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IDEAL CONTROL MASTERY TECHNIQUE CORRELATES WITH CHANGE IN A SINGLE CASE

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The authors present a study of a 16-session psychotherapy conducted from the perspective of control mastery theory (CMT), a cognitive–psychodynamic–humanistic theory of psychopathology and psychotherapy process. Following every session, measures of the client's in-session affect, the therapist's in-session techniques, therapeutic alliance, and session outcome were obtained. The authors developed a quantitative prototype of ideal CMT technique for this case and determined how closely each session's technique matched the prototype. The closer the therapist's in-session technique was to ideal CMT technique, the better the client's in-session affect and the better the session outcome. Providing ideal CMT technique was associated with better session outcome, even after controlling for the passage of time, in-session affect, and therapeutic alliance.

Psychotherapists are often critical of psychotherapy research (Bohart, O'Hara, & Leitner, 1998; Henry, 1998; Persons & Silberschatz, 1998). This criticism is, in part, because studied psychotherapies sometimes poorly approximate practiced psychotherapies. Consider, for example, the researchers' use of treatment manuals to tailor the delivery of therapeutic techniques to specific diagnoses from the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM–IV*; American Psychiatric Association, 1994). Practitioners in the real world prefer to use clinical theory to develop individualized case formulations and flexible treatment plans to prescribe techniques (Drozd & Goldfried, 1996). Even therapists who advocate the use of treatment manuals in their practice tend to modify the manual to suit the particular complexities of each case (Persons, Bostrom, & Bertagnolli, 1999). Thus, studies that report on the effects of manualized treatments fail to study what therapists actually do.

In addition, clinical practitioners complain that psychotherapy research pays undue attention to questions of minimal concern to the psychotherapist while neglecting questions that matter most to clinicians. For instance, the bulk of psycho-

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therapy research has been focused on explaining variation across cases and empirically supporting specific brands of therapy (Chambless & Hollon, 1998). Although these kinds of studies may have some utility in making policy and reimbursement decisions, practitioners would prefer that more attention be paid to explaining variation *within* a case (Campbell, 1996) and to empirically supporting mechanisms of change (Garfield, 1998; Goldfried & Wolfe, 1996; Howard, Moras, Brill, Martinovich, & Lutz, 1996). Clinicians must make decisions within the context of ongoing treatments. They would like to know why some sessions go better than others and whether closely following their clinical theory helps their clients to improve.

In an effort to address both of these criticisms, we conducted a quantitative single case study to determine whether variability in the therapy process and session outcomes could be explained by variability in the therapist's application of ideal therapy techniques. Though the "ideal" techniques in this particular case were selected using a cognitive–relational theory, typically referred to as control mastery theory (CMT), our basic methodology could be applied to virtually any clinical theory.

Control Mastery Theory

CMT, developed by Joe Weiss and tested empirically by the San Francisco Psychotherapy Research Group (Weiss, 1993; Weiss, Sampson, & Group, 1986), is an integrationist theory that weaves together humanistic, cognitive–behavioral, and psychodynamic concepts. In agreement with humanistic theories, CMT assumes that psychotherapy patients are inherently motivated to overcome their problems, to successfully adapt to their environments, and to fulfill normal developmental goals (e.g., attaining a satisfying career or relationship). Like cognitive–behavioral theories, CMT proposes that patients are often blocked in their progress toward their goals by maladaptive systems of beliefs. However, CMT shares with psychodynamic theories the view that the most damaging beliefs develop in the wake of disturbing childhood experiences. Weiss (1993) termed such cognitions *pathogenic beliefs* because they contribute to psychological problems. Pathogenic beliefs typically develop in an effort to maintain an attachment to a significant other (e.g., a parent) and often are linked to considerable *unconscious guilt* (O'Connor, Berry, & Weiss, 1999). For example, a patient who grew up in a household with a father who was chronically unsuccessful at business may develop the pathogenic belief that if he (the patient) is successful, then his father will feel inferior. As an adult, the patient may experience unconscious guilt when he attempts to succeed in his career. Thus, he might inhibit his own progress in order to decrease his guilt and maintain his relationship with his father. Though his pathogenic belief may accomplish this result, it is also likely to leave the client feeling like a failure and evidencing symptoms of depression.

Pathogenic beliefs are viewed by CMT as maladaptive and not gratifying to the person holding them. Because CMT incorporates the humanistic tenet that people have a basic drive to self-actualize, the theory assumes that people seek ways to disprove their pathogenic beliefs. Psychotherapy is one of those ways. To this end, CMT proposes that patients come into therapy with a plan, which includes conscious goals for therapy and unconscious strategies for modifying their pathogenic beliefs. The primary strategy that patients use is to methodically test their pathogenic beliefs in the context of the therapy relationship. Patients have many ways of testing their therapists. A test may take the form of a particular action directed toward the therapist or a general attitude that the patient takes toward the therapist while the patient watches carefully for the therapist's response. For example, the hypothetical patient described above might brag about his accomplishments in therapy to determine whether the therapist feels inferior (as the patient assumes his father will).

