward *characteristic* direction if therapist restates or rephrases the child's affective tone, statements, ideas, or nonverbal behavior in order to render their meaning more evident. For example, therapist remarks, "What you seem to be saying is that you're worried about what therapy will be like."

Place toward *uncharacteristic* direction if therapist does not clarify or restate child's communication when unclear or incoherent.

Item 66: Therapist is directly reassuring.

Place toward *characteristic* direction if therapist attempts to allay child's anxieties, and instill the hope that matters will improve. For example, therapist tells child there is no reason for worry.

Place toward *uncharacteristic* direction if therapist tends to refrain from providing direct reassurance when child is evidently anxious or upset. For example, child describes feeling worried about the first day of school, and the therapist refrains from telling the child, "it will be fine."

Item 67: Therapist interprets warded-off or unconscious wishes, feelings, or ideas.

Place toward *characteristic* direction if therapist draws the child's attention to feelings, thoughts, or impulses that may not have been clearly in her awareness. For example, child's expression saddens when discussing mother, and therapist wonders with her about her feelings.

Place toward *uncharacteristic* direction if therapist does not attend to underlying wishes, feelings, or ideas child may have, but rather emphasizes more conscious material. For example, when child brings therapist a handmade card with a heart on it, the therapist draws attention to the handiwork of the child rather than any underlying intention.

Item 68: Real rather than fantasized meanings of experience are actively differentiated.

Place toward *characteristic* direction if therapist or child notes differences between child's fantasies and objective reality. For example, therapist points out that child did not cause his parents' divorce; or when child plays dead and reassures the therapist "just in the game."

Place toward *uncharacteristic* direction if neither therapist nor child focus attention distinguishing between fantasy and reality when such distinction is unclear. For example, child tells the therapist he is an only child and therapist, knowing of siblings, does not question this assertion.

Item 69: Child's current or recent life situation is emphasized.

Place toward *characteristic* direction if child or therapist emphasizes very recent or current life events. For example, child talks about being sad about the recent move of a friend.

Place toward *uncharacteristic* direction if discussion of current life is actively avoided in discussion or play.

Item 70: Child struggles to control feelings or impulses.

Place toward *characteristic* direction if child attempts to manage or control strong emotions or impulses. For example, child fights to hold back tears while obviously distressed.

Place toward *uncharacteristic* direction if child does not appear to make an effort to restrain or regulate feelings he is experiencing, or has little or no difficulty achieving control over them.

Item 71: Child engages in make-believe play.

Place toward *characteristic* direction if child plays imaginatively or symbolically. For example, child treats a pencil as if it were a magic wand.

Place toward *uncharacteristic* direction if play is concrete or rule bound. For example, when playing a board game, child refuses any imaginary dialogue with the pieces of a game.

Item 72: Child is active.

Place toward *characteristic* direction if child is quite talkative and mobile.

Place toward *uncharacteristic* direction if child is inactive, sluggish, or reticent. For example, child consistently waits for therapist to initiate discussion or play.

Item 73: Child expresses fears or displays phobic behavior.

Place toward *characteristic* direction if child discusses or evidences fear or timorousness during the hour without apparent reason, or discusses being generally afraid of something quite specific. For example, child pulls sleeve over hand in order to turn doorknob on the way out of the office.

Place toward *uncharacteristic* direction if child appears calm, brave, and at ease even when experiencing something worrisome.

Item 74: Humor is used.

Place toward *characteristic* direction if the child or therapist displays humor during the course of the hour.

Place toward *uncharacteristic* direction if the interaction between therapist and child and therapist appear serious and matter-of-fact when there are playful or humorous potentials. For example, a slip of the tongue that might seem funny is not talked about as such.

Item 75: Interruptions, breaks in the treatment, or termination of therapy are discussed.

Place toward *characteristic* direction if either the child or therapist talks of interruptions or breaks in the treatment, for example, vacation, illness, or ending of therapy.

Place toward *uncharacteristic* direction if discussion of interruptions in the treatment or termination seems to be avoided. For example, a lengthy break in treatment due to summer vacation is mentioned in passing, but neither child nor therapist pursues the topic further.

Item 76: Therapist makes links between child's feelings and experience.

Place toward *characteristic* direction if the therapist points out how the child's affects are related to her experience. For example, therapist notes that child seems quite sad in therapy on the day before the therapist leaves for vacation.

Place toward *uncharacteristic* direction if the therapist does not make links between child's feelings and her experience when she appears overwhelmed, or overtly distances self from affects.

Item 77: Therapist's interaction with child is sensitive to the child's level of development.

Place toward *characteristic* direction if therapist responds to child in a manner consistent with the developmental level of the child.

Place toward *uncharacteristic* direction if therapist's comments or behaviors are above or below the child's apparent level of development. For example, therapist talks to a 9-year-old as if he were a teenager, or in a baby voice.

Item 78: Child is compliant.

Place toward *characteristic* direction if child is particularly deferential, compliant, or appears to go out of their way to please the therapist. For example, child undertakes any hint or suggestion of the therapist. When therapist says that there are some new crayons, child immediately asks "what would you like me to draw?"

