

Working With Imagery to Modify Core Beliefs in People With Eating Disorders: A Clinical Protocol

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Imagery is a relatively novel area of interest in eating disorders (EDs). Clinical experience and some research work indicate that rescripting of early memories may be a useful way to modify core beliefs in EDs. Relevant constructs, as applied in the current paper, are defined and described, including core beliefs, imagery rescripting, and early memories. Existing empirical research on the outcome of imagery rescripting of early memories is outlined, including in EDs. Relevant ED research on images and early memories in EDs is presented. A case is made for applying imagery rescripting to early memories in EDs. The origins and development of a clinical protocol are described. The aim of the protocol is to identify and rescript or modify early memories associated with the core beliefs characteristic of EDs. This process has also been applied in other disorders. Clinical examples illustrate the application of the protocol in EDs, including extracts of dialogue from a clinical case. The paper covers indications for use of the protocol, practical and ethical considerations, its suitability in individual cases, and some final practical tips. These include examples of useful questions to ask patients that facilitate successful rescripting of memories, and thus core belief modification. The paper concludes with some thoughts on future work.

SOME preliminary attention has been paid to the use of imagery in relation to core beliefs¹ in people with eating disorders (EDs; Cooper, Todd, & Turner, 2007; Mountford & Waller, 2006; Ohanian, 2002). Despite this, relatively little has yet been written on the topic. The current paper is concerned with the use of imagery rescripting of early memories in people with EDs. This approach, unlike that of Mountford and Waller, has the explicit aim of modifying the core beliefs of those with EDs. This article will begin with a short summary of ED outcome to set the scene. This will highlight the need for novel approaches to treatment in EDs. A brief overview of the advantages of using imagery strategies, versus more traditional verbal strategies, will be provided. What is meant by imagery rescripting (as well as imagery and early memories), and the effectiveness of imagery rescripting,

in eating and other disorders will be discussed. Particular attention will be given to definitions used in the current paper. Relative to EDs, a much larger literature exists in other disorders. Reference to definitions and outcome in other disorders will, therefore, help contextualize those used here in EDs. With a similar aim, research on relevant constructs (core beliefs, imagery, early memories, and images of early memories) in EDs will then be discussed. A rationale for imagery rescripting of early memories in EDs will be briefly presented. This will be followed by some initial thoughts on how imagery rescripting might work theoretically (in relation to cognitive theory), including in eating, and other disorders. Given that relatively little has been written on exactly how to carry out imagery rescripting in people with EDs, the majority of the paper will then describe a practical protocol. This will describe how to modify core beliefs in EDs, using the technique of imagery rescripting. This involves working with early memories. The methodology is based on that termed “imagery rescripting” by other researchers and clinicians (e.g. Edwards, 2007). It will focus on the rescripting of early childhood memories identified as being associated with patients' core beliefs, as described, for example, by Arntz and Weertman (1999). A similar protocol has previously been described as part of a comprehensive, integrated metacognitive and cognitive therapy treatment for bulimia nervosa (BN) and binge eating (Cooper, Todd, & Wells, 2009). The current description and protocol, however, is designed to be a stand-alone strategy. As such, it might potentially be

¹ *Core beliefs* (a term often used synonymously with negative self-beliefs, schema, or early maladaptive schema) is typically taken to refer to beliefs about the self that develop early in life, and that are central to the individual's core psychopathology. These beliefs are inflexible, persistent, applied across a wide range of situations in the individual's life, and resistant to change. There are technical differences in their respective definitions (see Beck, Freeman, & Associates, 1990). For example, core beliefs about others and the world have also been identified (see Padesky, 1994). In the current paper, the terms will be used synonymously, as is usual in clinical practice, with the preferred term being *core beliefs*.

integrated with a range of different treatment approaches. Detailed clinical material, taken from the author's experience with patients with EDs, will be used to illustrate the application of the protocol. Information on expected response and outcome will also be included.

EDs are often hard to treat successfully. Cognitive behavior therapy (CBT) has had some success, particularly for bulimia nervosa (BN; e.g., Agras, Walsh, Fairburn, Wilson, & Kraemer, 2000), but overall outcomes are less than optimal, especially when long-term outcome is considered (e.g., Fairburn & Harrison, 2003). Compared to BN, therapy for anorexia nervosa (AN), at least in systematic research trials, often results in poor outcome. This is true both in the short term, as well as over the longer term (e.g., Pike, Walsh, Vitousek, Wilson, & Bauer, 2003). One approach to improve outcome involves revision and elaboration of older cognitive-behavioral models of EDs (Jansen, 2001) and translation of these developments into clinical practice (e.g., Cooper, 2003; Cooper, Wells, & Todd, 2004; Cooper, Todd, Turner, & Wells, 2007; Waller et al., 2007). An important aspect of this is now often considered to be the identification of core beliefs: their role in the development and maintenance of EDs, and the application of this understanding to clinical work. An integral part of these developments is incorporation of core beliefs into an overall formulation of EDs. Here they are assigned a role either in the development of EDs (Waller et al., 2007) or one in which they also play an important maintaining function (Cooper, *in press*). They also play a role as one significant module to be added to transdiagnostic treatment in some cases (Fairburn, Cooper, & Shafran, 2003). To date, much core belief work in EDs has drawn on well-established strategies devised for personality disorders (e.g., Beck et al., 1990), and other long-standing difficulties (e.g., Young, 1990). Padesky (1994) provides a useful overview of how schema (or core belief) change might be achieved, and some of these methods have been adapted for EDs (e.g., Cooper, Todd, & Wells, 2000). These include historical tests of core beliefs and continuum work. Importantly, in the current context, however, all these strategies rely primarily on verbal methods. Anecdotally, clinicians have found these useful in EDs, but have also identified some important limitations (e.g., Cooper et al., 2009). In particular, while considerable change can be made in "rational" beliefs (when one considers the belief logically, or rationally), this change does not always extend to "emotional" beliefs (when one considers how one feels, irrespective of what is logically believed). As a result, patients may report that although they know logically (i.e., when they think about it rationally), that a belief about the self is no longer true, they still feel and behave, and remain convinced deep inside, that it is true. Few traditional methods of modifying core beliefs, in eating or other disorders, employ imagery-

