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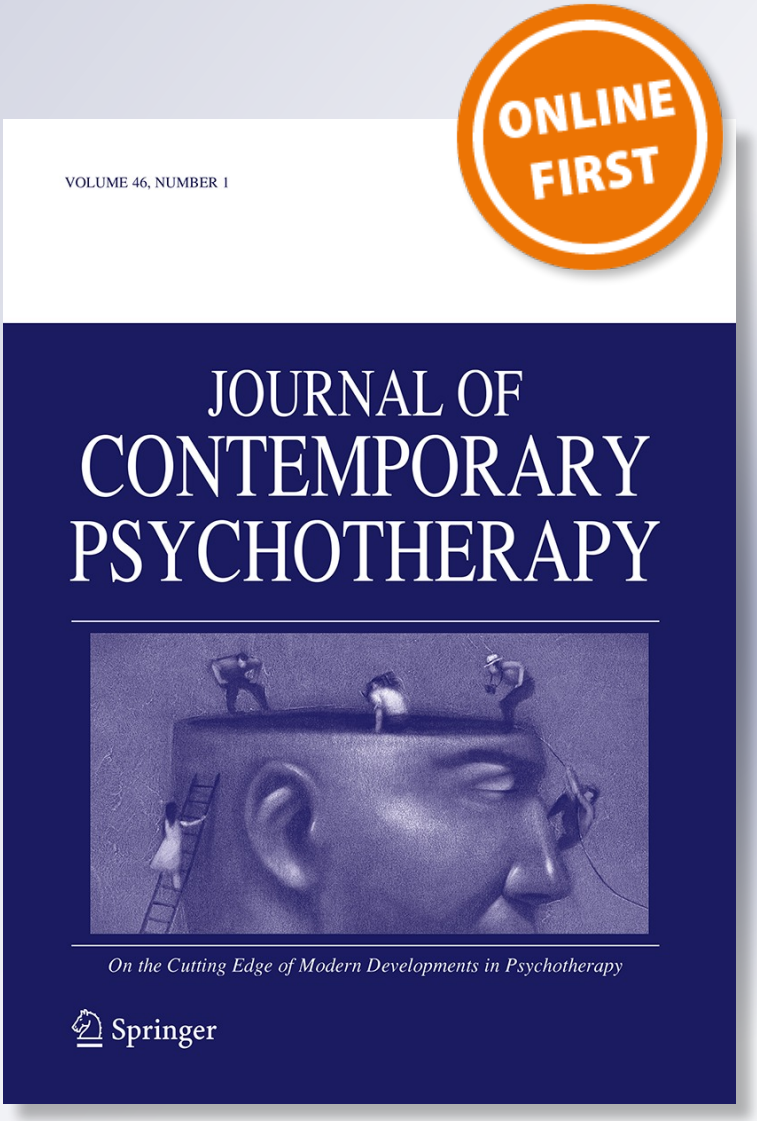

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ORIGINAL PAPER

Imagery Rescripting for PTSD and Personality Disorders: Theory and Application

Robert N. Brockman[1] · **Fiona L. Calvert**[2]

Abstract Imagery Rescripting is a psychotherapy technique that has been integrated into Cognitive Behaviour Therapy (CBT) interventions in the treatment of various psychiatric populations including post-traumatic stress disorder (PTSD), personality disorders, specific phobias, depression, obsessive–compulsive disorder, social phobia, and suicide risk. Whilst empirical evidence for imagery rescripting is accumulating, the technical application and theoretical rationale for its use can differ markedly depending on treatment protocol, treatment population, and research group. One such instance is in the case of PTSD and personality disorders where there is significant disparity in the rationale and application of imagery rescripting for the two populations. This paper describes the theoretical and technical differences between protocols for the use of imagery rescripting with these two populations. It will be argued that the differences between these protocols may not necessarily represent meaningful disorder-specific considerations. Instead, choosing between different protocols for the application of imagery rescripting may be better guided by considering the goals of the intervention as well as the individual client's readiness for mastery in rescripting. Finally, current research limitations in this field are highlighted and the authors suggest future research directions for further clarity in clinical decision-making regarding this intervention.