Place toward *uncharacteristic* direction if child does not seem to play an overly pleasing role, or exhibit deferential or compliant responses or behaviors.

Item 79: Therapist comments on changes in child's mood or affect.

Place toward *characteristic* direction if therapist makes frequent or salient comments about shifts in the child's mood or quality of experience. For example, therapist notes that in response to her comments, child has shifted from angrily throwing toys to letting himself feel his sadness.

Place toward *uncharacteristic* direction if therapist does not comment on marked changes in child's states of mind during the hour.

Item 80: Child behaves in a dependent fashion (vs insists on independence).

Place toward *characteristic* direction if child dependently solicits the therapist's comfort, aid, or support. For example, child is clingy and needy.

Place toward *uncharacteristic* direction if child behaves in an independent or counter dependent fashion. For example, child insists, "I can put my shoes back on myself!" when therapist gestures to help.

Item 81: Therapist emphasizes feelings to help child experience them more deeply.

Place toward *characteristic* direction if therapist stresses the emotional content of what the child has described in order to encourage the experience of affect. For example, therapist exaggerates feelings that the child describes in a matter-of-fact manner.

Place toward *uncharacteristic* direction if therapist under-emphasizes the experience of affect, or appears only interested in child's objectified descriptions.

Item 82: Therapist helps child manage feelings.

Place toward *characteristic* direction if therapist helps child manage overwhelming or difficult feelings or states. For example, therapist encourages the child to count to ten before acting or speaking when angered, or to reflect on anxious or sad feeling connected to an angry outburst.

Place toward *uncharacteristic* direction if therapist does not intervene or offer opportunity for reflection or naming when child is overwhelmed by feeling.

Item 83: Child is demanding.

Place toward *characteristic* direction if child makes numerous demands/requests of the therapist or pressures therapist to meet a request. For example, child continually asks therapist to get him a drink or a desired item.

Place toward *uncharacteristic* direction if child is reluctant or hesitant to make appropriate requests of the therapist. For example, child squirms because he needs to go to the bathroom, yet does not excuse himself, or is reluctant to ask the therapist to take him to the bathroom.

Item 84: Child expresses anger or aggressive feelings.

Place toward *characteristic* direction if child expresses resentment, anger, bitterness, hatred, or aggression (this excludes such feelings directed at therapist).

Place toward *uncharacteristic* direction if consequent feelings of anger or aggressive feelings are deliberately avoided. For example, when child describes parent belittling her, she describes how tolerant her parents must be since she is so difficult.

Item 85: Child's aggression is directed toward self.

Place toward *characteristic* direction if child turns anger or aggressive feelings inward. For example, child claims that she is terrible and expects some sort of retribution for having a terrible thought about someone.

Place toward *uncharacteristic* direction if child directs angry or aggressive feelings outward (excludes such feelings directed toward the therapist). For example, child kicks over the tower of blocks created during the session, or talks about wanting to hurt someone because she is so angry.

Item 86: Therapist is confident, self-assured (vs uncertain or unsure).

Place toward *characteristic* direction if therapist's demeanor is self-assured and confident.

Place toward *uncharacteristic* direction if therapist appears uncertain, embarrassed, apprehensive, or ineffectual.

- Item 87: Therapist informs child of the potential impact of his or her behavior on others (not including the therapist).
Place toward *characteristic* direction if therapist helps the child make connections between behaviors and statements, and how others might receive or interpret them.
Place toward *uncharacteristic* direction if the therapist refrains or finds alternative ways to address the child's behaviors or feelings in relation to their impact on others. For example, when child reports excluding a friend from play, therapist focuses on the child's motivations for doing so.
- Item 88: Material of the hour is meaningful and relevant to child's conflicts.
Place toward *characteristic* direction if material of the hour is importantly related to child's psychological conflicts, or are topics of real concern.
Place toward *uncharacteristic* direction if material of the hour seems unrelated to or somehow removed from issues of central concern.
- Item 89: Therapist acts to strengthen existing defenses.
Place toward *characteristic* direction if therapist's stance is characterized by a calm, attentive compliance intended to avoid upsetting the child's emotional balance, or if she actively intervenes to help child avoid or suppress disturbing ideas or feelings.
Place toward *uncharacteristic* direction if therapist does not act to shore up defenses or suppress troublesome thoughts or feelings.
- Item 90: Child's dreams or fantasies are discussed.
Place toward *characteristic* direction if a topic of discussion is dream content, including daydreams or fantasy material. For example, child and therapist explore the fantasies of the child regarding the therapy before they met.
Place toward *uncharacteristic* direction if child's dreams or fantasies brought up during the hour are not elaborated or explored.
- Item 91: An earlier developmental phase is a topic.
Place toward *characteristic* direction if there is discussion of experience of previous developmental stages. For example, a 5-year-old talks about having baby feelings, or therapist likens arguments that an adolescent is having with his parents to toddler-like tantrums.
Place toward *uncharacteristic* direction if discussion of current or future themes predominates over past memories or experiences.
- Item 92: Child's feelings or perceptions are linked to situations or behavior of the past.
Place toward *characteristic* direction if several links or salient connections are made between the child's current emotional experience and perception of events with those of the past. For example, therapist points out, or child realizes that current fears of being left alone are derived from the loss of a parent.
Place toward *uncharacteristic* direction if current and past experiences are discussed but not linked. For example, child talks about having felt left out by friends at school last year, and moves on to discuss his mother's pregnancy. Therapist does not make reference to an association between the events.
- Item 93: Therapist is neutral.
Place toward *characteristic* direction if therapist tends to refrain from taking a particular stand in relation to child's opinion, declarations, ideas, or experience. For example, when child asks therapist if she approves of a particular behavior, the therapist responds by asking the child what position he imagines her or others taking, rather than directly responding to the question.