based strategies. The potential advantages of imagery-based strategies, compared to verbal strategies, will be considered in more detail below.

In a number of disorders, attention has turned to the therapeutic use of imagery (e.g., Holmes, Arntz, & Smucker's, 2007, special issue of the *Journal of Behaviour Therapy and Experimental Psychiatry*) as a nonverbal strategy for producing change. This applies to core beliefs as well as other cognitive behavioral constructs. It has been recognized for some time that imagery may have greater power than verbal representation (for example, in facilitating some forms of learning; Paivio, Smythe, & Yuille, 1968). Singer (1974, 2006) provides a useful history of mental imagery in relation to the development of modern psychotherapy. Edwards (2007) suggests that its origins go back to Janet (1889) and use of "imagery substitution," the practice of which may involve (under hypnosis) visualization of early negative or traumatic early memories followed by their transformation into more positive images. A widely cited example from Janet (Marie) is not dissimilar in content to the current practice of imagery rescripting of early memories. Indeed, it is described as such by van der Hart and Friedman (1989). However, the theoretical mechanisms hypothesized to be responsible for change as outlined by Janet are not consistent with those that might be proposed by modern-day CBT. The role of imagery in assisting emotional change formed part of behavior therapy, notably in systematic desensitization (Wolpe, 1958). Visualization is an important technique in Gestalt therapy (Perls, 1970). However, the therapeutic use of imagery has only begun to be extensively explored in CBT.

It has been proposed that imagery, compared to verbal representation, has a special relationship to emotion. Evidence is now rapidly accumulating in support of this notion (Holmes & Mathews, 2005). For example, research has demonstrated how use of mental imagery compared to use of a verbal sentence produced a greater emotional response, even though the material being processed was the same (Holmes, Mathews, Mackintosh, & Dalgleish, 2008). A number of different applications of imagery have been described historically in CBT. Beck, Emery, and Greenberg (1985), for example, used imaginal exposure of anxious images, imagining of worst scenarios, and substitution of positive imagery for feared situations. Of particular interest here, however, is the relatively recent application of imagery rescripting to treat childhood memories (with the aim of modifying core beliefs), for example, as part of cognitive therapy for personality disorders (e.g., Arntz & Weertman, 1999).

As suggested above, imagery rescripting is not a completely new treatment strategy (Edwards, 2007). Edwards described its precursors, early origins, and subsequent integration into mainstream CBT. He noted

that it is now prominent in a number of CBT approaches to a range of different disorders. Indeed, his article forms part of a special issue on imagery rescripting (see [Holmes et al., 2007](#)), where application to several different disorders is presented. Holmes et al. describe three types of imagery rescripting techniques in CBT. All address negative imagery, and are termed “direct techniques imagery interactive.” In other words, the therapist works directly with, and interacts with, the image in some way. The specific form of rescripting is partially dependent on the disorder or symptoms involved. For example, rescripting of fantasy images is particularly relevant to obsessive-compulsive disorder (OCD), where there may be no clear autobiographical memories that represent feared outcomes. Rescripting of “image-based memories” (Holmes et al.’s term) would appear to come closest to the approach that will be described here for EDs. In this approach, the therapeutic work is conducted in imagination with the individual’s remembered early experiences. The work described by [Weertman and Arntz \(2007\)](#) seems to come closest to the protocol which is presented here. Like Weertman and Arntz, early memories are treated using imaginal strategies in order to effect change in disorder-related core beliefs and psychopathology.

In discussing different versions and definitions of imagery rescripting, it is important to define what is meant by imagery and early memories, particularly in the current context. [Hackmann \(1998, p. 301\)](#) defines images as “contents of consciousness that possess sensory qualities, as opposed to those which are purely verbal or abstract.” While visual imagery appears most common ([Horowitz, 1970](#)), images can also contain other sensory qualities, including auditory, tactile, gustatory, and organic or body-based qualities. All aspects may be important in individual cases of imagery rescripting in EDs.