Therapists pass these tests and facilitate the patient's mastery over his or her pathogenic beliefs by using techniques that challenge or oppose pathogenic beliefs. CMT terms these techniques *pro-plan* or *plan compatible* because they support the patient's plan for therapy. Pro-plan techniques may be direct (as in a cognitive reframing or interpretation of unconscious feelings) or indirect (as in adopting a supportive stance toward patients who did not get enough support in childhood). Previous studies suggest that when therapists pass tests (Silberschatz & Curtis, 1993) or offer pro-plan interventions (e.g., Silberschatz, Fretter, & Curtis, 1986), then patients evidence immediate and observable improvements in in-session affect (Silberschatz & Curtis, 1993), therapeutic alliance (Foreman, Gibbins, Grienenberger, & Berry, 2000), and session outcomes

(e.g., Pole & Jones, 1998). Thus, in the present study, we hypothesized that offering ideal CMT techniques would be associated with improved in-session affect, enhanced therapeutic alliance, and better postsession outcomes.

Method

The Case

History. The client, whom we shall call "Maria," was born in Mexico, the youngest of four siblings. Maria reported having had a happy childhood and a good relationship with her parents. She only remembered one upsetting event in her childhood: the death of her grandmother. Prior to that loss, Maria described herself as relatively carefree and innocent. After her grandmother died, Maria became more serious and introspective. She concluded that all of the women in her family, including her own mother, had devoted their lives entirely to taking care of their husbands and children with almost no attention to their own needs. Maria believed that her grandmother died without ever participating fully in the world around her, without ever following her own passions and pleasures. So Maria vowed to have more out of life than a husband and children. She wanted a career and a chance to contribute to and be recognized by her larger community.

Maria sought a career in veterinary medicine. She worked hard in school and progressed to the point of conducting a thesis study. While collecting her thesis data, she unexpectedly became pregnant and withdrew from school, leaving her thesis research incomplete. Maria's pregnancy surprised and upset her conservative family. She decided to marry the father of her unborn child, her long-time boyfriend. At age 25, shortly after her wedding and the birth of the child, Maria first met criteria for major depressive disorder. Her depression was treated with imipramine, which ameliorated her symptoms. Over the next few years, Maria subsequently had two more children. She followed her husband to the United States, where he won a fellowship to pursue doctoral studies at a prestigious university. As was customary in her culture, she had forsaken her own professional ambitions in favor of caring for the children and supporting her husband while he concentrated on his studies. When Maria was 30 years old, her mother died of complications following a stroke. Two months later, Maria sought psychotherapy through our research project.

Presenting complaints and diagnosis. Prior to beginning therapy, Maria participated in a semi-structured diagnostic interview including a Primary Care Evaluation of Mental Disorders (PRIME–MD; Spitzer et al., 1995). Her primary complaint was that she was not getting enough enjoyment or meaning out of life. She felt that her life had veered off course since she had left school. She complained that she was not accomplishing anything while her husband was earning his advanced degree. Though she hoped to eventually complete her own degree, she often felt too tired and too guilty about taking time off from parenting. She also felt guilty about allowing her husband to assume any parenting responsibilities because she considered his graduate studies to be more important than hers. Maria reported feeling as though she was being "held back" from doing even little things that she wanted to do for herself, such as reading, knitting, or studying. She described feeling like there was a "wall" keeping her from pursuing her interests. It was interesting that she did not request assistance with grieving her mother's death and did not count bereavement as a significant contributor to her problems. Thus, Maria received the following multiaxial *DSM–IV* diagnosis: Axis I—major depressive disorder, recurrent, moderate; Axis II—none; Axis III—deferred; Axis IV—death of mother, dissatisfaction with employment status; Axis V—Global Assessment of Functioning (GAF) = 65 (at intake). Her Beck Depression Inventory (BDI) score of 19 placed her in the "moderate–severely depressed" range according to published guidelines (Beck, Steer, & Garbin, 1988).