Place toward *uncharacteristic* direction if therapist expresses opinions, or takes positions either explicitly or by implication. For example, therapist tells child that his friends have a bad influence on him, and therefore, he should find new friends.

Item 94: Child feels sad or depressed (vs cheerful and joyous).

Place toward *characteristic* direction if child's mood seems melancholy, sad, or depressed.

Place toward *uncharacteristic* direction if child appears delighted, joyful, or conveys a mood of well-being or happiness.

Item 95: Child's play lacks spontaneity.

Place toward *characteristic* direction if the play is rigid, stilted, repetitive, or appears rote.

Place toward *uncharacteristic* direction if child's play is imaginative, lively, and child generates new ideas. For example, while stacking blocks, child creates a zoo out of the blocks, and asks therapist to come visit the animals.

Item 96: Child's parents are a topic of discussion.

Place toward *characteristic* direction if child talks about parents (or primary caregivers) or represents them in play.

Place toward *uncharacteristic* direction if discussion about parents (or primary caregivers) is apparently avoided.

Item 97: Therapist emphasizes verbalization of internal states and affects.

Place toward *characteristic* direction if therapist encourages the child to explore and verbalize thoughts and feelings. For example, therapist states, "tell me how you are feeling right now as we are discussing this."

Place toward *uncharacteristic* direction if therapist avoids encouraging the child to talk about his thoughts and feelings.

Item 98: The therapy relationship is discussed.

Place toward *characteristic* direction if therapy relationship is discussed. For example, therapist calls attention to features of the interaction or interpersonal process between them (not in relation to other relationships the child has); or the child makes connections between the therapy relationship and other relations.

Place toward *uncharacteristic* direction if neither therapist nor child comments on the nature of their interactions.

Item 99: Therapist offers help or guidance.

Place toward *characteristic* direction if therapist offers help, guidance, or instruction. For example, when child is struggling to find the right words to express himself, therapist suggests particular words.

Place toward *uncharacteristic* direction if therapist does not offer help or instruction when asked for help by child. For example, therapist does not intervene to help when child says he cannot figure out how to set up a board game.

Item 100: Therapist draws connections between the therapeutic relationship and other relationships.

Place toward *characteristic* direction if therapist makes several salient comments linking the interpersonal aspects of therapy and feelings toward other significant individuals. For example, therapist remarks that he thinks the child is sometimes afraid he will criticize the child just as her parent does.

Place toward *uncharacteristic* direction if therapist's activity during the hour includes no attempts to link the interpersonal aspects of therapy with experiences in other relationships when there are opportunities to do so.

Appendix IIA Introduction to Manualized Treatments for Psychodynamic Psychotherapy Research

Carolina Seybert, Ingrid Erhardt, Raymond A. Levy, and Horst Kächele

About 30 years ago, a methodological innovation began under the title of "Psychotherapy Manuals." The change in the structure of research studies began with Beck et al.'s [1] manual for CBT and the IPT manual for interpersonal therapy for use in the NIMH Treatment of Depression Collaborative Research Program [2]. Soon, two psychodynamic manuals appeared: Luborsky [3] and Strupp and Binder [4]. The launching of these manuals reflected the new requirements in order to qualify for psychotherapy research funding: in order to be sponsored, research had to take the form of controlled trials modeled after medical research, where, in psychopharmacology studies, an experimental procedure aims to determine whether a certain substance is effective. Within this model, psychotherapy studies with only two points of measurement (beginning and end) are considered insufficient, and psychotherapeutic interventions have to be defined reliably and related to treatment effect or outcome.

Psychotherapy manuals need to fulfill the following three criteria (according to Luborsky [3], p. 4):

1. The specification of technique needs to be as clear as possible for the type of treatment in question.
2. The manual should describe treatment principles explicitly and specify the prescribed actions for the therapist.
3. The manual should include scales to evaluate the extent to which the therapist adhered to the principals described.

The first step in the development of a manual consists of defining and clarifying the elements that are characteristic to a particular psychotherapy method. For this reason, in the preface to Strupp's manual, Merton Gill recognized "the beginning of a movement towards the integration of classical and interpersonal psychoanalytic theory and technique" ([4], p. VIII). Luborsky's text [3] also claims to have included the main curative principles of psychoanalytic psychotherapy. Similarly, Klerman and his colleagues [5] position their treatment, "interpersonal psychotherapy," as being close to psychodynamic treatment theory, and they support their claim with empirical evidence.