The early memories treated in imagery rescripting may be likened to autobiographical memories, in that they concern events (general or specific) that have happened in an individual’s personal history. Unlike work in PTSD on intrusive thoughts and flashbacks (e.g., [Ehlers & Clark, 2000](#)), the approach to be outlined here does not assume that the childhood memories recalled are intrusive or problematic in their own right. Neither does it assume that they are necessarily traumatic, or that they are accurate representations of the past. [Bartlett \(1932\)](#) referred to memories as imaginative reconstructions, and memories often come to awareness as mental contents or images. As Beck further noted in relation to CBT, it is the interpretation that is important ([Beck, 1976](#)). Theoretically, in imagery rescripting of early memories, it is assumed only that the memories, and their associated images (which will then be modified), are functionally linked to core beliefs. It is thus hypothesized

that rescripting or modifying them will alter the schema or core beliefs associated with them ([Arntz & Weertman, 1999](#)). As noted below, this means that a good assessment of any links between current problems and core beliefs is crucial if rescripting is to be effective.

Imagery rescripting of early memories has now been conducted in several disorders, albeit using slightly different approaches, and no one completely consistent protocol. A number of studies incorporate it into a more comprehensive treatment strategy (e.g., [Farrell, Shaw, & Webber, 2009](#)), thus its specific effectiveness can be difficult to assess. A number of studies, however, have evaluated it in isolation, with overall promising results. [Weertman and Arntz \(2007\)](#) compared focus on present versus past core belief change using a protocol-based imagery rescripting intervention for childhood memories in those with personality disorders. They found past-focused methods produced more change in schemas than present-focused methods. Treatment was relatively long, with 24 sessions allocated to each intervention in a crossover design. The protocol was a direct extension of [Smucker, Dancu, Foa, and Niederee \(1995\)](#), with the addition of historical role-plays developed by the authors. A single-session intervention rescripted early memories in a small group of people with social phobia, compared with a control session. This produced significant change in encapsulated belief (core belief linking recurrent intrusive images to early memory), image and memory distress ([Wild, Hackmann, & Clark, \(2008\)](#)). The protocol used was based on that of [Arntz and Weertman \(1999\)](#), although also involved cognitive restructuring. Two papers have also described the treatment of images of childhood memories, with the aim of modifying core beliefs, in patients with depression ([Brewin et al., 2009](#); [Wheatley et al., 2007](#)). Two case studies ([Wheatley et al.](#)) showed reduced distress, belief and symptom change, as well as behavioral change. A case series showed similar changes that were maintained at 1-year follow-up ([Brewin et al.](#)). Both studies used protocol-based treatments, largely derived from that described by [Arntz and Weertman](#), as well as [Hackmann \(1998\)](#) and [Smucker and Dancu \(2000\)](#). The average number of sessions in the case series was 8.1, and no verbal challenging of beliefs took place. In relation to EDs, two studies were found in the literature in which treatment of early memories using imagery rescripting was used. The first ([Ohanian, 2002](#)) describes imagery rescripting as part of additional CBT, based on [Edwards \(1990\)](#), [Layden, Newman, Freeman, and Morse \(1993\)](#) and [Smucker et al. \(1995\)](#). This is a single-case report with a good outcome in terms of decreased binge eating and vomiting when conventional CBT had failed. The second is an experimental study ([Cooper, Todd, Turner, & Wells, 2007](#)) in which imagery rescripting was used in a single

session to modify early memories associated with idiosyncratic core beliefs in 12 women with BN. Compared to a matched control group that received an intervention that was not designed to rescript early memories, significant change in emotional core beliefs and associated mood and ED symptoms was achieved. Layden's work (Layden et al., 1993) formed the basis for a detailed protocol in this study.

Research on Core Beliefs, Imagery, and Early Memories in EDs

The existence of core beliefs in EDs is now well established and recognized. The majority of studies have been descriptive or correlational in design, so direction of causality in relation to ED symptoms is hard to establish. More rigorous studies have, however, established core beliefs as statistical predictors of ED symptoms. For example, a recent study identified core beliefs that had previously been established as characteristic of EDs, rather than depression (Cooper & Cowen, 2009), as significant predictors of ED symptoms in a group at risk of developing an ED (Pringle, Harmer, & Cooper, 2010).

Some preliminary work has been conducted on the presence of spontaneous images in people with EDs and their functional link to core beliefs, both in BN (Somerville, Cooper, & Hackmann, 2007) and AN (Woolrich, Cooper, & Turner, 2006). This work has described the use of imagery as a particularly useful means of accessing core or negative self-beliefs (Somerville & Cooper, 2007),² an important consideration in identifying key core beliefs for change in imagery rescripting. It has also described the phenomenology of such imagery, highlighting that spontaneous images are experienced in multiple modalities. For example, visual, organic, and cutaneous modalities were reported by those with BN (Somerville et al., 2007). Significantly, participants reported that the early memories they associated with their core beliefs contained very similar sensory qualities as they experienced in their spontaneous images. This finding is important in reminding clinicians that therapy in EDs that uses imagery rescripting may need to adapt to the multimodal experience of early memories if it is to be most effective. In BN typical core beliefs concerned, in descending order of frequency: self-value (e.g., "I'm worthless"; "I'm unlovable"), failure (e.g., "I'm a failure"; "I'm ineffective"), self-control (e.g., "I'm out of control"), physical attractiveness (e.g., "I'm ugly"; "I'm unattractive"), stupidity (e.g., "I'm stupid"; "I'm gullible/naïve"), laziness (e.g., "I'm lazy"), me in relation to others (e.g., "I'm embarrassing to others"), and weakness (e.g.,

