Chapter 15
CBT for Reducing Looming Vulnerability Distortions: Translational Concepts and Clinical Applications

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Despite the established efficacy of cognitive-behavioral therapy (CBT) for anxiety disorders (e.g., United Kingdom Department of Health Services, National Institute of Health and Clinical Excellence), a sizable percentage of patients do not demonstrate significant symptomatic reductions and/or remain at heightened risk of relapse following treatment (Hofmann & Smits, 2008). Efforts have been made in recent years to refine and extend CBT approaches with the aim of enhancing treatment outcomes.

In an attempt to improve the efficacy of current protocols, this chapter describes clinical approaches and concepts derived from the looming vulnerability model (Riskind, 1997; Riskind, Rector, & Taylor, 2012; Riskind & Williams, 1999). We have piloted these approaches with the hope that they can augment existing, empirically supported treatments for anxiety disorders and will be integrated into such protocols.

Looming Vulnerability Distortions: A Critical Component of Threat Cognition

As developed throughout this text, the focus of the looming vulnerability model (LVM) is on abnormal cognitive content in anxiety that is far more dynamic than the view adopted by other current CT/CBT models. It isn't only that anxious individuals have faulty threat appraisals that lead them to overestimate probabilities and costs. They also overestimate patterns of dynamic change and rapid gains in threats

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and view them as approaching (or looming) before them, thereby intensifying their anxiety.

Looming Vulnerability Distortions and Their Determinants

We suggest that anxiety derives in part from a characteristic set of looming vulnerability related cognitive and perceptual distortions. These "*looming vulnerability distortions"* are unique and different than the standard list of conventional distortions (e.g., black-white thinking) because they involve dynamic temporal and spatial parameters of threat. These dynamic, temporal, and spatial parameters of threat remain unexplored by contemporary CBT protocols. However, research has revealed that individuals overestimate the amount of time that goes by (their inner clock speeds up) when facing threats as compared to more neutral situations (see Chap. 5; Langer, Wapner, & Werner, 1961). For other examples, they overestimate the proximity of threats in space and time (Cole, Balcetis, & Dunning, 2013; Langer, Werner, & Wapner, 1965; Rachman and Cuk (1992) and the speed with which they are approaching (Basanovic, Dean, Riskind, & MacLeod, 2018; Riskind, Kleiman, Seifritz, & Neuhoff, 2014; Vagnoni, Lourenco, & Longo, 2012).

General Factors That Can Affect Perceptions and Distortions of Dynamic Growing Threat

Some of the cognitive-perceptual distortions that we will describe can arise from bi-directional relationships between focusing and dynamic properties in threat. Individuals tend to focus on possible threats more when they view them as having dynamic properties (see Chap. 6). Reciprocally, when they focus on a threat stimulus, this may cause them to perceive the stimulus as more dynamic. Studies of the "autokinetic" effect (e.g., Adams, 1912; Sherif, 1935) provide a useful laboratory-metaphor when considering this focusing effect. The autokinetic effect is defined as the tendency to perceive an illusion of movement in a stationary light source (because of moving one's own eyes and body) in ambiguous circumstances in a dark room. We suggest that the act of focusing on a feared stimulus—such as a spider or snake or an imagined social rejection scenario—can also create an illusion of movement.

This self-generated illusion of movement can be derived in part from proactive mental simulation. When they are faced with a feared stimulus or emergent threat, individuals engage in faulty proactive coping in which they mentally simulate the threat as approaching and striking. The self-generated illusion of movement results because individuals become psychologically anchored in images they simulate of threats as being closer as dynamically growing faster than they are. Tversky and

Kahneman (1974) have proposed the tendency to overweight early information is difficult to overcome. This "focusing illusion" (also known as Anchoring or Focalism) can explain how fearful focusing can lead to self-generated illusions of movement. Once psychologically anchored in early information from their mental simulations, individuals overweight the anchor even when they adjust their judgments with more information.

