



## Improving the yield of psychotherapy research

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## PRESIDENTIAL ADDRESS

# Improving the yield of psychotherapy research

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### Abstract

**Objective:** Although the effectiveness of psychotherapy is well documented, little progress has been made in elucidating mechanisms of change. Major impediments to progress are the homogeneity assumptions evident in many psychotherapy studies. Case-specific research strategies avoid treating patients, therapists, and treatments as homogeneous variables and such studies are more successful at elucidating the link between psychotherapy processes and treatment outcome. **Method:** A case-specific, process-outcome study comprised of 39 patients treated by experienced therapists is presented. We did not focus on a supposedly homogeneous diagnostic group of patients (e.g., depressed patients) or particular manualized brands of therapy. Instead, we identified each patient's particular problems and conflicts (plan formulation) and then determined the degree to which therapists effectively addressed the patient's problems—that is, the degree to which therapists' interventions were compatible with (i.e., responsive to) the patient's plan. **Results:** Correlations between ratings of therapist responsiveness (plan compatibility of interventions) and a variety of outcome assessments were significant and substantial (accounting on average for 25% of outcome variance). **Conclusion:** The findings presented here suggest that the extent to which therapists are responsive to their patients' plans is a strong predictor of treatment outcome and of patients feeling positively about their therapy experience.

**Keywords:** process-outcome research; homogeneity assumptions; case-specific research; control-mastery theory; therapy relationship; change mechanisms

The field of psychotherapy research has been multiplying at an astonishing pace. In the last five decades the number of studies on the therapeutic relationship has increased from 20 to well over 5000 (Horvath, 2013). In view of this incredible, exponential rate of growth, what does “improving the yield” mean? Although the effectiveness of psychotherapy has been clearly established (American Psychological Association, 2012; Lambert, 2013; see also, Table 1 in Shedler, 2010), the most common lament in reviews of psychotherapy research is the notable lack of progress in identifying change mechanisms in psychotherapy. In one of the earliest editions of the *Handbook of psychotherapy and behavior change*, Parloff, Waskow, and Wolfe (1978) concluded that surprisingly little progress had been made in understanding how the therapist contributes to the success or failure of psychotherapy. More recent reviews have drawn similar conclusions.

Kazdin (2009), for instance, pointed out that despite thousands of studies, “there is no evidence-based explanation of how or why even the most well-studied interventions produce change, that is, the mechanisms through which treatments operate” (p. 418). In order to improve the yield of psychotherapy research it is essential to clarify why there has been so little progress in understanding how therapy works and then to suggest research methods that can illuminate the fundamental question of how therapy leads to change.

### Homogeneity Assumptions are a Major Impediment to Progress

Homogeneity is the hallmark—if not the cornerstone—of randomized controlled trials, which are widely regarded as the gold standard of experimental

research designs. Researchers go to great lengths to create homogeneous groups of subjects or patients, homogeneous groups of therapists, and homogeneous treatments. Once patients and therapists have been carefully screened and treatments have been rigorously manualized, researchers assume that a sufficient degree of homogeneity has been achieved and that any remaining within-group differences can simply be regarded as error variance. Many prominent psychologists have argued that such homogeneity assumptions are a major impediment to progress. In his presidential address to the American Psychological Association, Cronbach (1957) pointed out that it is misleading to speak broadly of treatment effects because the effect will vary depending on the person being treated. He urged researchers to realize that the patient or subject and the treatment “are an inseparable pair and that no psychologist can dismiss one or the other as error variance” (1957, p.683). The idea that individuals respond differently to the same situation or set of interventions has a long history in psychology. Personality, developmental, clinical, and social-cognitive theorists (among others) argue that individual needs or goals vary considerably and such individual variation plays a critical role in shaping attitudes, emotions, and behavior (e.g., Ainsworth, 1979; Andersen & Chen, 2002; Dweck, 1975, 2008; Johnson, Dweck, & Chen, 2007; Markus, 1977; Mischel & Shoda, 1995; Reis, Collins, & Berscheid, 2000).

A walk in the woods or a stroll in any natural setting quickly reveals that uniform consistency is nowhere to be found and that diversity is everywhere in nature—in fact, one could argue that homogeneity defies the laws of nature. Alfred Russell Wallace, the famous nineteenth century biologist and the co-founder of evolutionary theory, cataloged animals and plants in a very small area of Sumatra and identified over 100,000 species! In psychology, challenges to homogeneity assumptions are evident from research on earliest infancy into late senescence. If there is anywhere in human life where homogeneity is most likely to be found it would be among premature infants in a neonatal intensive care unit. It is very easy to assume that these tiny babies are pretty much alike—that they all have similar needs and they can thus be treated similarly (homogeneously). Recent work in behavioral neonatology suggests that such an assumption is simply wrong. A growing body of clinical and research evidence suggests that it is essential to accurately assess the infant’s emotional/behavioral signals and to recognize that infants actively participate in all aspects of care delivery (VandenBerg, 2007). In a carefully designed research study of 92 preterm infants (weighing less than 1250 grams) investigators found strong empirical evidence

for the effectiveness of individualized care in terms of better weight gain, shorter hospital stays, and improved neurobehavioral outcome (Als et al., 2003). These results argue against assuming that neonates have similar needs and can be treated in uniform, proscribed ways. Similar arguments have been proposed for understanding adolescents (e.g., Eccles et al., 1993) and dementia in the elderly (e.g., Cohen-Mansfield, 2001).