"I'm weak") (Somerville & Cooper). Typical early memories concerned negative comments from family/others about weight/shape and self-consciousness about appearance (Somerville et al.). In AN typical core beliefs, also in descending order of frequency were: powerlessness, failure, defectiveness, unattractiveness, worthlessness, and emptiness. Associated early memories included "changing life circumstance," "negative relationship," "feeling unimportant to family/friends," "perceived pressure/failure to meet standards," and "physical illness/body changes" (Woolrich et al., 2006). Mean age of first memory of core beliefs was 12.1 years in the AN group (Woolrich et al.; age of associated early memory was not obtained) and 9.88 years for associated early memory in the BN group (Somerville & Cooper).

There is evidence that early memories in those with EDs are linked to spontaneous images along a number of affective and other sensory dimensions, for example, in associated distress and vividness of the imagery experienced (e.g., Somerville et al., 2007). Thus, the links between examples of current problems and early memories appear to be relatively strong, and provide support for the hypothesis that rescripting early memories should also impact on current symptoms, as well as modify the core beliefs or meaning contained in the early memories. In AN, links to a number of specific ED behaviors were also explored, and strong links were found between core beliefs and "not eating" and "placating others" (Woolrich et al., 2006). There is also some evidence that early memories, compared to those in people without an ED, have rather different qualities and properties. In particular, compared to dieters, images of early memories involved more sensory modalities, and were more vivid than those in healthy volunteers (Somerville & Cooper, 2007). The functional links between early memories and core beliefs and current symptoms were also absent in those without an ED (Somerville et al., 2007; Woolrich et al.). Interestingly, emotional belief ratings (how much one feels the belief to be true, deep inside) in this and other ED research (e.g., Turner & Cooper, 2002) have consistently been found to be higher than rational belief ratings (how much one feels the belief to be true when considering it rationally or logically).

How Does It Work?

Imagery rescripting of early memories involves a number of procedures and its mechanism of action is unclear. There are a number of different theories about imagery, as well as memory, and thus a number of different cognitive theories that might need to be considered in hypothesizing what the mechanism of action might be in the procedure outlined here for EDs. Experimental psychologists are unclear whether imagery and words are encoded and recalled from memory in a

²Note that the data reported in Somerville et al. (2007) and Somerville and Cooper (2007) concerns the same group of participants and was collected at the same time.

single system, whether they are stored as abstractions or propositions, or whether they are contained in two distinct and separate systems. The stance taken on this is likely to have implications for any explanation of how imagery rescripting conducted in clinical practice might work. Current explanations of imagery rescripting in clinical practice, including of early memories, are much less detailed than theories of imagery, autobiographical memory, and schema (relevant to core beliefs) in experimental psychology, and increasingly cognitive neuroscience. It is typically unclear how the clinical theories proposed might map onto experimental theories. Theoretically, the usefulness of imagery in altering core beliefs (beliefs that are highly emotional and negatively valenced) is consistent with the notion that imagery has a special relationship to emotion (e.g., Holmes & Mathews, 2005), a notion that is shared now by a number of clinical theorists (e.g., Teasdale & Barnard, 1993). It is also consistent with the findings that use of imagery can enhance learning (e.g., Paivio et al., 1968). For example, rescripting of early memories involves some exposure and possibly habituation to the memory image. A learning theory might therefore provide at least a partial explanation for how imagery rescripting of early memories works. Others have drawn attention to the similarity of the neural pathways involved in imagination and memory, in conjunction with a retrieval competition hypothesis, in which new representations that are more accessible in the presence of the same retrieval cues are created (Brewin, 2006). In a related explanation, Cooper, Todd, Turner, and Wells (2007) discuss how their experimental study may have produced change in the emotional core beliefs of their BN patients. This explanation draws on a metacognitive framework (e.g., Wells, 2000) to explain the impact of the imaginal rescripting of early memories that they used. This explanation forms the basis of the current ED protocol. In this model emotional belief is based on internal information such as feeling states and memory. Bringing a trusted person into the image (a key part of the intervention) might help retrieve positive interoceptive and conceptual information antagonistic to the negative information in the memory. This then functions to alter both the emotional belief and also the relationship to the belief.

Why Imagery Rescripting in EDs?

Novel treatments are greatly needed in EDs. Rescripting of early memories shows considerable promise in a number of disorders and some initial encouraging outcomes in EDs. Rescripting of early memories seems particularly appropriate in those with EDs. ED symptoms frequently overlap with those in disorders in which it has been found to be successful, not least depression and

personality disorders. It is consistent with the increasing importance attached to the role of core beliefs in both BN and AN. In addition, research on imagery, core beliefs, and early memories has established the presence of many of the key relationships between these variables and ED-related symptomatology that are assumed in existing and in currently proposed application(s) of the technique. It therefore seems logical to extend its use to those with EDs, particularly to those whom standard CBT has failed to help significantly. It is, however, clear that further research on its efficacy is a priority in order to support and justify its clinical use, particularly its use as a stand-alone treatment. Current research in depression provides a model of good practice in this respect (Brewin et al., 2009).