Another force of a general social cognitive nature that can lead to looming vulnerability distortions stems from a version of the "Planning Fallacy" originally proposed by Kahneman and Tversky (1979). The planning fallacy is defined as the overoptimistic tendency for individuals to overlook possible obstacles that may arise when they are attempting to complete future tasks. This in turn leads them to underestimate how much time will be needed to complete the tasks. We suggest that there is a *fear-based planning fallacy* tendency that works in the opposite direction. Namely, when individuals are faced with a feared situation or danger, they tend to underestimate the amount of time that is *realistically available to respond* or develop countermeasures. For example, the anxious person has a fearful tendency to *underestimate* what can be accomplished to meet a deadline that is a week away if they used their time well. The anxious person's attention becomes narrowly focused on the perceived danger and potential coping resources fade into the background. Similarly, the anxious person has a pessimistic tendency to underestimate (or discount) factors that might constrain or impede the growth and approach of threats that they anticipate. For example, spiders and contaminants have realistic constraints that prevent the spiders from moving as swiftly as they imagine from the other side of a large room.

Dysfunctional Beliefs That Can Affect Looming Vulnerability Distortions

Dysfunctional beliefs about threat and change are another general class of factors that can contribute to a person's perceptions and distortions of dynamic growing threat. Such beliefs can increase the person's vigilance for danger and proactive mental simulations of dangers and their tendencies to focus on possible dangers. The beliefs included could be those such as: "The world is dangerous," "I'm incapable of succeeding," and "People always reject me." Others include beliefs that can intensify the person's fears of change, such as: "Change in life is basically negative," "I'm vulnerable and can't deal with the danger of change," "Even when things seem to get better, they end up badly," and "When things happen, they develop too quickly for me to act." In addition, irrational beliefs about time management may also play a role. These include beliefs such as "I don't need to or know how to manage my time or plan." In addition to these other beliefs, perfectionistic beliefs can lead to procrastination cycles that heighten the sense of overwhelming looming threat.

Looming Vulnerability Distortions May Behave as Instigators of Other Standard Cognitive Distortions

We suggest that perceptions and distortions of dynamic growing threat can play a leading role in prompting other standard cognitive errors (e.g., dichotomous thinking or overgeneralization). A study by Paulhus and Lim (1994) broadly supports this idea. They presented evidence that heightened perceptions of threat evoke tendencies for individuals to think in a more simplistic and less balanced and complex manner. They followed and assessed the complexity of college students' information processing and cognitions 2 weeks before an exam, 1 week before the exam, and a week after the exam. Their data showed that cognitions a week prior to the exam became more simplistic, unidimensional, and extreme. Those findings are consistent with theoretical ideas in social psychology that people's initial immediate attributions/appraisals of events are simplistic and require a second effortful step to subsequently balance them to take account of additional information. Importantly, however, people do not normally take this extra step if they are feeling threatened, stressed, fatigued, or distracted (Gilbert & Malone, 1995).

Individuals with looming vulnerability perceptions and distortions may therefore exhibit black and white thinking, catastrophizing, or other types of distorted thinking. Furthermore, they could lead to a downward spiraling or snowballing cascade of dysfunctional cognition. As one worst case example, looming vulnerability distortions can become so overwhelming that they can reinforce hopelessness and suicidal desires to escape from psychological pain. Rector et al. (2008) described the distorted looming appraisals of a patient with GAD that appear to have contributed to her suicide.

Overview of CBT Strategies to Target LV Distortions

Taking this theoretical grounding into account, what recommended guidelines can we give clinicians for designing CBT strategies for treating looming vulnerability distortions? The recommended include these key elements: (1) assessing looming vulnerability distortions, (2) providing a psychoeducation process that involves normalizing anxiety and imparting information about perceptions and distortions of looming vulnerability, (3) helping the patients to identify these, and (4) developing a cognitive case formulation. The guidelines also include the use of methods that are novel or that can encompass adaptations and modifications of standard procedures such as: (5) Socratic questioning, (6) behavioral experiments, (7) using metaphors and mental imagery, and (8) homework assignments.

