Schema Therapy for Personality Disorders—A Review

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Schema therapy (ST) with the schema mode approach is currently one of the major developments in CBT for personality disorders. The schema mode model includes both a general approach to treatment as well as specific variants for each personality disorder. The first specific mode model has been defined for borderline personality disorder. Treatment based on this model has been found to be very effective in several studies. A meta-analysis of these studies is presented. Further mode models have also been defined for most personality disorders and for forensic patients. Preliminary results of studies in these patient groups are also promising. Important current and future developments include applications of ST in other treatment settings (i.e., group and inpatient treatment), and the development of approaches for chronic Axis I disorders. Important topics for future research include direct comparisons of ST to other active treatment conditions, dismantling studies, and more fundamental investigations of experiential treatment techniques.

Recent developments in psychotherapy for personality disorders have focused on Borderline Personality Disorder (BPD). Several treatment approaches have proposed clinical models of BPD and several treatment models have shown efficacy varying degrees, including Dialectical Behavior Therapy (review in Kliem, Kröger, & Kosfelder, 2010), Mentalization-Based Treatment (MBT; Bateman & Fonagy, 2009), Transference-Focused Therapy (TFT; Doering et al., 2010), and Schema Therapy (ST; Young, Klosko, & Weishaar, 2003). However, very few approaches have extended their application to other personality disorders. To the best of our knowledge, only the schema therapy approach has explicated models for the majority of the personality disorders. Hence this paper focuses on ST as a major current development in the field of cognitive therapies for personality disorders.

ST was originally developed by Jeffrey Young (Young et al., 2003) for treating nonresponders to normal CBT, most often those with personality disorders. A specific ST model was first developed for BPD (Arntz & van Genderen, 2009; Young et al., 2003). Since then, specific models for other personality disorders have been developed and currently the schema approach has been elaborated for almost all personality disorders (Arntz & Jacob, 2012; Bamelis, Renner, Heidkamp, & Arntz, 2011). ST integrates CBT with attachment theory, humanistic therapies (particularly Gestalt therapy), and psychodynamic concepts regarding the biographical background of maladaptive psychological patterns. Several essential factors distinguish ST from other cognitive therapy approaches:

1. ST places an extensive focus on processing memories of aversive childhood experiences;
2. There is an extensive use of experiential techniques such as imagery rescripting exercises and chair dialogues to change negative emotions related with aversive childhood memories;
3. The therapeutic relationship is conceptualized as limited reparenting (i.e. schema therapists offer an approximation of the essential experiences that patients missed when they were children) within the context of the ethical and professional boundaries of the therapeutic experience (McGinn & Young, 1996);
4. The schema mode model helps both the therapist and the patient understand the patient's current problems and directs the choice of therapy techniques.

SCHEMAS AND SCHEMA MODES

Central concepts in ST are early maladaptive schemas (EMS) and schema modes. EMS are defined as dysfunctional knowledge representations acquired early in life, containing both explicit beliefs accessible to consciousness as well as implicit knowledge, and behavioral-procedural and emotional information. They are described by Young et al. (2003) as broad patterns comprising thoughts, emotions, memories, and attention tendencies. They develop when children's basic needs are not met. Examples of schemas in personality disorders include mistrust/abuse, abandonment, and defectiveness/shame. When an EMS is triggered, associated negative emotions and coping responses ensue. The schema model suggests that people may cope with the schema-related distress by avoiding, surrendering, or over-compensating to the schema, but in doing so, inadvertently reinforce the schema. Thus, schemas can be observed within different emotional states, and the method of coping determines the emotional state that follows the activation of the schema (for empirical evidence see Rijkeboer, Lobbestael, & Huisman-van Dijk, 2012). The concept of schema modes describes these different states.