Imagery Rescripting Protocol for Working With Early Memories in EDs

The protocol described below developed out of clinical and research work with core beliefs and imagery in people with EDs. Its development has been influenced by the imagery procedures described by Layden et al. (1993), Smucker and Niederee (1995), and Edwards (1990). Hackmann's influence and advice at different times has also been invaluable. From Layden and colleagues comes an emphasis on providing a sense of self-efficacy and control, and on enhancing care and protection, both particularly relevant to those with EDs (e.g., Bruch, 1973). Over time, the balance between these has shifted to place greater weight on encouraging self-efficacy and nurturing as part of the therapeutic process, as it became evident in practice that patients often responded best to nurturing imagery. This emphasis is similar to that on compassion and compassion-focused imagery (Gilbert & Irons, 2004).

Below is a summary of the protocol, developed and systematized, in a number of research and clinical studies and work (e.g., Cooper, Todd, Turner, & Wells, 2007; Cooper et al., 2009; Somerville et al., 2007; Woolrich et al., 2006). It describes an imagery rescripting method for modifying core or negative self-beliefs in people with EDs.

Preparing for Imagery Work

Before proceeding to implement the protocol, some preliminary points need to be considered, including the patient's suitability for the procedure.

The following questions should be asked:

1. Does the patient have strongly held core beliefs?
2. Are they causing distress?
3. Have they been tackled using verbal restructuring, and failed to shift significantly?
4. Can the patient manage any distress likely to be evoked in the procedure?

5. Has the patient given informed consent and weighed the pros and cons of engaging in the procedure?
6. Does the therapist have time available to complete an hour-and-a-half (or longer) imagery rescripting session?

Experience suggests that imagery rescripting of early memories works best on strongly held emotional core beliefs, rather than on strongly held rational core beliefs. Typically, traditional verbal restructuring strategies should be employed to modify any core beliefs (insofar as that is possible) before embarking on imagery rescripting. Imagery rescripting is also typically an option for *emotionally* held core beliefs that have not altered with standard methods (i.e., those that are believed deep inside, despite what the person knows logically to be true).

Because core beliefs are often associated with considerable affect, then evoking these beliefs can be upsetting for the patient. It is thus important that procedures for managing this, including at the end of the intervention, are in place before commencing. Patients should be warned about the possibility of distress, and the pros and cons of going ahead with the procedure should be discussed with them. This should be done in a way that allows them to make an informed choice about whether or not to go ahead.

The relative lack of rigorous evidence for the efficacy of the procedure in EDs should also be discussed, although the encouraging nature of early research can be quoted (especially the study by Arntz & Weerman, 1999). The experimental findings in EDs (Cooper, Todd, Turner, & Wells, 2007), can also be mentioned.

It is important to schedule enough time: typically, an hour and a half, perhaps more, is required to complete an imagery rescripting session. Further sessions can be scheduled as needed.

The following key points should be kept in mind:

1. It is important to remember that imagery rescripting of early memories is a means to an end, and not an end in itself. The overall aim is to modify core beliefs.
2. The aim is to alter core beliefs that are “emotionally” strongly believed, rather than core beliefs that are “rationally” believed.
3. The procedure is not intended as a complete treatment in itself—more standard cognitive therapy strategies should already have been employed to alter other types of belief.³

³ There seems no reason, however, given the encouraging findings in depression (Brewin et al., 2009), that it could not be adapted as a sole treatment; neither are other forms of psychotherapy necessarily incompatible with its use.

4. A formulation, including the core beliefs to be targeted, should be drawn up. It is important for the therapist and patient to understand how their core beliefs may contribute to their ED.
5. The patient should be given/generate collaboratively a rationale for the intervention. This should include weighing the pros and cons of proceeding.

A good formulation is essential. In the current context, establishing a functional link to the ED symptoms is important in order that the patient understands why and how imagery rescripting might be useful, and to ensure that those core beliefs crucial in the maintenance/development of the disorder's symptoms are targeted.

Rationale for Patients

As with any cognitive therapy intervention, the patients should be given a rationale for the procedure. As far as possible this should be developed collaboratively, and draw on the patient's own experience. In presenting and discussing the rationale, the following points should be covered:

1. Core beliefs (e.g., “I'm useless”; “I lack control”) play an important role in EDs.
2. Core beliefs may need to be modified for treatment to be successful.
3. It is not clear how best to do this in the context of standard cognitive therapy.
4. Verbal restructuring strategies can be useful, but people often continue to believe them “emotionally” if not rationally, and emotional core beliefs are very hard to change with standard strategies.
5. Imagery rescripting of early memories is one promising way to modify strongly held emotional core beliefs.

In order to participate, the patient also needs a description of what imagery rescripting will involve. This should cover the following points:

1. The patient works with the therapist in imaginal rather than verbal mode to change core beliefs.
2. Imaginal mode or imagery involves multiple modalities—visual, auditory, kinaesthetic, etc.
3. One or more early memories associated with the patient's core beliefs will be identified.
4. The patient will work with the therapist to alter the meanings about herself that are contained in the early memory.
5. This will involve imagining the events in the early memory, and discussing and manipulating an image of the memory, assisted by the therapist.

