Analysis of Crisis Intervention Processes

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Summary: The remediation processes in psychosocial crisis intervention were modeled focusing on cognitive orientation. Frequent observations and subsequent process modeling constitute a novel approach to process research and reveal process-outcome associations. A sample of 40 inpatients who were assigned to treatment in a crisis intervention unit was monitored in order to study the process of crisis intervention. The process data consisted of patients' self-ratings of the variables mood, tension, and cognitive orientation, which were assessed three times a day throughout hospitalization ($M = 22.6$ days). Linear time series models (vector autoregression) of the process data were computed to describe the prototypical dynamic patterns of the sample. Additionally, the outcome of crisis intervention was evaluated by pre-post questionnaires. Linear trends were found pointing to an improvement of mood, a reduction of tension, and an increase of outward cognitive orientation. Time series modeling showed that, on average, outward cognitive orientation preceded improved mood. The time series models partially predicted the treatment effect, notably the outcome domain "reduction of social anxiety," yet did not predict the domain of symptom reduction. In conclusion, crisis intervention should focus on having patients increasingly engage in outward cognitive orientation in order to stabilize mood, reduce anxiety, and activate their resources.

Keywords: Crisis intervention, process analysis, process-outcome associations, cognitive orientation, self-focused attention.

Analysis of Crisis Intervention Processes

Psychosocial crises and the ensuing crisis intervention are by definition highly dramatic processes. As in a drama, psychosocial events and the patient's psychological functioning usually fluctuate in quick temporal succession during a critical episode. Given the imminent risk of suicide, therapeutic interventions are implemented under considerable pressure of time. This risk, however, is also linked to opportunity—*krísis* refers to "danger" as well as to "decisive moment." Thus, time and process are at the core of crisis intervention.

To date, the investigation of process aspects has received only little attention in the quantitative research of crisis intervention. With few exceptions, notably Sexton et al. (1996) and Hayes and Strauss (1998), even the larger literature on psychotherapy process research is generally confined to the examination of process variables in cross-section and not in their natural form as time series.

The present study postulates that using single or only several measurements is insufficient to capture the essence of treatment process. The authors' understanding of process is a more literal one, so that the temporal aspects of psychosocial crises were scrutinized. These aspects were assessed in both a quantitative descriptive manner (time series modeling) and with respect to the relationship between these time series models and the success of treatment (process-outcome relationships). Thus, the objective of the present study was not to evaluate the efficacy of the specific treatment approach used (for an assessment of efficacy, see Reisch et al., 1999).

In recent years, numerous analyses focusing on the components of successful psychotherapy have been performed (for a review see Orlinsky et al., 1994). It has been revealed that the mastery/coping-behavior of a patient is an important mechanism of change and one of the major dimensions contributing to treatment outcome (Grawe, 1997). Coping capacity is manifested in different guises. In the fields of general and personality psychology, Kuhl (1992, 1996) made a distinction between two modes of *volitional self-control*, that is state orientation and action orientation. After experiencing stressful life events, a person's volitional competencies may become restricted, resulting in behavioral inhibition, rumination, passivity, and perseveration (state orientation). The opposite mode of action orientation is characterized by active attempts to cope with fear-inducing situations (Kuhl & Beckmann, 1994). In state orientation the focus of awareness is inward, whereas action orientation is characterized by high self-efficacy, internal locus of control and outward cognitive orientation. After stress induction, state-oriented persons tend to neglect self-determined goals in favor of goals that were

imposed by other persons (Kuhl & Kazén, 1994). Restricted volitional capacity was found in depressive patients (Hautzinger, 1994), and its remediation was proven instrumental in the therapy of phobic disorders (Hartung & Schulte, 1994; Schulte et al., 1997). The character dimension of low self-directedness (i. e., state orientation) was correlated with suicide attempts in women with depression and eating disorders (Bulik et al., 1999). The connection of state orientation and psychological disorder is congruent with findings on the concept of self-focused attention (Ingram, 1990). A functional role of self-focused attention in anxiety was found by Woody and Rodriguez (2000).

A large body of work addresses the concept of *self-efficacy*. Self-efficacy expectations are particularly crucial if psychotherapy is viewed as both facilitating and being dependent on self-management and self-regulation (Bandura, 1997; Kanfer et al., 1996; Carver & Scheier, 1998). It was found that self-efficacy was predictive of better outcome in cognitive-behavioral therapy (Tschacher et al., 2000); self-efficacy was also shown to be an important process dimension in the modification of substance use (Reilly et al., 1995) and a mediator of distress due to medical conditions (Ormel et al., 1997).

In summary, it may be assumed that coping capacity, both as a dispositional variable (preferred mode of self-control) and as a therapy process variable (self-efficacy), is important for therapy process as well as for therapy outcome. This premise should hold true most particularly for psychosocial crises as these are states arising from severe stress induction and are characterized by depressed mood and suicidal ideation which latter were found to correlate with restricted volitional capacity.

The objective of the present study was to assess the dynamics of the volitional variable cognitive orientation. What are the sequential relations of this variable with general psychological parameters such as mood and tension? We evaluated multivariate linear dynamical models in order to explore the dynamics inherent to psychosocial crises under inpatient treatment. Consequently, the relation of process to treatment outcome was examined on the basis of these dynamical models.

