

Self-Understanding, Empathy, Guided Discovery, and Schema Belief in Schema-Focused Cognitive Therapy of Personality Problems: A Process–Outcome Study

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The aim of this study was to examine the dispositional and/or episodic influences of the process variables of self-understanding, empathy, guided discovery, and convictions about primary early maladaptive schema, which are central concepts in the schema-focused cognitive therapy of personality problems. The sample consisted of 35 patients with panic disorder and/or agoraphobia and DSM-IV Cluster C personality traits who participated in an 11-week inpatient program. Patients, therapists, and an expert observer rated individual therapy sessions. Greater patient-rated self-understanding the first session was related to greater decreases in schema belief and of emotional distress throughout therapy. Greater therapist-rated empathic experience the first session was related to greater decreases in distress throughout therapy. Session-by-session analyses revealed few sequential relationships. However, a greater in-session reduction of schema belief weakly predicted lower level of pre-session distress the next session, and vice versa. The study illustrates how to intensively measure and model change in psychotherapy, using both growth curve and time series analyses.

KEY WORDS: process predictors; schema-focused therapy; panic disorder; agoraphobia; cluster C personality.

INTRODUCTION

In psychotherapy research, there is limited evidence that various interventions have the impacts claimed in the therapy model, and that these relate to outcome (Watson & Greenberg, 1996). This study attempts to test central hypotheses of a schema-focused cognitive therapy model regarding process–outcome relationships. Cognitive therapy has proved to be effective for a variety of symptom disorders

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(Robins & Hayes, 1993). Recently, standard cognitive therapy has been extended and modified to adapt to the specific needs of patients with personality disorders and/or more chronic anxiety and depressive disorders (Beck, Freeman, & Associates, 1990; Young, 1990). Central to Young's schema-focused approach is the concept of early maladaptive schemas (EMSs). These are thought to develop during childhood and be significantly dysfunctional throughout adulthood. For instance, a child may be overly criticized when it does not meet parental standards and develop the schema "I am defective." To cope with the schema and the associated painful and devalued distressed state, the child will engage in a variety of strategies that, in the long run, become maladaptive as they tend to reinforce the schema. One such strategy is schema avoidance whereby people avoid certain situations or distract themselves from thinking about EMS-related issues. Within the schema model, clinical symptom states such as anxiety or depression result from an activation of EMSs, whereas personality problems and disorders are viewed mainly as expressing generalized maladaptive coping strategies.

According to the theory of cognitive therapy in general (Beck, 1997), and the schema-focused model in particular (Young, 1990), change in symptom states and mood results from change in schema beliefs. To change the patients' belief in their EMSs, and, consequently, their symptomatic distress, at least three central tasks need to be accomplished. First, the patients need to arrive at new and more sympathetic understandings of their problems and core issues (McGinn & Young, 1996). Patients tend to take their problems and symptoms as evidence of their EMSs, for instance "the fact that I am not able to do something about my problems demonstrates that I am incompetent." The schema-focused model offers an opportunity to understand how one's symptoms and maladaptive coping strategies are related to EMSs, and that these EMSs do not reflect the truth about oneself, but are rather related to unfortunate childhood circumstances. Better self-understanding, that is, novel and potentially profitable ways to view one's difficulties, will facilitate schema work and change in schema belief.

Second, schema avoidance and other maladaptive coping strategies have to be curtailed, and the patient helped to accept and tolerate the resulting painful emotional state. An empathic attitude, which, within a schema perspective, may be defined as the therapist's effort to understand the schema and be emotionally attuned with the patient, conveys acceptance of the patient. This may serve to contradict the patient's assumption that the avoided EMS-related states themselves represent "proof" of the EMS, and a reduced belief in the EMS may follow.

Third, when the patients are able to experience the EMS-related emotional state, they must be helped to examine the life experiences they have taken as evidence for their EMSs in accordance with the principle of guided discovery (Young, 1990). Through questions and comments, the therapist stimulates and guides the patient's thinking activity in a way that helps the patient think critically about the experiences taken as evidence and thus develop alternative perspectives (Overholser, 1993). Consequently, a reduction of schema belief is expected to occur. On the other hand, if the therapist relies on debate, persuasion, or lecturing, the patient may become resistant and end up believing more in his/her EMSs.

Surprisingly few studies have addressed the core issue of cognitive therapy that cognitive change precedes (and thus may cause) change in emotional distress. DeRubeis et al. (1990) found that change in attributional style, dysfunctional attitudes, and hopelessness from pretreatment to midtreatment predicted change in depression from midtreatment to posttreatment among depressed patients treated with cognitive therapy. On the other hand, early symptomatic change did not predict cognitive change later in therapy. On a sessional level, Persons and Burns (1985) found that change in degree of belief in automatic thoughts was related to mood change during cognitive therapy sessions. However, the correlational nature of this study does not rule out the possibility that it is actually mood change that is causing the cognitive change or that a third factor is causing both. Safran, Vallis, Segal, and Shaw (1987) observed that in-session cognitive change was related to an increase of general problem resolution between sessions. However, it is possible that parallel processes occurring in the two series of observations could account for the obtained relationship and thus lead to a spurious conclusion. Muran, Gorman, Safran, Twining, and Winston (1995) found that in-session cognitive change (and therapeutic alliance)—averaged across sessions—predicted overall outcome, whereas averaged in-session changes in depression and anxiety did not. In a study of cognitive-behavioral therapy for depression, Tang and DeRubeis (1999) observed substantial cognitive changes in the therapy sessions preceding large symptom improvements in a between-session interval. Although these studies are suggestive, it appears that more usual time series methods have yet to be used to examine whether cognitive changes precede distress changes on a session-by-session level.

Previous time series analyses of nonmanualized, eclectic psychotherapies have failed to find a direct relationship between an increase of self-understanding into own problems and symptomatic improvement (Sexton, 1993, 1996). Most studies of various types of psychotherapy have supported the hypothesis that empathy is related to outcome (Orlinsky, Grawe, & Parks, 1994). In cognitive therapy, patients' perceptions of therapists' empathy correlated positively with degree of improvement during individual therapy sessions (Persons & Burns, 1985). Furthermore, therapists' empathy was found to have a causal effect on recovery from depression in cognitive-behavioral therapy (Burns & Nolen-Hoeksema, 1992). Empirical studies of the influence of guided discovery appear to be nonexistent.

