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Abstract	The first systematic follow-up study of therapeutic results was delivered by the Berlin Psychoanalytic Institute and reported by Fenichel [1]. This study set a precedent that many psychoanalysts were to follow in subsequent years [2–4] (for a review see [5]). At times, the work of these analysts had far-reaching social impacts; the studies Dührssen [6] performed at the Berlin Central Institute for Psychogenic Illnesses led to the inclusion of psychodynamic (PD) and psychoanalytic (PA) treatments among the forms of therapy covered by health insurance in Germany. From the available literature, it is clear that the PA community has cared about the issue of the long-term effects of treatment from early on.

Keywords (separated by '-')	Follow-up - Long-term psychotherapy - Outcome research - Psychoanalytic/psychodynamic - Psychotherapy - Structural change

Chapter 8
What Happens After Treatment: Can Structural Change be a Predictor of Long-Term Outcome?*

Tilman Grande, Wolfram Keller, and Gerd Rudolf

Keywords Follow-up • Long-term psychotherapy • Outcome research • Psychoanalytic/psychodynamic • Psychotherapy • Structural change

The first systematic follow-up study of therapeutic results was delivered by the Berlin Psychoanalytic Institute and reported by Fenichel [1]. This study set a precedent that many psychoanalysts were to follow in subsequent years [2–4] (for a review see [5]). At times, the work of these analysts had far-reaching social impacts; the studies Dührssen [6] performed at the Berlin Central Institute for Psychogenic Illnesses led to the inclusion of psychodynamic (PD) and psychoanalytic (PA) treatments among the forms of therapy covered by health insurance in Germany. From the available literature, it is clear that the PA community has cared about the issue of the long-term effects of treatment from early on.

Follow-up studies are generally conducted in order to establish whether the effects of psychotherapy remain stable after the completion of treatment. Of primary interest in such investigations is the persistence of effects with respect to a specific form of treatment as compared to another or to a control condition. Such studies provide evidence concerning whether the therapeutic effect of a treatment remains constant or even increases up to a follow-up measurement at a specified point in time [7].

Using the data from the Heidelberg–Berlin Study, we adopted a different approach in investigating the long-term effects of therapy outcomes. We addressed the following question: Which specific type of change should occur by the end of therapy in order to ensure that the broad positive effects

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that influence many central life domains are found later on (at a follow-up)? Which forms of pre–post change are associated with such effects, after a longer interval of time has elapsed following therapy completion? The following example illustrates these points of interest: let us assume that an investigation measures changes in symptom distress and interpersonal problems from the onset to the end of therapy. An outcome criterion that reflects treatment effects in various life domains is identically applied at the end of therapy and at a follow-up. It is found that while change in symptom distress and interpersonal problems both highly correlate with the criterion at the end of therapy, only one of the two measures (e.g., changes in interpersonal problems) continues to significantly correlate with assessments at 3-year follow-up. This result may suggest that in comparison with changes in symptom distress, pre–post changes in interpersonal problems represent a more important outcome due to their association with long-term, extensive positive changes in the life of the patient. In a further step, this finding might be used to infer the type of change that therapeutic work should focus on.

PA theory of personality uses the term "structure" to refer to the temporally stable organization of personality and the habitual patterns that individuals adopt in an attempt to resolve their unconscious conflicts [8, 9]. PA theory of therapy thus postulates a special form of change that is assumed to account for particularly persistent effects: so-called "structural change." Structural changes are differentiated from more superficial changes, under which, for example, symptom reduction is subsumed. It is assumed that changes at this deeper level of the personality are essential in attaining persistent therapeutic effects at all levels (including the symptomatic level). The techniques employed within PA treatment (e.g., encouragement of regression, interpretation of transference, etc.) aim to promote such "structural changes" [10–12].

Investigations suggest that changes of this type are not an exclusive characteristic of PA treatments, but can also be achieved with other forms of psychotherapy, such as expressive or supportive approaches [13, 14]. When considering the pivotal importance of structural change for the self-image of PA therapy, it is astounding that this concept has remained largely undefined for a considerable length of time, has scarcely been empirically investigated, and has only recently been subject to operationalization attempts. These attempts include: the Karolinska Psychodynamic Profile developed by Weinryb and Rössel [15]; the Scales of Psychological Capacities by Wallerstein and coworkers [16, 17]; the Reflective Functioning Scale designed by Fonagy et al. [18]; the Shedler-Westen Assessment Procedure [19]; and the Heidelberg Structural Change Scale (HSCS) [20] which is based on the Operationalized Psychodynamic Diagnostic (OPD) system [21, 22]. Despite substantial differences between these instruments, a common feature is their reliance on complex clinical ratings of the patient and his or her changes that can only be conducted by well-trained raters. The patient is not considered able to perform self-ratings of structural change.