Method

Participants

The sample consisted of patients who were admitted to the Crisis Intervention Unit (CIU) of the University Hospital of Social and Community Psychiatry in Bern, Switzerland. The time frame comprised of four consecutive months in 1996. Patients were selected solely on the basis of treatment duration; the criterion being an observation period at the CIU of 7 days or more. Shorter treatment episodes—where the CIU functioned as a triage facility within the psychiatric service network—were not considered.

51 patients (32 women, 19 men) agreed to participate in the study on the basis of informed consent. No systematic deviation of age, gender, or diagnosis was detected in this sample as compared to a small group of nonconsenters. Of these 51 patients, 11 were excluded from the process investigation on grounds of insufficient data (i. e., fewer than 7 days of treatment or noncompliance with monitoring). Thus, a total of $N = 40$ patients took part in the study.

The mean age of participants was $M = 33.6$ years ($SD = 12.5$); the mean observation period was $M = 22.6$ days ($SD = 13.7$). 56% were female. 43.6% were suicidal or had attempted suicide prior to admission. The sample was heterogeneous with respect to the proportion of diagnostic subgroups (according to the International Classification of Diseases, ICD-10): adjustment disorders, 50%; psychotic disorders, 22.5%; affective disorders, 15%; personality disorders, 10%; substance abuse, 2.5%. The composition of the present sample was remarkably similar to CIU patient statistics of previous years (Schnyder & Sauvant, 1993, p. 53; Tschacher, 1996; cf. Schnyder et al., 1999), and can therefore be considered representative of the population of psychosocial crisis patients in the Bern catchment area.

Treatment

The CIU, an open ward with 12 beds, is part of the community-based psychiatric facilities of Bern, the capital of Switzerland. In line with the prevailing treatment philosophy, duration of hospitalization should be confined to two to three weeks. All of the patients included in the study participated in eclectic group therapy, consisting of work therapy, movement therapy and training in problem-solving skills (Ciompi, 1977). The latter focuses mainly on reducing distress, understanding crisis and increasing self-esteem. Sedative, neuroleptic, or antidepressive drugs were administered when indicated. In general, approximately 14 hours of group therapy, two hours of individual therapy, plus milieu therapy were offered each week. Family interventions were implemented bi-weekly where appropriate.

Time Series Data

A self-rating method was used to generate time series data for each patient. The variables mood, tension, and cognitive orientation were rated on a seven-point Likert scale. Throughout the duration of treatment at the CIU, each patient assessed these three variables three times a day (morning, noon, and evening at fixed equal intervals). Patients were given formal instruction in self-monitoring for the purposes of the study and were provided with a booklet similar to a diary which included the rating scales and a written version of the self-monitoring instructions. The booklet fits into a pocket and can therefore be easily and

unobtrusively carried. Hence, self-ratings could be made even during leaves and visits home over weekends.

Low levels of the variable mood indicated an uncomfortable and aversive general emotional state; high levels indicated feeling comfortable and positive. The quality of these emotional states was not further specified, only an evaluation as "good" or "bad" was demanded of the patient. The variable tension could vary between the poles of very tense / strained and without tension/calm. Thus, the variables mood and tension were selected to map the overall emotional state of an individual (cf. dimensions of evaluation and potency in Osgood et al., 1957). These variables are frequently evaluated in the context of field studies and in ambulatory assessment (e. g., Perrez & Reicherts, 1996). The third variable, cognitive orientation, was included to assess the volitional status of an individual. Low levels of this variable indicated that the patient's awareness was directed toward his or her inner world, toward oneself. This can be assumed as being equal to the concept of state orientation defined by Kuhl (1992). As opposed to this, high scores indicated external orientation toward the environment, which is equivalent to Kuhl's action orientation. Patients were informed that mood, tension, and cognitive orientation could be treated as orthogonal variables, i. e., they could be rated independently of one another.

Time Series Modeling

Time series analyses were performed for each of the 40 courses of the variables mood, tension, and cognitive orientation.

A mandatory step was to ensure stationarity (i. e., constant levels within a time series) of these data by eliminating any statistical trends in the time series of the three variables. The respective linear trends were removed from the series using the procedure AUTOREG in SAS. An alternative method of making the time series stationary would have been to difference the data first and then compute models composed of differenced variables. Differencing, however, has the disadvantage that all further discussion would necessarily address the differenced variables (e. g., change in mood) instead of the observed variables (e. g., mood), thereby rendering interpretation more difficult. After the elimination of linear trends but prior to time series analysis, missing data were replaced by the mean values of the respective time series for each participant.

Autoregressive models of first order (so-called lag 1 models) were computed throughout the sample. The reason for modeling all time series in the same manner was to ascertain comparability across all patients which is a necessary condition for later aggregation of the models across the sample. The AIC criterion of Akaike (1976) is a tool to estimate the optimal modeling order for a given time series. According to this criterion, lagged models of order 1 or above were recommended in 51% of this sample. Lag 1

modeling was the preferred lagged model (30% of AIC criteria). In general, no systematic bias is introduced by autoregressive modeling even if a less than optimal model was estimated.