Personality disorders and symptom disorders typically occur together, and this may both complicate the treatment and the interpretation of outcomes. In an effort to address this, we chose to focus upon patients with panic disorder, agoraphobia, or both, who received treatment for their symptom disorder prior to the treatment of their personality problems.

We hypothesized that more self-understanding, more empathy, and higher quality of guided discovery early in therapy will be related to more across-session reduction in schema belief and emotional distress.

We also hypothesized that session-by-session variations in in-session schema belief change would predict intersessional distress. We also hypothesized that session-by-session variations in self-understanding, empathy, and guided discovery would

predict intersessional outcome, and these effects would be mediated by changes in schema belief.

METHOD

Participants

Participants were selected among referrals to an inpatient clinic specializing in the cognitive treatment of panic disorder/agoraphobia and personality problems. In most cases, they were referred because outpatient treatment attempts had failed. The applicants were given a precare evaluation interview, including the Structured Clinical Interview for *DSM-IV* Axis I (SCID-I; First, Spitzer, Gibbon, & Williams, 1995) and II (SCID-II; First, Spitzer, Gibbon, Williams, & Benjamin, 1994) diagnoses by the first author. The reliability of the first author's *DSM-III-R* judgments has been shown to be high in a previous study (Hoffart & Hedley, 1997), and this was replicated for Axis II judgments in this study (see below). The criteria for being included to the treatment program and to the present project were (a) satisfying *DSM-IV* criteria for panic disorder with or without agoraphobia or agoraphobia without panic disorder, (b) age from 22 to 65 years, and (c) the patient presents problems related to *DSM-IV* Cluster C personality disorders (PDs). That is, he/she describes chronic and symptom-independent problems that express the core meaning of these Cluster C personality disorders. Those who met these criteria were informed that use of psychotropic medication was prohibited during the 11-week inpatient period, and their medications were reduced or discontinued prior to hospital treatment.

Forty patients in five closed treatment groups were included. Two patients dropped out from treatment before the personality-focused phase started. For practical reasons unrelated to the study, another 3 patients received less than nine individual sessions in the personality-focused phase, and were therefore excluded. Among the remaining 35 patients, 28 (80%) women and 7 (20%) men, the mean age was 40.1 years ($SD = 9.5$, range = 22–60). The mean age at onset of the treated anxiety disorder was 25.6 years ($SD = 10.5$). Thirty-two (91%) of the patients met criteria for panic disorder with agoraphobia, 1 for panic disorder without agoraphobia, and 2 for agoraphobia without panic disorder. Of the 35 patients, 10 (29%) met the criteria for social phobia, 12 (34%) for obsessive–compulsive disorder, 12 (34%) for generalized anxiety disorder, 12 (34%) for simple phobia, 8 (23%) for hypochondriasis, 32 (91%) for major depression (27 of them had current depression, and 5 were remitted), 3 (9%) for dysthymia, 5 (14%) for alcohol abuse/dependence (all 5 had remitted), and 15 (43%) for medication abuse/dependence (3 of them were fully remitted). On Axis II, 12 (34%) met the criteria for avoidant personality disorder (PD), 3 (9%) for dependent PD, and 6 (17%) for obsessive–compulsive PD. No other Axis I or II diagnoses exceeded a frequency of 1 in the present sample. Sixteen (46%) had at least one Axis II disorder. Of the 35 patients, 22 (63%) had a lower occupational level (unskilled worker, living on social security benefit, unemployed), 20 (57%) were married/cohabiting, and 32 (91%) had received previous

psychiatric treatment. Twenty (57%) had used anxiolytics, and 21 (60%) had used antidepressants the last month before admission.

Treatment

The patients were admitted to closed treatment groups with eight members in each. Alternate patients were allocated to the two individual therapists, Therapist A and B.

The agoraphobia-focused treatment was based on the cognitive model of panic and agoraphobia (Clark et al., 1994), whereas the personality-focused part was based on Young's (1990) schema-focused approach. Within the first 4 days after admission, remaining psychotropic medication was discontinued. The 5-week agoraphobia-focused phase started with group sessions where each patient's catastrophic fears and evidence for these fears were elicited. Alternative interpretations of their feared symptoms were also developed. Both the catastrophic and the alternative interpretations were then tested in behavioral experiments. The patients met for a 45-min session in the morning for planning the day's behavioral tasks, performed the tasks, and returned for a 50-min session where their interpretations of their experiences during task performance were discussed. Except for the intake session, the patients had no individual sessions in this first phase.

The 6-week personality-focused phase started with education about EMSs in a group setting. This phase consisted of 9–10 individual sessions of 45-min duration, twice a week, together with the carrying out of planned behavioral assignments ("homework"). The individual sessions had a common structure: an agenda was first set, then homework assignments were often reviewed, and, towards the end of the session, new assignments were usually discussed and decided upon. A case formulation that was shared between patient and therapist was developed the first individual session. At the start of the personality-focused phase, some patients were still so symptomatic that they were not yet able to concentrate fully on schema-work. Therefore, the symptom states were also addressed using the relevant standard cognitive model (Hawton, Salkovskis, Kirk, & Clark, 1989). In schema work, the patient's lifetime evidence for their EMSs were elicited. The patients were also encouraged to express feelings associated with painful issues, especially anger and sadness. Imagery exercises, roleplay, or both were used for activation and challenging of EMSs. At the end of each session, the patients were helped to formulate their most important experience during the session. The therapists sought to adopt an empathic attitude, seeking to grasp the schemas that were activated and to validate the patient's emotional state and thus promoting the expression of these states. The therapists also engaged in "limited reparenting," that is, tried to provide the patient with positive experiences as antidotes to the patient's problematic childhood experiences (Young, 1990).

The behavioral assignments in the personality-focused phase addressed any remaining catastrophic fears related to panic and agoraphobia as well as assumptions related to the patient's maladaptive coping strategies. For example, to assert one's interests towards a roommate or to refrain from uncritically trying to satisfy a needy

fellow patient. These assignments were planned and followed up by the therapists and the nursing staff.

The personality-focused phase also included eight 90-min group sessions, where 1 patient was focused upon in each session. The patient's EMSs were sought out and identified, evidential experience was elicited, and alternative interpretations were discussed. The other patients were encouraged to provide support and feedback during this process.

The patients participated in various other group activities and in the ward's general program, consisting primarily of one physical training session and one ward meeting per week. In addition, a person close to the patient, most often the spouse, was admitted to the hospital and participated in the treatment program during a 5-day period.