CMT case formulation. At the time of the treatment, the therapist (J. Stuart Ablon) was a 26-year-old, male, European American, clinical psychology intern and advanced graduate student at the University of California, Berkeley. He received weekly supervision from a researcher and experienced practitioner of CMT (Lynn O'Connor), who, in turn, received regular consultation from the progenitor of CMT (Joseph Weiss). Ablon, O'Connor, and Weiss used CMT to formulate the case. They hypothesized that Maria was being "held back" from pursuing her interests by a "wall" of unconscious guilt arising from the pathogenic belief that pursuing her personal interests was less important than complying with the needs of others (e.g., her husband and children). These clinicians thought that Maria desired more out of life than what her mother, grandmother, and other women in her culture had accomplished but also felt guilty about potentially surpassing them. This guilt also extended to Maria's marriage. The formulation proposed that Maria unconsciously worried about emasculating her husband by becoming more successful than he, thereby violating another cultural norm. Unconscious guilt was viewed, therefore, as both the barrier to Maria's goals and the root of her depression. It was expected that Maria would test pathogenic beliefs about guilt and the pursuit of her interests in the context of psychotherapy.

The treatment. Maria met with her therapist once a week for 16 weeks at a cost of $5.00 per session. Her sessions were 50 min. long and were videotaped in their entirety. In the course of the treatment, the therapist typically challenged Maria's pathogenic belief that her interests and goals were unimportant by inviting her to set the agenda for their sessions and by encouraging her to interpret the meaning of her own behavior. Maria frequently shared her theories about the psychological underpinnings of her problems. The therapist encouraged her theories and praised her insights. In fact, in addition to directly challenging pathogenic beliefs (by interpreting them and negating them), the therapist advised and encouraged Maria to seek roles outside of motherhood. He encouraged her to fulfill her ambitions, supported her when she did, and helped her realize how her guilt and worry about others kept her from pursuing her goals. Throughout the therapy they also discussed the subtle ways that cultural norms and gender inequities contributed to her problems. Toward the end of her therapy, Maria took the initiative to join a community program dedicated to helping ethnic minority and economically disadvantaged children perform better in school. She soon began volunteering in the classrooms and serving on multiple committees offering outreach to Spanish-speaking parents. She was ultimately voted volunteer of the year. This work became a source of great satisfaction for her and allowed her to involve herself in activities that made use of her intelligence and organizational abilities in a work setting, while at the same time integrating her interests in par-

enting, social activism, and multiculturalism. She stated that she saw these volunteer activities as a first step toward returning to her career. By the end of therapy, Maria was confident that she would ultimately complete her thesis. In sum, Maria learned to identify the crippling influence of her pathogenic beliefs. She reported that the "wall" that she described at the beginning of treatment had been taken apart brick by brick.

At the time of her posttherapy exit interview, Maria no longer met criteria for major depression. Her BDI score was 6, which placed her in the "asymptomatic range." The magnitude of this change was both clinically significant (Beck et al., 1988) and consistent with changes reported in randomized controlled trials of manualized psychotherapies for depression (e.g., Elkin et al., 1989). Maria was interviewed again at 6 months, 1 year, and 18 months posttherapy. She remained free of major depression during this duration and continued to advance in her career aspirations.

Measures

At the time that the following measures were obtained, each respondent was blind to the explicit hypotheses of the present study. Respondents were also kept blind as to the responses of other respondents. All measures were collected and analyzed by Nnamdi Pole.

Client in-session affect. Following each session, Maria used a 9-point scale to rate how strongly she felt each of several emotions during the session from 0 (*none*) to 8 (*most in her life*). Two groups of emotions were selected for analysis: depressed affect (which consisted of the following items: sadness, tiredness, low amusement) and ineffective affect (which consisted of the following items: inadequate, inferior, helpless). A single score was calculated for each cluster by computing z scores of the ratings of each item and averaging these scores within each cluster.

Therapeutic alliance. The client, therapist, and independent observers (i.e., three trained undergraduate research assistants who watched the videotaped sessions in order) rated three items relevant to therapeutic alliance at the end of every session: (a) How close did the client feel to the therapist during this session? (b) How well did the therapist understand the client's distress and goals for therapy? and (c) How much agreement was there between therapist and client about how therapy should proceed? These items conform generally to the three components of alliance identified by Bordin (1976): emotional bond between therapist and client, agreement on therapeutic goals, and agreement on therapeutic tasks. Each item was rated on a 7-point scale ranging from 1 (*not at all*) to 7 (*very much so*). Ratings of these three items were averaged together separately for client, therapist, and observers to arrive at three separate scores of therapeutic alliance. Therapeutic alliance is one of the best-known predictors of psychotherapy outcome (Horvath & Greenberg, 1994).

Session outcome. The client, therapist, and observers rated three items relevant to session outcome at the end of every session: (a) How helpful was the therapist during this session? (b) How was the client feeling after this therapy session? and (c) What is your overall rating of the session? Each item was rated on a 5-point scale in which 1 indicated a strongly negative rating and 5 indicated a strongly positive rating. Three separate session outcome scores were determined by averaging the ratings of these three items separately for client, therapist, and observers.