The majority of the above-listed instruments – with the exception of the HSCS – are conceptually designed to measure change as a reduction in unfavorable personality styles, or a dissolution of inner inhibitions or other constraints. Change is thus implicitly defined as an abatement or eradication of pathology. This definition is conceptually problematic when it comes to measuring change in the context of PA therapy. Since the famous clinical follow-up investigations of Pfeffer [23], which were supported by Schlesinger and Robbins [24], more recent systematic studies have confirmed that patients remain susceptible with respect to their central conflicts for a long time after successful courses of therapy, and they transiently react in a neurotic manner when conflict-laden topics are touched upon (for example, [25]). What is fundamentally changed is rather the individual's ability to deal with such situations in a regulatory fashion. Following therapy, the patient is able to find healthier solutions in place of the neurotic ones that were previously employed. These observations suggest that changes due to PA treatment should be conceptualized as changes in methods of dealing with conflictual tendencies and vulnerabilities, rather than as the elimination of these characteristics. Adaptive handling of critical situations becomes possible when the patient gains not only cognitive, but, more importantly, emotion-based insight into his or her own unconsciously motivated problematic areas of life [26]. We maintain that this form of change is captured by the HSCS, which measures therapy-based changes in dealing with individually defined problem areas [20, 27].

In PA literature, it has been argued that in contrast to purely symptomatic changes, or changes in overt behavioral patterns, structural changes broadly impact many life domains and are associated with a change in the experience of self [28]. Changes of this kind are not easily captured using, for example, pre–post comparisons, since it is not only certain aspects of the patient which are subject to change (symptoms, behavior patterns, relationship problems, etc.) but the entire reference system within which the patient evaluates his or her experience and behavior. According to Sandler and Sandler [29], this occurs when the patient attains reconciliation with previously unaccepted parts of the self, and, in so doing, is able to temper judgements of the self and others. In some circumstances, it may be possible that a problem – for example, in the interpersonal domain – can therefore be solved without the overt changes that the patient desires at the onset of therapy, through changes in his or her internal judgements. In this case, the patient would nonetheless retrospectively state that his or her interpersonal difficulties had improved as a result of therapy. Similarly, a patient may also retrospectively note favorable changes in life domains in which no problems had been perceived prior to the onset of therapy (which are, however, critically identified in hindsight). Retrospective evaluations of change thus reflect shifts in a patient's internal reference system in addition to manifest changes in symptoms and behavior. In our view, it is therefore worth considering whether retrospective evaluations might for this very reason represent an option in assessing more fundamental therapeutic changes from the perspective of the patient.

Retrospective evaluations are viewed critically in the research literature. Pre–post measures or rather pre–post comparisons [30] are considered to be a standard for measurement of success. Critics point out that numerous investigations have repeatedly demonstrated only a weak correlation between retrospective evaluations and prospectively conducted pre–post measurements.

However, patients do not necessarily expect a certain level of symptom change as a result of their therapy; rather, they expect the attainment of personal goals which vary considerably according to the individual. In retrospective outcome evaluations, symptom changes are therefore not objectively evaluated through pre–post measurements, but rather assessed in terms of the attainment of a personal goal. In line with this argumentation and with reference to the considerations discussed earlier, we would like to add that fundamental therapeutic changes can result in further modification of these individual goals and in turn of the patient's evaluation criteria. We therefore advocate that retrospective evaluations of change be employed for the assessment of outcome alongside pre–post comparisons. Such criteria were applied in the current study for the purpose of assessing the short- and long-term effects of treatment in various life domains.

According to PA clinical experience, the process of change does not conclude with the completion of therapy. In the "post-analytic phase" [26], further important developmental steps occur. Giving up the transference relationship through a mourning process may lead to the identification with the function of the analyst that is theoretically associated with the formation of self-analytic skills [31]. While the end of therapy to a certain extent marks a completion of the work of the analyst – and in favorable cases, the achievement of structural changes – many effects do not become apparent until a later date, when the patient has attained a higher level of autonomy and has acquired methods of independent self-regulation on the basis of newly gained insights. In light of this delayed manifestation of therapeutic effects, PA researchers call for a distinction between treatment outcomes measured at the end of therapy and those measured at a later date [26, 32, 33]. An interval of between 2 and 5 years is recommended as an adequate time frame for a follow-up at which point persistent therapeutic effects in the life of the patient can be detected [33]. In line with this view, we assume in the present study that structural changes (pre–post) in particular predict therapeutic effects that can be measured after a longer post-therapy interval.

The present investigation is based on data collected in the Heidelberg–Berlin Study [34–36], which investigated the differential effects of two forms of PD therapy. Rather than focusing on these differential treatment effects, however, the current investigation adopted the research approach outlined at the outset of the introduction in order to determine which pre–post changes (i.e., changes from the onset to the end of therapy) best predicted retrospective patient assessments in the total

patient group at the end of therapy and at 1-year and 3-year follow-up. It was assumed that structural change would be a better predictor of the criterion as compared with changes in symptoms or interpersonal problems, and that this would apply regardless of treatment group. However, in order to examine a potential influence of group on the association between predictors and criterion, interactions between pre–post measures and treatment form were nonetheless subject to statistical testing.

Method

Participants

The original study was conducted as a conjoint investigation in Heidelberg and Berlin. Design and results are described in detail in Grande et al. [35]. Psychoanalysts in private practice were requested to include consecutive patients seeking treatment. Patients with psychotic disorders and those below the age of 18 years were excluded. Sixty-two cases in which patients completed their therapy as planned and also participated in the study to the very end were initially included. Nine cases dropped out from the study. Five other patients terminated their study participation during the course of therapy while continuing with their treatment.