We used the procedure STATESPACE of SAS/ETS software (1993) to compute the lag 1 interrelations between variables. Statespace models of lag 1 are equivalent to vector autoregression (VAR) of first order (the method is called vector autoregression because each time step of the treatment process is given by a vector of three variables). In other words, we determined the regressive association of each of the three process variables mood, tension, and cognitive orientation at time $t-1$ with these variables at the following time of measurement t. Additionally, we computed the autocorrelations that denote the impact of each variable on itself at the succeeding point of time. Including these three autocorrelations, the Statespace procedure yielded $3 \times 3 = 9$ VAR parameters, which quantified the strength of the sequential associations. Time series analysis provided T-values of all VAR parameters (defined as the parameter values divided by their individual standard errors) for each individual patient. In random processes, these T-values are distributed normally around an expected mean value of zero. The empirical T-values of the sample were used to evaluate the process data by testing the null hypothesis that they are zero with the t-statistic (if data were not distributed normally, Wilcoxon's signed-rank test was used alternatively).

Treatment Outcome Data

Outcome was assessed by four standard questionnaires that measured pre-post changes based on patient self-ratings. Effects of treatment were defined for each patient as the difference between values at admission and values at the time of discharge. The following questionnaires were applied: Social Anxiety Questionnaire (UFr: Ullrich & Ullrich, 1977); Emotional Comfort Inventory (EMI-B: Ullrich & Ullrich, 1978); Symptom Check List (SCL-90-R: Derogatis, 1977; Franke, 1994); Beck Depression Inventory (BDI: Beck, 1994). In addition, the Giessen-Test (GT: Beckmann et al., 1990) was used to assess personality variables (social resonance; dominance; undercontrol; prevailing hypomanic mood; permeability; social potence).

In order to simplify the process-outcome investigation, we applied a principal component analysis (PCA) with varimax rotation that condensed the outcome variables into a set of principal components or factors (Cattell's R-technique). Each factor score was calculated by taking the linear combination of all standardized original variables. PCA was performed across all records of outcome variables taken from the patients. Each record consisted of 22 subscales of the outcome questionnaires mentioned above (UFr: five subscales; EMI-B: seven subscales; SCL-90-R: nine subscales; BDI: one subscale). Owing to its small communal-
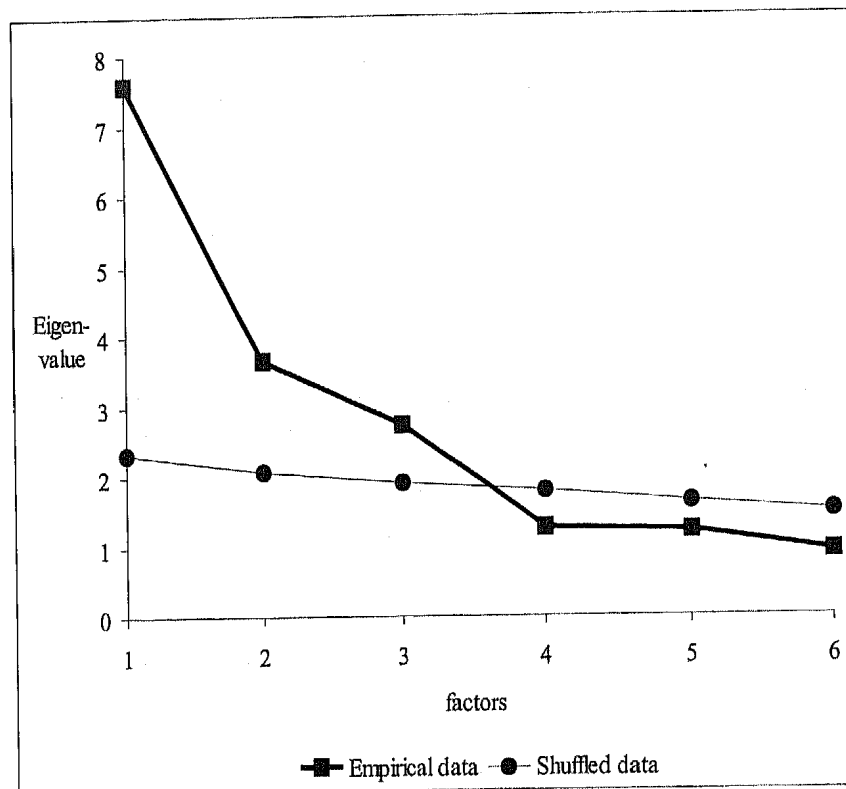
Figure 1. Determination of the number of PCA factors (see Table 1) by comparing the empirical eigenvalues with pseudo-eigenvalues from a shuffled data set. The crossing of graphs indicates that three factors are meaningful by explaining more variance than their shuffled counterparts.

Table 1. Factor loadings resulting from principal component analysis of outcome measures (varimax rotated factors).