Schema modes are divided into 4 broad categories. (1) Dysfunctional child modes are activated when patients experience intense negative emotions related to their schemas, such as shame, anxiety, threat, sadness, or anger. They are further divided into vulnerable (i.e., sad, abandoned etc.) and angry/impulsive child modes. (2) Dysfunctional (punitive or demanding) parent modes are linked to

self-devaluation and overly high standards, which in turn, are associated with the corresponding schemas. (3) Dysfunctional coping modes encompass coping responses related to avoidance, surrendering, and over-compensation. Avoidance can be related to detachment or social withdrawal (detached or avoidant protector mode), or by intense self-stimulation or substance use (self-soothing coping mode). Over-compensation is often related to narcissistic or overly controlling patterns (narcissistic self-aggrandizer or over-controller mode). Some over-compensation modes contain patterns of forensic patients, such as aggression or cunning to achieve ones goals (bully and attack mode or cunning mode, respectively; Bernstein, Arntz, & de Vos, 2007). (4) The healthy modes of the happy child and the healthy adult represent functional states (see Arntz & Jacob, 2012, for a detailed description of all schema modes).

The mode model comprises both a general and a disorder specific approach. Within the general approach, all symptoms, problems, and problematic interpersonal patterns of an individual patient are conceptualized within the framework of applicable modes. In the disorder specific approach, specific diagnoses (mostly personality disorder diagnoses) are associated with relevant mode models. In other words, the patient's symptoms and problems are linked to the modes that correspond with the patient's main diagnosis. However, an individual mode model based on the disorder specific model can be extended with additional modes if necessary. Specific mode models have been proposed for all but two personality disorders, with extensions for forensic patients.

The best known example is the mode model of Borderline Personality Disorder (BPD) (Arntz & van Genderen, 2009). The BPD mode model contains an abandoned/abused child mode, an angry/impulsive child mode, a punitive parent mode, and a detached protector mode related to the avoidance of emotions. The healthy adult mode is usually weak. With regard to BPD symptoms, intense negative emotions are related to the abandoned/abused child mode. Anger outbursts are connected with the angry child mode. Impulsive behaviors are mostly related to the impulsive child mode. Self-devaluation and self-punishment are connected with the punitive parent mode. Behaviors associated with emotion avoidance, such as dissociation, substance abuse, or social withdrawal, are related to the detached protector mode. Some problems may be related to different modes. In such cases, the connection with a specific mode is made in discussion with the patient. As an example, self-injuring behavior may be related to the punitive parent mode if the patient uses self-injury to punish herself. However if the patient experiences relief from negative emotions after cutting him or herself, then self-injury is connected to the detached protector mode.

The mode model describes the (often sudden) switches in emotional-cognitive states that are common in BPD and other severe personality disorders. It also helps explain how patients can have conflicting feelings and ideas simultaneously, or alternating—as they can be conceptualized as being related to different modes.

SCHEMA THERAPY

The schema mode model guides the treatment. Current problems or symptoms of the patient are linked to the mode model and therapy techniques are chosen according to the modes that are currently activated. Each mode requires specific treatment techniques and goals. Coping modes usually dominate the first phase of treatment. The therapist helps the patient identify their modes, and discusses their pros and cons as well as the way they initially developed in childhood. In the following stage, the therapist helps patients reduce their reliance on coping modes so that they can access the intense emotions that are blocked by the performance of these coping strategies. Often the therapy situation is the first situation in which patients let down the coping mode and share their intense feelings with a safe person.

These feelings, related to dysfunctional child modes, are the main focus of treatment following the reduction of coping modes. Emotion processing and experiential interventions aim at validating and healing child modes. A central treatment technique for dysfunctional child modes is imagery rescripting (Arntz, 2011; Arntz & Weertman, 1999; Hackmann, Bennett-Levy, & Holmes, 2011, for detailed descriptions). In imagery rescripting exercises, the patient imagines stressful childhood memories and modifies them in order to ensure that his or her basic needs are met during the image. For example, the patient may imagine himself being protected and the perpetrator being battled in an imagery rescripting exercise conducted to address memories of childhood abuse.