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Imagery Rescripting is a psychotherapy technique that has been integrated into Cognitive Behaviour Therapy (CBT) interventions to treat various psychiatric populations including post-traumatic stress disorder (PTSD) (Arntz et al. 2013; Grunert et al. 2003, 2007; Hagenaars and Arntz 2012; Long et al. 2011), personality disorders (Young et al. 2003), specific phobias (Hunt and Fenton 2007), depression (Brewin et al. 2009; Wheatley et al. 2007), obsessive–compulsive disorder (Speckens et al. 2007; Veale et al. 2015), social phobia (Frets et al. 2014; Reimer and Moscovitch 2015; Wild et al. 2007), body dysmorphic disorder (Willson et al. 2015) and suicide risk (Holmes et al. 2007b).

Imagery rescripting describes a set of related therapeutic procedures that are aimed at changing the unfolding of events in a distressing or traumatic memory. In this process, part or all of a distressing memory is evoked and the client is assisted to 'rescript' the memory by imagining a more desirable outcome (Hackman et al. 2011). This can be achieved in a number of ways, and may involve imagining a different ending to a traumatic event, bringing a trusted adult-figure into the memory to protect the vulnerable individual, or punishing the perpetrator of the distressing event (Stopa 2009). Recent experimental findings have confirmed the special capacity of mental imagery to evoke emotions (Holmes and Mathews 2005), suggesting that techniques which make use of imagery may be a powerful tool for any therapy which aims to facilitate emotional processing.

Although not a new technique amongst psychotherapists (Edwards 2007), imagery rescripting has become the focus

of serious academic endeavor to claim its place as a technique used in the CBT tradition in the last decade (Holmes et al. 2007a). As will be reviewed in detail in this paper, the development of imagery rescripting followed two parallel streams: (1) as an approach to treating PTSD, particularly type II traumas (Smucker et al. 1995); and (2) as a method for modifying the schematic beliefs that often characterize personality disorder presentations (Arntz and Weertman 1999). Separate protocols for the use of imagery rescripting have emerged from these two streams.

This paper will endeavor to describe the theoretical and technical differences in the application of imagery rescriping to PTSD as well as to personality disorders, as outlined by protocols within the literature. It will be argued that the differences between these protocols may not necessarily represent meaningful disorder-specific considerations. Instead, choosing between different protocols for the application of imagery rescripting may be better guided by considering the goals of the intervention as well as the individual client's readiness for mastery in rescripting. Finally, current research limitations in this field are highlighted and the authors suggest future research directions for further clarity in clinical decision-making regarding this intervention.

Rationale and Application of Imagery Rescripting for PTSD

Posttraumatic stress disorder (PTSD) is a psychological condition that may develop in individuals who have been exposed to one or more traumatic events. It involves the presence of intrusion symptoms such as recurrent flashbacks or nightmares as well as avoidance of stimuli associated with the traumatic event. Individuals diagnosed with PTSD also display negative alterations in cognition, mood, arousal and reactivity, related to the traumatic event (American Psychiatric Association 2013). In examining the nature of traumatic events that precede posttraumatic symptoms, Terr (1991) distinguished between "type I" single-incident trauma (an unexpected event such as a traumatic accident, natural disaster or terrorist attack) and "type II" complex trauma (repetitive traumatic events such as ongoing childhood sexual abuse, community violence, or genocide). Type II trauma is associated with a much higher risk for the development of PTSD compared with type I (Copeland et al. 2007). Type II trauma can also lead to negatively altered schematic views of oneself and others, particularly when occurring at developmentally critical periods. Further, an individual's ability to form a healthy identity and coherent personality may be impacted as a result of exposure to type II trauma (Cook et al. 2005; Van der Kolk et al. 2005). In both types of trauma, but particularly in the case of type II, non-fear related emotions such as guilt, powerlessness, self-blame, disgust and shame may contribute to the maintenance of PTSD (Holmes et al. 2005). Imagery rescripting has emerged as a potential method of targeting these non-fear related emotions in PTSD. The following section outlines the theoretical rationale and protocol for the use of imagery rescripting for individuals with PTSD with non-fear based emotions.