Identifying Core Beliefs and an Associated Early Memory

If patients are already receiving cognitive therapy, then the therapist and patient are likely to have a good idea of what the important core beliefs are that contribute to the ED. However, given that some may have been modified by conventional strategies, it is usually helpful to make an assessment of the current status of belief in these, both rational and emotional. This will help the therapist and the patient to select the most important remaining core beliefs that need to be tackled. Alternatively, the therapist and patient may already have identified one or more very specific core beliefs that are strongly held emotionally, and that might usefully be tackled in this way.

The downward arrow technique is perhaps the quickest and most useful way to identify relevant core beliefs. In order to be certain of selecting core beliefs that are functionally linked to the ED, it can be useful to start this exercise by selecting a recent situation in which patients report feeling worried or concerned about their eating, weight, or shape. If this procedure is used it is important to check at the end of the exercise that the core belief elicited is indeed related to their ED concerns. Useful questions to elicit core beliefs, an associated early memory, and the functional link to current ED problems can be seen in Table 1.

The downward arrow technique then involves repeating the last two questions (and similar questions as seems appropriate) until the “bottom line” is reached. This is usually signalled by repetition of the beliefs by the patient in response to further questioning. Typical core beliefs identified include those related to self-value (e.g., “I’m worthless”), failure, lack of self-control and lack of physical attractiveness (e.g., “I’m ugly”) (Somerville & Cooper, 2007).

To identify associated early memories, the patient is then asked about her earliest memory of having the thoughts/feelings associated with the core beliefs, and how the memory and the core beliefs contained in it might be

functionally linked to her ED behavior. Finally, the conclusions reached about the self, including about sense of control, self-blame, safety, and worthiness, are explored. Useful questions to elicit these can be seen in Table 2.

All the core beliefs elicited should be rated on a scale from 0 to 100% for belief (0 = *I do not believe this at all*, 100 = *I am completely convinced that this true*), with rational belief (what you know logically to be true) and emotional belief (what you feel to be true, even when you know that this is not the case logically) ratings being collected. These ratings are important because they will be used to evaluate outcome of the procedure, and to inform subsequent imagery rescripting sessions, if these are needed.

The core beliefs and early memory from one patient (Susie) can be seen in Table 3.

Having elicited a brief description of the early memory associated with the core beliefs, it is important to then elicit a detailed mental image of the events contained in the memory. Use questioning to elicit a full picture in as many sensory modalities as possible, and aim to create a vivid image so that the patient feels as if the event is being reexperienced. This procedure for Susie is described below in more detail. The image of the early memory that is created will be the one that is subsequently rescripted.

Once the core beliefs have been identified and rated and a clear description and image of the associated early memory have been obtained, then imagery rescripting can begin. The following section is written with reference to Susie, a patient with BN who completed imagery rescripting. It includes some examples from a session she took part in.

Case Description: Applying Imagery Rescripting to Early Memories

Susie's core beliefs about herself before imagery rescripting can be seen in Table 3. Initially, rational responding using verbal strategies was used to introduce flexibility into Susie's thinking. This produced some

Table 1
Useful downward-arrow questions to identify core beliefs

When was the last time you felt really worried, anxious or bad about your eating?
Please tell me about a time that wasn't a binge, if possible.
Can you tell me when that was, how long ago?
Was that a typical episode for you, or was there something unusual about it?
[patient identifies a recent episode and one that is typical, and preferably one that was not an episode of binge eating]
Can you close your eyes and imagine yourself back in that situation?
Please describe the scene for me—what was happening, what were you doing, what were you feeling, what could you smell, hear, see, feel?
What thoughts did you have?
What thoughts did you have about yourself?
What did that mean? What did that say about you? What did you think as a result?
[the latter questions are repeated as necessary]

Table 2

Useful questions to identify earliest memory, core beliefs, and functional links to ED symptoms

What's your earliest memory of having those thoughts/feelings?
 Are the memory and the beliefs contained in it connected to your dieting/bingeing?
 In what way are they connected?
 [General beliefs about the meaning of the events in the memory for self should be explored, together with any specific beliefs about control and self blame, as follows]:
 What did you think about yourself as a result of this event?
 What did you think about your sense of control, safety, worthiness, etc?
 Who did you think was to blame?

change in her rational core beliefs but relatively little in her emotional core beliefs. Imagery rescripting was then begun, focused particularly on her remaining emotional core beliefs.

Susie was asked to reexperience her specific early memory of being asked a question in class. The therapist asked if she felt able to close her eyes, in order to concentrate better on the memory. Susie felt able to do this. The therapist asked her to recall the incident as if she were reliving it and as if she were actually there and it was happening in the present. Questions were asked, including what do you see, hear, smell, feel on your skin, and what sensations do you notice in your body? Susie replied to each of these questions. The vividness of the experience in each sensory modality was heightened by asking Susie to focus on particular aspects of the memory and report back on how vivid it then was. The aim was to help Susie reexperience the events in the memory in all modalities, and bring it alive in all sensory modalities. In other words, a detailed mental image of the memory was created.