Assessing Looming Vulnerability Distortions

The practicing clinician can assess looming vulnerability distortions by synthesizing information gathered from many various sources. Examples include information from (1) patients' life circumstances, (2) data from looming vulnerability measures, (3) verbal material obtained from sessions, (4) information regarding perceptual illusions and mental imagery, and (5) information obtained by means of Socratic questioning.

1. *Patient's Circumstances*

   When developing cognitive case formulations to guide treatment, considerable information can sometimes be obtained by clinicians from the patients' factual circumstances. For some patients, for example, looming vulnerability distortions can be triggered by approaching deadlines, job interviews, examinations, public speaking events, and approaching social interactions. The clinician should also be alert for anniversary reactions to events that are not obvious such as past deaths, break-ups, significant loss events, or job. For other nonobvious examples, the clinician should be cognizant that some individuals can become more anxious when they approach a particular date or season when they experienced serious anxiety or depression and fear a "looming" relapse.

   For other subtle examples, alcohol or substance abusers may fear anniversaries of dates of traumatic occasions in which they relapsed. In such cases, individuals may misinterpret ordinary symptoms of anxiety, depression, or other symptoms such as negative, intrusive thoughts that anyone might experience as signs of an approaching relapse.

2. *Looming Cognitive Style and Other Measures*

   In addition, clinicians can get valuable information for constructing cognitive case formulations from self-report measures. For example, they can administer measures of the general LCS or other measures of more specific looming cognitive styles for specific subtypes or symptoms. These might include measures that assess perceptions of looming vulnerability to contamination, spiders, or panic attacks, or other themes. It can be noted that Riskind (2018a) is currently developing a new measure, the "Looming Cognitions Inventory," that assesses the endorsement of thoughts or feelings associated with looming vulnerability. Examples include: "every moment is bringing me much closer to the things I'm worrying about," and "when I think about my concerns, it feels like time is slipping away rapidly." Riskind (2018b) is also developing a measure of the list of looming vulnerability distortions presented later in this chapter.

   It is predicted that *change* scores that occur on such measures can be used to determine whether the perceptions and distortions that anxious patients have of dynamic growing threat are normalizing with treatment. A recent study by Katz, Rector, and Riskind (2017) has reported evidence confirming that the LCS, as assessed by (LMSQ scores) decreases during standard CBT. It is also theoretically expected that measures of LCS and looming vulnerability distortions might

be assessed as potential mediators of treatment outcome and represent meaningful treatment outcomes in their own right.

In addition to standard CBT, it is possible that other interventions such as mindfulness practices can also reduce scores on the LCS (Katz et al., 2017). Mindfulness training, for example, could help to mitigate perceptions and distortions of rapidly growing threat by shifting the anxious person's focus from mental simulations of the future to the experience of the present. By specifically targeting looming vulnerability distortions, it is plausible that looming vulnerability interventions may provide additional useful tools and even be especially effective at remediating such distortions.

3. *Verbal Material in Session*. Verbal utterances of the patients in their sessions provide valuable material. For examples, we have heard patients say things such as: "I don't have enough time"; "things are catching up to me"; "I'm falling behind and can't keep up with my work"; and "things are headed towards a crash." Particularly memorable was the statement of a patient who with no prompting stated, "it feels like each day is bringing me one more step closer to doom."
4. *Perceptual Illusions*. Clinicians should also probe patients to determine if they are experiencing perceptual illusions. For example, spider phobics perceive spiders in a glass box as hopping in their direction when they don't (Rachman & Cuk, 1992). Similarly, sexual assault victims may perceive exaggerated physical movement by potential attackers in their directions (Elwood, Williams, Olatunji, & Lohr, 2007). Victims of automobile accidents may experience perceptual illusions of cars swerving in their direction (Taylor, 2006).
5. *Mental Images*. In addition to perceptual illusions, the clinician can be alert to mental images and dynamic simulations that create perceptions of dynamic growing threat. Even static images can contain dynamic, kinetic information (e.g., a snake coiled to strike). Thus, even when images might seem static, they can represent a kind of pictorial shorthand for a dynamic growing threat.
6. *Socratic Questioning for Assessing and Modifying Looming Vulnerability Distortions*