The study was originally designed to compare two therapeutic approaches, namely PA and PD treatment (compare [35]). Three of 62 cases were excluded from data analysis due to the nature of the original study design and the fact that the initially planned therapy method (PA or PD) was so extensively modified by the respective therapist in the course of treatment that it was no longer possible to allocate these three treatments to their original group. Fifty-nine cases thus remained; 32 in the PA group and 27 in the PD group. These patients formed the basis of our analyses. Of these, 55 patients (93.2%; 29 PA and 26 PD) participated in the 1-year follow-up and 53 (89.8%; 29 PA and 24 PD) in the 3-year follow-up.

The average age of the 59 patients was 37.3 years (SD = 9.4); 39 (66.1%) were women and 20 (33.9%) men. Thirty-two (54.2%) patients were high school graduates; the remaining 27 left school at an earlier stage. The diagnostic evaluation was performed by the individual therapists based on the International Classification of Diseases (ICD-10 [37]). During the planning of the study, this procedure was instrumental in substantially enhancing study acceptance among therapists. All analysts were provided with ICD research criteria [37] and were also given the opportunity to discuss and clarify respective cases with project representatives in instances of diagnostic uncertainty. Analysts took frequent advantage of this option. Personality disorders were diagnosed in accordance with ICD-10 (F60, F61) by independent raters based on interviews (carried out in line with OPD guidelines, see below). These raters were highly experienced in the use of the ICD. Since the narcissistic personality disorder is not included in the ICD, this diagnosis was undertaken in accordance with DSM-IV criteria (and encoded as F60.81). The most frequent ICD diagnoses were depressive disorders (F32–34: 66.1%), anxiety disorders (F41: 40.7%), and somatoform disorders (F45: 37.3%), followed by compulsive disorders (F42: 22.0%), sexual dysfunctions (F52: 22.0%), adjustment disorders (F43: 18.6%), and eating disorders (F50: 18.6%). Multiple diagnoses were allowed. Thirty-one (52.5%) patients were diagnosed with a personality disorder, most frequently narcissistic (11 cases F60.81: 18.6%) or borderline (six cases F60.31: 10.2%). (Further personality disorders: two cases of emotionally unstable personality disorder impulsive type F60.30, dependent personality disorder F60.7, and histrionic personality disorder F60.4; one case of paranoid personality disorder F60.0, anankastic personality disorder F60.5, and anxious avoidant personality disorder F60.6; one dual diagnosis F60.1 and F60.81; four unspecified personality disorders.) An average of 2.5 clinical diagnoses (comparable with Axis I in DSM) and three diagnoses including personality disorders were made per patient.

The Global Severity Index (GSI) of the Symptom Checklist-90-Revised (SCL-90-R [38, 39]) was used to measure current overall distress. The mean value at the onset of therapy was $M = 1.06$ ($SD = 0.59$). In comparison, Brockmann et al. [40] report a mean GSI value of $M = 0.92$ ($SD = 0.54$) for an unselected sample of 31 patients at the onset of psychoanalytically oriented outpatient psychotherapy, and Schauenburg and Strack [41] found a mean value of $M = 1.22$ ($SD = 0.65$) in a mixed group of 410 patients from PA practices.

For the total score of the Inventory of Interpersonal problems (IIP [42]), we found a mean value of $M = 1.62$ ($SD = 0.49$) at therapy onset. In comparison, Brockmann et al. [40] report a mean value of $M = 1.69$ ($SD = 0.43$) at the start of therapy for their unselected patient sample. In a controlled study with a sample of 63 patients receiving outpatient psychoanalysis for a depressive disorder, Huber et al. [43] found a mean IIP total value of $M = 1.81$ ($SD = 0.38$). In sum, the degree of impairment shown by our patients was thus representative of that which is generally found under naturalistic conditions in psychoanalytically oriented outpatient therapies in Germany.

Therapists

In order to qualify for participation in the study, therapists were required to have completed PA training at an institute recognized by the German Association for Psychoanalysis, Psychotherapy, Psychosomatics, and Depth Psychology (DGPT) – the umbrella organization for PA therapy schools in Germany. A course of training as stipulated by the statutes of the DGPT qualifies and entitles therapists to recover the costs of PA and PD therapies from statutory German health insurance schemes. The 59 treatments were conducted by 45 analysts from Heidelberg and Berlin. Some therapists [14] contributed one PA and one PD case to the study, others either one PA or one PD case. The analysts had a mean age of 51.8 years ($SD = 6.7$); 29 (60.4%) were women and 19 (39.6%) men. Twenty-six (54.2%) were psychologists and 22 (45.8%) physicians (psychiatrists). Average professional experience as psychotherapist was 20 years ($SD = 7.59$; *min.* 5 years, *max.* 40 years), and approximately half had completed their PA training at least 7 years ($SD = 7.35$; *min.* 2, *max.* 31 years) before the start of the project. Accordingly, all analysts involved in the study were well-trained and experienced psychotherapists.