Many scholars and reviewers of the psychotherapy research literature have suggested that the homogeneity assumptions that we make—or try to impose—on research studies have significantly impeded the quality of our research yield. Some 50 years ago, Kiesler (1966) described some of the prevalent assumptions in psychotherapy research: that there is uniformity among patients who share the same diagnosis, uniformity among therapists who share the same theoretical orientation and that there is uniformity among treatments. Kiesler referred to these as uniformity myths because they are based on the erroneous assumption that patients, therapists, and treatments are homogeneous variables. The fallacy of patient uniformity is evident in randomized controlled trials of supposedly homogeneous patient samples (Persons & Silberschatz, 1998). In one of the most elaborate psychotherapy experimental trials—the NIMH Treatment of Depression Collaborative Research Program (TDCRP—Elkin et al., 1989)—patients were extensively screened and carefully selected in order to insure diagnostic homogeneity (major depressive disorder). The investigators would thus feel assured in assuming that the patients in all treatment conditions were similar and could be treated similarly. But this patient homogeneity assumption does not fit with clinical experience; clinicians recognize that patients who share the same diagnosis often differ in a variety of substantive ways. The patient uniformity myth “has led to both statistical and conceptual problems. The major statistical problem is the large client variance characteristically found in differential treatment designs” (Rice & Greenberg, 1984, p. 12). For example, in a reanalysis of the TDCRP data Blatt, Zuroff, Hawley, and Auerbach (2010) found differing levels of perfectionism in the ostensibly homogeneous depressed patient samples, and these differences significantly effected both the therapeutic alliance and the treatment outcome. Similarly, in a study of 657 depressed inpatients Wollburg and Braukhaus (2010) identified a clinically important source of patient heterogeneity: patients who framed their goals in AVOIDANCE terms showed significantly less symptomatic improvement than did patients who framed their goals in APPROACH terms.

Is there more uniformity among therapists and treatments? Psychotherapy researchers try to assure homogeneous therapist samples by using rigorous selection criteria and by adopting standardized training procedures. Similarly, elaborate treatment manuals and adherence measures are typically used to insure that treatments are indeed equivalent. Despite these efforts, considerable heterogeneity is evident among therapists as well as the treatments studied (e.g., Kim, Wampold, & Bolt, 2006). Reviews of psychotherapy research consistently conclude that psychotherapy techniques contribute very little to treatment outcome (e.g., Beutler, Machado, & Neufeldt, 1994; Lambert & Ogles, 2004; Wampold, 2001). Research shows that it is the quality of the therapy relationship (Horvath & Bedi, 2002; Norcross, 2002; Orlinsky, Ronnestad, & Willutzki, 2004; Wiseman & Tishby, 2014; Zuroff & Blatt, 2006) and therapist characteristics (Beutler et al., 1994; Blatt, Sanislow, Zuroff, & Pilkonis, 1996; Wampold, 2001; Webb, DeRubeis, & Barber, 2010)—rather than well-crafted treatment manuals or standardized training—that predicts psychotherapy effectiveness. Some studies have found that the mechanisms of change are often very different from those suggested by underlying theories or treatment manuals (e.g., Kazdin, 2007; Roussos, Waizmann, & Etchebarne, 2010), and trained judges reading transcripts of therapy sessions often find it difficult to determine which particular brand of treatment was provided (Ablon & Jones, 2002). In a study of manualized cognitive therapy for depression, Castonguay, Goldfried, Wisner, Raue, and Hayes (1996) found that the quality of the therapeutic relationship and the patients' emotional involvement (level of experiencing) predicted patient improvement on all outcome measures whereas therapist adherence to the cognitive treatment manual predicted poorer outcomes.

Experienced clinicians are under no illusions that patients or therapists are homogeneous for they recognize that the effectiveness of psychotherapy will vary considerably depending on the person delivering the treatment as well as the person receiving it. Cronbach (1957) pointed out that for many researchers such individual differences have typically been an annoying nuisance since the experimentalist's primary goal is to control behavior:

variation within treatments is proof that he has not succeeded. Individual variation is cast into that outer darkness known as "error variance." For reasons both statistical and philosophical, error variance is to be reduced by any possible device. . . . But whatever your device, your goal in the experimental tradition is to get those embarrassing differential variables out of sight. The correlational

psychologist is in love with just those variables the experimenter left home to forget. He regards individual and group variations as important effects . . . (p. 674)

Following in a similar vein as Cronbach, Kiesler (1966) in his classic paper on uniformity myths in psychotherapy research argued that variability among patients, therapists, and treatments was inevitable. He maintained that the field would progress significantly when researchers made this variability a primary focus of study rather simply treating it as error variance that needs to be controlled.