Therapists

The two individual therapists (the first and the second author) are certified clinical psychologists. The two primary psychiatric nurses had 8 and 3 years of clinical experience.

Training and Supervision

Four pilot treatment groups were conducted over a period of 1 year to train the therapists. Both during the pilot and the research period, a third psychologist conducted a 60-min weekly supervision session for the therapists, addressing immediate treatment problems and questions about adherence to the treatment model.

Process Measures

Each of the session variables was assessed from one or more of the three perspectives of patient, of therapist, and of a cognitive therapy expert observer. The first four and the last session were videotaped.

Patient's Ratings

The patients completed a modified version of Muran et al. (1995) pre- and postsession impact questionnaires. The presession questionnaire consists of five emotional items concerning anxiety, depression, anger, sadness, feelings of unreality, rated on 0–100 point scales, for example, "How anxious are you right now?" To determine the patient's primary schema, an open-ended statement was presented: "Your most basic negative schema is;" followed by the phrase "I am . . ." with open space to fill in to a complete sentence. This was followed by the item: "How much do you believe in that right now?" The postsession questionnaire included the same five emotional items. Ratings of both the maximal level during the session and the postsession level were elicited. Belief in the focused thought during session was measured using an open-ended item, "Please describe the most important thought that was worked

on during the session.” Both maximal degree of belief in that thought during the session and the postsessional level were requested. In addition, patients recorded their the patient’s postsessional degree of belief in their primary schema. Ratings of self-understanding and therapist’s empathy were elicited by the questions “To what extent did you find promising new ways to see your difficulties?” and “To what extent did you feel that the therapist understood you and realized how you felt?.” Both items are rated on a scale ranging from 0 to 100. To control for potential expectancy bias, the patients were informed that the therapists were blind to all the patients’ ratings. The construct validity of the feeling and the focused thought items find support in that they relate in theoretically meaningful ways to each other and to other clinical variables (Muran et al., 1995). Two factor analyses of the pre-sessional and the postsessional emotional ratings, respectively, yielded both only one factor with eigenvalue above 1. The five emotional items were therefore summed as a measure of emotional distress (Cronbach’s $\alpha = .85$ and $.81$ for the pre-sessional and postsessional ratings, respectively). The average correlation between the postsessional rating one session and the postsessional rating of the subsequent one across sessions was $.51$ for self-understanding, $.69$ for patient-rated empathy, $.67$ for schema belief, and $.77$ for distress. The concurrent validity of the distress and the schema belief measures were examined by completing them at follow-up and relating them to the relevant overall outcome measures (see below). Distress correlated with STAI-Y1 scores, $r = .67$, $p < .001$ and with BDI scores $r = .62$, $p < .001$. Schema belief correlated with SQ scores, $r = .50$, $p < .01$. Concurrent validity was further investigated by having an independent sample of 17 nonpsychotic, psychiatric patients in the same clinic complete the postsession impact questionnaire and other, more validated measures after one arbitrary individual session. Self-understanding correlated with the task impact subscale of the Session Impact Scale (Elliot & Wexler, 1994), which measures insight into self, other, or problem solution, $r = .88$, $p < .001$. Unfortunately, the Empathy Scale – Patient’s Version (ES-P; Burns & Nolen-Hoeksema, 1992) showed a marked ceiling effect and a highly skewed distribution. The ratings on our 0–100-point scale of empathy, on the other hand, appeared normally distributed. We omitted the 6 patients with maximum score on the ES-P and obtained a correlation of $.48$ ($p = .139$, $n = 11$), between the two measures.

Therapist’s Ratings

After each session, the therapist rated his/her empathic experience, “To what extent did you feel you understood the patient and how he/she felt?”; and the guided discovery, “How well do you think you helped the patient discover new ways of seeing his/her problems?”; on 0–100-point scales. The average correlation between the ratings one session and the subsequent one was $.63$ for empathic experience and $.41$ for guided discovery. The therapists of the 17 patients in the independent sample mentioned above completed the 0–100-point empathic experience scale and the Empathy Scale – Therapist’s Version (Burns & Nolen-Hoeksema, 1992). The scores were relatively evenly distributed on both scales and their intercorrelation was $.71$ ($p < .001$).

Expert Observer's Ratings

The observer rated empathy and guided discovery on 0–6 competence items of the Cognitive Therapy Scale (CTS; Vallis, Shaw, & Dobson, 1986); “understanding” and “guided discovery,” respectively. To increase the content validity of the “guided discovery” item and to anchor it in more specific criteria, it was elaborated to include—in addition to the dimension of guidance versus debate/lecturing—the dimensions of goal directedness and of reactivity to the patient’s responses (Overholser, 1993). Thus, a high quality guided discovery session would be one where the therapist guided instead of instructed the patient’s thinking, where the dialogue was directed towards a specific goal, and where the focus was regulated by what the patient considered to be significant evidence. Overall competence was assessed by also rating the other nine items of the CTS and recording the percentage of session time focused on panic/agoraphobia, other symptom disorders, and the EMSs. To assist him in his ratings, the observer was provided a list of strategies of the schema-focused model and a completed case formulation sheet for the particular patient. The third individual session was selected for rating for each patient as it was expected that the therapist would show more varied skills in this session than in the first or the second one (Barber, Crits-Christoph, & Luborsky, 1996). The CTS has proven to be sensitive to variations in the quality of therapy (Vallis, Shaw, & Dobson, 1986). Twelve randomly selected videotapes were scored by an independent expert to test the reliability of the primary observer’s ratings. The Intraclass Correlation Coefficient [ICC(3, 1), Shrout & Fleiss, 1979] was .93 for the CTS total score, .73 for empathy (“understanding”), .92 for guided discovery, and .51 for percentage of time focused on EMSs.

Registration of Homework Performance

The patients’ performance of behavioral assignments was identified from the medical records, and classified into agoraphobia-related and schema-related tasks. As an index of homework compliance, the number of tasks performed from a session till the next session was computed for each individual session.

Outcome Measures

Measures of Panic and Agoraphobia

The self-report measures include the Mobility Inventory for Agoraphobia (MI; Chambless, Caputo, Jasin, Gracely, & Williams, 1985), which measures agoraphobic avoidance of a range of situations, both if the patients are alone (MI-AAL) and if they are accompanied (MI-ACC); the Body Sensations Questionnaire (BSQ; Chambless, Caputo, Bright, & Gallagher, 1984), which measures fear of the body sensations associated with high arousal and panic; the Agoraphobic Cognitions Questionnaire (ACQ; Chambless, Caputo, Bright, & Gallagher, 1984), which measures thoughts about the possible catastrophic consequences of panic; and the Panic Rating Scale

(Clark et al., 1994), which measures panic attack frequency, disability due to attacks, and disability due to avoidance behavior.