In-session therapy techniques. Following each session, the therapist rated the extent to which he used each of 30 different therapeutic techniques (e.g., "focusing on client's guilt" or "transference interpretations"). The techniques were primarily drawn from the Psychotherapy Process Q-set, a pantheoretical language for describing the therapy process (Jones, Hall, & Parke, 1991), and were each rated on a 9-point scale depending on how characteristic it was of the therapist's behavior during that session (-4 = *very uncharacteristic* to $+4$ = *very characteristic*).

Ideal CMT technique. We developed a measure of ideal CMT technique by modifying an approach pioneered by Ablon and Jones (1998). The therapist and supervisor were asked to rate independently the same 30 therapeutic technique items according to how they would be used in an ideal session *with this patient* from the perspective of CMT. Therapist and supervisor ratings were highly correlated ($r = .82$, $p = .000$) and were therefore averaged together to obtain a more stable measure. The 10 most and least ideal CMT techniques are presented in Table 1. In order to assess how closely the therapist followed ideal CMT technique, we computed the absolute value of the difference between the ideal CMT technique score for each item and the in-session technique score for that same item. We then calculated the average absolute deviation across all technique items and subtracted it from eight to obtain a measure scaled so that the highest value (i.e., eight) would indicate perfectly ideal CMT technique and the lowest value (i.e., zero) would

TABLE 1. Ten Most and Least Ideal Control Mastery Theory (CMT) Techniques in the Case of Maria

CMT technique	Rating
Most ideal CMT techniques	
Focusing on the client's guilt	4.0
Supportive and encouraging statements	4.0
Facilitating the client's speech	3.5
Directly reassuring statements	3.5
Interpreting unconscious wishes, feelings, or ideas	3.5
Encouraging new ways of behaving	3.0
Linking present to the past	3.0
Discussing irrational (pathogenic) beliefs	3.0
Strengthening defenses	3.0
Offering advice and guidance	2.5
Least ideal CMT techniques	
Encouraging the client to accept more responsibility	−4.0
Telling the client to think for herself	−3.5
Emphasizing unacceptable feelings	−3.5
Neutrality	−3.5
Defense interpretations	−3.0
Transference interpretations	−2.0
Emphasizing nonverbal behavior	−1.5
Interpreting the client's in-session behavior	−1.5
Challenging the client's view	−0.5
Assigning homework	0.5

Note. Techniques were rated on a 9-point scale ranging from −4 (*very uncharacteristic*) to 4 (*very characteristic*).

indicate maximum deviation from ideal CMT technique.

Data Analysis

We analyzed the data using Pearson's product–moment correlation coefficients and hierarchical multiple regression analyses. The use of these statistical approaches is usually contingent on compliance with specific assumptions (e.g., independence of observations) that are unlikely to be met by multivariate time series data such as ours (Neter, Wasserman, & Kutner, 1990). However, these assumptions are only relevant when the statistics are being used to draw inferences about a larger population (Cohen & Cohen, 1983). The analyses in this study pertain only to the specific case under investigation and are not intended to imply anything about other cases. In other words, we used these statistics to describe the actual relationship between observations in our data rather than to infer what might be true in a larger population of cases. Tests of statistical significance are irrelevant to this pursuit and are not reported in this article. Instead, we emphasize the size of the observed relationships using Cohen's (1977) conventions of labeling correlations as small ($.10 < r < .30$), medium ($.30 < r < .50$), or large ($r > .50$).

Results

Summary of Primary Variables and Their Association With Time

Table 2 presents some descriptive statistics on the primary measures and their correlation with session number. These data suggest that Maria's in-session affect (both ineffective and depressed) varied considerably from session to session. She shifted from feeling moderately ineffective to feeling very effective, and she shifted from feeling very depressed to slightly depressed over the course of her treatment. Furthermore, both of these affect dimensions evidenced a medium-sized negative correlation with session number, suggesting improvement over time. Therapeutic alliance (as assessed by the client, therapist, and independent observers) fluctuated from moderate to very good during the treatment and improved strongly with time. Session outcomes (as rated by the client, therapist, and independent observers) ranged from moderate to excellent and were moderately associated with session number, suggesting better session outcomes over time. Our data also indicated that the therapist's technique was close to ideal CMT throughout the treatment but became closer to ideal over time.

Was Ideal CMT Technique Associated With Client In-Session Affect, Therapeutic Alliance, and Session Outcome?