Treatment

Differences between the two PD approaches, PA and PD, did not form the focal point of this investigation. Therapeutic format was, however, considered as a potential moderator. PA was primarily (for more than half of therapy duration) conducted with the patient in a lying position, with a frequency of at least three sessions per week, and a total of at least 150 sessions. PD was for the most part conducted with the patient in a sitting position, with a frequency of one session per week, and a total of between 25 and 100 sessions. Given its connection with the therapeutic techniques employed and the objectives associated with the respective treatment approach, session frequency represented a crucial defining factor. With an average duration of 44.2 months ($SD = 14.3$; $Mdn = 43.8$), PAs lasted almost twice as long as PDs, which had an average duration of 24.2 months ($SD = 8.5$; $Mdn = 23.1$). In the PA group, the number of sessions ($M = 310$; $SD = 102.9$; $Mdn = 300$) was more than four times higher than in the PD group ($M = 71.1$; $SD = 25.5$; $Mdn = 75$). Variances of duration in both groups were, however, substantial reflecting the wide range of session numbers.

As mentioned previously, PA and PD are associated with different therapeutic techniques and objectives. Therapists used an item checklist every 3 months to indicate their present therapeutic

t1.1 **Table 8.1** OPD axes and list
t1.2 of potential problem areas

t1.3	Relationship
t1.4	Individualized formulation of a core dysfunctional relationship pattern
t1.5	*Life-determining conflicts*
t1.6	1. Dependence/autonomy conflict
t1.7	2. Submission/control conflict
t1.8	3. Care/autarchy conflict
t1.9	4. Self-value conflicts
t1.10	5. Guilt conflicts
t1.11	6. Oedipal-sexual conflicts
t1.12	7. Identity conflicts
t1.13	*Structural capacities/vulnerabilities*
t1.14	1. Capacity for experience of self
t1.15	2. Capacity for self-control
t1.16	3. Capacity for defence
t1.17	4. Capacity for object-experience
t1.18	5. Capacity for communication
t1.19	6. Capacity for attachment

aims and the treatment techniques employed. In line with the standard commentary on the German guidelines for psychotherapy [44], supportive and focal interventions and objectives were evaluated as being characteristic of PD (items: clarify, advise, relieve stress, encourage, structure, focus-oriented work on personality problems), whereas regression and transference-oriented approaches were classified as being characteristic of PA (items: encouragement of/work on transference, admission/encouragement of regressive processes, work on dreams, unrestricted and extensive work on personality problems). In each case, these items were summated to form a PD or a PA score, which was then divided by the number of items [35]. Scores thus ranged from 0 to 1, with a maximum score of 1 indicating that all items typical of one of the treatment forms had been checked. Scores were averaged across all assessment occasions. In this way, differences between the PD and PA groups were established. The average PA score was 0.50 ($SD=0.19$) in the PA group and 0.23 ($SD=0.17$) in the PD group. This difference was significant, T [45] $=5.747$, $p<0.001$, one tailed. The average PD score was 0.22 ($SD=0.15$) in the PA group and 0.36 ($SD=0.16$) in the PD group. This was once again significant, T [45] $=3.64$, $p<0.01$, one tailed. Effect sizes [46] were 1.53 for the PA score and 0.96 for the PD score.

Measures

Structural changes were measured using a two-step approach: in a first step, core problem areas were defined for each patient based on the OPD; the second step involved an assessment of change for each patient over the course of therapy with respect to the identified problem areas. Outcome measures were thus individualized. The OPD [29] comprises three PD axes which are relevant in this context (Table 8.1): the relationship axis captures the dominant dysfunctional relationship patterns displayed by a patient; the conflict axis assesses the presence and degree of intensity of eight types of conflict; the structure axis defines patients' functional levels with regard to six structural capacities or vulnerabilities. (*Cave:* Given the similar-sounding terms "structure" and "structural change," it is necessary to clearly distinguish between the two: while "structure" in the OPD refers to psychological capacities or deficits, "structural change" in the context of the PA discussion denotes a basic form of personality modification with respect to relationship patterns, unconscious conflicts, *and* patients' structural features in the sense of the OPD.)

The validity of the OPD has been investigated in a large number of studies, the results of which have been summarized and discussed by Cierpka et al. [47]. In the meantime, several other studies on the validity of the OPD in terms of relationship diagnostics [48], conflict diagnostics [49], and structure diagnostics [50] have been published. Overall, these studies show that the three PD axes of the OPD can be used to capture central PA concepts and to describe mental dysfunctions.

OPD ratings are based on clinical interviews conducted in accordance with the OPD interview manual [21]. Interviews were conducted by study collaborators (i.e., not by the therapists) and video recorded. The interview, which takes between 1 and 1½ h, focuses on the subjective experiences and behavior of the patient within personal relationships with the aim of identifying indications of patients' latent conflicts and structural features. For the purpose of assessing changes, the interviews were reconducted at the end of treatment, and once again video recorded.

Based on the OPD assessment, core problem areas were defined for each patient. The term "core" refers to those aspects of the patient's OPD profile that were presumed to produce and/or sustain psychic and somatic symptoms and interpersonal difficulties. The definition of such problem areas thus carried the status of a PD hypothesis, inferring that change had to take place within these areas in order to effectuate a substantial reduction or disappearance of patients' symptoms and complaints. Since therapists were ignorant to the core problem identified, they were not able to gear their interventions towards alleviating problems in these areas. The items listed in Table 8.1 were used to determine the core problem areas. Taking these items together (one core dysfunctional relationship pattern, eight types of conflict, and six dimensions of structural capacity/vulnerability) produces a total of 15 problematic features from which problem areas can be selected for each patient. Previous studies [27, 51] have indicated that a selection of five items from the overall OPD profile is sufficient to identify a patient's problem constellation. Two independent raters carried out the identification of problem areas. Given the importance of valid item selection for this procedure, discrepancies between raters were discussed in order to reach a consensus. In cases of doubt, a third expert was included.