Imagery Rescripting for PTSD

A description of imagery rescripting applied to PTSD populations was first published by Smucker et al. (1995) who described the use of this technique for survivors of childhood sexual abuse (type II trauma). Smucker et al. identified the need for treatment approaches targeting the complex array of non-fear related emotions often experienced by these individuals, including powerlessness, self-blame, disgust and shame. At this time, Prolonged Exposure (Foa et al. 1989) had emerged as a popular treatment of PTSD in which the client recalls and relives traumatic memories by telling their account out loud, in present tense and in first person narrative. Imaginal exposure to these memories is repeated and corrective information is provided within a safe therapeutic environment. Through modification of the meaning given to the memory, the reliving of the traumatic event becomes less distressing (Foa et al. 1989). Smucker et al. (1995) argued that despite its success in guiding treatment for PTSD in general, the Foa et al. (1989) model of PTSD was too narrow to encompass the non-fear related meanings and emotions that are frequent in presentations of childhood sexual abuse survivors. Furthermore, Prolonged Exposure was argued to be too narrow to encompass and drive treatment for the pathogenic schemas which generally developed alongside such early maladaptive experiences. Smucker et al. (1995) argued that although prolonged exposure may successfully decrease danger appraisals, it was limited in its ability to bring about change in the meanings of trauma events. Indeed, it is being made increasingly clear in the trauma literature that although fear is the most common emotional response to trauma, non-fear related emotions are often seen as primarily maintaining many PTSD cases (Holmes et al. 2005). While exposure treatments are known to be effective for fear-related disorders, there is no compelling evidence that non-fear related emotions habituate to exposure alone (Grunert et al. 2007).

To address this limitation, Smucker et al. (1995) introduced imagery rescripting as a variation to Prolonged Exposure. They termed their protocol Imagery Rescripting and Reprocessing Therapy and articulated the following aims: (a) decrease physiological arousal, (b) decrease PTSD intrusions, (c) facilitate cognitive change regarding

the meaning of the event, and (d) modify maladaptive abuse-related beliefs and schemas. Unlike Prolonged Exposure, the imagery rescripting protocol is not based upon helping clients 'habituate' to PTSD memories. Instead, imagery rescripting for PTSD aims to directly modify trauma images to give the client a sense of mastery over the distressing memory thus decreasing fear, as well as modifying the maladaptive non-fear related meanings that might be driving emotions such as disgust, shame, and guilt. Theories of emotional processing (Foa and Kozak 1986) and state-dependent recall (Bower 1981) suggest that the maladaptive meanings and schemas associated with childhood sexual abuse can most readily be accessed and modified when the client is in an emotional state most similar to that occurred during the abusive experience. That is, cognitive change is more likely to occur when the greatest number of elements or cues that underpin the traumatic experience is present, conditions that may be replicated with the use of imagery rescripting.

The application of imagery rescripting to PTSD is made up of three discrete stages, beginning with an imaginal exposure stage (stage 1) (Smucker et al. 1995; Smucker and Dancu 1999). In the imaginal exposure stage, the client visually recalls and re-experiences the images, thoughts and associated affect associated with the traumatic event in much the same fashion as is done in a Prolonged Exposure paradigm. The difference however, is that in imagery rescripting, the exposure is not prolonged so as to bring about habituation but only lasts as long as it takes for the client to recall the memory script once, for the purpose of fully activating the memory and associated affect cues. Next, an imaginal rescripting stage (stage 2) ensues where the client begins to again recount the script up until the height of the trauma (the client's subjective units of distress is frequently taken from which the clinician decides where the affect is most intense). At this point, the therapist encourages the client to imagine his or her adult-self entering the scene and provides prompting so that the client may be able to change the abuse imagery and instead produce a mastery imagery. The therapist uses what Smucker and Dancu (1999) refer to as Socratic imagery, analogous to the Socratic method of questioning to promote guided discovery (Padesky 1993). In the Socratic imagery method, the therapist assists the client to make his or her own decisions about what to do next in the scene so as to maximise the mastery experience. With this in mind, the therapist provides prompts for the client to engage in the imagery but will not enforce a set direction or narrative. The therapist might ask 'is there something you would like to do or say in the scene as your adult self?', encouraging the client to autonomously generate the imagery. Even at times when the client clearly struggles to have power in the image, the therapist does not intervene in a directive sense, but instead prompts the client to think of their own way of obtaining mastery. A therapist may for example ask, 'is there something or someone you would like to bring into the scene so that you can help the child?' Once a client has experienced success with stage 2 of imagery rescripting by demonstrating that they can overcome their powerlessness and have mastery over the image, they progress to stage 3, which involves adult-child interaction imagery. The purpose of stage 3 imagery is for the 'healthy adult' within the client to provide nurturance and support to the abused child in the image, something that was presumably missing in the original narrative. Successful imagery rescripting sessions where the client has a good mastery experience are audio-recorded and given to the client to repeat for homework.