Measures of General Symptoms

The self-report State-Trait Anxiety Inventory (STAI; Spielberger, 1983) provides scores for both state (STAI-Y1) and trait (STAI-Y2) anxiety. The self-report Beck Depression Inventory (BDI; Beck, Steer, & Garbin, 1988) measures degree of depressive symptoms.

Personality-Related Measures

The self-report Schema Questionnaire (SQ; Schmidt, Joiner, Young, & Telch, 1995) measures the person's EMSs. The 64-item version of the self-report Inventory of Interpersonal Problems (IIP-64; Alden, Wiggins, & Pincus, 1990) measures interpersonal concerns. The Affect Consciousness Interview (ACI; Mosen, Odland, Faugli, Daae, & Eilertsen, 1995) measures the person's ability to become aware of, tolerate, express, and conceptualize his/her emotional reactions. The ACI was administered and scored by professionals not involved in the treatment. An interrater reliability of $ICC(3, 1) = .82$ at pretreatment and $.93$ at follow-up was obtained in this study. The SCID-II interview measures *DSM-IV* Axis II disorder (First et al., 1994). Indices for each PD in Cluster C were obtained by averaging the ratings across the criteria for each disorder, where 1 (*absent or false*), 2 (*subthreshold*), and 3 (*threshold or true*). An overall PD Cluster C (PD-C) Index was computed by averaging the ratings across all the criteria. The SCID-II was conducted at the evaluation interview by the first author and at 1-year follow-up—focusing on the follow-up period—for the most part by a psychiatrist who had not been involved in the treatment and was blind to the patients' outcome. For practical reasons, five of the follow-up interviews were conducted by the first author and one of them by another researcher. However, the psychiatrist also scored these six interviews on the basis of audiotapes of them, and these scores were used in the study. To assess interrater reliability, the psychiatrist scored 10 randomly selected audiotapes of the pretreatment SCID-II interviews. The reliability appeared to be satisfactory, the $ICC(1, 1)$; ShROUT & Fleiss, 1979) was $.83$ for the Avoidant Index, $.95$ for the Dependent Index, $.94$ for the Obsessive–Compulsive Index, and $.91$ for the overall PD-C Index. For the six follow-up SCID-II interviews that were not conducted by the psychiatrist, the $ICC(1, 1)$ between those who conducted the interviews and the psychiatrist was $.99$ for the Avoidant Index, $.80$ for the Dependent Index, $.65$ for the Obsessive–Compulsive Index, and $.99$ for the PD-C Index.

Procedure

Assessment on the outcome measures took place at the precare evaluation interview (evaluation), at intake (pretreatment), at the shift of treatment phases (midtreatment), at discharge (posttreatment), and 1 year after end of treatment

(1-year follow-up). The process measures were completed before and after each individual session.

Statistical Analysis

The effect of early process upon outcome were examined through a growth curve approach, using PROC MIXED (SAS Institute, 1993a, 1993b). Early session values of the process variables were used to predict to the slope of postsessional ratings of schema belief and emotional distress. To control for potential confounding effects, we also examined the effects of distress, depression severity, and type and severity of personality disorders upon the predictors.

The Time Series Cross-Sectional Regression (TSCSREG; SAS Institute, 1993a, 1993b) procedure, Fuller method, was used to address the session-by-session influences of the process variables upon schema belief and emotional distress. It examined to what degree the session-by-session variations in the process variables predicted variations in the dependent variables, over and above the predictability arising from the orderly behavior of the variables themselves. We took homework compliance into account in the time series analyses as this variable has shown to affect outcome in cognitive therapy (Burns & Spangler, 2000).

The individual sessions were conducted in the schema-focused phase of the program, and nine sessions were analyzed for each patient. For the patients ($n = 12$) that had 10 sessions, the last session was omitted. As the preliminary TSCSREG analyses of the ratings indicated that schema belief influenced later distress, but also that distress influenced later schema belief, we took extra measures to protect against artefactual findings. First, we differenced both the independent and the dependent variables to achieve stationarity. Examination of the autocorrelation function and the partial autocorrelation function indicated a first-order moving average process in each of them. The moving average component was removed with an ARIMA filter (Norusis/SPSS, 1993), thus prewhitening (i.e., removing all regular behavior from the series) the variables. The prewhitened variables were examined to ensure that there was no remaining time dependencies. Finally, the analysis was repeated, using the differenced independent variables and the residuals of the dependent variables derived from the ARIMA regression.

As we wished to examine a mediator model (Baron & Kenny, 1986), ratings of the predictor variables after one session were related to ratings of schema belief (the presumed mediator) before the next session, and ratings of schema belief were related to ratings of distress before the session thereafter. In this as in any analysis using lagged variables, the number of time points that can be included is reduced by the lag number (here one in some analyses and two when a mediator model was considered).

To examine potential therapist-specific process, we conducted each growth curve and time series analysis a second time, adding a Therapist \times Predictor interaction term. To relate the changes in the ongoing process measures to the overall change process, the relationships between the slopes of the ongoing process measures over the course of therapy and overall outcome were examined. Cohen's d was used to

compute effect sizes (Cohen, 1988). Two-tailed tests were used, and a p -value of .05 was required for statistical significance.

RESULTS

Integrity of Treatment

Mean CTS total score was 3.30 ($SD = 0.73$) for Therapist A, and 4.18 ($SD = 0.47$) for Therapist B, indicating a moderate-to-high competence. There was a significant difference between scores, $t(33) = 4.07, p < .0001$. The mean proportion of time focused on EMSs in the third session was 58% (range = 10–100), on panic/agoraphobia 18% (range = 0–60), and on other symptom disorders 24% (range = 0–80). Time focused on EMSs was related to the slope of postsessional schema belief ratings, $r(34) = -0.35, p < .05$.