Outcome variables	Factor loadings		
Beck Depression Inventory			
Depression	.58	-.10	-.13
Emotional Comfort Inventory [EMI-B]			
Anxiety	.82	-.35	-.03
Depression	.92	-.23	.02
Exhaustion	.88	.27	.09
Aggression	.64	-.27	.18
Inhibition	.85	.03	-.11
Loneliness	.73	-.30	.04
General mood	.94	-.18	-.02
Symptom Check List [SCL-90-R]			
Somatization	.17	-.83	.13
Obsessive-compulsive	.44	-.74	.09
Interpersonal sensitivity	.19	-.85	-.13
Depression	.55	-.64	.07
Anxiety	.40	-.73	.12
Anger-hostility	.09	-.69	.26
Phobic anxiety	.10	-.75	-.11
Paranoid ideation	.03	-.75	.27
Psychoticism	-.08	-.80	.04
Social Anxiety Questionnaire [UFr]			
Fear of criticism	-.07	-.31	.80
Fear of contact	.11	-.11	.59
Ability to demand	.03	-.05	-.90
Ability to refuse	.01	.11	-.71
Guilt feelings	-.05	.05	.54
	Outcome domain		
	Improvement in Emotional Well-being	Symptom Reduction	Reduction of Social Anxiety

ity, the subscale UFr6 (dependency on norms) was excluded from this and further analyses.

The number of outcome factors was determined by comparing the empirical eigenvalues to the pseudo-eigenvalues that resulted from factorizing a surrogate data set. This surrogate data set was generated by shuffling (i. e., mixing) all empirical scores of the 22 subscales independently. This produced records composed of random scores where all scores were nevertheless distributed in the same way as the empirical data. The factors the eigenvalues of which fall below those of the corresponding surrogate factors may be considered as negligible. The crossing of graphs (see Figure 1) indicated that three factors permitted the optimal factorial reduction of the empirical data in principal component analysis. A three-factor solution was therefore chosen for subsequent factor rotation with the varimax method. 66.0% of the total variance was explained by these three factors. The factor loadings are given in Table 1. The rotated linear components were labeled according to the outcome domains they predominantly covered:

Reduction of Social Anxiety (dominant subscales UFr1 to UFr5), Symptom Reduction (SCL-90-R1 to SCL-90-R9), Improvement in Emotional Well-Being (BDI and EMI-B1 to EMI-B7).

Associations Between Process and Outcome

The impact of treatment process (given by VAR parameters) on treatment outcome (given by outcome domains) was assessed using multiple regression analysis. All 9 VAR parameters were included in a whole model ANOVA test to determine whether they predicted an outcome domain in a statistically and clinically significant way. In addition to these three whole model tests (one for each outcome domain), we performed backward stepwise regressions to identify those VAR parameters that were most predictive for outcome. In order to clarify the meaning of the outcome domains, we additionally tested their relationships with patient characteristics expressed by the Giessen-Test subscales.
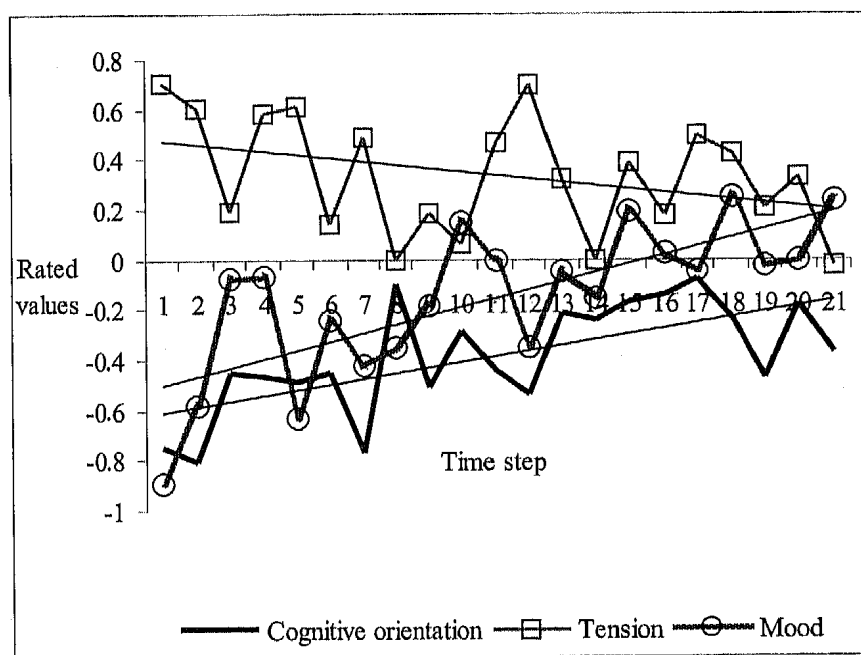

Figure 2. Averaged values and linear trends of the process variables tension, mood, and cognitive orientation during the first 7 days of crisis intervention.

Table 2. Averages and standard deviations of time series parameters: Test of the null hypotheses that VAR parameters were zero.