Dysfunctional parent modes also have to be reduced in order to weaken their influence in the patient's life. Chair dialogues are often used to fight against the messages of these modes, and to express rage or anger towards them. As a symbolic action, the chair of the dysfunctional parent mode may be placed out of the therapy room. By contrast, the healthy modes may be enhanced in a variety of ways. If necessary, the therapist may serve as a model for the healthy adult mode, particularly in the beginning phase of therapy. For example, the therapist may protect the child in imagery rescripting exercise, by offering advice when needed, by giving psycho-education, or by directly expressing functional attitudes about needs and emotions.

Experiential techniques are initially prioritized, in order to break through detachment and to initiate change at a schema level. However, cognitive and behavioral techniques are also used to ensure that functional cognitions and behaviors replace maladaptive ones. In the therapy relationship, the therapist offers a direct corrective relational experience (limited reparenting), validates coping modes, welcomes child modes, confronts dysfunctional parent modes, and models and enhances healthy modes.

EFFICACY AND EFFECTIVENESS:
META-ANALYSIS OF SCHEMA THERAPY

Most published studies have investigated ST for borderline personality disorder (BPD), and have used the mode model. An exception are two studies by Ball (Ball, 2007; Ball, Maccarelli, LaPaglia, & Ostrowski, 2011) that used the schema model, and did not report superior effects of ST in substance dependent patients. The following is a meta-analysis of the studies using ST to treat BPD. Data were available for 5 studies, case series, open trials, or randomized controlled trials (RCT) that used ST to treat BPD. The following studies were analyzed with Meta-Analyst, version Beta 3.13 (Wallace, Schmid, Lau, & Trikalinos, 2009).

Nordahl and Nysaeter (2005) reported results of a series of six complete single case reports using ST to treat BPD. No substantial changes were observed during repeated baseline assessments over a 10-week period. Changes occurred only when ST was initiated (between 18 and 36 months), with all patients exhibiting a therapeutic response, and 5 of the 6 patients maintaining clinically significant gains at 12-month follow-up.

Giesen-Bloo et al. (2006) conducted a multicenter RCT comparing ST to Transference-Focused Psychotherapy (TFP) in 86 patients over a period of 3 years (and a follow-up one year later). Although both treatments were effective in reducing general and borderline personality specific symptoms, ST had fewer drop-outs over 3 years (27% vs. 50%), and was more effective than TFP both in terms of recovery from BPD and general psychopathological dysfunction. Patients receiving ST showed greater improvement on six BPD criteria (7 at 4 year follow-up) as assessed with the Borderline Personality Disorder Severity Index (BPDSI; Arntz et al., 2003), and also exhibited greater improvement on secondary variables. This pattern of recovery remained steady at three (45.5% in the ST vs. 23.8% in the TFP condition) and four (52.3% vs. 28.6%) years following the end of treatment. Moreover, 66% of ST-patients versus 43% of TFP patients attained a reliable reduction on the main outcome. A cost-effectiveness analysis of the same RCT demonstrated that ST was more cost-effective than TFP (less costs, and better effects), although both treatments could not be clearly distinguished with regard to cost-utility (with utilities expressed as quality of life adjusted years; Van Asselt et al., 2008). The superior effects of ST were not a simple effect of fewer dropouts, as both completers and dropout sub-analyses (intent-to-treat) yielded similar differences between conditions.

Farrell, Shaw, and Webber (2009) investigated the additive effects of group-ST offered to 32 BPD outpatients receiving treatment as usual (TAU) in an individual format. The group-ST was time-limited (30 sessions of 90 minutes, delivered over 8 months) and given by two therapists in groups of 8 patients. None of the patients from the ST-group dropped out of treatment, while 4 of the 16 TAU-only patients (0% vs. 25% drop-out) dropped out. Strong effects of a limited dose of group-ST were found on indices of borderline severity, general functioning (GAF), and general psychopathological symptoms (SCL-90). By contrast, TAU had almost no effects. Following treatment, 94% (N = 15) of the group-ST

participants were no longer diagnosed with BPD using the DIB-R, as compared to only 15% of the control subjects. The same pattern of results was observed at the 6-month follow-up. The results should be interpreted with caution given that the treatment was delivered by investigators who developed the treatment. Additionally, participants were recruited from a group with an exceptionally high treatment compliance given that even participants in the apparently noneffective control condition were to a high degree able to maintain treatment. Future studies will learn to what degree effects are generalizable to other centers and to other patient populations.