Overall Outcome

The time effects of repeated measures Therapist (Therapist A vs. Therapist B) \times Time (evaluation, pretreatment, midtreatment, posttreatment, 1-year follow-up) ANOVAs on each of the outcome scales are reported in Table I. Also, the results of post hoc comparisons between each assessment are reported. Significant time effects occurred on all scales. On most of the specific panic/agoraphobia scales and on the two general symptom scales, significant changes occurred in the schema-focused phase, but not in the symptom-focused phase. On the ACQ and the BSQ, significant changes occurred in both phases. For the eight outcome measures that were completed both at evaluation and pretreatment (see Table I), the mean effect size for this period was 0.07. The mean effect sizes from pretreatment (evaluation for the BDI and the PD-C) to follow-up on all the 14 outcome measures was 0.65. The effect size from pretreatment to posttreatment was 0.68 on the MI-AAL, 0.53 on the STAI-Y2, and 0.39 on the PD-C Index. For the 16 patients with a defined Cluster C personality disorder, the corresponding effect sizes were 1.12, 0.62, and 0.69. The only significant Therapist \times Time interaction was for the IIP, $F(4, 30) = 2.88, p < .05$. Analyses for each time period revealed that the patients of Therapist A changed less from midtreatment to posttreatment.

Cross-Sectional Analyses of the Process Measures

Some patients reported the same EMS through all the sessions, whereas others reported varied schemas. According to Young's category system (Young, 1990), 20 patients most often reported a defectiveness/shame schema, 8 a dependence/incompetence schema, 3 a failure schema, 3 an emotional deprivation schema, and 1 an unrelenting standards schema.

Table I. Mean (*SD*) Scores on the Outcome Measures Across Assessments (*n* = 35)

Outcome measure	Assessment					<i>F</i> ^a
	Evaluation	Pretreatment	Midtreatment	Posttreatment	Follow-up	
Panic/agoraphobia						
MI-ACC	2.52x (1.00)	2.61x (1.12)	2.51x (1.12)	2.11y (0.97)	2.06y (0.96)	6.04**
MI-AAL	3.38x (0.99)	3.30x (1.12)	3.16x (1.16)	2.77y (1.05)	2.70y (1.18)	10.03****
PRS-F	—	2.37x (1.44)	2.14x (1.29)	1.69y (1.30)	1.49y (1.52)	3.74*
PRS-PD	—	5.20x (2.71)	4.83x (2.39)	3.74y (2.76)	3.63y (3.34)	3.76*
PRS-AD	—	5.46x (2.39)	4.91x (2.33)	3.66y (2.53)	3.94y (2.95)	5.40**
ACQ	46.3x (22.3)	47.5x (23.8)	38.0y (21.5)	31.2z (20.0)	26.3z (19.5)	8.31****
BSQ	3.33x (0.70)	3.25x (0.74)	2.95y (0.81)	2.59z (0.77)	2.58z (0.83)	8.02****
General symptoms						
STAI-Y1	59.5x (13.3)	56.9x (16.8)	60.2x (13.0)	50.7y (15.2)	48.2y (17.3)	6.58****
STAI-Y2	63.5x (9.1)	62.0x (13.7)	62.1x (13.2)	55.1y (13.6)	52.7y (15.5)	5.55**
BDI	26.1 (12.0)	—	—	—	17.0 (14.0)	14.00****
Personality						
IIP-64	1.70x (0.59)	1.68x (0.56)	1.69x (0.55)	1.63x (0.63)	1.33y (0.69)	5.01**
SQ	2.93x (0.85)	2.85x (0.89)	2.84x (0.84)	2.68x (0.94)	2.38z (0.97)	4.89**
ACI	—	1.99x (0.33)	2.04x (0.32)	2.38y (0.37)	2.69z (0.43)	39.35****
PD-C Index	1.61 (0.37)	—	—	—	1.47 (0.34)	5.22*

Note. MI = Mobility Inventory for Agoraphobia (-ACC = accompanied subscale, -AAL = alone subscale; 1–5); ACQ = Agoraphobic Cognitions Questionnaire (0–100); BSQ = Body Sensations Questionnaire (1–5); PRS = Panic Rating Scale (-F = frequency subscale, 0–4; -PD = panic disability subscale, 0–8; -AD = avoidance disability subscale, 0–8); STAI = State-Trait Anxiety Inventory (-Y1 = State Form, -Y2 = Trait Form; 20–80); BDI = Beck Depression Inventory (0–63); IIP-64 = Inventory of Interpersonal Problems, 64-item version (0–4); SQ = Schema Questionnaire (1–6); ACI = Affect Consciousness Interview (1–5); PD-C Index = Personality Disorder Cluster C Index (1–3). Means with different subscripts are significantly ($p < .05$) different.

^aTime effects of Therapist \times Time repeated measures ANOVA.

* $p < .05$. ** $p < .01$. **** $p < .0001$.

The development of the predictors, schema belief, and distress across sessions are depicted in Figs. 1 and 2. The correlations between the predictor variables, schema belief, distress, and session number for the 315 sessions are reported in Table II.

Relating Intermediate and Overall Outcome

The correlations between the slopes across sessions of postsessional schema belief and distress and the differences between posttreatment and midtreatment (at the shift of treatment phases) scores on the overall outcome measures are reported