   During Socratic questioning, the clinician can probe anxious patients looming vulnerability perceptions with questions such as "it sounds like you think you don't have enough time to be able to deal with this or feel that things are happening too fast. Is that right?"

Cognitive Case Formulation

When developing cognitive case formulations, clinicians engage in a continuing process of synthesizing data with concepts from conceptual models about the abnormal cognitive content of anxiety (e.g., future threat, anxiety sensitivity, intolerance of uncertainty, metacognition). The same is true when using the LVM. Namely,

clinicians attempt to identify distorted mental simulations and mental images of the spatial and temporal parameters of rapidly growing threat. These may reflect the list of distortions we will describe below as well as the focusing illusion and fear-based planning fallacy.

Psychoeducation Process: Normalizing, Recognizing, and Helping Patients Recognize Looming Vulnerability Distortions

In this section, we turn to the remaining key elements that we identified in our guidelines. These include: (1) psychoeducation and (2) helping practitioners to instruct the patients about the concepts and help them to recognize looming distortions as preparatory steps for CBT.

Psychoeducation to Help Patients Normalize Anxiety and Recognize Distortions

Psychoeducational information can help to normalize the patients' symptoms to reduce their frightfulness. It can also prepare them for therapeutic CBT collaboration and help them to understand the distortions that might be targeted to reduce their anxiety. Toward this end, we suggest using instructions like the following:

> "The different symptoms that you're experiencing—feelings of tension, sleep disturbance, distraction, worry—are all symptoms of anxiety. You can think of the human anxiety response as like a smoke alarm system that is triggered when our minds detect threats. This is a totally natural thing and anyone who has threatening thoughts becomes anxious. Anxiety and fear can be adaptive when there is a realistic threat that we can do something about. But when it is extreme or happens too often, it becomes maladaptive and this kind of anxiety can result from faulty and distorting thinking that magnifies threat and minimizes ways we can cope."
>
> In addition, the practitioners can add:
>
> A "Anxiety is sometimes" created by thoughts like catastrophizing and black and white thinking. There is also another major way that our minds create anxiety. Our perceptions of time and space are like an elastic that can contract towards us or stretch out. For example, someone who is afraid of deadlines might see them as coming faster than they are, or someone who is afraid of spiders may see them approaching even when they are not.
>
> The cognition distortions on this list are helping to make your anxiety worse. They may be making you feel more time pressured, or overwhelmed, or worried, or making it hard for you to correctly see that there may be things you can do to cope. These not only can make any threatening situation seem ever worse but can also cause you to perceive some of the things you fear as unstoppable when they are not.

After presenting these instructions, a clinician can describe the list of looming vulnerability distortions (or those that are relevant relevant). The distortions in the

list are based on clinical observations, research, or both. It is still being refined and could benefit from further systematic empirical study.