VAR parameter	M	SD
mood[$t-1$] $\rightarrow$ mood[t]	0.73**	1.43
tension[$t-1$] $\rightarrow$ mood[t]	−0.09	1.08
cognitive orientation[$t-1$] $\rightarrow$ mood[t]	0.34*	1.02
mood[$t-1$] $\rightarrow$ tension[t]	−0.33	1.13
tension[$t-1$] $\rightarrow$ tension[t]	0.97***[a]	1.70
cognitive orientation[$t-1$] $\rightarrow$ tension[t]	−0.24	0.81
mood[$t-1$] $\rightarrow$ cognitive orientation[t]	−0.00	1.16
tension[$t-1$] $\rightarrow$ cognitive orientation[t]	0.18	1.04
cognitive orientation[$t-1$] $\rightarrow$ cognitive orientation[t]	0.90***	1.12

Note. The sequential association of each of the three variables mood, tension, and cognitive orientation at time $t-1$ with these variables at the subsequent time of measurement t (in short notation, e. g., cognitive orientation[$t-1$] $\rightarrow$ mood[t]) is quantified by the T-values provided by time series analyses in each patient. [a]Wilcoxon Test was used because of nonnormal distribution.
*$p < .01$. ** $p < .001$. ***$p < .0001$

Table 3. Summary of the whole model ANOVA tests and stepwise regression analyses for VAR parameters predicting the outcome domains.

Outcome domain	Multiple regression		Stepwise regression (backward)		Significant predictors
	R^2	F	R^2	F	
Improvement in Emotional Well-Being	.30	0.99	.15*	5.14	cogn. orient.[a][*t–1*] → cogn. orient.[*t*]
Symptom Reduction	.16	0.44	–	–	–
Reduction of Social Anxiety	.54*	2.71	.52**	7.15	cogn. orient.[*t–1*] → mood[*t*] cogn. orient.[*t–1*] → tension[*t*] mood[*t–1*] → tension[*t*] mood[*t–1*] → cogn. orient.[*t*]

Note. Dashes indicate that backward stepwise regression analysis could not be performed because all VAR parameters failed to enter the model. $N = 30$ (several patients not used due to missing data). [a]Cogn. orient. = Cognitive orientation
*$p < .01$. ** $p < .001$

Results

A general description of the process observed during crisis intervention was obtained by the averaged values of the variables mood, tension, and cognitive orientation. These averages were plotted for the initial week of treatment, starting with the first measurement of each patient (see Figure 2). The data showed significant linear trends toward improved mood (standardized $\beta = .76$; $p < .001$), outward cognitive orientation (standardized $\beta = .73$; $p < .001$), and decreased tension (standardized $\beta = -.44$; $p < .05$) (see linear regression lines in Figure 2).

Some diversity was found among the VAR time series models of individual patients. Two examples of individual time series models are presented in Figure 3. A prototypical general model was calculated which aggregated the individual results of the whole sample (see Figure 4). Two patients were identified as statistical outliers using Mahalanobis distances and therefore were excluded from the aggregation (thus, $N = 38$). The sample T-values of four out of nine VAR sequential parameters differed significantly from the statistically expected zero (see Table 2), namely, all three autocorrelative parameters (horizontal arrows in Figure 4) and the association of cognitive orientation at time *t–1* with mood at time *t* (or, in short notation, cognitive orientation [*t–1*] → mood[*t*]). All of these parameters were positive, indicating positive autocorrelations and positive impact of cognitive orientation on mood. In other words, outward cognitive orientation generally preceded improved mood at a subsequent point in time.

These VAR parameters that spell out the aggregated process model of the crisis sample are shown in Figure 4. The significant residual correlations—i. e., correlations that remain after estimation of the VAR sequential parameters—indicated that there was still some synchronic correlative structure in the process data. Tension was correlated inversely with both mood and (to a lesser degree) outward cognitive orientation, whereas the synchronic cor-
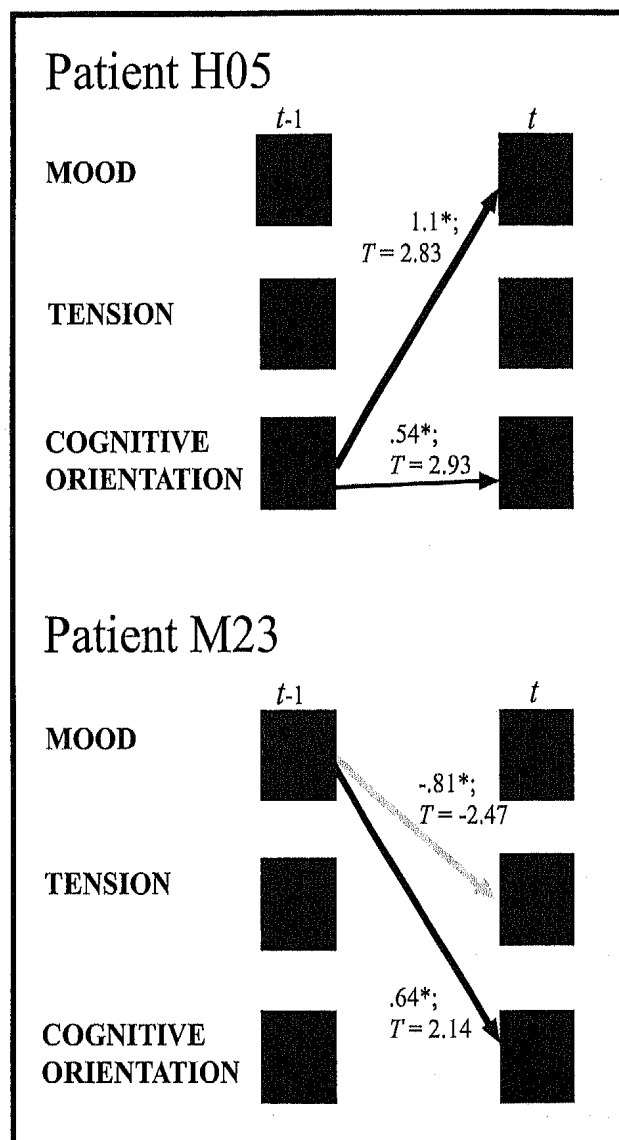