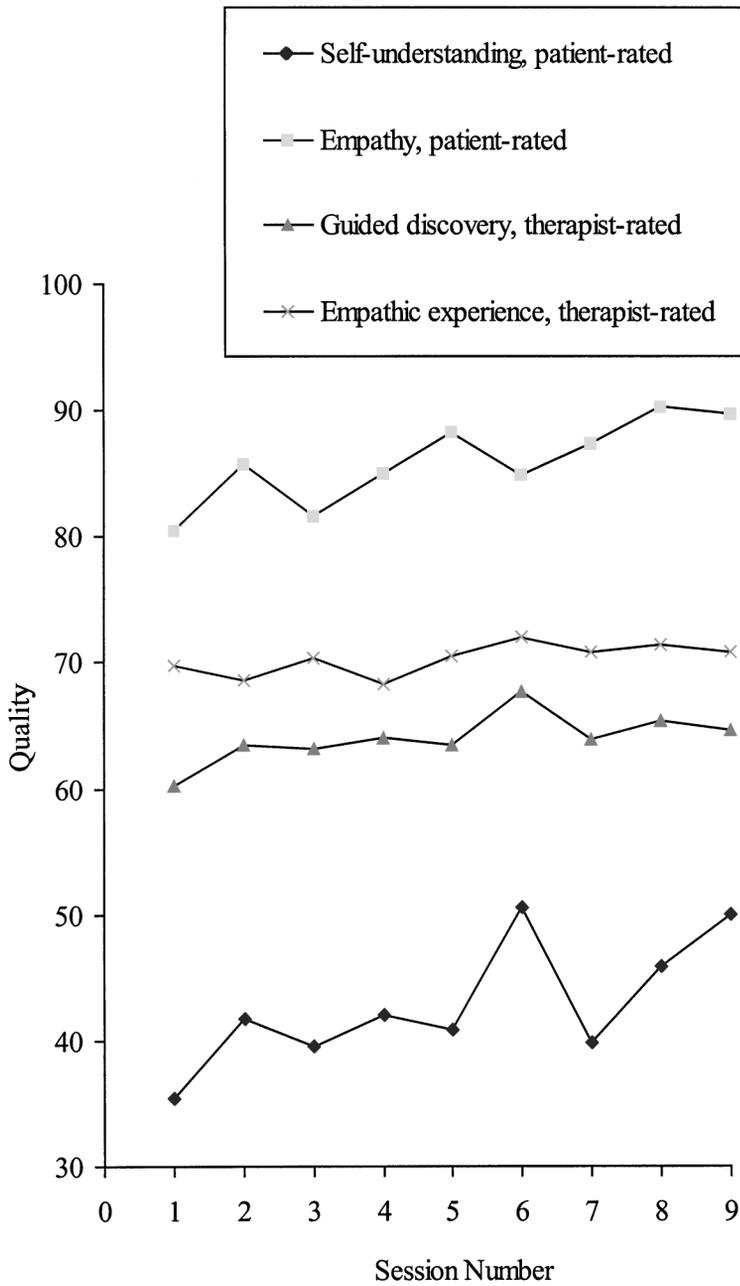


Fig. 1. The means of the predictors at the end of each session.

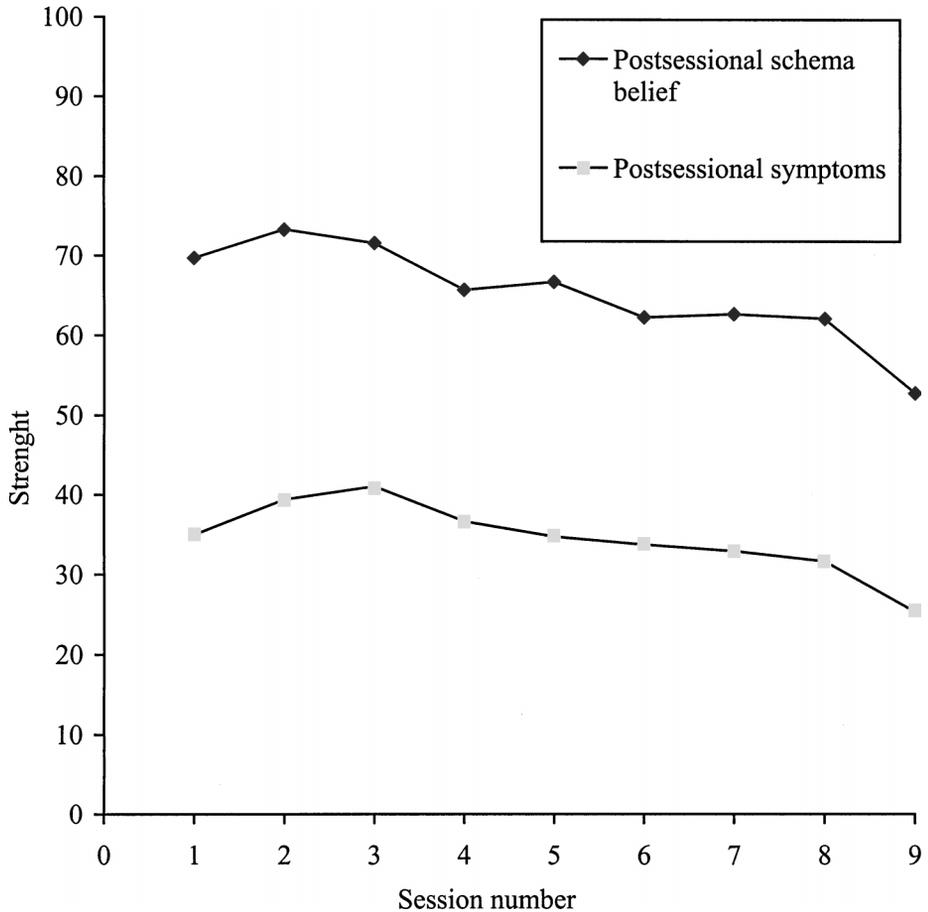


Fig. 2. The means of the schema belief and distress measures at the end of each session.

in Table III. Intersessional distress change was highly related to change on specific panic/agoraphobia measures, but not to change on general symptom measures. Intersessional schema belief change was related only to change in EMSs, Cluster C personality traits, and fear of bodily sensations. Average in-session distress change was unrelated to change on the overall outcome measures, whereas average in-session schema belief change was related to change on two of the specific panic/agoraphobia measures.

Predicting Schema Belief and Symptom Slopes Across Sessions

The slopes of schema belief and distress across sessions were predicted by the early session process variables using growth curve analysis (Table IV). Inspection of the curves in Fig. 2 indicates that the slopes are essentially linear, and therefore the slopes across all the nine sessions were used also when predicting from the third

Table II. Intercorrelations Between the Process Measures and Session Number for the 315 Sessions

Measure	1	2	3	4	5	6
1. Self-understanding, patient-rated	—					
2. Empathy, patient-rated	.52****	—				
3. Empathic, experience, therapist-rated	.16**	.24****	—			
4. Guided discovery, therapist-rated	.21***	.13*	.50****	—		
5. Postsessional schema belief	-.40****	-.27****	-.05	.00	—	
6. Postsessional distress	-.26****	-.06	.27****	.19***	.50****	—
7. Session number	.13*	.13*	.06	.10	-.19***	-.16**

* $p < .05$. ** $p < .01$. *** $p < .001$. **** $p < .0001$.

session. Self-understanding in the first session was significantly related to the slopes of postsessional schema belief and of postsessional distress. Therapist-rated empathy was significantly related to the slope of postsessional symptoms. Patient-rated empathy was significantly related to the slope of distress. No significant relationships appeared between observers’ ratings of the third session and the slopes. There were no therapist-specific process-effects, that is, no significant process by therapist interactions. To determine the partial contributions of the significant predictors of the distress slope, they were combined in one analysis. Self-understanding, $t(275) = -2.14$, $p < .05$, and therapist-rated empathic experience, $t(275) = -2.05$, $p < .05$ still contributed significantly, whereas the contribution of patient-rated empathy disappeared, $t(275) = -0.18$, *ns*, indicating that therapist’s empathic experience and patient-rated empathy shared variance and expressed similar experiences.