### **Embracing Individual Differences: Personalized Psychotherapy Research**

The famous statistician, John Tukey, pointed out that it is far better to seek "an approximate answer to the *right* question, which is often vague, than an *exact* answer to the wrong question, which can always be made precise" (1962, p. 13). I believe that one of the *right* questions for improving the quality of psychotherapy research is this: How can we integrate the clinician's concern with what is best for a particular patient with the researcher's concern for scientific rigor and generalizability? In medical research there has been a rapidly growing interest in personalized medicine (more recently referred to as "precision medicine"), which aims to understand biological, genetic, and environmental variation of diseases and to develop *individually tailored treatments* for them. Such personalized approaches are in stark contrast to conventional, modern medicine that assigns patients to diagnostic groups based largely on physical signs and symptoms and prescribe symptom-focused rather than patient-focused treatment. Effective psychotherapists tend to tailor their interventions to fit the problems and needs of a patient, (e.g., Caspar, 2009; Caspar & Ecker, 2008; Castañeiras & Fernández-Álvarez, 2014; Kramer, 2009; Norcross & Wampold, 2011; Sampson, 2005; Shilkret, 2006; Silberschatz, 2005; Watson, 2010), and as such one could argue that good therapy is by definition personalized therapy. The clinician develops an understanding, an implicit or explicit formulation of the patient's particular problems, needs, or goals and then intervenes in ways that are optimally responsive to the patient's difficulties and goals.

Are such patient-centered approaches evident in psychotherapy research? Psychotherapy researchers have long been interested in how to conceptualize and evaluate the degree to which therapeutic interventions are optimal for particular patients. One way the question was frequently framed in the psychotherapy research literature—indeed, this became

known as the “litany question” in psychotherapy research—is “what treatment, by whom, is most effective for this individual with that specific problem, under which set of circumstances” (Paul, 1967, p. 111). There are many excellent studies of psychotherapy process and outcome that utilize case-specific methods. I will give a few brief examples and then describe a recently completed process-outcome study, which illustrates how research can take into account different patients’ needs in evaluating therapist interventions.

Building on Kiesler’s (1966) critique of false uniformity assumptions, Rice and Greenberg (1984) argued that in order to make meaningful progress in understanding how and why psychotherapy works a new research paradigm was needed. Psychotherapy researchers, they argued, need to move beyond aggregate designs (based on uniformity assumptions) that evaluate therapist behaviors without taking context into account:

Clearly, people in therapy are goal-setting beings who actively construe the task and situation and act in terms of their goals and construals. Clients will respond differentially to the same interventions depending on how they perceive the situation and in terms of their own goals and intentions . . . . (p. 13)

Rice and Greenberg refer to this paradigm as the “events paradigm” because the research focus is on key events or clinically significant incidents in therapy sessions (e.g., a patient discussing a particularly important goal or working on a salient interpersonal conflict). The key events approach has been used to study a variety of interesting clinical phenomena such as spontaneous fluctuations in hypnosis (Brenman, Gill, & Knight, 1952), momentary forgetting during therapy sessions (Luborsky, 1967), the integration of defenses during psychotherapy (Horowitz, Sampson, Siegelman, Weiss, & Goodfriend, 1978; Sampson, Weiss, Mlodnosky, & Hause, 1972), the emergence of warded-off contents (Gassner, Sampson, Weiss, & Brumer, 1982; Horowitz, Sampson, Siegelman, Wolfson, & Weiss, 1975), patients testing the therapist (Silberschatz, 1986; Silberschatz & Curtis, 1993), the resolution of problematic emotional reactions (Rice & Saperia, 1984), patients identifying key moments in therapy sessions (e.g., Elliott, 1983; Fitzpatrick & Chamodraka, 2007; Hardy et al., 1999; Lepper & Mergenthaler, 2008; Mendes et al., 2010; Timulak, 2010), to name but a few.

The case-specific emphasis of the events paradigm is especially relevant to studying how the therapist’s interventions influence therapeutic progress since the patient’s particular needs, goals, and intentions determine how the intervention will be perceived.

Any effort to evaluate the meaning of a therapist’s intervention to a particular patient is inevitably based (either implicitly or explicitly) on a particular conception or model of pathology and how therapy works. Below I give a brief overview of control-mastery theory, the model that informs my clinical approach as well as the research that my colleagues and I have carried out (a comprehensive account of the theory can be found in Silberschatz, 2005 and Weiss, 1993). I will then illustrate how we use the theory to study process and outcome and to elucidate mechanisms of change in psychotherapy.