Figure 3. Individual time series models of two patients. Arrows starting from the left column (i. e., value at time *t–1*) to the right column (value at time *t*) indicate significant associations between process variables. Gray lines indicate negative significant associations. The respective weights of the associations as well as their T-values are given (*$p < .05$).
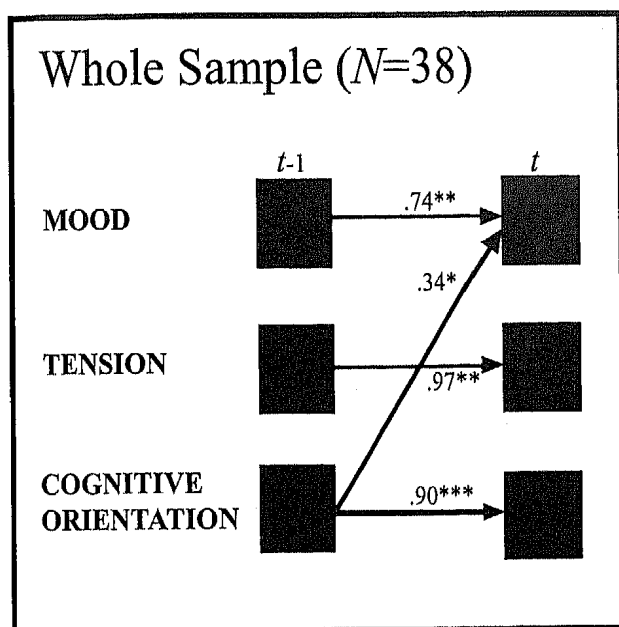
Whole Sample (*N*=38)

Figure 4. Aggregated time series model of the sample. Arrows starting from the left column (i. e., value at time *t–1*) to the right column (value at time *t*) indicate significant average associations between process variables of the sample. The respective averages of sample *T*-values are given by numbers (probability that averages deviated from $T = 0$, $*p < .05$; $**p < .01$; $***p < .001$).

relation of mood and outward cognitive orientation was positive.

Subsequent to PCA, the set of outcome measures was expressed by the three outcome domains Improvement in Emotional Well-Being (27.0% of total explained variance), Symptom Reduction (26.0% explained variance), and Reduction of Social Anxiety (13.0% explained variance). Reduction of Social Anxiety was closely related to the personality characteristics measured by the Giessen-Test (whole model test of a multiple regression analysis of this outcome domain with all Giessen-Test subscales, $p < .0001$, $R^2 = 82.08$, $F = 18.33$; significant subscales after performing backward stepwise regression were social resonance and prevailing hypomanic mood; $p < .0001$, $R^2 = 77.47$, $F = 48.13$). Patients with high social resonance and prevailing hypomanic mood experienced a higher reduction of social anxiety.

The process-outcome findings based on multiple regression analyses are given in Table 3. The outcome domain Reduction of Social Anxiety depended significantly on the process described by the time series analyses; the parameters responsible for this effect were cognitive orientation[*t–1*] → mood[*t*], cognitive orientation[*t–1*] → tension[*t*], mood[*t–1*] → tension[*t*], and mood[*t–1*] → cognitive orientation[*t*]. Improvement in Emotional Well-Being was not related to VAR parameters in the whole model test, yet there was a significant contribution of one parameter (autocorrelation of cognitive orientation) to this domain of outcome according to stepwise regression. Finally, the outcome domain Symptom Reduction was not associated with the crisis intervention process.

Discussion

Psychosocial crises treated in an inpatient psychiatric facility were monitored three times a day by means of patient self-ratings entered in a diary booklet. These ratings revealed significant trends in the process variables cognitive orientation, mood, and tension. Whereas the improved mood and reduced tension generally experienced by crisis patients were not unexpected in the course of the successful treatment and the stabilization of these patients (Reisch et al., 1999), the finding that cognitive orientation became increasingly focused on outward events is a novel observation in research on the crisis intervention process. Consequently, we investigated the two most prominent questions that may be derived from this result: is cognitive orientation instrumental in the improvement of mood and tension during crisis remediation? And is there a link to the overall outcome of treatment?