As the results presented in Table 3 indicate, we found that ideal CMT technique was associated with less ineffective affect and less depressed affect (as assessed by the client), better therapeutic alliance (as assessed by the therapist, client, and independent observers), and better session outcomes (as assessed by the client, therapist, and independent observers). Most of these correlations were large. However, the association with therapist-rated alliance was medium sized ($r = .33$), and the association with therapist-rated outcome was small ($r = .26$).

We were concerned that our observed correlations with ideal CMT technique might have been confounded with changes unfolding over time. Thus, we reanalyzed the data using partial correlations to control for the influence of time (i.e.,

TABLE 2. Descriptive Statistics of Primary Variables

Variable	Minimum	Maximum	*M*	*SD*	Correlation with time[e]
In-session affect[a]					
Ineffective	1.00	4.67	1.98	1.06	−.44[g]
Depressed	3.00	6.33	4.40	0.96	−.39[g]
Therapeutic alliance[b]					
Client rated	3.93	6.20	5.51	0.66	.68[h]
Therapist rated	4.40	6.33	5.38	0.83	.64[h]
Observer rated	4.13	5.93	5.23	0.47	.55[h]
Session outcome[c]					
Client rated	2.67	4.67	3.60	0.56	.25[f]
Therapist rated	3.00	5.00	4.04	0.62	.41[g]
Observer rated	3.22	4.67	3.93	0.37	.33[g]
Ideal CMT technique[d]					
Ideal CMT technique score	6.96	7.75	7.35	0.23	.63[h]

[a]In-session affect items were rated by the client on a 9-point scale ranging from 0 (*none*) to 8 (*most in my life*).
[b]Therapeutic alliance items were rated on a 7-point scale ranging from 1 (*poor alliance*) to 7 (*excellent alliance*).
[c]Session outcome items were rated on a 5-point scale ranging from 1 (*poor outcome*) to 5 (*excellent outcome*).
[d]Ideal control mastery theory (CMT) technique score was indexed on a 9-point scale ranging from 0 (*maximum deviation from ideal CMT technique*) to 8 (*perfectly ideal CMT technique*).
[e]Time was operationalized using session number.
[f]Small effect size.
[g]Medium effect size.
[h]Large effect size (Cohen, 1977).

session number). These partial correlation analyses substantially decreased the relationship between ideal CMT technique and all ratings of therapeutic alliance and eliminated the relationship between ideal CMT technique and therapist-rated session outcome. However, ideal CMT technique was still associated with reduced ineffective and depressed in-session affect and better session outcomes as rated by both the client and the observers (Table 3).

Does Ideal CMT Technique Predict Session Outcome After Controlling for Time, In-Session Affect, and Therapeutic Alliance?

We wanted to know whether ideal CMT technique added anything to predicting session outcomes above and beyond what was predictable by the combination of the passage of time, the client's in-session affect, and the therapeutic alliance. We first computed aggregate variables for in-session affect (by averaging depressed and ineffective affect), therapeutic alliance (by averaging client, therapist, and observer ratings), and session outcome (by averaging client, therapist, and observer ratings). We then examined the bivariate correlations between our aggregate outcome measure and the other aggregate variables. We found that better aggregate session outcome scores were associated with higher session number ($r = .32$), lower aggregate in-session negative affect ($r = -.74$), better aggregate therapeutic alliance ($r = .60$), and greater closeness to ideal CMT technique ($r = .76$). Finally, we conducted a hierarchical multiple regression analysis examining the effects of ideal CMT technique on

TABLE 3. Correlations Between Closeness to Ideal Control Mastery Theory (CMT) Technique and In-Session Affect, Therapeutic Alliance, and Session Outcome

	In-session affect		Therapeutic alliance			Session outcome		
Ideal CMT technique	Ineffective	Depressed	Client	Therapist	Observer	Client	Therapist	Observer
Correlation	−.55[c]	−.68[c]	.61[c]	.33[b]	.57[c]	.76[c]	.26[a]	.51[c]
Partial correlation	−.52[c]	−.60[c]	.21[a]	−.09[a]	.35[b]	.79[c]	.00	.40[b]

Note. Partial correlations controlled for session number.
[a]Small effect size. [b]Medium effect size. [c]Large effect size (Cohen, 1977).

aggregate session outcome controlling for session number, aggregate in-session negative affect, and aggregate therapeutic alliance (respectively). We found that each predictor accounted for medium to large amounts of incremental variance in session outcome (Table 4). Session number accounted for 10% of the variance in session outcome, in-session negative affect accounted for an additional 44% of the variance, therapeutic alliance accounted for an additional 14% of the variance, and ideal CMT technique accounted for an additional 18% of the variance. All of the predictors combined accounted for 86% of the variance in session outcome.

