CHAPTER

7

Mount Zion Hospital and Medical Center: Research on the Process of Change in Psychotherapy

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Background and Aims

The broad objective of the Mount Zion Psychotherapy Research Group (MZPRG) is to increase the effectiveness of psychotherapy by discovering fundamental principles about how the psychotherapist helps the patient to make progress. Under the direction of Sampson and Weiss, the research program began 17 years ago with clinical and empirical studies of psychoanalyses. These early studies addressed how patients develop control over their unconscious impulses, affect, and defenses (Sampson, Weiss, Mlodnosky, & Hause, 1972); insight into previously warded-off mental contents (Gassner, Sampson, Weiss, & Brumer, 1982; Horowitz, Sampson, Siegelman, Wolfson, & Weiss, 1975); and control over symptomatic behaviors (Horowitz, Sampson, Siegelman, Weiss, & Goodfriend, 1978). In the last 10 years, we have extended our research to the study of brief (16-session) psychodynamic psychotherapy. The studies of the MZPRG have tested and led to further refinement of a theory of psychopathology and psychotherapy developed by Weiss (1967, 1971, 1986).

The concept of unconscious pathogenic beliefs is central to Weiss's (1967, 1971, 1986) theory. According to the theory, psychopathology stems from unconscious pathogenic beliefs that usually develop from traumatic childhood experiences. Patients come to therapy with a plan which is often unconscious) to master their conflicts. The patient's plan may be viewed as a strategy for disconfirming pathogenic beliefs by developing greater understanding of them in therapy and by testing them in the relationship with the therapist. The therapist may help the patient to disconfirm pathogenic beliefs through interpretations or by responding appropriately to the patient's tests (Curtis & Silberschatz, 1986; Silberschatz & Curtis, 1986; Weiss, 1986). The theory does not suggest a particular technique; rather, it explains how therapy works.

In planning studies on how the therapist influences the process and outcome of psychotherapy, the MZPRG was confronted with a fundamental problem in the field: how to determine whether a particular intervention appropriately addresses an individual patient's problems and therapy goals. The MZPRG responded to this problem by developing a method for creating reliable, individualized case formulations that could then be applied to determine whether any given intervention suitably addresses a patient's problems. The formulation method, *plan diagnosis,* was initially used on psychoanalyses (Caston, 1980, 1986) and

was subsequently refined and applied to the study of brief dynamic psychotherapy (Curtis & Silberschatz, 1989; Curtis, Silberschatz, Sampson, Weiss, & Rosenberg, 1988; Rosenberg, Silberschatz, Curtis, Sampson, & Weiss, 1986).

The plan diagnosis method paved the way for developing a measure that could be used to rate the goodness of fit between therapist behaviors and the problems and goals of a patient. Two suitability measures have been developed. The first, the degree to which the therapist passes the patient's tests, assesses the appropriateness of a therapist's response during a moment in the therapy (i.e., when the patient is testing a pathogenic belief). A second measure developed by Caston (1980, 1986), the Plan Compatibility of Interventions Scale (PCIS), has been used to rate the suitability of therapist interpretations (Bush & Gassner, 1986; Fretter, 1984; Silberschatz, Fretter, & Curtis, 1986). Both of these measures have been applied with high interjudge reliabilities to therapy transcript data, and both have proven to be sensitive predictors of shifts in therapy process. Throughout our research we have compared our methods and concepts with those of other investigators, and we have also tested competing hypotheses about the process of psychotherapy (Silberschatz, 1978; Silberschatz, Sampson, & Weiss, 1986).

Our research effort is divided into four subareas of investigation: (a) reliable and replicable methods of formulating patients' plans, (b) studies of the patient's efforts to disconfirm pathogenic beliefs through testing of the therapist, (c) the effects of the therapist's interventions on the patient's progress, and (d) the development of new process and outcome measures that are sensitive indicators of therapeutic progress. Each of these areas of investigation, along with a summary of our findings, is described.