Empirical Evidence of Imagery Rescripting for PTSD

Thus far, there is some empirical evidence for the use of imagery rescripting in the treatment of PTSD. An initial paper by Smucker and Niederee (1995) describes a successful case study for a survivor of childhood sexual abuse with PTSD, and the results of a small open trial comparing imagery rescripting to CBT with Prolonged Exposure for survivors of childhood sexual abuse with type II trauma. This trial reports that both treatments resulted in significant reductions in PTSD symptoms, with imagery rescripting showing superior reductions on all but one outcome measure when compared to CBT with Prolonged Exposure. These findings suggest that imagery rescripting may be at least as effective if not more effective in this population when compared to a gold standard treatment. However, the lack of a control group in the study design weakens the strength of such conclusions.

Grunert et al. (2003) conducted the first case study of imagery rescripting with work-accident related PTSD. Two clients who were considered non-responders to CBT with Prolonged Exposure were selected to participate. Both were assessed to be suffering prominent non-fear related emotions such as guilt and anger to varying degrees. The research design combined Prolonged Exposure and imagery rescripting components at different times in treatment so as to aid in some comparison. The case study showed that these two clients with a high loading of non-fear related emotions did not habituate after 14 and 2 sessions of Prolonged Exposure respectively (participant 2 dropped out after 2 sessions). However, both participants no longer met criteria for PTSD after adding just one session of imagery rescripting followed by several experiences of reliving the imagery rescripting session through use of a tape for homework over the following week. This case study data suggests that adding an imagery rescripting

component to Prolonged Exposure may be of benefit to persons suffering PTSD with prominent non-fear related emotions. However, these results must be interpreted with caution due to the methodological limitations within this design. The uncontrolled nature of the research design, minimal number of participants and potential participant-selection bias render the broad generalisability of the findings questionable. Further, the mechanism through which imagery rescripting seemed to facilitate a strikingly rapid reduction in PTSD symptom warrants closer investigation.

Arntz et al. (2007) recently conducted a randomised wait-list trial investigating the use of Prolonged Exposure versus Prolonged Exposure + imagery rescripting versus wait-list control in a group of 71 individuals suffering chronic PTSD. In total, 39 % of participants reporting multiple traumatic experiences and 24 % of participants reporting trauma that had taken place in childhood. Data from 67 participants were available at completion of the study which showed that, at completion, both treatment groups significantly reduced PTSD symptoms in comparison to the wait-list group. Interestingly, there were significantly more drop-outs in the Prolonged Exposure group compared with the Prolonged Exposure + imagery rescripting group (51 vs. 25 %, $p = .03$). Intention to treat analyses showed that the two treatment groups did not differ from each other in terms of the effect on PTSD symptoms overall. However, participants in the Prolonged Exposure + imagery rescripting group reported greater reductions in uncontrollability of anger, externalisation of anger, hostility, and guilt when compared to those who had received Prolonged Exposure alone. Further, the results showed a trend towards further improvement at follow-up. These findings suggest that compared to Prolonged Exposure alone, Prolonged Exposure + imagery rescripting is at least as effective in reducing the overall symptoms of PTSD, is better tolerated by clients, and has a greater effect on problematic non-fear related emotions such as anger and guilt.