In a second step, the HSCS (Fig. 8.1) was used to identify the way in which patients dealt with the selected problem areas. Ratings were performed based on the video-recorded OPD interviews. The HSCS is a modified form of the Assimilation of Problematic Experiences Scale [52–54] which is more strongly oriented towards a PA model of process and change [20]. Each stage of the scale marks a therapeutically significant step, beginning with increasing awareness of a previously unperceived problem area, extending to the therapeutic working through of associated aspects and experiences, and then to subsequent basic changes in both the patient's experience and specific external behaviors. The scale was applied at the onset and the end of treatment in order to assess the way in which the patient dealt with the problem areas represented by the selected OPD items. This was carried out for each of the five problem areas. Based on the assumption that these problems interact with one another and collectively produce the patient's difficulties, mean structural change scores were calculated by averaging HSCS ratings across the five problem areas. Structural changes were thus represented as shifts in mean HSCS scores along the scale. For calculation purposes, intermediate scale points (e.g., 3– and 3+, see Fig. 8.1) were assigned corresponding scores (e.g., 2.7 and 3.3, respectively). To date, the HSCS has been employed in two studies [27, 51, 55].

Interrater reliability for the selection of the five OPD core problem areas and the HSCS rating was measured based on a total of six experienced raters. In line with specifications of the OPD Task Force [21], all raters received at least 60 h of training in applying the OPD; performance checks were conducted based on predefined criteria [56] as well as using four to six standard videos before raters began their work. Raters were subsequently trained to use the HSCS by two of the developers of the scale. Compared with the OPD ratings, the HSCS represents a less demanding instrument, and its application is rapidly learned. Performance checks were once again conducted using four to six standard videos, following which raters entered the study. Since the study extended over a period of several years, the entire group met regularly (approximately four times per year) to perform collective ratings and discuss discrepancies.

Fig. 8.1 Heidelberg Structural Change Scale (Source: Reprinted with permission from Rudolf et al. [36]

Stages		Manual excerpt
1. Problem area warded off	exact 1 match 1+ tendency ↓	The problem is entirely unconscious; associated experiences are evaded; problematic behaviour is ego-syntonic; the patient has "no problem" with the problem area
2. Unwanted preoccupation with the problem	tendency ↑ 2- exact 2 match 2+ tendency ↓	Unpleasant feelings and thoughts in connection with the problem area can no longer be immediately rejected, but preoccupation with the problem is reluctant; external confrontations with the problem take place, but are rejected as disturbances; the patient does not realise that problems might be associated with his/her own person
3. Vague awareness of the problem	tendency ↑ 3- exact 3 match 3+ tendency ↓	Patient notices/suspects the existence of a problem that is part of him/herself and cannot simply be rejected; recurrence causes the problem to take on a continuing existence; negative affects originate from the tension between the insistent nature of the problem and the pat.'s defensive/aversive attitude
4. Acceptance and exploration of the problem	tendency ↑ 4- exact 4 match 4+ tendency ↓	The problem begins to take on a new shape within the pat.'s consciousness; there are incipient indications of an active, "head-on" preoccupation with the problem; the problem can now be formulated as an "assignment" and can hence be made the subject of therapeutic work; destructive, rejective responses may interfere with this attitude but can no longer undermine it altogether
5. Deconstruction in the problem area	tendency ↑ 5- exact 5 match 5+ tendency ↓	Querying and disintegration of accustomed coping modes; uncertainty concerning evaluations of own person and others; perception of own limitations and deficiencies; resignation and moods of despair alternate with urges toward reparation; old modes are lost and cut off, new ones not yet accessible
6. Reorganization in the problem area	tendency ↑ 6- exact 6 match 6+ tendency ↓	Abandonment and final relinquishing of accustomed coping modes; pat. is increasingly self-reliant in his/her own experience and able to take control of and assume responsibility for his/her own life in the problem area; increasingly conciliatory approach to problem area; solutions materialize spontaneously and unexpectedly; re-integration
7. Integration of the problem	tendency ↑ 7- exact 7 match	Dealing with the problem has become something natural; the area has lost its special significance in the eyes of the pat.; the problem is something which belongs to the past, preoccupies pat. as a memory

Two raters assessed each case, and different groups of raters performed the ratings at the onset and the end of therapy. In the case of material collected at the end of therapy, the Berlin group rated the Heidelberg material and visa versa. Raters assessing the HSCS at the end of treatment were informed about the problem areas which had been defined for each patient at the onset of treatment but otherwise had no baseline information about the patient or information concerning developments over the course of therapy. For the selection of problem areas from the OPD profile at the start of treatment, a kappa of 0.62 was calculated [46]. With regard to HSCS ratings, an interrater agreement of ICC (1.1) = 0.83 was found.