In their multicenter RCT, Nadort et al. (2009) compared an individual ST condition to a ST condition with telephone crisis support provided by the therapist outside office hours, in the context of an implementation trial. Main outcome was BPD severity assessed with the BPDSI. No differences were observed between the two ST conditions. Treatment was considerably less intense than the one administered in the Giesen-Bloo et al trial. After the first year with 2 sessions per week, frequency of sessions gradually decreased over the remaining 2 years. At 1.5 years, a 21% drop out rate was observed. Nonetheless, the results are comparable to those of the Giesen-Bloo et al. trial and demonstrate that ST can be successfully implemented in a general health care environment with structured training and regular supervision. However, therapeutic effects leveled off earlier than in the Giesen-Bloo trial and patients complained that sessions were reduced in frequency too early in treatment. Given that both conditions utilized ST, we combined results from the two conditions and used them for the within-ST meta analyses.

Dickhaut and Arntz (2012) conducted a pilot study assessing a combination of individual and group-ST provided over a two year period (with a possible continuation/booster sessions of individual ST). Eighteen BPD patients were recruited and treated in two consecutive cohorts, in groups of 8 and 10. Primary outcome was BPD severity while secondary outcomes included the SCL-90, quality of life, happiness, and specific ST-indices. The drop out rate in this study was higher than in studies investigating individual ST condition possibly because the fixed group format was problematic for some patients. Nonetheless, the effects were strong, with 77.4% recovered at 2.5 years based on mixed logistic regression estimates.

Figure 1 shows the forest plot of the meta-analysis of the dropout proportions within the first year of treatment. The average drop out in studies using ST is extremely low, especially considering the high dropout percentages usually reported in treatment trials of BPD patients using traditional approaches. The highest dropout rates in ST approaches, possibly related to the group format, were observed in the Dickhaut and Arntz (2012). Studies using the group format are typically associated with a higher dropout with the exception of the Farrell et al. (2009) study which had no dropouts. Overall, the average dropout percentage of 10.1% (95% CI 3.7, 24.7) in the ST studies compares favorably to the average (first year) dropout percentages (calculated by means of meta-analysis) of 23.0% (95%CI [16.6-30.8]) observed in studies using DBT (data from Kliem et al.,
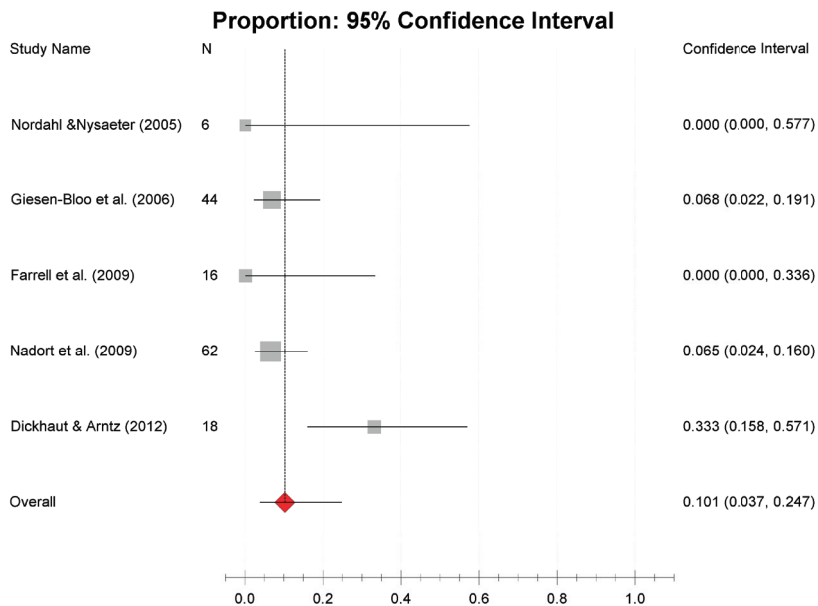
FIGURE 1. Forest plot of meta-analysis of drop-out proportions of ST for BPD in 5 trials