### **Control-mastery Theory: An Example of Personalized Psychotherapy and of Personalized Research**

Control-mastery theory begins with the assumption that early adverse or traumatic experiences play a central role in the development of psychopathology. Weiss (1993) posited two types of traumatic experiences: (1) shock trauma: discrete catastrophic childhood events such as the death or serious illness of a parent that overwhelm the child’s coping capacities and (2) stress trauma: persistent adverse experiences from which the child cannot escape, such as growing up in a dysfunctional family or being raised by a depressed, narcissistic, or neglectful parent. Children develop theories as part of their efforts to cope with trauma and to preserve their ties to their parents and family. Due to immaturity and lack of life experience, the child’s theories are often irrational, self-critical, and self-blaming (Shilkret & Silberschatz, 2005). Such theories are often the cornerstone of later psychopathology and are thus called pathogenic beliefs. For example, a child who had been mistreated by her parents developed the pathogenic belief that she deserved mistreatment. That unconscious belief led to psychopathology later in her life including depression, disturbed relationships, and substance abuse. A graphic representation of the control-mastery model of psychopathology is shown in Figure 1.

Pathogenic beliefs are internalized cognitive-affective representations of traumatic experiences. Typically, they are extremely painful, constricting, and debilitating (Silberschatz & Sampson, 1991). Control-mastery theory assumes that psychotherapy patients are highly motivated to disconfirm or relinquish pathogenic beliefs. This fundamental motivation to solve problems and master conflicts is embedded in the concept of the patient’s plan (Silberschatz, 2005; Weiss, 1993). According to control-mastery theory, patients come to therapy to get better and they have a plan for doing so: by

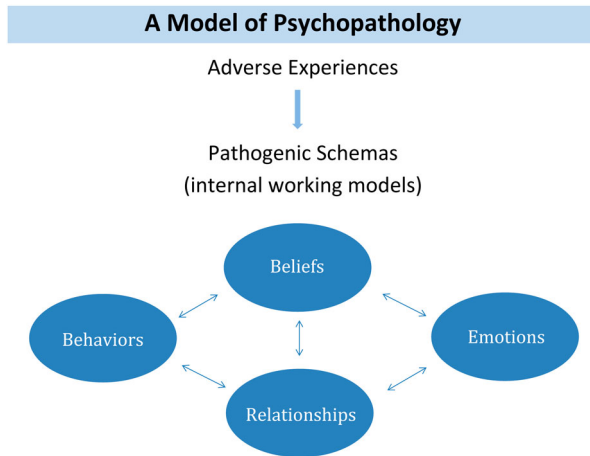


Figure 1. A model of Psychopathology.

disconfirmation of their crippling pathogenic beliefs. In therapy—as in other aspects of a person’s life—plans are frequently unconscious or not consciously articulated; nonetheless, the plan organizes the patient’s behavior and plays an important role in evaluating and filtering information. Patients work in therapy to disconfirm pathogenic beliefs by testing the therapist and/or by using new knowledge or insight developed during therapy.

Understanding a patient’s plan—that is, the patient’s goals, the pathogenic beliefs that have impeded them, the traumas that contributed to the beliefs, and how the patient is likely to test them in therapy—is vitally important to the clinician treating the patient as well as to the researcher studying psychotherapeutic processes. The following clinical vignette illustrates how a good case formulation—in this instance a formulation of the patient’s plan—can improve the effectiveness of psychotherapy and can also serve to improve the quality of psychotherapy research. The patient is a 28-year-old married woman who sought therapy with a psychoanalytic therapist. Her presenting problem was that she had difficulty feeling close to her husband, did not enjoy sex, and had a hard time going along with his suggestions or wishes. She was puzzled by this because she loved him and wanted to feel closer to him. Here is an interchange that occurred in an early session:

*Patient:* I had an interesting dream last night [pause]. I also had an upsetting fight with my husband [long pause]. Which would you like me to talk about?

The patient knows that many psychoanalytic therapists are very interested in dreams and she also made it known that she is very interested in why she fights with her husband. Thus, on the face of it (and without knowing anything else about this patient) one could

speculate that the patient may be trying to figure out whose interests will prevail, possibly elevating this interchange to the status of a “significant event” or an example of the patient testing the therapist.

There are a variety of ways that the therapist could respond to the patient: he could, for example, explore the meaning of the patient’s asking him, or suggest that it would be useful to discuss the dream, or make a resistance interpretation. But a more personalized, precise reply would utilize information that the patient revealed in prior sessions about her childhood. She had previously told the therapist that she grew up with an extremely narcissistic father who needed his children to always see things his way and she recounted several examples from her childhood. Such adverse experiences often lead to pathogenic beliefs or schemas (internal working models in the language of attachment theory). These beliefs are often unconscious but readily inferable. This patient developed the pathogenic belief that in order to maintain a relationship—particularly with a man—she needed to subjugate herself and her wishes.