Once the memory was reexperienced in depth and detail, and a detailed mental image had been created, Susie was asked to identify her feelings and her thoughts about herself, in the first person, that were contained in the image of the memory. She then rated her depth of feeling and degree of belief in her thoughts, using 0–100

rating scales. This is important as it provides baseline data against which to evaluate any change in feelings and, importantly, any core beliefs identified. Susie was then asked to think of a safe person that she could bring into the image or, alternatively, whether she preferred to go into the situation herself as an adult. Susie chose to bring in another, safe person, and after much thought and assistance from the therapist, she decided on an aunt. She was asked to imagine her aunt, and bring her into the image of her early memory. The therapist then asked Susie, as the child in the image, to ask a series of questions. These included the following: Who would you like to talk to? What do you need to hear? What do you want? What would the safe person say/do? The child responded to the questions. The therapist then asked how, if these things were to happen, she would then think and feel. Susie replied to these questions.

Once behaviors and conversation that would decrease any distress and negative beliefs about herself were identified, Susie was encouraged to imagine the child enacting the behavior in the responses—phrases such as “imagine that ...” were used to facilitate this. When the responses had been enacted (in imagination), the therapist once more checked with the child how she was feeling and what she was thinking. Importantly, the therapist assessed any change in her core beliefs, including asking her to rerate on the 0–100 scales her current emotional core beliefs. The questioning, responding, and any enacting in imagination continued until significant shifts were reported in Susie's feelings and core beliefs. Continuous assessment meant that any feelings and core beliefs that did not appear to be changing could be explicitly targeted. For example, the child, encouraged and aided by the therapist, would be asked what she thought might help with, for example, her thoughts and feelings. The steps in this process are listed below.

Table 3

Susie's core beliefs and early memory

Susie's beliefs	Rational belief	Emotional belief
I'm all alone	20	90
I'm unloved	10	80
I'm uncared for	20	90
I'm not wanted	20	100

Susie's Early Memory

Susie had a memory (age 8 or 9) of being bullied at a new school. She recalled a specific episode in class one day when she had been asked a question, and hadn't known the answer. Everyone else had laughed and made fun of her because they knew the answer. Around that time her mother was very ill and in hospital suffering from depression. Susie was being cared for by her grandmother, and had been told not to tell anyone her mother was ill.

1. Engage in rational responding.
2. Identify safe other person/adult self.
3. Engage in questioning and enact responses.
4. Check changes in core beliefs.
5. Repeat last two steps until core beliefs have altered, child feels better.

Below is an extract from Susie's session, illustrating some of the key questions and the form of a typical session.

THERAPIST: Who would the child like to talk to?

SUSIE: My auntie, she was always kind to me, gave me good birthday presents—things I wanted; I stayed with her when my mum was ill and in hospital—she always had time for me

THERAPIST: Can you imagine your auntie in the memory? [Therapist prompts until image of auntie is vivid and detailed.]

THERAPIST: How does the child feel now?

SUSIE: A little bit calmer, but still worried.

THERAPIST: What is the child thinking now?

SUSIE: I'm thinking it's nice to see Auntie. I'm thinking I hate having to live with Granny. I'm worried that Mum won't get better.

THERAPIST: Would you be able to say that to Auntie?

SUSIE: No, I can't—Granny would be really angry with me—she doesn't like me talking about mum. I feel such a nuisance.

[Therapist checks here if Susie can talk directly to the trusted person, but this seems too hard. Instead the therapist asks what else might be helpful ...]

THERAPIST: What do you think might help you/the child in this situation?

SUSIE: I want to see Auntie smile, then come up and give me a big hug.

THERAPIST: How do you think you would feel then?

SUSIE: Relieved, safe.

THERAPIST: Would you still feel all alone, unloved, and uncared for?

SUSIE: I'd be thinking I have someone to help, someone who cares.

[Susie is able to find behaviors that might help, so the therapist pursues these with her.]

THERAPIST: Can you imagine that scene—when Auntie smiles—can you describe what you see, hear, feel, etc.?

[Therapist goes through scene and encourages Susie to enact each component, periodically checking out changes in core beliefs and feelings. Therapist adjusts questions if necessary to ensure core beliefs decrease and feelings become more positive.]

Later on in the session, when Susie is feeling calmer and safer, the therapist focuses more directly on her fear of being all alone (hypothesized to be related to her worries about her mum, and her fear that her mum will never recover).

THERAPIST: How alone do you feel now?

SUSIE: A lot. I'm really worried about Mum. What if she never comes home? Granny won't talk about her or let me see her. What am I going to do?

THERAPIST: Suppose for a moment that did happen, what then? What would that mean for you?

SUSIE: I wouldn't have anyone—I'd be all by myself, all alone, and scared.

THERAPIST: Do you think Auntie might be able to help with this worry?

SUSIE: I'm not sure.

THERAPIST: Would it be helpful to talk to Auntie about it?

SUSIE: Maybe.

THERAPIST: What might you like to say to her?

SUSIE: I want to know if Mum is never going to come home again.

THERAPIST: Can you try asking her? Can you imagine asking her? What would you say?

The scene is then enacted as described above. Table 4 contains Susie's core belief ratings at the end of the session, compared with her ratings at the start.