2010); 34.9% (95%CI [26.6, 44.3]) in studies using TFP (Clarkin, Levy, Lenzenweger, & Kernberg, 2007; Doering et al., 2010; Giesen-Bloo et al., 2006), and 24.8% (95%CI [16.9, 34.8]) in studies using MBT (Bateman & Fonagy, 1999, 2009). The 10% dropout rate also compares favorably to the average dropout rate of 25% (95% CI: 18–32%) based on a random effects meta-analyses for interventions of <12 months duration (Barnicot, Katsakou, Marougka, & Priebe, 2011).

Figure 2 shows the forest plot of the effect sizes (Cohen's d, here defined as the average change divided by its standard deviation) of pre-post change on the index of BPD pathology used in the study (BPDSI; Arntz et al., 2003; Dickhaut & Arntz, 2012; Giesen-Bloo, Wachters, Schouten, & Arntz, 2010; Giesen-Bloo et al., 2006; Nadort et al., 2009; DIB-R; Farrell et al., 2009; Zanarini et al., 2003). If a BPD-severity measure was missing, the average effect size of the available outcome measures was used (Nordahl & Nysaeter, 2005). Intent-to-treat analyses formed the basis, with dropouts either estimated through the loc-f method or through mixed regression analyses. The pooled effect size was 2.38 (95% CI 1.70, 3.07; heterogeneous variances model).

Figure 3 shows that the variation in effect size appears to be associated with treatment length. Lower effects were found in studies in which patients were treated for a mere 30 sessions (Farrell et al., 2009) or up to 18 months (Nadort et al., 2009). Larger effects were reported in trials providing between 18–36 months of treatment (Dickhaut & Arntz, 2012; Giesen-Bloo et al., 2006; Nordahl & Nysaeter, 2005). The ST effect sizes also compare favorably to the global effect size of DBT (d = .50, 95% CI .43, .57) reported in a meta-analysis by Kliem et al. (2010). However, in the absence of RCTs directly comparing ST and DBT, it

Forest Plot: 95% Confidence Interval

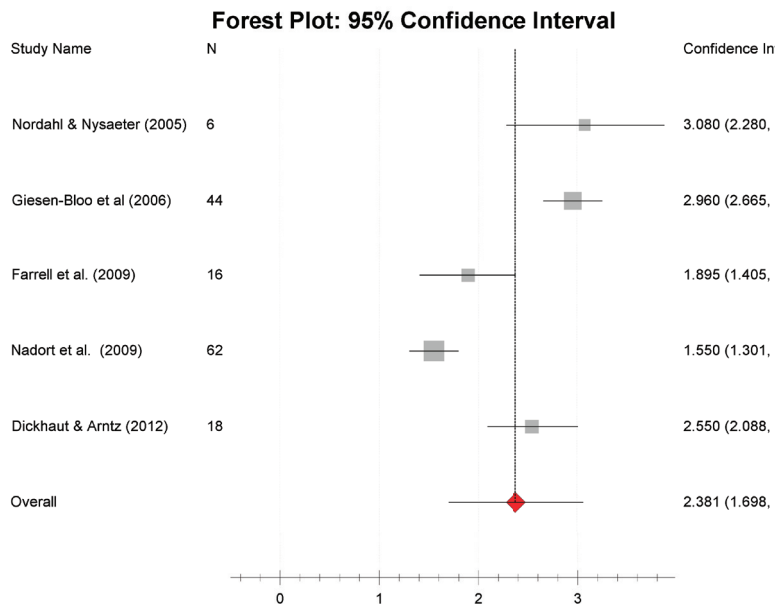| Study Name	N		Confidence In
Nordahl & Nysaeter (2005)	6		3.080 (2.280,
Giesen-Bloo et al (2006)	44		2.960 (2.665,
Farrell et al. (2009)	16		1.895 (1.405,
Nadort et al. (2009)	62		1.550 (1.301,
Dickhaut & Arntz (2012)	18		2.550 (2.088,
Overall			2.381 (1.698,