In therapy, the patient worked to disconfirm her pathogenic schema. One way she could do so was by trying to find out (test) if she would need to subjugate herself to her therapist as she had to with her father—“which would you like me to talk about?” With this rudimentary formulation the therapist would know, with a high degree of certainty, how to respond to the patient in that moment: saying something like “You should talk about whatever is most important to you” would enhance the patient’s feeling of safety and represent a step in the direction of disconfirming her pathogenic belief. However, it is important to point out that this same response could be detrimental to a different patient with different childhood traumas and pathogenic beliefs. For instance, a patient whose parents were overwhelmed by her turning to them for help or guidance and frequently lashed out at her, saying “We don’t know what to do why don’t you figure it out?” would interpret the above response very differently. The important point here is that psychotherapeutic techniques are not a reliable guide for deciding how to be most helpful to a patient because even if patients share the same diagnosis the meaning of an intervention can differ considerably.

Case formulations also add considerable precision to empirical studies of psychotherapy. In empirical research studies that my colleagues and I have carried out, we develop individualized case formulations for each patient studied. These formulations, called plan formulations, include the patient’s conscious as well as unconscious *adaptive goals*, the *pathogenic beliefs or schemas* that impede the patient from achieving the goals, the *adverse or traumatic*

*experiences* that contributed to the pathogenic schema, and the *tests* the patient may pose to disconfirm pathogenic beliefs. Research has shown that trained raters achieve high levels of interjudge reliabilities in plan formulations (see Curtis & Silberschatz, 2005, 2007 for review), and we then use these reliable formulations to assess how compatible the therapist's interventions are with the formulation. In the example of the young woman who could not feel close to her husband, her goal was to have a better relationship with him and her primary pathogenic belief was that she had to subjugate herself in order to preserve a loving relationship. Growing up with a fragile, narcissistic father contributed to the development of this pathogenic schema, and she worked in therapy by (unconsciously) testing the therapist to determine if he would require her to subjugate herself as her father had.

In psychotherapy process studies that my colleagues and I have carried out we begin by developing a reliable plan formulation for each patient in the study and then use the formulation as a standard for evaluating how suitable or responsive the therapists' interventions are to the particular patients' problems, needs, and goals (for an overview of this research, see Silberschatz, 2005). One of the key or significant process events that we have focused on are the patient's tests of the therapist (as in the above example). Using a repeated measures intensive single case design we found that when therapists disconfirm pathogenic beliefs—that is, pass the patient's test—patients show signs of improvement and therapeutic progress in the session. When therapists confirm pathogenic beliefs—that is, fail the patient's test—patients tend to stagnate or deteriorate (e.g., Silberschatz, 1986; Silberschatz & Curtis, 1993). These studies focused on patient initiated events in the session (patient tests), and we have also used similar methods to study therapist initiated events such as therapist interpretations. In the research on interpretations we found that the plan compatibility of the interpretation (a patient-specific measure of suitability or responsiveness) was predictive of therapeutic progress while a general technique measure—transference versus non-transference interpretation—was not predictive (Silberschatz, Fretter, & Curtis, 1986). These results suggest that in order to assess the effectiveness of therapist behaviors it is necessary to have a case-specific measure of what will be helpful to a particular patient. In other words, it is neither clinically nor scientifically appropriate to regard patients or therapists as homogeneous variables.

Systematic process research and microanalytic studies of how therapist interventions affect patient in-session behaviors are very useful for elucidating change mechanisms in psychotherapy. However, a

convincing account of how therapy works would also require demonstrating that changes within sessions contribute to changes at the conclusion of therapy—that is, demonstrating the connection between process and outcome. Our research group invested an enormous amount of time and effort demonstrating that the plan compatibility of therapist behaviors (a patient-specific measure of responsiveness) significantly predicts therapeutic progress during therapy sessions. In these process studies we focused on many instances of significant events in a small number of cases (the sample size reflected the number of instances of process events, not the number of patients). We were also interested in seeing how well these therapist ratings predict outcome, though such a study would obviously require a much larger number of patients.

### Case-specificity in a Process-outcome Study

In contrast to research that treats patients, therapists, and treatments as homogeneous variables, there are a handful of previous psychotherapy studies that utilized a case-specific methodology in assessing the link between psychotherapy processes and therapy outcome (Caspar, Grossmann, Unmüssig, & Schramm, 2005; Crits-Christoph, Cooper, & Luborsky, 1988; Norville, Sampson, & Weiss, 1996; Piper, Joyce, McCallum, & Azim, 1993; Piper, Joyce, McCallum, Azim, & Ogrodniczuk, 2002; Sammet, Leichsenring, Schauenburg, & Andreas, 2007; Sammet, Rabung, & Leichsenring, 2006). In all of these studies, the researchers first identified each patient's particular problems and conflicts and then determined the degree to which therapists effectively addressed the patient's problems. The reliable case formulation approach that we developed for our process research—the plan formulation method (for review, see Curtis & Silberschatz, 2005, 2007)—was used in the present study. Plan formulations were developed for each patient and were then used to assess the degree to which therapists' interventions were compatible with (i.e., responsive to) the patient's plan. The study was designed to investigate whether plan compatibility significantly predicts treatment outcome.