For many clinicians, especially those who are psychodynamically oriented, the introduction of such manuals into clinical practice induces the fear that the manualization of therapies restricts the freedom, spontaneity, and variety of individual practice. However, if for a given therapy, an individual action is recommended within the framework of the treatment, this instruction is only a guideline to evaluate therapeutic action. Consequently, a rigid conformity to the rules is likely to decrease efficacy for that treatment. For psychoanalytic therapies, this stimulates rich reflections about creating the structure for a psychoanalytic treatment [6]. These manual-based specifications are certainly less problematic for cognitive-behavioral therapy approaches, but they are never completely problem-free.

Is conducting therapy and conforming to a manual (which is also conforming to a single theoretical approach) related to positive outcome? This is a critical question for psychotherapy research.

Luborsky et al. [7], in a treatment project with drug-addicted patients, included psychoanalytic psychotherapy, cognitive-behavioral therapy, and structured drug counseling and demonstrated for these diverse psychotherapy modalities that the therapist with the strongest adherence to their technique – measured by evaluating the correlation of applied interventions with the theoretical frame – also had the best therapeutic results. The results of this first study suggested that one must consider not only the variation of quality within and between therapists. Given that it has been repeatedly found that a large amount of variability is due to the severity of patient pathology [8], these results suggest more attention must be given to the techniques of psychotherapeutic treatments with patients whose pathology indicates a poor prognosis. Within this difficult-to-treat population, therapeutic competence could be decisive. As an illustration of this diversity of therapist competence, Crits-Christoph et al. [9] reported an average of 12% variance of therapist effects (with a range of 0–50%). In their meta-analytic evaluation study, the factors were examined which could be responsible for such effects. These included the usage of a therapy manual, the degree of therapist's expertise, the treatment's duration, and the type of treatment (psychodynamic vs cognitive-behavioral).

For verification of the hypothesis, data from 15 comparative studies were included. The results can be summarized succinctly: the use of a therapy manual and the degree of the therapist's expertise can significantly reduce variance among therapists. Perhaps, the use of a manual keeps very good therapists from being as good as they can be, while placing a floor under the efforts of the less competent ones. Can we conclude that manual adherence and individual expertise are two of the critical variables in psychotherapy outcome?

In the second Vanderbilt study from Strupp's research group, the effect of a targeted training program for experienced therapists was examined in terms of therapeutic process and outcome. The analysis focused on the individual patient–therapist dyads before and after the therapist's training in the manualized treatment [10]. This more recent study, concerning the advantages and disadvantages of manualization, compared equally experienced therapists with and without explicit training in manualized therapy with the finding that the training did not result in significant differences in outcome.

In the German-speaking world, the cognitive-behavioral therapist Schulte has been propagating, for some time now, the superiority of standardized treatments as opposed to customized treatments with phobic patients [11]. A Dutch cognitive-behaviorally oriented group demonstrated, on the other hand, the negative effect of manualization in the case of obsessive-compulsive disorders, both on a symptomatic level and on the level of general functioning [12].

The same tendency is shown in the results of a re-analysis of the “Multi-Center Collaborative Study for the Treatment of Panic Disorder” from Barlow's cognitive-behavioral group [13]. This study procured even stronger results concerning the effect of therapist expertise than the NIHM project for treatment of depression in a re-analysis by Blatt et al. [14]. Surprisingly, a large effect size was discovered for general therapist experience and its influence on patient's fear level, and only a low effect size was observed from adherence to cognitive-behavioral technique.

The conclusion thus derived may be that therapist experience prevails! In other words: General therapeutic knowledge and experience are more important than expertise in the procedures of a specific treatment orientation [13]. This conclusion is supported by an extensive meta-analysis of 90 studies by Shadish et al. [15] which “demonstrates that the application of naturalistic psychotherapy and manualized treatment yield equal outcomes; whether in clinically representative or in non-representative patient samples, both forms of therapy achieved equal levels of symptom reduction, which also increased with treatment length” ([16], p. 246). Phrased in a most convincing manner:

that which is relevant about experience may be general clinical contact rather than developing specific proficiencies ([16], p. 240).

Thus, the use of manuals for beginners can rightfully be recommended, but research findings contradict the necessity of manuals for experienced clinicians.

Practice Teaches Research?

Since the paradigm of randomized control trials (RCTs) was elevated to the gold standard of the current scientific and professional-political situation, the degree of acceptable evidence for therapeutic methods has emerged solely from studies that conform to such a scientific design. Given that the majority of practitioners plead for inclusion of naturalistic studies for defining the degree of evidence, one wonders why. Presumably, practitioners realize from their clinical experience that the practice of psychotherapy proves little resemblance to the laboratory situation of randomized controlled trials. This is often referred to as the problem of ecological validity (e.g., [17, 18]).

It seems fair to conclude that the development of disorder-specific, evidence-based treatments [19] enhances the technocratic perspective. However, a new problem has emerged as, for example, outcome studies have demonstrated that depressive disorders can be equally treated by cognitive therapy, behavioral intervention, interpersonal therapy, or psychodynamic therapy (for the comparison cognitive vs. psychodynamic, see [20]).