These results were further supported in a study conducted by Grunert et al. (2007) where 23 Prolonged Exposure treatment non-responders received 1-3 sessions of imagery rescripting. The findings of the study indicated that 18 out of 23 participants no longer met criteria for PTSD after this small course of imagery rescripting work. Interestingly, this study also reported that all 23 participants (sufferers of type I trauma who had had an unsuccessful trial of Prolonged Exposure) were assessed before treatment to be suffering predominant non-fear related emotions. The interpretability of these results is also somewhat limited by potential selection-bias issues and lack of experimental control. However, situating this study within other literature, Grunert et al. argue that CBT with Prolonged Exposure may be more effective for clients with prominent fear-related PTSD, yet those suffering PTSD with prominent non-fear related emotions appear to better tolerate and benefit from imagery rescripting. They call for individualised trauma assessments where care is taken to assess the prominent PTSD emotions thought to be maintaining the disorder. From these assessments, clinical decisions can be made as to choice of approach, with presentations loading heavily on fear receiving Prolonged Exposure and presentations with prominent non-fear related emotions receiving an imagery rescripting component.

In sum, imagery rescripting appears from a small number of case studies and open trials to be at least as effective as CBT with Prolonged Exposure in the treatment of both type I and type II trauma. However, the most interesting finding from these case studies and trials is the trend that imagery rescripting appears to be more effective and better tolerated than CBT with Prolonged Exposure in the treatment of PTSD with prominent non-fear related emotions. These findings align with the notion that the theoretical model of emotional processing and habituation underpinning Prolonged Exposure is not sufficiently applicable in the treatment of PTSD with prominent non-fear related emotions. Clearly however, further investigation using more rigorous research designs including randomised controlled trials is required to provide more solid evidence for these assertions.

Rationale and Application of Imagery Rescripting for Personality Disorders

Although imagery rescripting first emerged as a treatment for the intrusive symptoms of PTSD, it is increasingly being seen as a viable treatment component for people with personality disorders, particularly within Schema-Focused Therapy (Young et al. 2003). In the context of Schema Therapy, imagery rescripting is applied to assist with change in the early maladaptive schemas which are thought to maintain personality disorders (Arntz 2011), rather than to reduce PTSD symptoms such as intrusions through the facilitation of emotional processing (Foa et al. 1989; Smucker et al. 1995). The main rationale for the use of imagery rescripting for personality disorders is that successful change in the underlying early maladaptive schemas involves the use of cognitive-behavioural techniques not only at a propositional knowledge level (i.e. cognitive challenging of cognitions and beliefs as is common in Beckian cognitive therapy) but at an implicational knowledge level where the client experiences the new perspective emotionally (Arntz 2011; Arntz and Weertman 1999). From this perspective, deep cognitive change requires clients to activate the meaning structures on an emotional

level so that they can be accessed and modified with new more adaptive perspectives (Holmes and Mathews 2005; Teasdale 1993). Imagery rescripting is one such technique that allows clients to reprocess new, more adaptive meanings using both the implicational and propositional meaning systems because of the ability of mental imagery to evoke the strong emotions associated with the original meaning structures (Holmes et al. 2007a). It is thus clear that the rationale and goals of imagery rescripting with personality disorders within Schema Therapy differs markedly from that used in imagery rescripting for PTSD. The focus on the use of imagery rescripting for personality disorders is on cognitive and emotional change of early maladaptive schemas rather than addressing PTSD symptoms including re-experiencing.