Table III. Correlations of Change During the Schema-Focused Phase on Outcome Measures, Intersessional Outcome Slopes, and Average In-Session Changes ($n = 35$)

Outcome measure	Slope of postsessional distress	Slope of postsessional schema belief	Average in-session distress change	Average in-session schema belief change
MI-ACC	.63***	.33	.20	.32
MI-AAL	.49**	.25	.24	.41*
PRS-F	.07	.17	.01	-.06
PRS-PD	.48**	.10	.08	.12
PRS-AD	.61***	.16	.14	.27
ACQ	.46**	.22	.27	.45**
BSQ	.43**	.39*	.27	.17
STAI-Y1	.32	-.14	.09	.21
STAI-Y2	.29	.01	.20	.27
IIP-64	.22	.30	-.11	.00
SQ	.36*	.45**	.05	.21
ACI	-.10	-.02	.07	-.13
PD-C Index	.24	.33*	.03	-.04

Note. MI = Mobility Inventory for Agoraphobia (-ACC = accompanied subscale, -AAL = alone subscale; 1–5); ACQ = Agoraphobic Cognitions Questionnaire (0–100); BSQ = Body Sensations Questionnaire (1–5); PRS = Panic Rating Scale (-F = frequency subscale, 0–4; -PD = panic disability subscale, 0–8; -AD = avoidance disability subscale, 0–8); STAI = State-Trait Anxiety Inventory (-Y1 = State Form, -Y2 = Trait Form; 20–80); BDI = Beck Depression Inventory (0–63); IIP-64 = Inventory of Interpersonal Problems, 64-item version (0–4); SQ = Schema Questionnaire (1–6); ACI = Affect Consciousness Interview (1–5); PD-C Index = Personality Disorder Cluster C Index (1–3).

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table IV. Predicting Change of Schema Belief and Distress Across Sessions From Initial Levels on the Predictor Variables

Across sessions outcome and predictor	<i>B</i>	<i>SE</i>	<i>t</i> (278)
Slope of postsessional patient schema belief ratings			
Self-understanding, patient-rated, 1. session	-.041	0.016	2.58**
Empathy, patient-rated, 1. session	-.001	0.016	-0.07
Empathic experience, therapist-rated, 1. session	-.061	0.035	-1.75
Empathy, observer-rated, 3. session	-1.064	0.575	-1.85
Guided discovery, therapist-rated, 1. session	-.001	0.048	-0.02
Guided discovery, observer-rated, 3. session	-.508	0.445	-1.14
Slope of postsessional patient distress ratings			
Self-understanding, patient-rated, 1. session	-.027	0.009	-3.06**
Empathy, patient-rated, 1. session	-.020	0.009	-2.12*
Empathic experience, therapist-rated, 1. session	-.052	0.020	-2.68**
Empathy, observer-rated, 3. session	.005	0.328	0.01
Guided discovery, therapist-rated, 1. session	.000	0.023	0.07
Guided discovery, observer-rated, 3. session	-.262	0.203	-1.29

Note. Results of linear growth curve analysis.

* $p < .05$. ** $p < .01$, two-tailed tests.

Predicting Intersessional Outcome From Ongoing Process

The results of the TSCSREG analyses, using the prewhitened variables, are reported in Table V. To examine a mediator model, ratings on the predictor variables one session were related to presessional schema belief the subsequent session, and to presessional distress two sessions later. Therapist-rated empathy predicted less distress two sessions later. However, as therapist-rated empathy did not predict schema belief, further mediator analyses became irrelevant. Also, the relationships between the predictor variables and presessional distress *one* session later were analyzed, but no significant relationships emerged. An in-session reduction in schema belief predicted a lower level of presessional distress the next session. However, a greater in-session reduction of distress predicted lower level of presessional schema belief the next session. The results of a separate ARIMA analysis confirmed the

Table V. Predicting Distress and Schema Belief From Intersessional Process

Intersessional outcome and predictor (and lag)	<i>B</i>	<i>SE</i>	<i>t</i>	<i>df</i>
Intersessional schema belief change				
In-session change in distress, patient-rated (-1)	.167	0.082	2.04*	243
Self-understanding, patient-rated (-1)	.006	0.034	0.18	243
Empathy, patient-rated (-1)	-.006	0.058	-0.10	243
Empathic experience, therapist-rated (-1)	.022	0.083	0.27	243
Guided discovery, therapist-rated (-1)	-.023	0.068	-0.33	243
Intersessional distress change				
In-session change in schema belief, patient-rated (-1)	.087	0.035	2.46*	278
Self-understanding, patient-rated (-2)	-.001	0.029	-0.02	208
Empathy, patient-rated (-2)	-.028	0.049	-0.56	208
Empathic experience, therapist-rated (-2)	-.154	0.069	-2.22*	208
Guided discovery, therapist-rated (-2)	-.103	0.056	-1.85	208

Note. Results of Time Series Cross-Sectional Regression (TSCSREG).

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

circular relationship between schema belief and distress. To examine whether the type of cognitive change influenced the results, the ratings of maximal in-session and postsessional belief in the thought focused during the session substituted the schema belief ratings in the analyses. Still, no significant relationships between the predictor variables and the belief ratings appeared. Finally, we found no therapist-specific effects.

Other Analyses

Self-understanding, patient-rated empathy, and guided discovery in the first session were not correlated with the variables that we had planned to control for depression and distress ratings before and after the first session and scores on the Avoidant, Dependent, and Obsessive–Compulsive Personality indices. In addition, the number of homework assignments performed between sessions were unrelated to changes in schema belief, $t(278) = 1.03, ns$; and of distress, $t(278) = 0.30, ns$; rated immediately before the next session (TSCSREG). On the other hand, higher levels of postsessional schema belief were related to a higher number of assignments performed until the next session, $t(313) = 2.20, p < .05$, whereas postsessional distress were unrelated to number of assignments, $t(313) = -0.16, ns$.