Moreover, for borderline disorders, several treatments of diverse orientations have shown similar effect sizes: Linehan's Dialectical-Behavioral Therapy [21], Kernberg's Transference-Focused Therapy [22], Rockland's Supportive Therapy [23], and Fonagy and Bateman's Mentalization-Based Therapy [24]. Another newly described intervention is Young's Schema-Focused Therapy [25]. What should the practitioner do given such abundance of evidence? Should he watch and wait? Should he choose his favorite or most comfortable type of intervention? Should he find some video-clips for the patient to choose a therapy from? In a practical sense, the therapist's duty will include deciding about the preferred form of therapy for a specific patient from the abundance of possibilities in his or her region. Therefore, criteria for determining the preferred, individually based treatment would be helpful. The therapy community may benefit from guidelines in order to determine which approach to psychotherapy matches a specific patient or which aim matches a specific patient [26]. Randomized controlled studies are unlikely to be able to provide an answer to these questions due to the overwhelming effort that is needed to make such distinctions considering the variety of personality dimensions which need to be taken into account. Perhaps, the therapist's expertise can contribute to arriving at highly useful criteria. Naturally, the therapist's individual expertise would not be the only criterion to be considered, but an experience-based discussion could be started in which skilled clinicians could clarify questions about preferred treatment indications with each other.

Who Teaches What to Whom?

One might often think that researchers teach practitioners; but it would be equally reasonable to ask: Who learns what from whom? Researchers learn from practitioners. Regarding the exponential heterogeneity of research findings, one must respect clinical knowledge. For more than 30 years now, the Dodo Bird Verdict, "Everyone has won, and all must have prizes," [27] has summarized the only conclusion possible from research findings. And this was equally true two decades later when Luborsky reinforced his earlier statement [28]. Also, if the most recent handbook article from Lambert and Ogles [8] generally reinforces this conclusion, no one actually believes it when thinking of an individual case, and for good reasons. Clinicians are accustomed to knowing that, in any individual case, the psychotherapeutic treatment goal is not easily achieved; instead of arguing about differences in effect sizes, it is urgent to care for the individual clinical situation. More than ever, the variety of scientific findings necessitates the need for diligence in finding the right treatment for each single patient. The researcher cannot solve this challenge; here, the well-informed practitioner must be asked.