## Method

### Patients

Data for the study were obtained from the Mount Zion Brief Therapy Research project, which focused on brief (16-session) psychodynamic therapy (Silberschatz, Curtis, Sampson, & Weiss, 1991). Patients

were self-referred and were screened to ensure their suitability for brief treatment (exclusion criteria were evidence of psychosis, severe substance abuse, organic brain impairment, and suicide risk). There were a total of 39 patients—predominantly anxiety and depressive disorders—in the study. They ranged in age from 19 to 89. Most were Caucasian, educated, and in the lower-middle to middle class SES.

### Therapists

Sixteen experienced (minimum three years of post-graduate experience) psychiatrists and psychologists served as therapists in this study. All were psychodynamically oriented with specialized training in brief psychodynamic therapy. Therapists received no information about the patients prior to beginning treatment; they simply knew that patients had been screened and accepted for brief treatment. The study began long after the therapies had been completed and consequently the treating therapists were unaware of our case formulations or hypotheses.

### Measures

*Target complaints.* This case-specific measure is a list of three target complaints along with a severity rating for each complaint (Battle et al., 1966; see also, Kivlighan, Multon, & Patton, 2000; Sales & Alves, 2012). The scale is completed at the beginning and at the end of treatment.

*Goal attainment scaling.* At the beginning of treatment the patient, independent evaluator, and therapist independently listed three patient goals for therapy. After treatment the degree to which each of the goals was attained is rated by the patient, therapist, and evaluator (Kiresuk & Sherman, 1968; see also, Sales & Alves, 2012; Shefler, Canetti, & Wiseman, 2001).

*Symptom checklist 90-R (SCL-90R).* The SCL-90R (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974) is a widely used self-report measure that assesses a variety of symptoms. Patients completed the measure at the beginning and at the end of therapy. The Global Severity Index (GSI) was used in the data analysis.

*Global Assessment Scale (GAS).* This 100-point anchored rating scale provides an overall rating of the patient's level of functioning on a continuum of psychological health-illness (Endicott, Spitzer, Fleiss, & Cohen, 1976; Luborsky, 1962)

*Brief Psychiatric Rating Scale (BPRS).* This scale (Overall & Gorham, 1962, 1988) is designed to provide a rapid assessment of 16 relatively independent symptom dimensions, for example, anxiety, guilt, motor retardation, blunted affect, etc.). Evaluators and therapists independently rated the patient

after the initial interview and again at the end of therapy. The total score, comprised of the sum of the 16 subscales, was used in the data analyses.

*Overall Change Rating Scale.* This global outcome rating taps the degree of overall improvement or deterioration since beginning treatment. The 9-point Likert scale, ranging from “very much worse” (−4) to “very much improved” (+4), was completed independently by patients, therapists, and the evaluator at the end of treatment.

*Patients' Post-therapy Questionnaire.* Patients completed a questionnaire about their therapy at the end of treatment. The questionnaire included Likert-rated items that focused on three broad areas: *Patient's experience of therapy* (How freely could you talk to T? How well did T understand you? Did you feel your T was helpful? Do you feel you made progress?), *Patient's rating of insight* (Self-understanding/insight, tension relief, new ideas about dealing with others, better self-control), *Patient's rating of support* (Reassurance/encouragement, more able to experience my feelings, honest/close relationship with T, help to talk about what feels important).

### Procedure

Patients were screened by an independent clinical evaluator prior to treatment to assure their appropriateness for time-limited therapy, and those found to be suitable were randomly assigned to therapists for 16 weekly therapy sessions. All sessions were audio-recorded and transcribed. Clinical evaluators, patients, and therapists independently completed a variety of measures pre- and post-therapy.

Judges previously trained in the plan formulation method read the verbatim transcripts of the intake interview and prepared a plan formulation for each case. A brief summary of the intake interview and the plan formulation served as the basis for rating the Plan Compatibility of the therapist's interventions. All of the therapist comments from the session—without any patient material—were read and judges independently rated the level of plan compatibility of the therapist's interventions for the *session as a whole*. A 7-point Likert scale ranging from −3 (strongly incompatible) to +3 (strongly compatible) was used. A total of 4 sessions for each case were rated, including session 3 (early), 7 (early-middle), 11 (late-middle), and 14 (late).

### Hypotheses

In our process studies we investigated variability within patient-therapist dyads to see how well ratings of the therapist's plan compatibility predicted



variations in the patient's level of functioning in the session. In the present study, we were interested in seeing how well these therapist ratings predict treatment outcome (change from pre-therapy to post-therapy). We hypothesized that there would be a statistically significant relationship between ratings of the plan compatibility of therapist interventions (a case-specific measure of therapist responsiveness) and treatment outcome. To put it most simply, patients who receive more plan compatible interventions have better outcomes. We also hypothesized that there would be a statistically significant relationship between plan compatibility of interventions and patients' overall feelings about therapy as reflected in the post-therapy questionnaire.