FIGURE 2. Forest plot of Cohen's d effect size of pre-post changes of ST for BPD in 5 trials

should be noted that the comparison of the effect sizes should be interpreted with caution. It is possible that various factors other than content of the treatment packages might explain the difference, such as the use of different outcome instruments, differences in treatment length and intensity (DBT usually lasting 1 year, ST longer), and differences in severity of the samples.

RECENT DEVELOPMENTS

Schema Mode Models For Other Personality Disorders

Given the success of ST for BPD, specific mode models have also been proposed for histrionic PD, narcissistic PD, avoidant PD, dependent PD, obsessive-compulsive PD, and paranoid PD (Bamelis et al., 2011). The coping modes cover a broad variety of coping patterns and related symptoms and are meant to conceptualize and treat personality disorders with very different symptomatology within the same basic model. Given the large overlap between forensic patients and those with antisocial disorder, the antisocial PD is conceptualized within a mode model for forensic patients exhibiting delinquent behaviors (Bernstein et al., 2007). The following two examples of specific schema mode models illustrate similarities and differences between models for different disorders.

Anxiety is the dominant emotion in avoidant PD (First, Spitzer, Gibbons, & Williams, 1996; Reich, 2009) and is related to worries that others will view the person as socially inept and inferior, and as being incapable of dealing with chal-
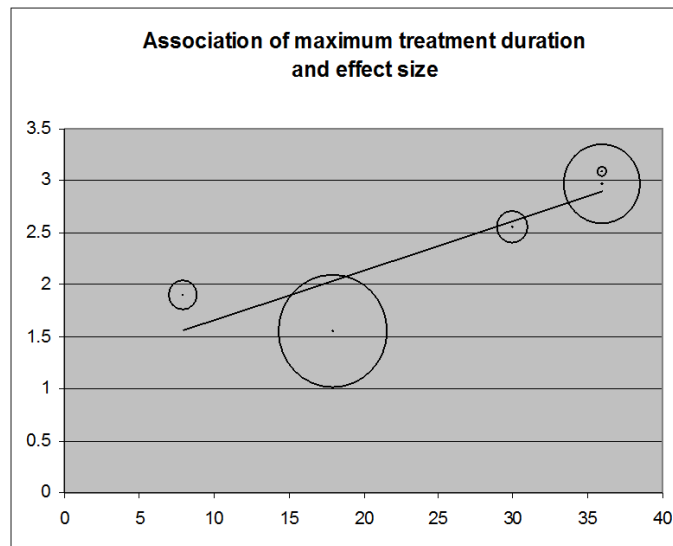
FIGURE 3. Relationship between maximum treatment lengths and effects sizes of the change in BPD-severity (Cohen's d). Circles are proportional to study ST sample size

lenging situations. The individual's self-image is characterized by low self-esteem and avoidance is conceptualized as the dominant coping strategy. Research shows that avoidant PD is characterized by avoidance both in social and nonsocial areas (Alden, Laposa, Taylor, & Ryder, 2002; Taylor, Laposa, & Alden, 2004). Accordingly, avoidant coping modes are prominent in the schema mode model for avoidant PD, and have received empirical support (Bamelis et al., 2011). The avoidant protector mode is characterized by situational avoidance. The detached protector mode is characterized by detachment from inner emotions and experiences, feelings and thoughts, as well as from people. Further, a punitive parent mode is active, and is hypothesized to represent the internalization of emotionally abusive parenting experienced as a child. In support of this conceptualization, research suggests that avoidant PD may be associated with high rates of emotional childhood abuse (Lobbestael, Arntz, & Bernstein, 2010). Vulnerable child modes are conceptualized as being at the core of the problem. A lonely and inferior child mode represents the emotional state these individuals try to avoid experiencing, in which they feel the loneliness and inferiority they experienced as a child. An abandoned/abused child mode represents the emotional state they experienced when they were abused or abandoned as a child.