The SCL-90-R [38, 39] was used by patients for self-assessment of symptom status. The GSI served as a measure of present overall distress. For the assessment of relationship problems, the German version of the IIP-D [42] was applied. Here, the total score was also used; due to the heterogeneity of the patient group, it would not have been possible to test hypotheses on specific symptom clusters or specific interpersonal problems. Hence, therapy effects were not assessed with reference to SCL-90-R or IIP-D subscales. Both the SCL-90-R and the IIP-D were completed by patients at the start and end of therapy.

At the end of treatment as well as at 1-year and 3-year follow-up, patients further performed a *retrospective evaluation of therapy outcome* using an eight-item questionnaire covering various aspects of therapeutic change: mental symptoms, somatic symptoms, interpersonal problems, coping with life demands, overall capacity, enjoyment potential, self-esteem, and general contentment with life. Questionnaire instructions were as follows: "Please call to mind the troubles and difficulties from which you suffered upon beginning psychotherapy. When you view yourself now: To what extent have these troubles and difficulties changed since back then?" These instructions were followed by the above-listed aspects of change (e.g., "interpersonal problems") which were to be rated on a six-point scale. With the anchor points −1 deteriorated/0 unchanged/+1 slightly improved/+2 clearly improved/+3 considerably improved/+4: maximally improved. Internal consistency (Cronbach's alpha) for the total scale amounted to 0.94. Items were summated and divided by the number of items; resulting values ranged between −1 and +4.

This instrument for retrospective outcome evaluation had been developed in the context of a previous investigation on 162 courses of PD therapy (the so-called Berlin Psychotherapy Study, compare [45]). Patients in this study were requested to describe changes which in their eyes had been central in the form of free text. A qualitative analysis of these texts leads to the identification of the change categories which are assessed by the eight items included in the present instrument.

Mean values and standard deviations for the retrospective assessment scale were as follows: $M = 2.00$ ($SD = 1.01$) at the end of treatment, $M = 1.94$ ($SD = 1.01$) at 1-year follow-up and $M = 2.02$ ($SD = 1.00$) at 3-year follow-up. On average, patients thus rated their situation as having "clearly improved" across all assessment occasions. In each case, average ratings were spread approximately one scale point around the mean.

Data Analysis

The investigation examined how well various pre–post changes were able to predict the retrospective outcome evaluations of patients at the end of treatment and at 1-year and 3-year follow-up. Pre–post changes were measured using the SCL-90-R (GSI), the IIP-D (total score), and the HSCS (mean rating with respect to the five problems areas). Residual scores resulting from a regression of initial scores on scores at the end of therapy were used as a measure of change. This approach corrects for regression to the mean and is recommended for application when employing individualized measures of change such as the HSCS [57].

t2.1 **Table 8.2** Summary of nine hierarchical multiple regression analyses for the prediction of patient evaluations of
t2.2 treatment outcome: separate analyses for each measure of pre–post change

			Step 1: Change measure only	Step 2: Change measure × treatment
t2.5	End of therapy ($n=54$)	GSIres	$\Delta R^2=0.26$, $\Delta F(1, 52)=18.70$***	$\Delta R^2=0.04$, $\Delta F(1, 51)=3.30$
t2.6		IIPtotalres	$\Delta R^2=0.45$, $\Delta F(1, 52)=43.14$***	$\Delta R^2=0.00$, $\Delta F(1, 51)=0.10$
t2.7		HSCSres	$\Delta R^2=0.22$, $\Delta F(1, 52)=14.44$***	$\Delta R^2=0.00$, $\Delta F(1, 51)=0.00$
t2.8	One-year follow-up ($n=53$)	GSIres	$\Delta R^2=0.10$, $\Delta F(1, 52)=5.50$*	$\Delta R^2=0.00$, $\Delta F(1, 51)=0.01$
t2.9		IIPtotalres	$\Delta R^2=0.17$, $\Delta F(1, 52)=10.60$**	$\Delta R^2=0.00$, $\Delta F(1, 51)=0.00$
t2.10		HSCSres	$\Delta R^2=0.25$, $\Delta F(1, 52)=17.26$***	$\Delta R^2=0.02$, $\Delta F(1, 51)=1.37$
t2.11	Three-year follow-up ($n=50$)	GSIres	$\Delta R^2=0.01$, $\Delta F(1, 52)=0.66$	$\Delta R^2=0.01$, $\Delta F(1, 51)=0.47$
t2.12		IIPtotalres	$\Delta R^2=0.06$, $\Delta F(1, 52)=2.87$	$\Delta R^2=0.06$, $\Delta F(1, 51)=2.99$
t2.13		HSCSres	$\Delta R^2=0.20$, $\Delta F(1, 52)=11.90$***	$\Delta R^2=0.00$, $\Delta F(1, 51)=0.04$

t2.14 *GSIres* residual scores of the Global Severity Score (SCL-90), *IIPtotalres* residual scores of the total score of the
t2.15 Inventory of Interpersonal Problems (*IIP*), *HSCSres* residual scores of the Heidelberg Structural Change Scale (*HSCS*),
t2.16 ΔR^2 increase in explained variance associated with the step
t2.17 *$p<0.05$; **$p<0.01$; ***$p<0.001$

For the prediction of outcome evaluations, a series of hierarchical regression analyses were performed. Three residual change scores (GSIres, IIPtotalres, and HSCSres) were separately entered as predictors of the three outcome evaluations. The first predictor to be entered into each regression analysis was the measure of change (e.g., GSIres), followed by the interaction between the measure of change and the treatment (e.g., Treatment × GSIres) in order to examine the potential influence of treatment form on the prediction of outcome. With three measures of change and three outcome criteria, a total of nine analyses were necessary.