The first of these questions was answered affirmatively. Time series analyses of the crisis process (after all trends had been eliminated from the data) showed that outward cognitive orientation had a significant time-lagged impact on positive mood. It should be noted that the opposite did not hold true (the average of the VAR parameter mood[*t–1*] → cognitive orientation[*t*] was $M = -.004$, which did not differ statistically from zero). This time-lagged impact may reflect a causal relationship in that the direction of the association between the two variables is from cognitive orientation toward mood, not vice-versa. The residual correlations indicated that cognitive orientation was also synchronically correlated with mood as well as, inversely, with tension. It was concluded that cognitive orientation played a pivotal role in the process of crisis intervention.

The second question—is there a link to outcome?—was investigated by the process-outcome analyses. It was found that the process patterns documented by the time series parameters were predictive of the outcome of treatment. Yet, treatment outcome was only partially linked with process. Reduction of Social Anxiety was significantly associated with several process parameters, especially those addressing the process variable of cognitive orientation. Improvement in Emotional Well-Being was enhanced by one time series parameter, namely the autocorrelative stability of cognitive orientation. Both findings imply that process measures, especially those connected to cognitive orientation, have influenced the outcome quality in a positive manner. Cognitive orientation may have been instrumental in the reduction of social anxiety. This is consistent with the results of Woody and Rodriguez (2000) who found that self-focused attention had a functional role in social anxiety. Seen from a clinical point of view, social anxiety levels would be among the first variables to be relieved by the stay in an inpatient environment. The important outcome domain of Symptom Reduction, however, was unrelated to the process models. This may show that the present mapping of treatment process was insufficient to explain the

effects of crisis intervention processes in their entirety. Our preferred interpretation is that this finding indicates a substantial function of crisis intervention, namely to stabilize the patients and increase their resources necessary to engage in subsequent symptom reduction work.

In summary, it was found that the process variable cognitive orientation was responsible for the experienced affective effects of crisis intervention, such as reduced social anxiety, improved mood, and emotional well-being. An encompassing formulation of process would be the next logical step toward a more comprehensive prediction and, possibly, explanation of all aspects of outcome. Obviously, there is a great potential variety of alternative process measures. The present results strongly indicate that cognitive orientation ranks among these relevant process variables. This evidence substantiates the notion that outward cognitive orientation in the sense of action orientation and enhanced self-efficacy expectations is a powerful mechanism of change (de Jong-Meyer et al., 1999).

The process models were based on exploratory observations in a naturalistic treatment setting where neither experimental control nor randomization was introduced. Thus, there was no definite guarantee that the temporal sequences found in the process models actually indicated causal sequences. Because of the lack of a control condition, the observed changes may be attributed less to the treatment but to the spontaneous process of restabilization after the critical events. Nevertheless, the considerable heuristic value and ecological validity of the findings encourage us to hypothesize about possible avenues for optimizing the treatment of psychosocial crises. This should be accompanied by process-oriented evaluations that focus on cognitive orientation, observed from both the patients' and therapists' perspectives. Our claim is that crisis intervention should help patients to increasingly engage in outward cognitive orientation; this in turn will make them feel better and activate their resources for ensuing therapies.

References

Akaike H. Canonical correlations analysis of time series and the use of an information criterion. In R Mehra & DG Lainiotis (Eds.), *Advances and case studies in system identification* (pp. 27–96). New York: Academic Press, 1976.

Bandura A. *Self-efficacy: The exercise of control.* New York: Freeman, 1997.

Beck A. *Beck-Depressions-Inventar: Testhandbuch* [Beck Depression Inventory: Manual]. Bern: Huber, 1994.

Beckmann D, Braehler E, Richter HE. *Der Giessen-Test (GT): Ein Test für Individual- und Gruppendiagnostik* [The Giessen-Test (GT): Test for individual and group diagnosis]. Bern: Huber, 1990.

Bulik CM, Sullivan PF, Joyce PR. Temperament, character and suicide attempts in anorexia nervosa, bulimia nervosa and major depression. *Acta Psychiatrica Scandinavica* 1999; 100:27–32.

Carver CS, Scheier MF. *On the self-regulation of behavior.* Cambridge: Cambridge University Press, 1998.

Ciompi L. Krise und Krisenintervention in der modernen Psychiatrie [Crisis and crisis intervention in modern psychiatry]. *Schweizerische Wochenzeitschrift* 1977; 10:893–898.

de Jong-Meyer R, Schmitz S, Ehlker M, Greis S, Hinsken U, Sonnen B, Dickhoever N. Handlungsorientierte Interaktionsbeiträge in verschiedenen Therapien: Prozesssteuerung und Erfolgsrelevanz [Action-oriented interactions in different types of psychotherapy: Relevance for psychotherapeutic processes and outcomes]. *Zeitschrift für Klinische Psychologie, Psychiatrie und Psychotherapie* 1999; 47:172–190.

Derogatis LR. *SCL-90-R: Administration, scoring, and procedures manual-I for the r(evised) version.* Baltimore: Johns Hopkins University School of Medicine, 1977.

Franke G. *SCL-90-R: Die Symptom-Checkliste von Derogatis* [SCL-90-R: Symptom Checklist 90 Items–Revised]. Weinheim: Beltz, 1994.

Grawe K. Research-informed psychotherapy. *Psychotherapy Research* 1997; 7:1–19.