References

1. Beck AT, Rush AJ, Shaw BF, Emery G. Cognitive therapy of depression. New York: Guilford; 1979.
2. Elkin I. The NIMH treatment of depression collaborative research program: where we began and where we are. In: Bergin AE, Garfield SL, editors. Handbook of psychotherapy and behavior change. 4th ed. New York: Wiley; 1994. p. 114–39.
3. Luborsky L. Principles of psychoanalytic psychotherapy. New York: Basic Books; 1984.
4. Strupp HH, Binder J. Psychotherapy in a new key. A guide to time-limited dynamic psychotherapy. New York: Basic Books; 1984.
5. Klermann GL, Weissman M, Rounsaville B, Chevron E. Interpersonal psychotherapy of depression. New York: Basic Books; 1984.
6. Thomä H, Kächele H. Psychoanalytic practice, vol. 1. New York: Aronson; 1994.
7. Luborsky L, Woody GE, McLellan AT, O'Brien C, Rosenzweig J. Can independent judges recognize different psychotherapies? An experience with manual-guided therapies. *J Consult Clin Psychol.* 1982;50:49–62.
8. Lambert MJ, Ogles BM. The efficacy and effectiveness of psychotherapy. In: Lambert MJ, editor. Bergin and Garfield's handbook of psychotherapy and behavior change. 5th ed. New York: Wiley; 2004. p. 139–93.
9. Crits-Christoph P, Baranackie K, Kurcias JS, Beck AT, Carroll K, Perry K, Luborsky L, McLellan AT, Woody GE, Thomson L, Gallagher D, Zitrin C. Meta-analysis of therapist effects in psychotherapy outcome studies. *Psychother Res.* 1991;1:81–91.
10. Bein A, Anderson T, Strupp HH, Henry W, Schacht T, Binder J, Butler S. The effects of training in time-limited dynamic psychotherapy: changes in therapeutic outcome. *Psychother Res.* 2000;10:119–32.
11. Schulte D, Kunzel R, Pepping G, Schulte-Bahrenberg T. Tailor-made versus standardized therapy of phobic patients. *Adv Behav Res Ther.* 1992;14:67–92.
12. Emmelkamp P, Bouman T, Blaauw F. Individualized versus standardized therapy: a comparative evaluation with obsessive-compulsive patients. *Clin Psychol Psychother.* 1994;1:95–100.
13. Hupert J, Bufka L, Barlow D, Gorman JM, Shear MK, Woods S. Therapists, therapists variables, and CBT outcome for panic disorders: results from a multi-center trial. *J Consult Clin Psychol.* 2001;69:747–55.
14. Blatt DS, Sanislow C, Zuroff D, Pilkonis P. Characteristics of effective therapists: further analyses of data from the National Institute of Mental Health Treatment of Depression Collaborative Research Program. *J Consult Clin Psychol.* 1996;64:1276–84.
15. Shaddish W, Matt G, Navarro AM, Phillips G. The effects of psychological therapies under clinical representative conditions: a meta-analysis. *Psychol Bull.* 2000;126:512–29.
16. Beutler LE, Malik M, Alimohamed S, Harwood TM, Talebi H, Noble S, Wong E. Therapist effects. In: Lambert MJ, editor. Bergin and Garfield's handbook of psychotherapy and behavior change. 5th ed. New York: Wiley; 2004. p. 227–306.
17. Westen D, Novotny CM, Thompson-Brenner H. The empirical status of empirically supported psychotherapies: assumptions, findings, and reporting in controlled trials. *Psychol Bull.* 2004;130:631–63.
18. Leichsenring F. Randomized controlled vs naturalistic studies. A new research agenda. *Bull Menninger Clin.* 2004;68:115–29.
19. Chambless DL, Hollon SD. Defining empirically supported therapies. *J Consult Clin Psychol.* 1998;66:7–18.
20. Leichsenring F. Comparative effects of short-term psychodynamic psychotherapy and cognitive-behavioral therapy in depression: a meta-analytic approach. *Clin Psychol Rev.* 2001;21:401–19.
21. Linehan M. Cognitive-behavioral treatment of borderline personality disorder. New York: Guilford Press; 1993.
22. Clarkin JF, Kernberg OF, Yeomans FE. Transference-focused psychotherapy for borderline personality disorder patients. New York: Guilford Press; 1999.
23. Clarkin JF, Levy KN, Lenzenweger MF, Kernberg OF. Evaluating three treatments for borderline personality disorder: a multiwave study. *Am J Psychiatry.* 2007;164:922–8.
24. Bateman AW, Fonagy P. Psychotherapy for borderline personality disorder. Mentalisation-based treatment. Oxford: Oxford University Press; 2004.
25. Giesen-Bloo J, van Dyck R, Spinhoven P, van Tilburg W, Dirksen C, van Asselt T, Kremers I, Nardort M, Arntz A. Outpatient psychotherapy for borderline personality disorder. Randomized trial of schema-focused therapy vs transference-focussed psychotherapy. *Arch Gen Psychiatry.* 2006;63:649–58.
26. Kächele H, Kordy H. Indikation als Entscheidungsprozess {Indication as process of decision}. In: Adler R et al., editors. *Uexküll Psychosomatische Medizin. Modelle ärztlichen Denkens und Handelns.* 6th ed. München/Jena: Urban & Fischer; 2003. p. 425–36.
27. Luborsky L, Singer B. Comparative studies of psychotherapy: is it true that “everybody has won and all must have prizes”? *Arch Gen Psychiatry.* 1975;32:995–1008.
28. Luborsky L, Digue L, Luborsky E, Singer B, Dickter D, Schmidt K. The efficacy of dynamic psychotherapies: is it true that “everyone has won and all must have prizes”? In: Miller NE, Luborsky L, Barber JP, Docherty JP, editors. *Psychodynamic treatment research. A handbook for clinical practice.* New York: Basic Books; 1993. p. 497–516.

Appendix IIB Listing of Psychodynamic Manualized Treatments

Compiled by Carolina Seybert, Ingrid Erhardt, Raymond A. Levy, and Horst Kächele

Affect-Focused Dynamic Psychotherapy

Name: Affect-Focused Dynamic Psychotherapy

Developer: Leigh Mc Cullough

Manual reference: McCullough L, Kuhn N, Andrews S, Kaplan A, Wolf J, Hurley C. Treating affect phobia: a manual for short term dynamic psychotherapy. New York: Guilford Press; 2003.

Study reference: Svartberg M, Stiles TC, Seltzer MH. Randomized, controlled trial of the effectiveness of short-term dynamic psychotherapy and cognitive therapy for cluster C personality disorder. *Am J Psychiatry*. 2004; 161(4): 810–817.

Training: unknown

Brief Dynamic Psychotherapy

Name: Brief Dynamic Psychotherapy

Developer: Per Høglend

Manual reference: Høglend P. Dynamisk kortidsterapi (Brief dynamic psychotherapy), in Poliklinikken Psykiatrisk Klinikk 25 år. In: Alnes R, Ekern P, Jarval P, editors. Oslo, Universitetet i Oslo, Norway: Psykiatrisk klinikk Vinderen.;1990. pp 27–38. (manual only in Norwegian)

Høglend P. Psychotherapy process scales. Manual. Oslo: Department of Psychiatry, Universtiy of Oslo; 1995.

Study reference: Høglend et al. The mediating role of insight for long-term improvements in psychodynamic therapy transference interpretations in dynamic psychotherapy: do they really yield sustained effects? *J Consult Clin Psychol*. 2010; 78(3): 438–448.

Training: unknown

Brief Therapy of the Stress Response Syndrome

Name: Brief therapy of the stress response syndrome

Developer: Mardi J. Horowitz

Manual reference: Horowitz MJ. Treatment of stress response syndromes. Arlington: American Psychiatric Publishing; 2003.