Method

The MZPRG has been studying the effective ingredients of psychotherapy, particularly how therapist behaviors influence the therapeutic process. Our concepts and measures cut across different types of patients and different types of therapy. Consequently, we have not focused on a particular therapy modality for targeted patient populations, nor have we used treatment manuals. Typically, treatment manuals define how a particular type of therapy (e.g., cognitive therapy, interpersonal therapy) should be conducted. We have developed a different kind of manual (the patient plan diagnosis) that is case specific and defines each patient's problems and goals and how the therapist can best respond to that patient. Consequently, in our efforts to identify effective ingredients in psychotherapy we use the patient plan formulation as a case-specific "treatment manual." The PCIS represents an individually tailored adherence measure that can quantify how much of an effective ingredient was delivered by the therapist. On the basis of the plan formulation of each patient, we have devised new instruments (described later) that measure the degree to which the patient has used or incorporated the effective agent.

Subjects

The patients studied in our research reflect a range of diagnostic categories, ages, educational backgrounds, and socioeconomic status levels. Therapies were drawn from our own archives as well as from those of other investigators. The patients whose psychoanalyses we studied were young, well-educated individuals with neurotic disorders. Our brief therapy sample includes young, middle-aged, and older patients (ranging in age from 18 to 88 years) who met the following acceptance criteria: a history of positive interpersonal relationships, no evidence of psychosis, organic brain syndrome, or mental deficiency, no evidence of serious substance abuse, and no evidence of suicidal or homicidal potential. Although they differed in presenting complaints, all patients in our brief therapy sample were diagnosed as having neurotic or character disorders or both. The brief therapy sample consisted predominantly of White, lower middle-class, and middle-class patients.

In all of the therapies we have studied, the therapists were experienced clinicians. The psychoanalysts had completed psychoanalytic training at accredited psychoanalytic institutes, and the therapists in the brief therapy studies all had at least 5 years of postdoctoral experience as well as training in brief dynamic psychotherapy. Most cases were treated by therapists who did not adhere to our particular theory of psychotherapy. Indeed, for the brief therapy studies we deliberately chose therapists with various psychodynamic orientations (e.g., Sifneos, Davanloo, Malan). When the therapies were recorded, the therapists were unaware of our hypotheses.

A total of 38 patients were treated as part of our brief therapy study. Patients received 16 weekly sessions of psychodynamically oriented psychotherapy; all sessions lasted 45 minutes, and all were audiotaped. Each patient received intake, termination, and 6-month and 1-year follow-up interviews by an independent clinical evaluator. Pretherapy and posttherapy test batteries were completed by patients, therapists, and the clinical evaluator. Verbatim transcripts of all therapy sessions, pretreatment interviews, test scores, and process data collected on each case were entered into the computerized Mount Zion Psychotherapy Data Archive.

Instruments

The instruments used in our research are aimed at answering the following questions:

- What does the patient hope to accomplish in treatment? What obstacles have stood in the patient's way? How is the patient likely to work in therapy to overcome these obstacles (plan formulation)?
- Did the patient make progress during a particular session or group of sessions (process or within-session change)?
- How did the therapist's interventions influence the patient's progress (process studies)?
- How much did the patient change from pretherapy to posttherapy status (outcome)?

Plan diagnosis. The MZPRG has developed a protocol for preparing the formulation of a patient's plan for therapy (Curtis & Silberschatz, 1989; Curtis et al., 1988). Plan formulations contain the following four components: the patient's conscious as well as unconscious *goals;* the *obstructions* or pathogenic beliefs preventing the attainment of goals; the means by which the patient is likely to *test* the therapist to disconfirm pathogenic beliefs; and the *insights* that would be particularly useful in helping the patient to disconfirm pathogenic beliefs. Studies of psychoanalysis (Caston, 1980, 1986) and of brief dynamic psychotherapy (Curtis & Silberschatz, 1989; Curtis et al., 1988; Rosenberg et al., 1986) have focused on methods for assessing the interjudge reliability of plan formulations. These studies show that excellent interjudge reliability can be achieved with this method.