Discussion

Maria came to therapy suffering symptoms of depression linked to her broken childhood vow to put her career over motherhood. Using CMT, Maria's therapist and supervisor hypothesized that Maria's progress toward career goals was frustrated by unconscious guilt about having more out of life than other women in her family and pathogenic beliefs that if she did pursue her goals then others would be hurt. The therapist and supervisor believed that ideal psychotherapy technique from the perspective of CMT would include such techniques as the following: focusing strongly on Maria's guilt; providing supportive, encouraging, and reassuring statements; interpreting unconscious mental contents; and discussing Maria's pathogenic beliefs. We conducted a study to determine whether providing ideal CMT technique was related to the gains that Maria made in therapy. Our results generally support the conclusion that the more closely the therapist approximated ideal CMT technique, the better the process and outcome of the therapy session. Specifically, Maria reported feeling less depressed and more effective during those sessions, and independent observers agreed with her that the therapeutic alliance was better and that the sessions were more helpful overall.

TABLE 4. Summary of Hierarchical Regression Analysis for Variables Predicting Session Outcome

Variable	R	ΔR	R^2	ΔR^2
Step 1: Session number	.32	.32[a]	.10	.10
Step 2: In-session negative affect (Aggregate)	.74	.66[b]	.55	.44
Step 3: Therapeutic alliance (Aggregate)	.83	.37[a]	.69	.14
Step 4: Ideal CMT technique	.93	.42[a]	.86	.18

Note. CMT = control mastery theory.
[a]Medium effect size. [b]Large effect size (Cohen, 1977).

The fact that therapeutic gains were associated with ideal CMT technique might be explained in a number of ways. First, it is possible that the different elements of the ideal CMT technique acted in an additive fashion. For example, interpreting Maria's unconscious guilt may have helped her to gain insight into the nature of her problems. Supportive and encouraging statements may have inspired her to act outside of the treatment in ways that would further disconfirm her pathogenic beliefs (e.g., becoming active in her community). Using both techniques in a single session may have given her both benefits, resulting in a better session outcome. A second possibility is that each ideal technique may have interacted synergistically. For example, interpreting Maria's unconscious guilt while offering encouraging statements may have taught her about her excessive worry about others while simultaneously assuring her that the therapist was strongly encouraging of her goals and not threatened by her ambitions. Finally, it is possible that the presence of less ideal techniques could have diminished the efficacy of the more ideal techniques. For example, if the therapist interpreted Maria's unconscious guilt but also suggested that the client accept more responsibility for her problems, then Maria may have felt that the therapist was covertly in agreement with her self-blame.

Our findings may seem to be at odds with studies reporting negative effects of rigid adherence to treatment manuals (Castonguay, Goldfried, Wiser, Raue, & Hayes, 1996; Henry, Strupp, Butler, Schact, & Binder, 1993). However, one must recall the therapist's actual in-session technique was not being measured against a nomothetic treatment manual but rather an idiographic, case-specific prescription of ideal techniques for *this* patient. Though many of the ideal techniques would appear in most CMT-based treatment plans (e.g., focusing on guilt), some aspects of the treatment plan were case-specific. For example, one of the most ideal techniques, "facilitating the client's speech," was prescribed because Maria asked for frequent reassurance that she was expressing herself adequately in English, which was her second language. Our case-specific application of theoretical prototypes may be the antidote for overly restrictive therapy manuals commonly used in psychotherapy re-

search while still retaining a means of examining the theoretical integrity of the treatment.

In a similar vein, we were intrigued to find that the application of ideal CMT technique was more strongly correlated with session outcome (r = .76) than was therapeutic alliance (r = .60). Even after controlling for the relationship between therapeutic alliance and session outcome, ideal CMT technique accounted for more incremental variance in session outcome than did therapeutic alliance (18% vs. 14%). These findings differ from the results of group studies, which report that more of the outcome variance is due to relationship factors than technique factors (30% vs. 15%, respectively; Lambert, 1992). Lambert's finding is often cited as a reason to emphasize common factors over specific technique factors. Yet the finding relates to variance across cases. Our finding relates to variance within a case. It may be true that the most important thing a therapist can do to increase the number of successful outcomes in her practice is to establish strong therapeutic alliances. However, our finding suggests that once a strong alliance is formed, a therapist can account for almost 20% additional variance within a case by following ideal CMT technique. Obviously, this finding may not generalize to other cases, but it would be worthwhile to investigate this possibility. Finally, our finding that over 40% of the variance was related to the client's emotional state during the session suggests that in-session emotion may be an important predictor of psychotherapy outcome and should be examined more closely in future research, a point also emphasized by others (e.g., Gendlin, 1961; Greenberg, 1993).