Study reference: Horowitz MJ, Marmar C, Weiss D, DeWitt KN, Rosenbaum R. Brief psychotherapy for stress response syndromes: the relationship of process and outcome. *Arch Gen Psychiatry*. 1984; 41(5): 438–448.

Training: <http://istsstest.sherwoodgroup.com/AM/Template.cfm?Section=ISTSSTreatmentGuidelines&Template=/MissingInclude.htm>

Brief Relational Psychotherapy

Name: Brief Relational Psychotherapy

Developer: Jeremy D. Safran

Manual reference: Safran JD, Muran JC. Negotiating the therapeutic alliance: a relational treatment guide. New York: Guilford; 2000.

Study reference: Muran JC, Safran JD, Samstag L, Winston A. Evaluating an alliance-focused intervention for personality disorders. *Psychotherapy*. 2005; 42: 532–545.

Training: unknown

Dynamic Deconstructive Psychotherapy (DDP)**Name:** Dynamic Deconstructive Psychotherapy (DDP)**Developer:** Robert J. Gregory**Manual reference:** Gregory RJ, Remen AL. A manual-based psychodynamic therapy for treatment-resistant borderline personality disorder. *Psychother Theor Res Pract Train*. 2008; 45: 15–27.**Study reference:** Gregory RJ, Chlebowski S, Kang D, Remen AL, Soderberg MG, Stepkovitch J, Virk S. A controlled trial of psychodynamic psychotherapy for co-occurring borderline personality disorder and alcohol use disorder. *Psychother Theor Res Pract Train*. 2008; 45: 28–41.**Training:** www.upstate.edu/ddp (The website has a free pdf of the manual and the link to a free multimedia training module)**Dynamic Interpersonal Therapy (DIT)****Name:** Dynamic Interpersonal Therapy (DIT)**Developers:** Alessandra Lemma, Mary Target, Peter Fonagy**Manual reference:** Dynamic interpersonal therapy (DIT). Oxford University Press (in press)**Study reference:** The development of a brief psychodynamic protocol for depression: dynamic interpersonal therapy (DIT). *J Psychoanal Psychother Appl Theor Res* (in press)**Training:** <http://www.annafreud.org/shortcourses.php>**Intensive Short-Term Dynamic Psychotherapy****Name:** Intensive Short-Term Dynamic Psychotherapy (ISTDP)**Developer:** Habib Davanloo**Manual reference:** Davanloo H. Short-term dynamic psychotherapy. New York: Jason Aronson; 1980.**Study reference:** Abbass A, Joffres MR, Ogrodniczuk JS. A naturalistic study of intensive short-term dynamic psychotherapy trial therapy. *Brief Treat Crisis Interv*. 2008; 8: 164–170**Training:** <http://ridistdp.org/index.htm>**Interpersonal Reconstructive Therapy (IRT)****Name:** Interpersonal Reconstructive Therapy (IRT) for Individuals with Personality Disorder**Developer:** Lorna Smith Benjamin**Manual reference:** Benjamin LS. Interpersonal reconstructive therapy: an integrative, personality-based treatment for complex cases. New York: Guilford Press; 2006.**Study reference:** Benjamin LS, Critchfield KL. An interpersonal perspective on therapy alliances and techniques. In: JC Muran, JP Barber, editors. *The therapeutic alliance: an evidence-based approach to practice and training*. New York: Guilford; 2010.**Training:** <http://www.psych.utah.edu/people/person.php?id=49>**Mentalization Based Treatment for Borderline Personality Disorder****Name:** Mentalization Based Treatment for Borderline Personality Disorder**Developer:** Anthony Bateman and Peter Fonagy**Manual reference:** Bateman AW, Fonagy P. Mentalisation-based treatment for borderline personality disorder: practical guide. Oxford: Oxford University Press; 2006.**Study reference:** Bateman AW, Fonagy P. 8-year follow-up of patients treated for borderline personality disorder: Mentalization-based treatment versus treatment as usual. *Am J Psychiatry*. 2008; 165: 631–638.**Training:** <http://www.annafreud.org/shortcourses.php>

Panic-Focused Psychodynamic Psychotherapy

Name: Panic-Focused Psychodynamic Psychotherapy

Developer: Barbara L. Milrod

Manual reference: Milrod BL, Busch FN, Cooper AM, Shapiro T. Manual of panic-focused psychodynamic psychotherapy. Washington: American Psychiatric Press; 1997.

Study reference: Milrod BL, Leon A, Busch FN, Rudden M, Schwalberg M, Clarkin JF et al. A randomized controlled trial of psychoanalytic psychotherapy for panic disorder. *Am J Psychiatry*. 1997; 164(2): 265–272.

Training: unknown

Psychoanalytically Oriented Focal Therapy of Generalized Anxiety Disorder

Name: Psychoanalytically oriented focal therapy of generalized anxiety disorder (based on Luborsky 1995)

Developer: Falk Leichsenring

Manual reference: Leichsenring F, Winkelbach C, Leibing E. Psychoanalytisch orientierte Fokalthherapie der Generalisierten Angststörung - ein Manual (Psychoanalytic oriented focal therapy of generalized anxiety disorder). *Psychotherapeut*. 2005; 50: 258–264.