The technical application of imagery rescripting to personality disorders in Schema Therapy also has several important divergences when compared to its application to PTSD populations (Arntz 2011). Young et al. (2003) describe imagery rescripting in full as it is applied in Schema Therapy. The main discrepancy between imagery rescripting for personality disorders and PTSD relates to the degree to which the imagery is therapist-directed. Whilst imagery rescripting for PTSD involves a Socratic endeavor in which the therapist facilitates client-driven discovery, imagery rescripting protocols within Schema Therapy for personality disorders assume that clients are often unable to generate such imagery on their own. As such, therapists using Schema Therapy with clients with personality disorders are instructed to enter the imagery and model the alternative perspective or healthy adult response for the client. The imagery rescripting thus takes a different form with the client's 'adult self' playing no part in the exercise initially, either in interactions with an abuser/invalidating figure or in child-self soothing interactions. The idea is that the therapist models the healthy adult perspective in order for the client to process this different perspective from some distance in a safe way, without the risk of having a failure experience. Arntz (2011) asserts that many clients with personality disorders do not yet have a healthy side that is developed enough to lead the imagery. These clients may lack accessible healthy views on the situation and may struggle to adaptively interact in the imagery with invalidating figures and their child-selves in healthy ways. Furthermore, he argues that the process of initially having the therapist come in and act as an advocate for the child-self is an important part of the limited re-parenting process that is core to Schema Therapy. With time and multiple positive experiences with therapist-intervening imagery, the therapist may then encourage the client's healthy adult to enter and take over this process. In this way, imagery rescripting for personality disorders is graded and less confronting for clients in the beginning. However, the cost of this may be that the imagery experience is less powerful for the client as it is not self-generated as it is when applied to PTSD. In imagery rescripting for PTSD, clients retain control of the direction of the imagery and Smucker and Dancu (1999) argue in principle that such Socratic processes may be more meaningful and powerful for the client. No empirical studies to date have looked specifically at comparing the efficacy of these two variations of imagery rescripting to see whether either procedure is likely to be more or less beneficial than the other in any population.

Empirical Evidence of Imagery Rescripting for Personality Disorders

Evidence for the efficacy of the entire schema therapy package for personality disorders is quickly emerging. Two randomised trials have been published for the overall Schema Therapy package including imagery rescripting for the treatment of Borderline Personality Disorder in individual (Giesen-Bloo et al. 2006) and group formats (Farrell et al. 2009) with favorable results for schema therapy over transference-focused individual psychotherapy and generic group therapy respectively. These results have also now been generalised to Cluster C, Narcissistic, and Histrionic Personality Disorder in a large Randomised Controlled Trial (Bamelis et al. 2014). However, no research to date has investigated the efficacy of any individual components of Schema Therapy for personality disorders, including imagery rescripting.

The closest direct evidence for the efficacy of imagery rescripting for personality disorders comes from a deconstruction study conducted by Weertman and Arntz (2007) who compared the efficacy of past- versus present-focused CBT techniques for the treatment of personality disorders. The major aim of the present-focused CBT intervention was to change maladaptive schemas and beliefs by techniques focusing on the present including continuum methods, positive data logs, pie charts, Socratic questioning, schema-dialogue, role plays in the present and use of the therapeutic relationship (empathic confrontation, giving direction, self-disclosure). Each session focused on schemas that were active in the present, with no use of methods focusing on the past. The past-focused CBT intervention aimed to change the meaning of schematic representations that have roots in childhood by use of historical role-plays and imagery rescripting. The use of present techniques to challenge schemas was not allowed and real life current problems were related to historical roots of the activated schemas. The study utilised a cross-over design in which participants experienced both past- and present-focused interventions with randomised order of treatment phases. This study found significant and large effect sizes for both

past- and present-focused interventions compared with the 'exploration period' for which no significant effects were found. These outcomes were maintained at 12-month follow-up. There was no significant difference in outcomes for the past- and present-focused interventions. The authors conclude that past-focused CBT interventions, for which imagery rescripting is the core technique, are as effective in the treatment of early maladaptive schemas in personality disorders as present-focused techniques. Several limitations of this study should be noted when interpreting these findings. Firstly, the results must be interpreted with caution and the generalisability of findings may be questionable due to the small sample size ($n = 21$). Further, the crossover design utilised in this study meant that a direct comparison between CBT with and without treatment of childhood memories was not possible. Thus, the researchers were not able to determine whether a combination of present- and past-techniques is more effective than CBT without treatment of childhood memories. In addition, the experimental design meant that the researchers could only examine the long-term effects of the total therapy package but not of the past- and present-focused interventions separately. Finally, the small sample of this study meant that no conclusions can be drawn regarding the influence of treatment of childhood memories for different personality disorder diagnoses. It is therefore clear that more investigations are needed to test the effectiveness of imagery rescripting on personality disorders more directly.