Process measures. The patient plan formulation is used in our process research to evaluate the suitability of therapist behaviors and the amount of progress that the patient is making within the session. Two kinds of therapist process measures have been used the Test Passing Scale, a 7-point Likert-type scale that measures the degree to which the therapist passes or fails the patient's tests (Silberschatz, 1978, 1986); and the PCIS, a 7-point Likert-type scale that assesses the extent to which the therapist's interpretations are compatible with the patient's plan (Bush & Gassner, 1986; Caston, 1980; Fretter, 1984; Silberschatz, Fretter, et al., 1986). Interjudge reliabilities for both measures have been good (*ICC*s > .75).

The patient's responses to therapist interventions (i.e., immediate changes from preintervention to postintervention status) have been measured with instruments developed by the MZPRG as well as by other researchers. One measure that we have used in most of our studies is the patient Experiencing Scales (Klein, Mathieu-Coughlan, & Kiesler, 1986), a widely used and well-validated instrument that taps the patient's level of involvement in therapy. Other process instruments used in our research include the Penn Helping Alliance Rating Method, the Vanderbilt Psychotherapy Process Scale, the Gottschalk–Gleser Anxiety Scale, and the Morgan Patient Insight Scale. The instruments developed by the MZPRG are described in the Research Accomplishments section.

Outcome measures. The outcome battery for the brief therapy sample includes Target Complaints, Goal Attainment Scaling, SCL-90–R, the Global Assessment Scale, the Brief Psychiatric Rating Scale, the Overall Change Rating Scale, the Adjective Checklist, and the Loevinger Sentence Completion Test. We have also developed a psychodynamic measure of outcome—the Plan Attainment Scale (Nathans, 1988; Silberschatz, Curtis, & Nathans, 1989)—that is derived from the patient plan formulation (see the Research Accomplishments section).

Procedures

Most of our studies involve testing hypotheses about how therapy works. We have typically used a repeated measures, single-case design with patients serving as their own controls. The research design entails (a) identifying the crucial incidents

in therapy (e.g., therapist interpretations, the emergence of previously warded-off mental contents, the patient's testing of the therapist); (b) measuring the patient's behavior before, during, and after the crucial event; and (c) replicating findings in other cases. For example, to study the effects of the therapist's passing or failing the patient's tests (Silberschatz, 1986) the following steps were taken: key patient tests (crucial incident) were identified; the therapist's responses to these tests were rated for the degree to which they disconfirmed the belief that the patient was testing (passing or failing the test); and the patient's behavior and affect immediately before and after the test were measured to determine whether the patient changed in the predicted direction. A similar procedure was used in studies of the immediate impact of therapist interpretations on the patient's in-session progress (Bush & Gassner, 1986; Silberschatz, Fretter, et al., 1986).

Research Accomplishments

Findings

All theories of psychotherapy assume that the therapist plays a significant role in the change process. Nevertheless, there has been little empirical evidence that the therapist has any systematic impact on therapeutic progress or outcome. It has been difficult to demonstrate therapist effects because investigators have not had a way of measuring whether therapist activities are appropriately suited to the particular patient's problems and goals. Consequently, most research has tended to count the frequency of types of interventions (e.g., interpretations, questions, and reflections) without taking into account the suitability of the intervention. The plan concept provides a framework for evaluating the patient's problems and goals, the obstacles to their realization, the means by which the patient will work in therapy to overcome these obstacles, and, most important, how the therapist can best help the patient.

The main findings of the MZPRG research program are as follows:

- It is possible to identify reliably a patient's plan.

- The plan formulation has predictive validity; that is, it correctly specifies how a patient will work and how he or she will respond to the therapist's interventions.

- The patient's tests can be reliably identified.

- Reliable judgments can be made about whether a therapist has passed or failed a test or whether an interpretation is well suited to the particular patient (i.e., whether it is plan compatible).

- Therapist behaviors have a significant impact on the patient's therapeutic progress: When a therapist passes the patient's tests or makes plan-compatible interpretations, the patient shows signs of progress. When the therapist fails tests or makes plan-incompatible interpretations, the patient shows signs of retreat.