- *Size Distortion* occurs when an anxious person perceives the threat as physically larger and bigger than others do (Shiban et al., 2016; Vasey et al., 2012). For example, Vasey et al. showed that spider phobics who drew the size of a spider that was covered after they had seen it drew it as larger than it was. Thus, it is as if a spider phobic might see a spider on the other side of the room and think it is as big as a soccer ball, while someone who is with them might see it as the size of a small coin.
- *Space Compression* occurs when someone perceives the threat a physically closer than others do (Cole et al., 2013; Langer, Werner, & Wapner, 1965). For example, a fearful person who perceives a spider might perceive it as much closer than someone else who does not fear spiders. The fearful individual might see a threat as close even when it is far away.
- *Time Compression* occurs when the anxious person perceives threats to be closer than they are. For example, an employee who will have to give a presentation that is days or week away, feels as if the deadline is already here. Like with space compression, this can cause the person to not see they have space with which they can plan or react.
- *Misperception of Time Rushing Forward* occurs when someone has the mistaken impression that clock time is rushing forward faster than it is (Langer et al., 1961). For example, while trying to prepare for a difficult exam, a person feels as if time is going by more quickly than it actually is.
- The *All-At-Once distortion* occurs when many potential future threats or challenges—e.g., occupational and/or relationship ones—seem to be developing and approaching all at once because of time compression. For example, future projects, job performance reviews, retirement challenges, may be separated by months or even years but due to time compression a person perceives them as simultaneously confronting them at once. This can cause them to seem overwhelming and unstoppable.
- The *Minimizing Coping Time* distortion occurs when a person overlooks how much time and space he/she has left to cope, and arbitrarily assume that he/she can't do anything that can produce more positive outcomes. For example, the person might have to host a surprise graduation party for a younger sister. Even though the sister doesn't graduate for 2 months, the person feels like it will go badly because she doesn't have enough time to plan the party well. She assumes that the party is going to be bad and that her sister is going to be disappointed.
- *Minimizing Intermediate Steps* distortion occurs when the person overlooks how many intermediate steps or enabling conditions or steps are required for the outcome to occur. Due to this, he/she fails to identify many possible points in the sequence where there are chances he/she or others could change outcomes.
- *Rapidly Rising Odds* distortion. The person estimates that the odds of a negative outcome are rapidly rising from the same starting point where other individuals might experience them as more constant. For example, even though he/she is

totally prepared, he/she fears that the odds of failing a certification exam are rapidly increasing as the day of the exam approaches.

- *Misperception of Approach Movement*. The person misperceives physical threats as approaching faster or to a greater extent than they actually are. For example, while out for a jog with friends, a person who is afraid of dogs sees a large stray dog in a park. The person misperceives that the dog is approaching though his friends who are with him do not.

CBT to Modify Looming Vulnerability Distortions

Socratic Questioning

In this context, the looming vulnerability distortions of anxious patients can be modified and countered with a combination of Socratic questioning and a variety of other procedures. These include behavioral exercises, imagery rehearsal, metaphor usage, and homework assignments. We can illustrate this with the concrete example below. In this example, an anxious patient was catastrophizing that the new administration "would poison the environment" with its policies and make it toxic for his young children.

To address these fears, the therapist used a pencil to draw two points on an ordinary 8 × 12 sheet of paper. They were separated by half a page. The therapist said to the patient: "This point on the left is our present time, while the point on the right is the future you imagine when the environment is poisoned and toxic. Even though those events haven't happened yet, it sounds to me as if you are viewing this future point as it were already presently here. Does it seem to you that this is what you are doing?"

The patient said "yes" and agreed that a lot of other events could still happen that might influence the outcome. The therapist pointed out that the patient was exhibiting the cognitive distortions of time compression and minimizing-intervening steps. In addition, the patient seemed to be showing the fear-based planning fallacy.

By using Socratic questioning, the patient was helped to identify other factors that could mitigate the threat he was imagining to the health of the environment. For example, the patient identified the growing opposition to the current administration's policies and the ongoing development and adoption of innovative technologies as potentially mitigating the threat. The intervention was very helpful.

Examine available Evidence: Socratic questioning was next used to help test the validity of the patient's beliefs about the speed with which the events are approaching or developing. By this means, the patient realized that the poisoned environment he feared could not instantaneously occur and might take years or decades. Moreover, the patient identified several reasons why the odds were lower than he had initially thought.