In addition, Susie felt she was less to blame for what had happened to her in the memory (rating decreased from 75 to 30), and that she was more deserving of help and protection (rating increased from 20 to 65).

Follow-Up

The description of the changes Susie made, and contained in the extracts presented above, were achieved

Table 4
Susie's core belief ratings before and after the imagery modification session

	Rational belief before session	Emotional belief before session	Rational belief after session	Emotional belief after session
I'm all alone	20	90	10	60
I'm unloved	10	80	10	60
I'm uncared for	20	90	10	50
I'm not wanted	20	100	10	60

in a single, albeit extended session. The changes she made in her core beliefs are typical of what might be expected in BN with a single session (i.e., emotional core beliefs alter significantly but do not reduce to zero immediately). Imagery was subsequently used in a similar way in a number of therapy sessions with Susie. As well as focusing on other emotionally held core beliefs that had not altered greatly with rational responding, Susie worked hard to decrease the core beliefs that had already been worked with in the first imagery session and that had demonstrated some change. The therapist and Susie patiently and diligently examined knowledge of Susie's background to elicit past strengths and positive or normative experiences. It also drew out exactly what Susie had wanted and needed as a child in order to feel safe and secure. Questions such as, "What else would help?" "What more does the child need or want?" were repeated, and additional scenarios were enacted in imagination, as necessary, in order to shift her core beliefs further towards zero. When little in her past had come at all close to meeting or providing those needs and wants, then scenarios were creatively constructed for Susie from some of the resources, even if previously unrealized and unrecognized, that might have been available. Alternatively, they were constructed from resources that could potentially be imagined to have been available, even if in a rather different environment or set of circumstances. While different core beliefs required somewhat different work, many were linked to a single memory, and could thus be worked with simultaneously. Susie also completed homework related to imagery rescripting in which she reinforced her learning by setting aside time to reenact key scenarios in imagination, checking out any changes in her core beliefs as she did so. This generated some additional ideas for what else she could do to reduce her core beliefs further, and these were then worked with in subsequent sessions with the therapist. Over time, Susie's previously strongly held emotional core beliefs fell further with most being rated close to zero by the end of therapy. She also no longer felt that she was to blame for what had happened to her, and her belief that she was deserving of help and protection approached 100%.

Useful Tips

Below are some tips that might assist the therapist in imagery rescripting work with ED patients.

1. It is important to ask lots of questions. These include questions such as, "What would you/the child like, need, want?" It can be helpful to ask the child to speak in the first person: for example, "What do you need now?" rather than "What does the child need now?"
2. Enacting behavior in imagination is very important. When the child makes a suggestion about what they need (e.g., what they need to hear, or perhaps what behavior needs to happen), it is useful to first ask if the child can try that (i.e., enact that in the image). This can then be followed up by asking them to go through the process of enacting it in imagination or working to make it possible for them to enact it.
3. Describing the enacting in imagination process out loud can be useful. As well as making it seem more real to the patient, it can help the therapist monitor its usefulness on a moment-by-moment basis, and spot when the emotional tone shifts either in a negative or positive direction. This then makes it easier to know when and where to encourage or intervene more actively in order that emotional core belief change occurs more effectively.
4. Checks should be made on how the child feels and what she concludes, especially in relation to identified core beliefs. It is always important to ask the patient what she concludes after enacting any suggested responses, and not to assume that change has occurred just because the child predicted it would. It is also important in assessing the degree of change; thus, ratings can be helpful too. Where change is relatively limited, then further work will be needed, and it is important to know that.
5. If the child is still feeling distressed and core beliefs have not altered significantly, then it is important to work further and carefully with the detail of the patient's experience and responses. Just as in verbal challenging, it is important to watch out for hesitations and "yes, but ..." responses, which can

indicate relatively little change has occurred. If doubt remains, then it is important to work further with that. A nonjudgmental approach is important, so that the patient does not feel they have failed. Cognitive therapy Socratic questioning skills and the maintenance of a nonjudgmental stance are vital here.

6. Even if change has occurred, it is usually helpful to check whether anything else might help and to work further with that, in order to achieve maximum change.

Proposals for the Future

Imagery work, including the imagery rescripting of early memories described here, is in its early stages with people who have EDs. An important question is how we refine our preliminary protocols to make them more effective. Exploration of the literature might be useful here. For example, Singer (2006) has useful ideas on how to work clinically with imagery, including techniques and strategies that might be usefully applied both to EDs and in the context of cognitive theory and therapy more generally. Further research is crucial not only to examine its effectiveness directly, but to examine how it works, with the longer-term goal of enhancing its effectiveness in future studies. In relation to EDs, little is known about individual differences in ability to generate and make use of imagery, and importantly, whether people with EDs differ from those without EDs in this, or indeed from other patient groups. Interest in examining the neural correlates of visualization and verbalization (e.g., Kraemer, Rosenberg, & Thompson-Schill, 2009) gives rise to the possibility of examining the process of imagery rescripting and the use and function of imagery generally, including in those with EDs, at a biological level. Combining the approaches of neuroscience and clinical psychology to understand how best to apply the knowledge gained to treat those with EDs is one exciting possibility for the future.

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