We hypothesized that, in line with the asserted long-term effects of structural change, pre–post changes in the HSCS (HSCSres) would be significantly more predictive of outcome at 1-year and certainly at 3-year follow-up as compared with pre–post changes in both IIPtotalres and GSIres. Predictive superiority of the HSCSres exclusively at 1-year follow-up (but not at 3-year follow-up) would thus not confirm our hypothesis. Predictive superiority of HSCSres exclusively at 3-year follow-up would limit the validity of our hypothesis to very long-term effects. This would correspond with the expectation found in other PA follow-up studies that long-term effects can only be examined 2–5 years after therapy completion (compare [33]). We therefore examined two hypotheses, a limited hypothesis (relating to the 3-year follow-up) and an extended hypothesis (additionally relating to the 1-year follow-up). Finally, differences between treatment forms were not expected to have any influence on the described associations, and the interaction between treatment and measures of change was not expected to be significant.

No predictions were made regarding the relative strength of the associations between the three measures of change and the outcome criterion at the end of therapy; however, a comparison of these associations was also calculated.

In testing the hypotheses, correlations between outcome criterion and HSCSres were compared with correlations between outcome criterion and IIPtotalres as well as with correlations between outcome criterion and GSIres, at each of the three assessment occasions. The significance of observed differences ($\Delta r_{ab} - r_{ac}$) was subsequently examined. Since two comparisons were required for testing each hypothesis, a $p=0.025$ level of significance was selected based on the Bonferroni correction. The correlations required for comparisons were calculated in Step 1 of each of the hierarchical regression analyses described above (see also Table 8.2).

Results

Table 8.2 presents the results of the nine regression analyses, in which the predictive value of the three measures of change was separately investigated. For the prediction of outcome evaluations, pre–post changes in GSI accounted for 26.5% of criterion variance at the end of therapy, 9.7% at 1-year follow-up, and 1.4% at 3-year follow-up. The variable IIPtotalres accounted for 45.3% of variance at the end of therapy, 17.2% at 1-year follow-up, and 5.6% at 3-year follow-up. In contrast, HSCSres accounted for a highly significant amount of variance in the prediction of all three outcome criteria: 21.7% at the end of therapy, 25.3% at 1-year follow-up, and 19.9% at 3-year follow-up. These first step results of regression analyses are also presented in Fig. 8.2. Interactions between treatment form and the three measures of change (Table 8.2) did not account for a significant amount of variance at any of the three retrospective assessment occasions.

Differences between HSCSres-criterion correlations and IIPtotalres-criterion correlations were as follows: $z=-1.75$ ($p=0.042$) at the end of therapy, $z=0.64$ ($p=0.261$) at 1-year follow-up, and $z=1.40$ ($p=0.081$) at 3-year follow-up. The z-value at the end of therapy has a negative sign, thus indicating that the correlation between IIPtotalres and the criterion was higher at this occasion than the correlation between HSCSres and the criterion. (This effect was reversed at both follow-ups.)

Differences between HSCSres-criterion correlations and GSIres-criterion correlations were as follows: $z=-0.34$ ($p=0.367$) at the end of therapy, $z=1.30$ ($p=0.097$) at 1-year follow-up, and $z=2.04$ ($p=0.021$) at 3-year follow-up. The z-value at the end of therapy once again has a negative sign thus indicating that the correlation between GSIres and the criterion was higher at this occasion than the correlation between HSCSres and the criterion. (This effect was again reversed at both follow-ups.)

In light of the striking decrease in IIPtotalres-criterion and GSIres-criterion correlations from the end of therapy across 1-year follow-up and to 3-year follow-up, we finally examined post hoc whether these changes were statistically significant. Analyses were exclusively based on the 50 cases for which data were fully available at both assessment occasions. The difference between IIPtotalres-criterion correlations at the end of therapy and at 3-year follow-up was $z=3.43$ ($p<0.001$); between GSIres-criterion correlations at the end of therapy and at 3-year follow-up $z=2.84$ ($p=0.002$); and between HSCSres-criterion correlations at the end of therapy and at 3-year follow-up $z=0.42$ ($p=0.33$). There was thus no significant change in HSCSres-criterion correlations from the end of therapy to 3-year follow-up.