Study reference: Leichsenring et al. Short-term psychodynamic psychotherapy and cognitive-behavioral therapy in generalized anxiety disorder: a randomized, controlled trial. *Am J Psychiatry*. 2009; 166: 875–881.

Training: unknown

Psychodynamic psychotherapy for social phobia

Name: Psychodynamic psychotherapy for social phobia

Developer: Falk Leichsenring

Manual reference: Leichsenring F, Beutel M, Leibing E. Psychodynamic psychotherapy for social phobia: a treatment manual based on SE therapy. *Bull Menninger Clin*. 2007; 71(1): 56–83.

Study reference: Leichsenring F et al. SOPHO-NET Forschungsverbund zur Psychotherapie der Sozialen Phobie. *Psychother Psych Med*. 2009; 59: 117–123.

Training: unknown

Short-Term Anxiety-Provoking Psychotherapy

Name: Short-Term Anxiety-Provoking Psychotherapy

Developer: Peter E. Sifneos

Manual reference: Sifneos PE. Short-term anxiety-provoking psychotherapy: a treatment manual. New York: Basic Books; 1992.

Study reference: Svartberg M, Stiles TC. Therapeutic alliance, therapist competence, and client change in short-term anxiety-provoking psychotherapy. *Psychother Res*. 1993; 4(1): 20–33.

Training: unknown

Supportive-Expressive Therapy

Name: Supportive-Expressive Therapy

Developer: Lester Luborsky

Manual reference: Luborsky L. Principles of psychoanalytic psychotherapy. A manual for supportive-expressive treatment. New York: Basic Books; 1984.

Study reference: Vinnars B, Barber JP, Noren K, Gallop R, Weinryb RM. Manualized supportive-expressive psychotherapy versus nonmanualized community-delivered psychodynamic therapy for patients with personality disorders: bridging efficacy and effectiveness. *Am J Psychiatry*. 2005; 162(10): 1933–1940.

Training: unknown

Supportive Psychotherapy for Borderline Patients

Name: Supportive psychotherapy for borderline patients

Developer: Lawrence H. Rockland

Manual reference: Rockland LH. Supportive psychotherapy for borderline patients: a psychodynamic Approach. New York: Guilford; 1992.

Rockland LH. Supportive therapy: a psychodynamic approach. New York: Basic Books; 1989.

Study reference: Clarkin JF, Levy KN, Lenzenweger MF, Kernberg OF. Evaluating three treatments for borderline personality disorder: a multiwave study. *Am J Psychiatry*. 2007; 164: 922–928.

Training: unknown

Time-limited Dynamic Psychotherapy

Name: Time-limited dynamic psychotherapy

Developer: Hans H. Strupp and Jeffrey L. Binder

Manual reference: Strupp HH, Binder JL. Psychotherapy in a new key. a guide to time-limited dynamic psychotherapy. New York: Basic Books; 1994.

Levenson H. Time-limited dynamic psychotherapy: a guide to clinical practice. New York: Basic Books; 1995.

Study reference: Strupp HH. The Vanderbilt studies revisited I. *Psychother Res*. 1998; 8(1): 17–29.

Training: unknown

Time-Limited Psychotherapy

Name: Time-limited psychotherapy

Developer: James Mann

Manual reference: Mann J. Time-limited psychotherapy. Cambridge, Mass: Harvard University Press; 1980.

Study reference: Shefler G, Dasberg H, Ben-Shakar G. A randomized controlled outcome and follow-up study of Mann's time limited psychotherapy. *J Consult Clin Psychol*. 1995; 63: 585–593.

Training: unknown

Time Limited, Short Term Interpretative and Supportive Therapies

Name: Time limited, short term interpretative and supportive therapies

Developer: William E. Piper

Manual reference: Piper WE, Joyce AS, McCallum M, Azim HF, Ogrodniczuk JS. Interpretive and supportive psychotherapies: matching therapy and patient personality. Washington, DC: American Psychological Association; 2002.

Study reference: Piper WE, Joyce AS, McCallum M, Azim HF. Interpretive and supportive forms of psychotherapy and patient personality variables. *J Consult Clin Psychol*. 1998; 66: 558–567.

Training: unknown

Transference Focused Psychotherapy

Name: Transference Focused Psychotherapy for Borderline Personality Disorder

Developer: Otto F. Kernberg

Manual reference: Clarkin JF, Yeomans FE, Kernberg OF. Psychotherapy for borderline personality. Focusing on object relations. 2nd ed. Washington: American Psychiatric Publishing; 2006.

Study reference: Clarkin JF, Levy KN, Lenzenweger MF, Kernberg OF. Evaluating three treatments for borderline personality disorder: a multiwave study. *Am J Psychiatry*. 2007; 164: 922–928.

Training: <http://www.borderlinedisorders.com/mental-health-professionals-index.php>

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