The plan diagnosis method has proved to be a reliable procedure for developing individually tailored psychodynamic case formulations. The method has been applied to 3 psychoanalyses and 11 brief therapies drawn from the Mount Zion Psychotherapy Data Archive as well as from other investigators' studies. Interjudge reliabilities (intraclass correlations of pooled judges' ratings) in the .80–.90 range are typical (Curtis & Silberschatz, 1989; Curtis et al., 1988; Rosenberg et al., 1986). Recent studies indicate that the plan concept can be taught to relatively inexperienced judges who can then apply it reliably (Curtis & Silberschatz, 1989). The plan diagnosis method has also been used by investigators who used a theoretical framework different from that of the MZPRG with comparably high levels of reliability (Collins & Messer, 1988).

Our studies show that plan formulations can be used to identify significant events in psychotherapy. Judges have been able reliably to identify key tests by the patient (i.e., instances in which the patient is testing a central pathogenic belief) and to rate the degree to which a therapist's interpretation helps the patient carry out his or her plan (intraclass correlations for these ratings range from .78 to .89; see Silberschatz, 1986; Silberschatz, Fretter, et al., 1986). In addition, plan formulations have been used as case-specific measures to assess how much progress a patient makes in the session (plan progressiveness) and in the therapy overall (Plan Attainment Scale; both measures are described later). In short, plan formulations can be reliably used to assess the meaning of patient and therapist behaviors and to provide a clinically meaningful template for evaluating therapeutic progress (Silberschatz, Curtis, & Nathans, 1989).

Our studies show that there are consistent significant correlations between ratings of therapist

behaviors and immediate patient progress. Horowitz et al. (1975) found that the patient's level of discomfort (as measured by a speech disruption measure) dropped when the therapist passed a test and that new (previously warded-off) content tended to follow passed tests. Silberschatz (1978, 1986) found that the patient became significantly more involved, productive, and relaxed when the therapist passed key tests. In addition to finding empirical support for the concept of testing and for the importance of the therapist's passing the patient's tests, Silberschatz compared the predictive validity of an alternative psychoanalytic model (based on traditional psychoanalytic theory) with that of Weiss's model (Silberschatz, Sampson, & Weiss, 1986). Interestingly, the two models made opposite predictions. The results provided strong support for the testing model: All of the correlations were in the direction predicted by the testing model and opposite to the direction predicted by the alternative model. This research is distinctive in the psychoanalytic literature in that it is the first study to show that competing hypotheses can be empirically evaluated.

In studies of brief dynamic therapies we have replicated and expanded on our findings concerning testing in psychoanalysis. We have found significant correlations between the degree to which a therapist passes a patient's tests and immediate changes in the patient's levels of experiencing (Silberschatz, Curtis, & Kelly, 1989), adaptive regression (Bugas, 1986), and voice stress levels (Kelly, 1986, 1988; see the Instruments Developed section for a description of measures). The fact that results from studies of psychoanalyses have been replicated in research on brief therapies with different patients and various measures of patient progress lends strong empirical support to the hypothesis that passing a patient's tests is an important factor in determining therapeutic progress.

Comparable results have also been obtained in research relating the plan compatibility of therapist interpretations (PCIS scores) with immediate patient improvement. In a study of more than 200 therapist interpretations drawn from 3 brief therapy cases, we found that PCIS ratings correlated significantly with changes in patient experiencing levels across all 3 cases (Silberschatz, Fretter, et al., 1986). We also sought to determine whether another measure of therapist interpretations—Malan's transference and nontransference classification method—would predict changes in the patient (see Silberschatz, Fretter, et al., 1986). PCIS scores (averaged for each session) explained 30%–60% of the variance in patient experiencing levels, whereas the transference classification was not predictive. The data suggest that patients who received a high proportion of plan-compatible interpretations had better treatment outcomes than those who received a low proportion of such interpretations.

Instruments Developed

In addition to the plan diagnosis method and the plan-based rating scales already discussed, the following measures have been developed by the MZPRG.