In our study, we strove to balance and blend the priorities of clinical practice with the priorities of scientific research. The client received an individualized case formulation based on a specific clinical theory and was treated in much the same way as she would have been in private practice (e.g., without a treatment manual). Moreover, because the theory's progenitor, Joseph Weiss, provided ongoing consultation, we have confidence that we appropriately applied the clinical theory. To these clinical strengths, we added scientific rigor by obtaining quantitative measures of relevant clinical variables (e.g., client affect, therapeutic alliance, session outcomes), many of which were gathered from the multiple perspectives of respondents who were all blind to the study hypotheses and to each other's ratings. We also assessed the efficacy of ideal CMT techniques using a fairly novel method based on the work of Ablon and Jones (1998). This method of developing a prototype of an ideal therapy session and measuring the discrepancy between actual and ideal techniques offers several advantages over the method typically used in the literature on CMT (e.g., Silberschatz, Curtis, Sampson, & Weiss, 1991), including the fact that it is (a) much less labor intensive, (b) easily adapted to private practice settings, (c) flexible enough to test competing clinical hypotheses, and (d) applicable to virtually any theoretical orientation. We plan to explore some of these advantages in future studies. Finally, we propose that our approach of integrating the perspectives of the empirical researcher (Nnamdi Pole), the therapist (J. Stuart Ablon), the supervisor (Lynn O'Connor), and the progenitor of the clinical theory (Joseph Weiss) might serve as a model for future quantitative single-case research studies.

Of course, our study is not without its limitations. As with any correlational study, our findings raise questions about the direction of the causal arrow. We suggest that ideal CMT technique improved therapy process and outcome. However, our results are also consistent with an alternative explanation, namely that dysphoric client affect and ruptures in the therapeutic alliance interfered with the therapist's ability to apply ideal CMT technique. A second major limitation of the study is the fact that all of our results are based on a single case. Consequently, we can make no claims of generalizability to other cases. Though we believe that a quantitative single case study is preferable to a large group study when trying to understand factors that contribute to variation within a case, it lacks the power to make inferential statements about a larger population. In order to do that, single cases must be replicated and become what John Gottman (1973) called, "*N*-of-one-at-a-time research." We hope that our study inspires clinicians to follow similar methodology in their private practice and to offer their findings to the cause of establishing the generalizability of these effects.

References

Ablon, J. S., & Jones, E. E. (1998). How expert clinicians' prototypes of an ideal treatment correlate with outcome in psychodynamic and cognitive–behavioral therapy. *Psychotherapy Research, 8*(1), 71–83.

American Psychiatric Association. (1994). *Diagnostic and*

statistical manual of mental disorders (4th ed.). Washington, DC: Author.

BECK, A. T., STEER, R. A., & GARBIN, M. G. (1988). Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clinical Psychology Review, 8*, 77–100.

BOHART, A. C., O'HARA, M., & LEITNER, L. M. (1998). Empirically violated treatments: Disenfranchisement of humanistic and other psychotherapies. *Psychotherapy Research, 8*(2), 141–157.

BORDIN, E. S. (1976). The generalizability of the psychoanalytic concept of the working alliance. *Psychotherapy: Theory, Research, and Practice, 16*, 252–260.

CAMPBELL, L. F. (1996). The treatment outcome pursuit: A mandate for the clinician and researcher working alliance. *Psychotherapy, 33*, 190–196.

CASTONGUAY, L. G., GOLDFRIED, M. R., WISER, S., RAUE, P. J., & HAYES, A. M. (1996). Predicting the effects of cognitive therapy for depression: A study of unique and common factors. *Journal of Consulting and Clinical Psychology, 64*, 497–504.

CHAMBLESS, D. L., & HOLLON, S. D. (1998). Defining empirically supported therapies. *Journal of Consulting and Clinical Psychology, 66*(1), 7–18.

COHEN, J. (1977). *Statistical power analysis for the behavioral sciences*. New York: Academic Press.

COHEN, J., & COHEN, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences*. Hillsdale, NJ: Erlbaum.

DROZD, J. F., & GOLDFRIED, M. R. (1996). A critical evaluation of the state-of-the-art in psychotherapy outcome research. *Psychotherapy, 33*(2), 171–180.

ELKIN, I., SHEA, T., WATKINS, J. T., IMBER, S. D., SOTSKY, S. M., COLLINS, ET AL. (1989). National Institute of Mental Health treatment of depression collaborative research program. *Archives of General Psychiatry, 46*, 971–983.

FOREMAN, S. A., GIBBINS, J., GRIENENBERGER, J., & BERRY, J. W. (2000). Developing methods to study child psychotherapy using new scales of therapeutic alliance and progressiveness. *Psychotherapy Research, 10*(4), 450–461.