The therapist then follows this up with a variation of the "*Consider the Opposite*" strategy. The patient was questioned about whether there might be any reasons that the risk of such poisoning might be declining and slowing down over time. That is, therapist asked if there were any reasons to think that the odds were only lower than had initially feared but might even be getting progressively lower? For example, the therapist asked: What future events could slow this down/cause the chances to go down? This intervention was also helpful.

Additionally, the patient was coached to practice *replacing negative thoughts* that contained the looming vulnerability distortions with more positive or corrective thoughts. For example, the patient could remind himself that "nothing would happen as quickly as he feared" and that "there would be opportunities for mitigating measures to prevent the environmental pollution."

Reframing Dynamic Parameters: In other cases, it can be helpful to help patients to reframe their beliefs about the dynamic parameters of threats. For example, the patient can be coached to reframe and replace faulty beliefs such as "I don't have enough time to get this done" with "this just looks impossible because I haven't structured my time well."

Time Segmentation is a strategy that works by dividing the period prior to arrival of expected negative event into separate parts or intervals. Patients can feel overwhelmed when they perceive that they must accomplish all the subproblems to achieve a goal all at once. The therapist can use time segmentation as a strategy for breaking down ostensibly insurmountable future problem into separate tasks and actions. For example, patients can be asked the following: "How many weeks, months, and hours do you have? You were assuming that you didn't have enough time. Let's think this through: Are there ways you could use the time you have?" As another example, consider the "day-by-day" approach used by dieters. This essentially can work dividing the daunting dieting task of losing a lot of weight (e.g., 50 pounds) into manageable parts (cf., Riskind, 1982).

Another related strategy is to help the patient to *Break Down (Deconstruct) the Negative Event into a Sequential Process*. This strategy is based on the fact that a prerequisite for any threatening outcome occurring is that it must progress through multiple intermediate steps and involves a temporal process. Breaking down the threatened event into intermediate steps can help to empower the patient. That is, it can help the patient to better recognize steps and action by which he/she can potentially intercede or change the outcome.

Deconstructing negative events can help overcome the anxious patient's tendency to underestimate coping resources. It can also provide an opportunity to address tendencies to minimize intervening steps that are necessary in the development of negative events that are associated with the focusing illusion and the fear-based planning fallacy. Because most feared events progress though steps, there are often multiple points where a person or other outside or unexpected forces might intercede to avert the events. Due to the fear-based planning fallacy, anxious patients underestimate unforeseen obstacles that might impede potential negative events from progressing as well as the steps that can be taken to intercede.

Behavioral Exercises and Behavioral Experiments

Standard behavioral exercises can be modified to counter looming vulnerability distortions. Behavioral exercises such as exposure can function by providing corrective learning experiences to patients that modify their threat cognitions and danger expectancies (Salkovskis, 1991; Wells et al., 1995). Therefore, exposure and response prevention can be seen as behavioral experiments to test the anxious person's distorted perceptions of dynamic growing threat (e.g., contamination, or loss of control over harm obsessions).

In addition, mental imagery exercises can be used with anxious patients as "behavioral" experiments. For example, a practitioner can ask the person to imagine that a contaminant or some other threat is growing and/or spreading, and give a SUDS rating, then have the patient rate the threat once more while visualizing it as static or shrinking. Such an experiment can provide an illustration to patients of how their perceptions of dynamic growing threat induce greater anxiety. It can be remembered that Dorfan and Woody (2006) placed a sterilized drop of urine on college student's hands and found that "moving harm: imagery produced a sensitization effect that retarded habituation as compared with safety imagery and static harm imagery."

Another example of a simple but powerful behavioral experiment can be used to counter the looming vulnerability distortion of "exaggerating the speed with which time is passing." We offer the following example of a young woman who was catastrophizing. She was "completely stressed out" and feared she would have to leave her job and unable to get another job. The practitioner provided the following instructions:

> "Imagine yourself sitting by a huge clock like Big Ben in London
>
> "Now as you think about the situation at work, imagine that the clock is ticking and raise your finger to signal to me each time a minute goes by."