DISCUSSION

The results were consistent with the assumption of schema-focused cognitive therapy that the patient's overall understanding of own problems emerging early in therapy will affect schema belief and therefore emotional distress throughout therapy. Self-understanding was emphasized in the first session of these therapies, during which a case formulation was developed collaboratively with the patient. Alternatively, the ratings of self-understanding may reflect the extent to which the patient's view was in harmony with the schema-focused therapy rationale and thus their appropriateness for this therapeutic approach.

Contrary to our expectations, the initial therapist's empathic experience ratings did not directly affect patient's schema belief. Thus, empathy appears to have direct effect only upon symptomatic improvement. The direct effects of self-understanding and empathy upon distress remained even when personality and the initial level of depression were taken into account. There were no indications that guided discovery had an impact on schema beliefs and distress.

Inconsistent with previous findings in other kinds of psychotherapies (Orlinsky, Grawe, & Parks, 1994), the therapist's empathic experience turned out to be a slightly better predictor than patient-rated empathy, although patient-rated first-session empathy alone was related to symptomatic improvement in therapy.

The session-by-session analyses potentially represent the most direct tests of the schema-focused model as sequential relationships between predictor variables, schema belief, and distress can be examined. This study appears to be the first one to demonstrate that in-session cognitive change precedes distress variation on a session-by-session level when time series analysis is used. However, this relationship

was reciprocal in that in-session distress change also preceded cognitive change. Both of these effects were of small magnitude. This may indicate that changes in cognitions lead to changes in emotions and vice versa, implying a circular relationship between them. Alternatively, reported cognitions and emotions may represent two aspects of some other more basic process. This interpretation is consistent with the Interacting Cognitive Subsystems approach of Teasdale and Barnard (1993), who postulate that subjective experience, such as feelings and propositional thought, represents indicators of the processing of schematic models.

Therapist-rated empathic experience a session predicted lessened preessional distress two sessions later. However, as empathic experience did not predict schema belief, the hypothesis that schema belief would be a mediator between empathy and distress was not supported. Thus, we found few significant sequential relationships between the studied predictor variables and change in schema beliefs and symptoms. One interpretation is that there actually are few sequential relationships between these variables on a session-by-session level.

Alternatively, methodological shortcomings may explain the failure to find such relationships although many of the general conditions required of a process-study of schema-focused therapy appeared to be realized here. Ratings of competence performed by a cognitive therapy expert with high interrater reliability indicated that the therapies were conducted with satisfactory—that is, moderate-to-high—competence. The mean duration of the patients' panic disorder/agoraphobia and their multiple comorbid Axis I and II diagnoses indicated that they had chronic and severe problems. This suggests that a schema-focused approach was appropriate.

However, the longstanding nature of their difficulties and the fact that 91% of them had received previous treatment but not responded satisfactorily would suggest that these patients had limited potential for making large changes. The patients showed no change on symptom and personality-related variables during the on average above 10-week waiting-list period before treatment (mean $ES = 0.07$), but changed on personality-related variables such as Cluster C personality traits, interpersonal problems, affect consciousness, and EMSs during treatment and/or in the 1-year-follow-up period. The mean effect size of 0.65 across all measures from pretreatment to follow-up was in the moderate range (Cohen, 1988). However, in the absence of an adequate comparison group, one cannot firmly conclude that the observed changes resulted from the therapy.

The effect sizes on the primary outcome variables were lower than those usually obtained both for cognitive therapy of panic disorder/agoraphobia (Chambless & Gillis, 1993) and for treatment of personality disorders (Perry, Banon, & Ianni, 1999). This may also suggest that the treatments were of too short duration. At any rate, these modest outcomes may have limited the opportunity for the occurrence of effects of various process variables on outcome.

Despite an intensive symptom-focused phase, the patients first improved on some of the symptom variables during the personality-focused phase. Thus, it is difficult to distinguish the effects of symptom improvement and the direct effects of treatment on personality during this phase.

Psychometrically, the criterion-related validity of our process measures of self-understanding, schema belief, and distress was supported by significant correlations

between scores on these variables and concurrent scores on established measures. The validation of our patient-rated empathy measure was complicated by a marked ceiling effect and a highly skewed distribution on the criterion measure. A correlation of moderate size was nevertheless obtained among the patients who scored less than maximum on the criterion measure. In addition, indirect evidence for the validity of our empathy measure was represented by the high intercorrelation between the therapist's versions of this measure and the criterion measure. The validity of the distress and schema belief ratings as measures of intermediate outcome was supported by our findings that the slopes of postsessional schema belief and distress were related to change on corresponding measures of overall outcome. Consistent with Muran et al. (1995), we also found that the average in-session schema belief change showed some relationships with overall outcome, whereas the average in-session distress change was unrelated to outcome.

It is possible that sequential relationships could not easily be observed in our study as the patients were exposed to so many other potentially therapeutic influences between sessions. However, we assessed the influence of one presumably potent between-session influence, the performance of behavioral assignments, which did not influence the results. Unfortunately, the way in which we measured this was methodologically weak, and the result was inconsistent with most other studies (Burns & Spangler, 2000). Both when and how we measured schema belief may be inadequate. Sequential change might actually occur within the same session and therefore would appear to be simultaneous in a session-to-session analysis. That is, changes in schema belief may occur so rapidly in relation to how often it was measured that it could not be detected with a session-to-session analysis. A potential problem with the schema belief measure was that different schemas could be selected and rated from session to session. Thus, session-by-session schema belief change could sometimes represent change in different schemas over the course of therapy. Another potential problem was that although the patients of this study were consistently able to select an EMS for rating, their belief ratings may have been contaminated by cognitive avoidance of negatively laden schemas (Young, 1990).

The present results indicate the clinical importance of promoting patient's self-understanding and therapist's empathic experience early on in schema-focused therapy. These phenomena may influence the tendency to believe in EMSs throughout therapy. The results failed to support the importance of guided discovery and of performance of between-session assignments ("homework") in schema-focused therapy, but this may be due to methodological shortcomings. Although Young's schema-focused model was followed, the actual therapies appear to be fairly consistent with the approaches of Beck and coworkers. Therefore, the results will probably be valid for cognitive therapy in general. Methodologically, this study illustrates how to more intensively measure and model change, using growth curve analysis to examine the effect of early process upon outcome and time series analysis to examine the sequential relationships between fluctuating processes during therapy. These methods can be particularly useful in unraveling the mechanisms of therapeutic change and may be of benefit to other psychotherapy researchers. Future studies should examine sequential changes *within* sessions, and base their assessment of EMSs on various modalities of behavior and experience.

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