GARFIELD, S. L. (1998). Some comments on empirically supported treatments. *Journal of Consulting and Clinical Psychology, 66*, 121–125.

GENDLIN, E. T. (1961). Experiencing: A variable in the process of therapeutic change. *American Journal of Psychotherapy*, *15*, 233–245.

GOLDFRIED, M. R., & WOLFE, B. E. (1996). Psychotherapy practice and research: Repairing a strained alliance. *American Psychologist, 51*, 1007–1016.

GOTTMAN, J. M. (1973). *N*-of-one and *N*-of-two research in psychotherapy. *Psychological Bulletin, 80*, 93–105.

GREENBERG, L. S. (1993). Emotion and change processes in psychotherapy. In M. Lewis & J. M. Haviland (Eds.), *Handbook of emotions* (pp. 499–508). New York: Guilford Press.

HENRY, W. P. (1998). Science, politics, and the politics of science: The use and misuse of empirically validated treatment research. *Psychotherapy Research, 8*(2), 126–140.

HENRY, W. P., STRUPP, H. H., BUTLER, S. F., SCHACT, T. E., & BINDER, J. L. (1993). Effects of training in time-limited dynamic psychotherapy: Changes in therapist behavior. *Journal of Consulting and Clinical Psychology, 61*, 434–440.

HORVATH, A. O., & GREENBERG, L. S. (1994). *The working alliance: Theory, research, and practice*. New York: Wiley.

HOWARD, K. I., MORAS, K., BRILL, P. L., MARTINOVICH, Z., & LUTZ, W. (1996). Evaluation of psychotherapy: Efficacy, effectiveness, and patient progress. *American Psychologist, 51*, 1059–1064.

JONES, E. E., HALL, S., & PARKE, L. A. (1991). The process of change: The Berkeley Psychotherapy Research Group. In L. Beutler & M. Crago (Eds.), *Psychotherapy research: An international review of programmatic studies* (pp. 98–106). Washington, DC: American Psychological Association.

LAMBERT, M. J. (1992). Psychotherapy outcome research: Implications for integrative and eclectic theories. In J. C. Norcross & M. R. Goldfried (Eds.), *Handbook of psychotherapy integration* (pp. 94–129). New York: Basic Books.

NETER, J., WASSERMAN, W., & KUTNER, M. H. (1990). *Applied linear statistical models: Regression, analysis of variance, and experimental designs*. Boston: Irwin.

O'CONNOR, L. E., BERRY, J. W., & WEISS, J. (1999). Interpersonal guilt, shame, and psychological problems. *Journal of Social and Clinical Psychology, 18*(2), 181–203.

PERSONS, J. B., BOSTROM, A., & BERTAGNOLLI, A. (1999). Results of randomized controlled trials of cognitive therapy for depression generalize to private practice. *Cognitive Therapy and Research, 23*(5), 535–548.

PERSONS, J. B., & SILBERSCHATZ, G. (1998). Are results of randomized controlled trials useful to psychotherapists? *Journal of Consulting and Clinical Psychology, 66*, 126–135.

POLE, N., & JONES, E. E. (1998). The talking cure revisited: Content analysis of a two-year psychodynamic psychotherapy. *Psychotherapy Research, 8*(2), 171–189.

SILBERSCHATZ, G., & CURTIS, J. T. (1993). Measuring the therapist's impact on the patient's therapeutic progress. *Journal of Consulting and Clinical Psychology, 61*, 403–411.

SILBERSCHATZ, G., CURTIS, J. T., SAMPSON, H., & WEISS, J. (1991). Mount Zion Hospital and Medical Center: Research on the process of change in psychotherapy. In L. E. Beutler & M. Crago (Eds.), *Psychotherapy research: An international review of programmatic studies* (pp. 56–64). Washington, DC: American Psychological Association.

SILBERSCHATZ, G., FRETTER, P. B., & CURTIS, J. T. (1986). How do interpretations influence the process of psychotherapy? *Journal of Consulting and Clinical Psychology*, *54*, 646–652.

SPITZER, R. L., WILLIAMS, J. B. W., KROENKE, K., LINZER, M., DEGRUY, F. V., HAHN, S. R., & BRODY, D. (1995). *Primary care evaluation of mental disorders*. New York: Pfizer.

WEISS, J. (1993). *How psychotherapy works*. New York: Guilford Press.

WEISS, J., SAMPSON, H., & THE MOUNT ZION PSYCHOTHERAPY RESEARCH GROUP. (1986). *The psychoanalytic process: Theory, clinical observation, and empirical research*. New York: Guilford Press.