Clinical Implications and Considerations

This review has highlighted that imagery rescripting is a psychotherapy technique which appears to be an effective addition to CBT treatments across a large number of populations, including PTSD. At present, less research is available to support its use with personality disorders. However, evidence exists for the use of Schema Therapy for this population, with imagery rescripting being a core component of this intervention.

Clinical protocols for the use of imagery rescripting with clients with personality disorders and PTSD evolved separately and differ markedly in terms of both rationale and technique. However, these two clinical subgroups have considerable diagnostic overlap and a presumed shared etiology (Lobbestael and Arntz 2007), given the longstanding recognition of the high frequency of abuse histories in personality disorders (Gunderson and Sabo 1993). As a result, appropriate rationale and application of imagery rescripting may present a point of confusion for therapists, particularly when such diagnostic overlap is present. These protocols differ markedly in the roles of the therapist and client, with PTSD protocols calling for the use of client-directed and Socratic rescripting as opposed to the therapist-lead approach outlined within the personality disorder literature. However, the fact that two distinct general protocols for the use of imagery rescripting emerged from different diagnostic groups does not necessarily mean that the differences between the approaches reflect meaningful disorder-specific considerations. Instead, choosing between different protocols for the application of imagery rescripting may be better guided by considering the goals of the intervention as well as the individual client's readiness for mastery in rescripting.

Firstly, the goals of the intervention may be a useful consideration in choosing one application of imagery rescripting over another. If the primary goals of the intervention are change in early maladaptive schemas for the purpose of decrease in personality disorder symptoms, then best evidence thus far indicates that a schema therapy rationale and application is best supported. If on the other hand the primary goals of the intervention are to intervene in the PTSD syndrome, to bring about change in the core symptoms of PTSD such as intrusive symptoms, then the addition of imagery rescripting to CBT has some empirical support.

Perhaps more importantly, another core issue for consideration in deciding between imagery rescripting protocols is to assess whether or not the client is likely to be capable of generating mastery imagery through Socratic rescripting. Schema Therapy protocols suggest that the more severe the client's personality disorder features, the more the therapist should guide the imagery initially to assist in modeling a healthy view of the image. This would seem to also apply to cases where the primary goals of the intervention are to reduce PTSD symptoms in persons with co-morbid personality disorder diagnoses or features. It may also be that a client presenting with PTSD resulting from type II trauma, particularly when exposed to trauma in their early development, finds it difficult to lead an imagery rescripting intervention since type II trauma commonly leads to negatively altered schematic views and can impede the formation of a healthy identity (Cook et al. 2005; Van der Kolk et al. 2005). These considerations must be balanced in conjunction with the cognitive therapy principle that a more Socratic, client-guided imagery rescripting may ultimately be a more powerful intervention for clients due to increased mastery. A cautious clinical approach may be to initially use therapist-guided imagery rescripting when in doubt as to the above questions. This is less likely to lead to poor outcome for the client, can ease the client into the process of imagery rescripting in a graded fashion, and may assist the therapist in providing further assessment of a client's readiness to engage in more Socratic imagery rescripting.

Current research on the effectiveness of imagery rescripting for PTSD and personality disorders is plagued with limitations and design issues. Rigorous empirical studies are required to more stringently test the above clinical considerations, which are put forward on the basis of the data available to date. In addressing the lack of clarity regarding clinical decision-making in the use of different imagery rescripting protocols, it is imperative that research is conducted to examine whether there is greater efficacy for any one protocol over another, and possibly more importantly, for whom. Clinical decision-making in the use of this intervention for clients with PTSD and personality disorders could be improved through examination of relevant client (and possibly therapist) variables in the effectiveness of imagery rescripting. Enhancing our understanding of and ability to measure client readiness for Socratic-based imagery rescripting is an important first step in improving clinical decision-making regarding appropriate implementation of imagery rescripting.

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