Hayes AM, Strauss JL. Dynamic systems theory as a paradigm for the study of change in psychotherapy: An application to cognitive therapy for depression. *Journal of Consulting and Clinical Psychology* 1998; 66:939–947.

Hartung J, Schulte D. Action and state orientation during therapy of phobic disorders. In J Kuhl & J Beckmann (Eds.), *Volition and personality: Action versus state orientation* (pp. 217–231). Göttingen: Hogrefe & Huber, 1994.

Hautzinger M. Action control in the context of psychopathological disorders. In J Kuhl & J Beckmann (Eds.), *Volition and Personality: Action versus state orientation* (pp. 209–215). Göttingen: Hogrefe & Huber 1994.

Ingram RE. Self-focused attention in clinical disorders: Review and a conceptual model. *Psychological Bulletin* 1990; 107: 156–176.

Kanfer FH, Reinecker H, Schmelzer D. *Selbstmanagement-Therapie.* Berlin: Springer-Verlag, 1996.

Kuhl J. A theory of self-regulation: Action versus state orientation, self-discrimination, and some applications. *Applied Psychology* 1992; 41:97–129.

Kuhl J. Wille und Freiheitserleben: Formen der Selbststeuerung. In J Kuhl & H Heckhausen (Eds.), *Motivation, Volition und Handlung, Enzyklopädie der Psychologie, Themenbereich C, Theorie und Forschung, Serie IV, Motivation und Emotion, Band 4* [Volition and the experience of freedom: Forms of self-managment. In J Kuhl & H Heckhausen (Eds.), Encyclopedia of psychology: Motivation, volition and action]. Göttingen: Hogrefe, 1996, pp. 665–765).

Kuhl J, Beckmann J. Introduction: Action versus state orientation in the context of personality and volition. In J Kuhl & J Beckmann (Eds.), *Volition and personality: Action versus state orientation* (pp. 1–5). Göttingen: Hogrefe & Huber, 1994.

Kuhl J, Kazén M. Self-discrimination and memory: State orientation and false self-ascription of assigned activities. *Journal of Personality and Social Psychology* 1994; 66:1103–1115.

Orlinsky DE, Grawe K, Parks KB. Process and outcome in psychotherapy—noch einmal. In AE Bergin & SL Garfield (Eds.), *Handbook of psychotherapy and behavior change* (pp. 270–376). New York: Wiley, 1994.

Ormel J, Kempen G, Penninx B, Brilman E, Beekman A, Van Sonderen E. Chronic medical conditions and mental health in older people: Disability and psychosocial resources mediate specific mental health effects. *Psychological Medicine* 1997; 27:1065–1077.

Osgood CE, Suci GJ, Tannenbaum PH. *The measurement of meaning*. Urbana, IL: University of Illinois Press, 1957.

Perrez M, Reicherts M. A computer-assisted self-monitoring procedure for assessing stress-related behavior under real life conditions. In J Fahrenberg & M Myrtek (Eds.), *Ambulatory assessment* (pp. 51–67). Seattle: Hogrefe & Huber, 1996.

Reilly PM, Sees KL, Shopshire MS, Hall SM. Self-efficacy and illicit opioid use in a 180-day methadone detoxification treatment. *Journal of Consulting and Clinical Psychology* 1995; 63:158–162.

Reisch T, Schlatter P, Tschacher W. Efficacy of crisis intervention. *Crisis* 1999; 20:78–85.

SAS Institute. *SAS/ETS® User's guide*. Cary, NC: SAS Institute Inc., 1991.

Schnyder U, Klaghofer R, Leuthold A, Buddeberg C. Characteristics of psychiatric emergencies and the choice of intervention strategies. *Acta Psychiatrica Scandinavica* 1999; 99:179–187.

Schnyder U, Sauvant JD. *Krisenintervention in der Psychiatrie* [Crisis intervention in psychiatry]. Bern: Huber, 1993.

Schulte D, Hartung J, Wilke F. Handlungskontrolle der Angstbewältigung: Was macht Reizkonfrontationsverfahren so effektiv? [Action control in treatment of anxiety disorders: What makes exposure so effective?] *Zeitschrift für Klinische Psychologie* 1997; 26:118–128.

Sexton HC, Hembre K, Kvarme G. The interaction of the alliance and therapy microprocess: A sequential analysis. *Journal of Consulting and Clinical Psychology* 1996; 64:471–480.

Tschacher W. The dynamics of psychosocial crises: Time courses and causal models. *Journal of Nervous and Mental Disease* 1996; 184:172–179.

Tschacher W, Baur N, Grawe K. Temporal interaction of process variables in psychotherapy. *Psychotherapy Research* 2000; 10:296–308.

Ullrich R, Ullrich R. *Der Unsicherheitsfragebogen (Testmanual U)* [Insecurity questionnaire]. München: Pfeiffer, 1977.

Ullrich R, Ullrich R. *Das Emotionalitätsinventar (Testmappe EMI-B)* [Emotional Comfort Inventory, test manual]. München: Pfeiffer, 1978.

Woody SR, Rodriguez BF. Self-focused attention and social anxiety in social phobics and normal controls. *Cognitive Therapy and Research* 2000, 24:473–488.

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