Plan Progressiveness Scale. This scale measures the degree to which, at any given time in the therapy, the patient's productions reflect progress or retreat with respect to his or her plan. The Plan Progressiveness Scale differs from other measures of therapeutic involvement (e.g., the Experiencing Scales) in that it is a case-specific scale that focuses on the content of the patient's productions rather than on the manner of their delivery. Thus, segments of patient speech that might be rated high on a measure such as the Experiencing Scales could be rated low on plan progressiveness. The scale was initially developed by Silberschatz and Curtis (1986) on 32 segments of patient speech (varying in length from 3 to 6 minutes); the intraclass correlation for the mean of 4 judges' ratings was .89. We found significant correlations between therapist test passing ratings and patient plan progressiveness.

The Plan Attainment Scale. The Plan Attainment Scale is a psychodynamic outcome measure that is based on the patient's plan formulation. It measures the patient's progress in three areas: the degree to which the patient achieved the goals for therapy, overcame the obstructions to attaining these goals (disconfirmation of pathogenic beliefs), and developed pertinent insights. Each of these three sections contains individualized items (taken from the plan formulation) that are rated on a 7-point Likert-type scale. In addition to rating individual items, judges make global ratings of goals, obstructions, and insights as well as a global rating for overall plan attainment. Trained judges first read the intake interview and plan formulation for the case to be rated; they then read the posttherapy evaluation interview and rate the patient's progress from pretherapy to posttherapy status on the Plan At-

tainment Scale. After the patient's progress is rated, a 6-month follow-up interview is also rated. In a study of seven cases, the measure was shown to be reliable and to correlate with other outcome measures such as the SCL-90–R and Target Complaints (Nathans, 1988; Silberschatz, Curtis, & Nathans, 1989).

Voice Stress Measure (VSM). The VSM is a psychophysiological measure that has been shown to be a sensitive indicator of emotional arousal and stress as reflected in voice characteristics (Scherer, 1982). Kelly (1986, 1988) adapted the VSM to study brief segments of psychotherapy data (2–5 minutes of speech). Kelly validated the VSM on 111 segments of patient speech drawn from three different brief therapies by correlating patient VSM scores with ratings of the degree to which therapists passed patients' tests. Passed tests tended to be followed by a decrease in voice stress, whereas failed tests tended to be followed by an increase in stress.

Adaptive Regression Scale. Based on Holt's system of scoring primary process thought on the Rorschach, the Adaptive Regression Scale (Bugas, 1986) is designed to measure both the expression of and the degree of control over primary process thinking manifested in psychotherapy sessions. The scale taps how comfortably and freely a patient can gain access to and use unconscious material in a therapeutic way; in this respect, the scale may be viewed as a measure of Kris's concept of regression in the service of the ego. The scale has been applied with good interjudge reliability (*ICC*s > .85). Bugas (1986) found significant correlations between changes (from pretest to posttest segments) in patients' levels of adaptive regression and ratings on the therapist Test Passing Scale.

The Boldness Rating Scale. The Boldness Rating Scale, developed by Caston (1986), is a 5-point rating scale that assesses the degree to which the patient is able to confront or elaborate on nontrivial material; that is, the extent to which he or she boldly tackles issues or retreats from them. At the low end of the scale, the patient is anxious and generally inhibited, and may express dissatisfaction about his or her handling of the material. At the high end of the scale, the patient seems able to plunge ahead and confront various issues even if they are painful or distressing. The scale has been used in studies of psychoanalyses and brief psychotherapies with high interrater reliability. Silberschatz (1986) found that boldness ratings correlated positively with ratings of test passing.

The Relaxation Rating Scale. This 5-point Likert-type scale measures the patient's degree of freedom and relaxation in the psychotherapy session. Originally developed to rate entire sessions (Curtis, Ransohoff, Sampson, Brumer, & Bronstein, 1986), the scale was adapted for rating 2- to 8-minute segments of patient transcript material Silberschatz, 1978, 1986). The sale ranges from the patient's seeming uncomfortable, constricted, beleaguered, and tense at the low end to feeling spontaneous, relaxed, and free at the high end. High interrater reliability has been achieved with psychoanalytic data as well as data from brief therapy. Relaxation has been shown to correlate with test passing (Silberschatz, 1978, 1986).