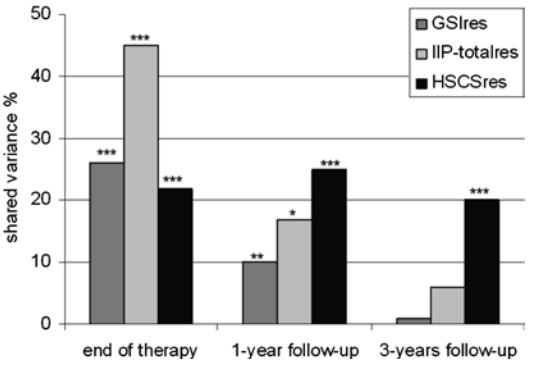

Fig. 8.2 Shared variances between predictors and criterion. *GSIres* residual scores of the Global Severity Score (SCL-90), *IIPtotalres* residual scores of the total score of the Inventory of Interpersonal Problems (*IIP*), *HSCSres* residual scores of the Heidelberg Structural Change Scale (*HSCS*); $*p<0.05$, $**p<0.01$, $***p<0.001$

Discussion

Results confirm that, in comparison with symptomatic changes, structural changes achieved by the end of therapy are a significantly better predictor of retrospective outcome evaluations conducted by the patient 3 years after therapy completion. In other words, when patients are requested to evaluate their therapy-related progress in various life domains 3 years after finishing therapy, their evaluations are significantly better explained by the structural changes as compared with the symptomatic changes achieved by the end of therapy. This effect was not found at 1-year follow-up.

Our hypotheses concerning the comparison between structural and interpersonal changes were not confirmed for either 3-year or 1-year follow-up. A post hoc analysis revealed, however, that while the association between interpersonal changes and retrospective outcome evaluation was significantly stronger than that between structural changes and the criterion at the end of therapy, it clearly decreased and became even weaker than this relationship at 3-year follow-up. This decrease was highly significant and shows that when patients are asked to retrospectively evaluate the progress they have made as a result of therapy, their evaluations at the end of therapy are significantly stronger determined by interpersonal changes than is the case 3 years later.

Pre–post structural change is the only measure that continues to (highly) significantly correlate with the patient's retrospective outcome evaluation after the end of treatment.

We consider these results to be consistent with the PA view that treatment should strive to achieve fundamental changes in the patient's personality changes that have long-term effects in the life of the patient. Since change processes often continue beyond the end of therapy, the complete scope of these effects is not necessarily immediately visible to the patient. As a result, it is frequently only with hindsight that patients recognize and appreciate the value of their therapy. The patient's experience at the end of therapy is more strongly influenced by other therapeutic effects, namely by changes in the areas of symptom distress and relationship problems. When it comes to evaluating those specific therapeutic changes which will have a long-term effect on the patient's life at this point in time, a clinical expert assessing the structural changes seems able to provide a more reliable judgment, with which the patient somewhat "belatedly" then agrees.

In selecting retrospective patient outcome evaluations as outcome criterion in the present study, we chose to assign this measure a central role. As discussed in the introduction, such measures have been challenged in the literature and judged rather critically in comparison to pre–post measures [30, 58]. However, we argue that retrospective outcome evaluations capture something different from that which is reflected by prospectively measured pre–post changes, given that they are based on relative assessments that relate to individual goals rather than absolute assessments of therapeutic achievements. We further point out that individual goals and therefore the internal evaluation norms of the patients change over the course of therapy (compare also [57]) and that such changes to the inner reference system represent a particular aim of PA treatment. We would like to emphasize this point with reference to the reports of the patients at the follow-ups: similar to other PA follow-up studies [32], our patients repeatedly retrospectively reported that their views and evaluations had been fundamentally transformed during but also following their therapy and that they now saw themselves and other people "in a different light" so to speak. Problems that had caused much distress prior to therapy appeared less significant in hindsight and behaviors and arrangements which had previously seemed "normal" were perceived as problematic. What Menninger [59] wrote about the effects of PA therapy based on the example of a fictitious case would seem to apply to more than just a few of these patients: "…although it is true that his expectations were not met, his gains were beyond his expectations" (as cited in [28], p. 751). In our opinion, these complex processes of change can at least be globally assessed using retrospective evaluations, all the more so considering that no other options are available. At the same time, we are all too aware that retrospective evaluations of change show certain weaknesses. They demand that the patient performs a complex cognitive operation that may impair the accuracy of their evaluation: they must first recall their level of distress at the onset of

therapy (which may differ from what they reported at that time), assess their current level of distress, and subsequently determine the difference between the two. For future studies of this kind, it would in our view therefore seem desirable to employ methods and strategies that allow for changing success criteria without having to accept the limitations of retrospective evaluations.

Some further methodological limitations must be noted: a number of therapists (14 of 45) contributed two courses of therapy to the study. Our data are therefore nested, a fact which was not accounted for in our statistical analyses. Diagnoses were not assessed in a standardized manner, and their validity is therefore questionable. Moreover, due to the naturalistic design of the study, it was not possible to examine the way in which therapists actually worked within courses of therapies independently of information provided by the therapists themselves. Therapy duration and the number of sessions varied enormously in both treatments. As therapist self-reports are the only adherence measure available to us, we have no independent evidence that the stated treatment was actually practised. Our study is therefore not able to answer the question concerning the therapeutic interventions and strategies needed to achieve structural change and the long-term benefits investigated: Therapeutic approach had no influence; interaction effects between the two forms of PD treatment and pre–post changes were not observed in any of our analyses.

In our view, the approach adopted in the present study enables a comparison of different types of pre–post changes with regard to short- and long-term therapeutic effects. The results of such comparisons carry consequences for practical clinical work: if certain pre–post changes are associated with more long-term effects, then therapy should aim to work towards effectuating these very changes. The question concerning what the therapist can do to contribute to such changes thus represents an important issue to be addressed in future investigations.

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