The general treatment of avoidant PD follows the same approach outlined above. An emphasis is placed on gently confronting avoidance, and on insisting that avoidance be first reduced in the therapy session and later on in the patient's own environment. Experiential techniques are often introduced stepwise, and overcoming avoidance is also a central focus in these techniques. As with BPD

patients, emotion-focused techniques form the core of treatment although cognitive and behavioral interventions are also applied to replace avoidant behaviors with healthier ones.

Another recent development is the model for forensic patients exhibiting delinquent behaviors. Using a schema mode model to understand imprisoned and forensic populations seems particularly appropriate given the high rate of personality disorders in these individuals (De Ruiter & Greeven, 2000; Leue, Borchard, & Hoyer, 2004). Inadequate aggressive or cunning behaviors are conceptualized with over-compensation modes, which are central to the mode model of forensic patients. Three over-compensation modes have been defined for forensic patients: In the bully and attack mode, people use threat, aggression, and intimidation to get what they want, or to protect themselves against threat. In the conning mode, people con, lie, or manipulate to achieve a specific goal related to either victimizing others or escaping punishment. In the predator mode, people focus on eliminating a threat, obstacle, or enemy in a cold, ruthless, and calculating manner. By contrast, the bully and attack mode uses hot aggression.

A recent study investigated the effectiveness of ST in six different PDs (with a majority of patients with cluster C PD in the sample) and found that ST was superior to different control treatments (Bamelis, Evers, Spinhoven, & Arntz, 2013). However, treatment effects were not as strong as those observed in studies with BPD—though it should be noted that dosage of ST was much lower in these studies. However, the lowered efficacy may also be related to the differential methods employed to train therapists in this study. Therapists were trained in two waves. The second wave of therapists, who were trained by practicing role plays, had significantly less drop-out and stronger effects than the first wave of therapists, who were trained by lectures and watching videos. Preliminary results from an ongoing study investigating ST in forensic PD patients are encouraging (Bernstein, 2012).

SCHEMA THERAPY AS A GROUP TREATMENT

The group format represents another promising recent development in ST. Group psychotherapy is potentially more cost-effective than individual treatment. In addition, groups offer important curative factors including support by peers, a sense of belonging and understanding, opportunities for vicarious learning, and in vivo practice of expressing ones needs in a healthy fashion. Incorporating these elements, Farrell and Shaw (2012) developed a group ST treatment protocol for BPD, which was successfully piloted in the studies by Farrell et al. (2009) and Dickhaut and Arntz (2013) mentioned above. Furthermore, van Vreeswijk and Broersen (2012) developed a shorter group therapy approach based on ST principles, which has been successfully piloted in eating disordered patients (Simpson, Morrow, Van Vreeswijk, & Reid, 2010). However, larger trials are still needed to determine the efficacy of ST in a group format. An international multicenter RCT is presently under way investigating group ST for BPD using the protocol

developed by Farrell and Shaw (2012).[1] Furthermore, a multicenter trial compar-ing group-ST to traditional group CBT for patients with generalized social phobia and comorbid avoidant personality disorder has been initiated in 2013 (Greeven, Spinhoven, Korrelboom, van Giezen, & Arntz, in progress).