The therapist counted the minutes and after a brief period, the therapist noted that the patient had counted 6 min when only 2–3 min had gone. When the therapist asked the patient how she explained the discrepancy, she recognized that "it is all in my outlook that time is going by faster in her mind than it actually is" and that this was making her more anxious.

In another variation of this strategy, the therapist can ask the patient to deliberately imagine time as going by faster. For example, they could imagine counting 5 min as having gone by when imaging an approaching threat when it has only been 2 min. This could further demonstrate how temporal distortions are contributing to her anxiety.

Mental Imagery Rehearsal and the Use of Metaphor

Imagery modification and rehearsal are frequently used in cognitive restructuring methods. As noted above, Dorfan and Woody, as well a predecessor study by Riskind et al. (2000), found evidence suggesting that mental imagery modification can provide tools for reducing looming vulnerability distortions. In the next section, we will present several additional mental imagery exercises as well as describe the possible use of metaphors in targeting looming vulnerability distortions.

"Freeze Frame"

In this "freeze frame" method, mental imagery is used with an anxious patient to slow down his or her perception of rapid threat progression. It is as if the person is led to watch a movie of the events that is slowing down in a frame-by-frame manner, until the threatening frames are finally stopped like a snapshot that is arrested in time. The technique can be used for perceptual illusions or mental images of physical threat stimuli that appear to be dynamically growing and approaching (e.g., spiders, potential physical assault, veering cars) but can also be used for other events such as social threat scenarios (e.g., rejection scenes). Patients can be provided an explanation of perceptual illusions and images: "It's a fear-related illusion, perhaps arising from the faulty way your mind is picturing the threat." They can also be informed that the fear can abate when the looming vulnerability distortion abates. They can be informed that they can cope with the illusion by not taking it seriously (e.g., "Remind yourself that it's just a harmless illusion that will eventually disappear"). Such an exercise can be paired with Socratic questioning (e.g., how likely is it that cars are veering into you every 5 ft. on the road). Freeze frame methods can help patients to achieve distance from their fears and to test their danger predictions and beliefs. For example, freezing the image of a fearful scene or stimuli can often increase patients' sense of control. As we discussed above, there is also support for the idea (Riskind, 1997) that such methods can facilitate effects of exposure in fear reduction (Dorfan & Woody, 2006; Riskind, 1997).

As noted by Riskind et al. (2012), some patients, such as motor vehicle accident victims, fear that their illusions of looming cars veering over the center lines on a road are dangerous because they might place themselves in jeopardy by acting on them—e.g., swerving into a telephone poll to avoid the illusion of a swerving car (Taylor, 2006). In most cases, however, the distortions are distressing but not dangerous, and they usually disappear over the course of exposure therapy. Even so, the therapist and patient should evaluate the evidence for and against the idea that the illusions place the patient at risk. Exposure exercises can be conducted in such a way that the distortions do not create a hazard (e.g., the motor vehicle accident victim suffering from such looming illusions might initially travel as a passenger during driving-related exposure assignments) (Taylor, 2006).

Furthermore, freeze frame techniques can be used for anxious or traumatized patients who have re-experiencing symptoms. Imaginal exposure can be modified such that the event is slowed down, as if watching a movie in a frame-by-frame manner (Taylor, 2006). Such slowing down is used to fully expose the person to all the elements of the trauma for a sufficient period to allow correction of distorted looming appraisals and fear extinction to occur. As just noted, evidence supports the idea that fear-reduction/habituation is facilitated when fearful events are slowed down or static (Dorfan & Woody, 2006; Riskind, 1997).

"Recede Frame"

In the "Recede Frame method," threatening stimuli can be imagined as moving away in reverse and growing smaller. As described in Chap. 7 (see also, Riskind et al., 2012), Davis, Gross, and Ochsner (2011) found in their study that participants had significantly fewer negative reactions when told that they should imagine a negative scene that they saw as "receding until it was the size of a postage stamp," compared with when they were told to imagine no change, or to imagine the scene as growing larger and moving toward them. Such imagery tasks can be implemented as coping strategies.