The Therapy Shame and Guilt Scale. This 33-item psychotherapy process measure was designed to assess manifestations of patients' shame and guilt in psychotherapy sessions. The scale was developed by Nergaard (1985). Alpha reliabilities for the individual items ranged from .45 to .98 (the average reliability was .80). A principal-components factor analysis yielded two distinct factors of shame and guilt items. In a study of 38 brief therapy cases from the Mount Zion Psychotherapy Data Archive, Nergaard and Silberschatz (1989) found that guilt ratings correlated significantly with posttherapy outcome.

Research Projects in Progress

Three main areas of work are currently in progress: (a) continuing research on the relation between the plan compatibility of therapist interpretations and patients' in-session progress, (b) relating the plan compatibility of interventions to therapy outcome, and (c) encouraging replications of our methods and procedures by other research groups.

In our studies of the psychotherapeutic process, we found consistent significant correlations between the suitability (plan compatibility) of therapist behaviors and immediate patient progress. We assumed, on the basis of these findings, that if the therapist made a preponderance of good or suitable (i.e., plan-compatible) interventions then the outcome of the treatment would be favorable. That is, if a clinician repeatedly confirms the patient's pathogenic beliefs (i.e., by failing the patient's tests or behaving in a plan-incompatible manner), the outcome is likely to be poor. If the

therapist helps the patient disconfirm pathogenic beliefs (by passing tests or intervening in plan-compatible ways), the patient is likely to make significant progress toward achieving therapy goals, and the outcome is likely to be favorable.

Pilot data from our testing and interpretation studies are consistent with this hypothesis. For instance, in one case with a poor therapy outcome, the average rating of the therapist's responses to the patient's tests throughout the therapy was 1.5 on a 7-point scale ranging from *therapist fails the test* (1) to *a clear instance of passing the patient's test* (7). By contrast, in a second case with a successful outcome, the average of the therapist's responses to tests was 5.5. Similarly, in our interpretation study (Silberschatz, Fretter, et al., 1986), we found that the case with the highest percentage of plan-compatible interpretations had the best outcome, whereas the case with the highest percentage of plan-incompatible interpretations had the worst outcome.

A study to assess the relation between plan compatibility of therapist interventions and treatment outcome is currently underway at Mount Zion Hospital. In this research, the verbatim transcripts of 38 completed brief dynamic psychotherapies are being studied. All therapist interventions from a sample of five therapy sessions are being rated for their degree of plan compatibility. Mean ratings will be computed for each of the five sessions, and these averaged plan-compatibility ratings will then be correlated with outcome assessment.

The plan diagnosis method has now been sufficiently streamlined so as to be usable by researchers outside of the MZPRG. To familiarize interested colleagues with our concepts and methods, the MZPRG has been hosting week-long intensive annual workshops. Stanley Messer and colleagues from Rutgers University attended one of our workshops to learn our plan diagnosis procedures. They then applied the plan diagnosis method to cases of their own as well as to cases from the Mount Zion Psychotherapy Data Archive. Although their conceptual framework differs sharply from our own, they have been able to apply our method with good interjudge reliabilities (Collins & Messer, 1988). A study comparing the formulations developed by the Rutgers and Mount Zion groups is currently underway. Each group is rating the plan diagnosis items identified for a given case by the other group in order to identify areas of overlap and disagreement in the formulations. By using the research design developed by Silberschatz (1978; Silberschatz, Sampson, et al., 1986) to study competing psychoanalytic hypotheses of the analytic process, the predictive power of these different formulations will be tested.