EMERGING TRENDS AND NEW DIRECTIONS

Application to Other Disorders, Settings, and Client Populations

A major recent trend is to adapt the schema mode model to other disorders with a chronic course and an unsatisfactory response to traditional CBT such as substance use disorders, chronic depression, and eating disorders. Emotional dysregulation may be a central theme in these disorders (Berking & Wuppermann, 2012), which supports the use of the schema mode model to conceptualize these conditions. Although ST was not superior to individual drug counseling (and even inferior with regard to some outcomes) in a recent large randomized treatment study for patients with substance dependency and personality disorder (Ball et al., 2011), it is noteworthy that the treatment approach used a schema-based approach and did not use the schema mode model to direct treatment. Further, there is little evidence that core experiential ST techniques were used. Finally, the trial suffered serious methodological problems making it difficult to draw conclusions from the study (Lee & Arntz, 2013).

Specific schema mode models have not yet been developed for chronic Axis I disorders. Instead, mode models are based on the individual's comorbid per-sonality pathology and are then connected to the individual's axis I symptoms. For example, cocaine dependence in a narcissistic patient could be conceptualized as the self-soother mode, or the self-aggrandizer mode, or both (Arntz & Jacob, 2012). A few pilot studies assessing the efficacy of ST for chronic axis I disorders have recently been conducted while others are underway (Heilemann et al., 2011; Renner, Huibers, & Arntz, in progress; complex / chronic depression; Cockram, Drummond, & Lee, 2010; complex PTSD; Thiel et al., 2012; obsessive-compul-sive disorder). Components of ST, notably imagery rescripting, have also been tested in various complex Axis I disorders and found to be very effective (see Arntz, 2012, for a review).

Another recent development is the application of ST in different populations and settings. A case series study on the treatment of personality disorders in the elderly is currently underway (Videler, van Royen, van Alphen, & Arntz, in prog-ress) and applications of ST for adolescents and couples is presently under discus-sion (Atkinson, 2012; Geerdink, Jongman, & Scholing, 2012). Schema therapy programs are also currently being implemented in more intensive treatment set-

tings, such as day clinic and inpatient settings (for example Muste, 2012; Reiss, Jacob, & Farrell, 2012). Although this modality has tremendous potential, findings from three pilot studies found that group ST was less effective in an inpatient setting (Reiss, Lieb, Arntz, Shaw, & Farrell, 2012).

Treatment Techniques

Another important trend in ST is a greater focus on positive schemas, emotions and experiences in treatment. Lockwood and Shaw (2012) emphasize the role of joy and play in in their clinical work given that many of these patients may have missed experiencing these key ingredients in their childhood. Research also suggests that better fulfillment of patients' needs and wishes during treatment predicts better therapy outcomes (Arntz, Hawke, Bamelis, Spinhoven, & Molendijk, 2012).

Further promising trends are related to integrating nonverbal treatment techniques with schema therapy. Treatment approaches such as music, art, drama, and body therapy may offer the potential for effecting change processes in accordance with the schema mode model (e.g., van den Broek, Keulen-de Vos, & Bernstein, 2011). Mental images, increasingly regarded as central in the development and maintenance of different psychological disorders (Brewin, Gregory, Lipton, & Burgess, 2010) continue to be targeted in ST using innovative strategies. Experiential techniques such as imagery rescripting, historical roleplays, and chair work exercises hold promise for modifying mental images but still need to undergo systematic empirical evaluation to test their effectiveness and to unravel underlying mechanisms of change (Arntz, 2011, 2012).

Treatment Comparisons

Given that ST has been directly compared only to TFP, direct comparisons with other well-established treatment approaches such as DBT or MBT are still needed. The comparative efficacy of group versus individual ST is still warranted. Although group treatments may be less costly to deliver, preliminary studies suggest that they may be associated with greater dropouts. Future studies are also needed to understand how the group format may be modified to address the needs of all group members, and to assess for whom and in what setting they may be better indicated. Finally, dismantling studies are also necessary to test essential ingredients of ST. Given that ST is a complex and lengthy treatment, understanding which techniques (e.g., limited reparenting, experiential techniques) are most critical for inducing change may help modify the treatment to focus more on those elements, and in doing so, increase the effects of ST.

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