### Data Reduction and Analyses

Since there were nearly as many variables (ratings by patients, therapists, and evaluators pre- and post-therapy) as there were patients, it was essential to reduce the number of dependent variables. Three different outcome domains were constructed: *symptomatic change*, *individualized change*, and *global change*. Each outcome domain included two sets of variables; whenever a variable had both pre-and and post-therapy measures (e.g., SCL-90R) residual gain scores (the variance in the post-score not predicted by the pre-score) were calculated. The symptomatic change domain is comprised of the SCL-90R (patient-rated symptoms) and the BPRS (a composite of therapist and evaluator symptom ratings from the BPRS). The individualized change domain is comprised of two idiographic measures: target complaints (a composite of the patient, therapist, and evaluator's target complaint ratings) and goal attainment (a composite of the patient, therapist and evaluator's goal attainment scores). The global change domain includes overall change (a composite of the patient, therapist, and evaluator's overall change ratings) and GAS (an average of the therapist and the evaluator's GAS ratings).

Correlations between the independent and dependent variables were computed for each of the 4 time points (i.e., sessions 3, 7, 11, and 14) as well as with the slope and the *y*-intercepts of the time points. Each analysis yielded a similar pattern of results. In the interest of brevity and conciseness results are reported only for the late session.

### Results

Reliabilities for the plan compatibility of therapist interventions were very good. Each case was rated separately by 4–6 trained clinical judges who made

their ratings independently. Interjudge reliability was assessed by means of intraclass correlations (Shrout & Fleiss, 1979). Since all subsequent data analyses used the mean of the judges' ratings we calculated coefficient alpha (termed ICC 3, K by Shrout & Fleiss). The interjudge reliabilities ranged from .80 to .96.

Correlations between ratings of the plan compatibility of therapist interventions (of the late session) and various outcome measures are presented in Table I. These correlations are all statistically significant and they are generally substantial in that they account for approximately 25% of the outcome variance (the range is from 12% to 42% of variance explained). The results were consistent across all three outcome domains. The plan compatibility ratings were predictive of symptomatic improvement, ideographically assessed change measures (improvement in severity of target complaints and in goal attainment), and in overall (global) improvement ratings. We also found a substantial correlation between how patients felt about their therapy and the plan compatibility of the therapist ratings. Patients who were treated by therapists that received high plan compatibility ratings tended to view their

Table I. Correlations between plan compatibility of therapist interventions and outcome  $N = 39$ .

Outcome domains	Plan compatibility of intervention (late session)
Symptomatic change:	
SCL-90 GSI	-.345*
BPRS	-.649**
Individualized change:	
Target complaints	-.500**
Goal attainment	.486**
Global change:	
Overall change	.548**
GAS	.513**
<i>Patient post-therapy questionnaire</i>	
Patient's experience of therapy	.667**
How freely could you talk to T?	
How well did T understand you?	
Did you feel your T was helpful?	
Do you feel you made progress?	
Patient's rating of INSIGHT	.534**
Self-understanding/insight	
Tension relief	
New ideas about dealing with others	
Better self-control	
Patient's rating of SUPPORT	.589**
Reassurance/encouragement	
More able to experience my feelings	
Honest/close relationship with T	
Help to talk about what feels important	

\* $p < .05$ , two-tailed.

\*\* $p < .01$ , two-tailed.

therapies more positively, achieved greater self-understanding and self-control, and reported feeling more supported by their therapists (29% to 44% of variance explained). Both of the study hypotheses were confirmed.

### Discussion

The findings presented here suggest that the extent to which therapists are responsive to their patients' plans—that is, disconfirm core pathogenic schemas—is a strong predictor of treatment outcome and of patients feeling positively about their therapy experience. It is important to emphasize that the plan formulations were done long after therapies had been completed, which insured that neither patients nor therapists could be influenced in any way by our hypotheses. The aim of this research was to study psychotherapies carried out by experienced therapists in order to investigate whether therapists who are more responsive to their patients' particular problems and needs have better outcomes than therapists who are less responsive. We deliberately chose to avoid focusing on a particular diagnostic group of patients or to instruct therapists to follow a particular treatment manual, and instead identified each patient's specific problem (plan formulation) and then assessed the degree to which the therapist helped the patient (plan compatibility). One of the things I have learned from clinical experience as well as from research is that there is tremendous interindividual variation in the development of psychopathology and in therapeutic response. Rather than treating such variability as error variance, it is been very productive to make that the central focus of the research. This study points to the value of avoiding homogeneity assumptions and to the feasibility and clinical utility of adopting a case-specific approach in process-outcome research. The results address the fundamental question of how therapists' interventions contribute to psychotherapy outcome.