Programs Planned for the Future

The research of the MZPRG has focused exclusively on psychodynamic therapy. An important new research direction is to apply our concepts and to test our hypotheses on other schools of therapy. We are currently planning research on cognitive therapy to determine how well ratings of plan compatibility of therapist behaviors predict progress in cognitive therapy. Initial reviews of cognitive therapy hours indicate that the plan diagnosis method can be applied to this form of treatment and that the PCIS can be adapted to cognitive therapies.

Nature of the Research Organization

The MZPRG was organized in 1972 by Sampson and Weiss to study the process of psychoanalytic therapy. At its inception the group had 10 members, and it has grown over the years to include more than 50 active members. The group includes clinically experienced psychoanalysts, psychiatrists, psychologists, social workers, research psychologists, and doctoral-level students (to date, 15 doctoral dissertations have been carried out in collaboration with the MZPRG). In 1979, Rosenberg and Silberschatz established the Brief Therapy Project as part of the larger MZPRG. Rosenberg subsequently left Mount Zion, and in 1982 Silberschatz and Curtis became codirectors of the Brief Therapy Project and organized the Mount Zion Psychotherapy Data Archive.

The National Institute of Mental Health (NIMH) has been a major source of funding for the MZPRG (NIMH grants MH-13915, 1967–1976; MH-34052, 1979–1981; and MH-35230, 1981 to the present). We have also received funding from Mount Zion Hospital, the American Psychoanalytic Association's Fund for Psychoanalytic Research, and the Chapman Research Fund.

Relation to Other Research Programs

Our main research focus has been to develop our concepts and methods, to demonstrate that our

measures are reliable, and to test the predictive validity of our measures. Having established the reliability of our instruments, we have recently started to compare our measures with those of other investigators. We have compared our plan diagnosis method with Luborsky's core conflictual relationship theme and Perry's dynamic formulation method (Perry, Luborsky, Silberschatz, & Popp, 1989). We have used the Vanderbilt Psychotherapy Process Scale (Windholz & Silberschatz, 1988) and the Vanderbilt Negative Indicators Scale (Nergaard & Silberschatz, 1989) on the sample of 38 brief therapies in the Mount Zion Psychotherapy Data Archive. Finally, we have compared the predictive validity of our Test Passing Scale and the PCIS with several process measures: the Penn helping alliance rating method (Hamer, 1987), the Vanderbilt Psychotherapy Process Scale (Kale, 1986), and Malan's classification of interpretations (Fretter, 1984; Silberschatz, Fretter, et al., 1986).

The research of the MZPRG supports the value of developing and testing theories of change processes in psychotherapy. The theory that we have been testing and the case-specific research approach that we use have the potential to bridge the wide gap between the practice of psychotherapy and research on psychotherapy. Although many investigators have suggested that psychotherapy research methods must be geared to the specific dynamics of particular patient–therapist interactions, empirical studies that use such case-specific methods are extremely rare. Many of the studies carried out by the MZPRG illustrate how such methods can be applied to study psychoanalysis and brief therapies. Our findings provide strong empirical support for the plan concept and for the therapeutic value of interventions that are compatible with the patient's plan.

The MZPRG was designed to improve the effectiveness of psychotherapy. Our studies have led to the refinement and further development of Weiss's (1967, 1971, 1986) theory of psychotherapy. The theory and its clinical applications have been widely taught in the San Francisco Bay Area and "exported" to other areas of the country through presentations, publications, and the yearly workshops held at Mount Zion Hospital and the San Francisco Psychoanalytic Institute. We have found that even relatively novice therapists can be trained in developing plan formulations and in applying them (in both clinical practice and research) to the understanding of clinical phenomena. Consequently, our research findings are both informed by and have had a strong impact on the theory and practice of psychotherapy.

Although the MZPRG research studies grew out of Weiss's (1986) cognitive-psychodynamic theory, our concepts and methods cut across various types of therapy and explain how the therapist's behavior, regardless of the type of therapy practiced, affects the patient's progress. Our techniques for developing reliable case formulations, for measuring the therapist's adherence to these formulations, and for measuring the impact of therapist behaviors on the process and outcome of therapy can be used by investigators with differing theories.

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