One could argue that the individualized approach highlighted in this research emphasizes internal validity and sacrifices external validity. Any research design obviously represents a compromise of one kind or another. Traditional experimental designs accept a variety of homogeneity assumptions so that results can be readily generalized to the supposedly homogeneous patient populations or treatments studied. Many have argued that this strategy has not been a productive one for psychotherapy research (e.g., Persons & Silberschatz, 1998; Wampold & Imel, 2015). The case-specific research presented here clearly avoids these false homogeneity assumptions but, many would argue, it does so at the considerable expense of generalizability. Does this

mean that the psychotherapy researcher is simply left dangling between the horns of a dilemma, hopelessly stuck between Scylla and Charybdis? Replication studies provide one pathway out of these difficult waters, particularly when results are replicated with different kinds of patients and different kinds of treatments. Process studies carried out by our research group for over 40 years have consistently shown that when therapists' interventions are experienced by patients as disconfirming pathogenic schemas, patients show discernible progress in the session (for review, see Silberschatz, 2005). These process studies typically focus on many interactions from single cases and each new case studied is a replication. Identifying a pattern of results in just one patient should leave any researcher questioning the external validity (generalizability) of the results. However, when the results are replicated on a second patient with a different therapist and then on a third, fourth, and fifth case the investigator can begin to have some confidence in the validity of the findings. Independent replication by other investigators (e.g., Albani et al., 2000; Brockmann et al., 2015; Caspar et al., 2000; Sammet et al., 2006) adds further weight to the validity.

This study is the first process-outcome study carried out by our research group and the findings are consistent with those in the process studies: taken together our research shows that the degree of responsiveness of therapist interventions is significantly correlated with progress within sessions (process studies) as well as with treatment outcomes. Moreover, the results from process-outcome studies carried out by other research teams (e.g., Caspar et al., 2005; Crits-Christoph et al., 1988; Piper et al., 1993) converge with the present findings. There are also findings from areas outside of psychotherapy research that lend strong support to the importance of individually tailored, responsive interventions. For example, in a very large study of medical patients, Reis et al. (2008) found that patient perceived responsiveness (i.e., the degree to which patients perceived their physicians as being responsive to their needs) was a very strong predictor of patients' satisfaction as well as subjectively rated health problems. Results from these various studies add confidence to the robustness and validity of our findings. This research is also "clinician friendly" in that it is very relevant to the kinds of issues and questions practicing therapists struggle with every day in their work—namely, how to optimize interventions to address a particular patient's problems, needs, and goals.

Idiographic process-outcome research that relies on case formulations is extremely labor intensive and time consuming so I would briefly like to comment on other empirical approaches that are

likely to improve the yield of psychotherapy research. I am thinking specifically of nomothetic approaches that are informed by an idiographic sensibility. The work by Safran, Muran and colleagues on therapeutic ruptures and repairs (Muran et al., 2009; Safran & Muran, 1996; Safran et al., 2014), studies of corrective experiences in therapy (Castonguay & Hill, 2012; Friedlander et al., 2012), resource activation (Fluckiger, Caspar, Holtforth, & Willutzki, 2009; Grawe, 1997, 2004; Mander et al., 2015), goal consensus (Tryon & Wingrad, 2011), patients' perceptions of their therapists as empathic (Watson, Steckley, & McMullen, 2014), and helpful versus hindering events in therapy (Elliott, 1983; Llewelyn, Elliott, Shapiro, Hardy, & Firth-Cozens, 1988) are but a few examples. Castonguay and colleagues (2010), reporting on their very large practice research network study, note that their focus on helpful and hindering therapy events provided both idiographic and nomothetic data to the researchers and to the clinicians: the aggregate data provided useful information about change processes across patients while data "collected and examined after each session provided therapists with information specific to the particular needs of each client" (p. 342). In our research group, we have been working to develop nomothetic versions of some of our idiographic measures. Examples include the pathogenic belief scale (Silberschatz & Aafjes-van Doorn, 2015), therapists' retrospective accounts of their own experiences in therapy (Bush & Meehan, 2011), the patient's experience of attunement and responsiveness scale (Snyder & Silberschatz, 2015), and a therapeutic preferences measure (Silberschatz, 2015) in which we ask patients and therapists to rank order their preferences based on the three factors identified in the working alliance scale (bond, tasks, and goals). Although none of these can substitute for the precise, individualized method reflected in this process-outcome study, all of these nomothetic approaches focus on important clinical phenomena and useful ways of advancing the field.

### Conclusion

The homogeneity assumptions that experimental designs require (they are the sine qua non of such designs) have severely limited the quality of psychotherapy research. The tenacious assumptions that patients, therapists, and treatments are uniform fly in the face of clinical reality and if we want to improve the quality of psychotherapy research we cannot continue to fly in the face of clinical reality. The results presented here, along with studies

noted above from other research teams, have started to shed light on the change mechanisms in psychotherapy—particularly on how therapist interventions affect the process and outcome of therapy. This process-outcome research shows that it is possible to design rigorous studies that are case-specific and avoid false homogeneity assumptions. It has been nearly 50 years since Kiesler argued that psychotherapy research needs to give up this homogeneity myth. If research has any hope of having an impact on clinical work, it is time to follow Kiesler's advice and bury this myth once and for all.

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