"Slowing the Conveyor Belt"

The "Slowing the Conveyor Belt" technique was illustrated by Riskind et al. (2012) with the example of an anxious patient who had a diagnosis of comorbid diagnosis of GAD and dysthymia. The "Conveyor Belt" technique was used in the extract from this session at a point in which he was highly anxious he was failing to make unsolicited "cold calls" required to generate business for his financially troubled company. He reported that he feared looking "foolish, idiotic, and small" but felt compelled to make them because otherwise his business would fail, which would cause him to lose his "wife, family, and even his sanity."

By questioning his assumptions (my whole life will be out of control…), he recognized there were "a number of things I can do to slow down the conveyor belt to doom." He said that "right now, the conveyor belt is idling," and he could even "go in the opposite direction to success" (e.g., plan and work more effectively).

"Slowing the Speedometer"

This imagery intervention involves the use of the metaphor of a speedometer to counter perceptions and distortions of rapidly growing dynamic threats. Riskind et al. illustrated the use of the technique with a patient who was reporting overwhelming fears about a variety of fears including the precariousness of his job, living on borrowed time, losing his ability to function because his anxiety would run

out of control, and the collapse of his marriage. The practitioner asked him to imagine that he could represent the speed of these various events that could be rated on a "speedometer" in terms of miles per hour (mph). The patient said "It feels like things are happening very, very quickly, like 100 mph. I'd say I'd feel about 70 or 80° out of a hundred of anxiety and about 20 or 30° of control."

The patient was instructed to imagine that the speed with which the events were coming above decreased in successive steps (e.g., from 100 mph to 95 mph and then from 95 mph to 90 mph) and then to rate his level of anxiety and feelings of control. As the speed went down the patient said he felt less anxious and when it reached 40 mph he said "That feels great! My anxiety is much lower, like about a 20 right now. And I'd rate my control like about a 60 or 70. I can really see that. I think that this has always been a problem for me. In college, I was always thinking that there were too many things to do and not enough time to do them."

"Slowing the Freight Train"

Another intervention that uses a freight train metaphor was illustrated by Riskind et al. (2012) with a young unmarried woman with GAD. She was being treated for chronic anxiety, worry, and comorbid depression (see Riskind et al., 2012). "In this session, the patient was catastrophizing about a series of events that she described as a "train of disaster" in which she would lose her job if she went back to school, having insufficient income, and that this would cause her new husband to leave her, and she'd end up doing "a menial doing temp work."

After rating her anxiety (90 on a 100-point scale), she was asked to imagine this chain or train of disasters as moving in "very small" increments toward her, such as a train that moved down the track one inch every 10 min. She rated herself as feeling greater control over her problems and her ratings of anxiety fell from 90 to 5. In a further imagery scenario, she was asked to exaggerate the speed of the onrushing scene of disasters. This exaggeration itself led her to vocalize that things were "not moving so fast" and gave her an enhanced sense of control.

Other metaphors could also be useful in CBT imagery exercises for looming vulnerability distortions. For example, a practitioner might ask a patient to imagine changing the freight train into a minibike and slowing it down. Or, the "train of disaster" could be reimagined as a toy train or a very small child on a bicycle. For another example, the patient could be asked to imagine being in a canoe without a paddle in a river that is rushing toward a waterfall, which they can then slow down and then reverse. Or they can imagine themselves on an escalator that they can slow down or reverse.

"Time Interpolation"

In a session that illustrates the "Time Interpolation" technique, a young paralegal reported feeling intensely anxious and "panicky" about an impending presentation she had to make to 40 attorneys. She reported thinking that they were "critical and confrontational" and said that she "would hate to be embarrassed" and that she "didn't talk well in front of people."

To deconstruct the negative event into a process, the practitioner used mental imagery to break down the patient's catastrophizing scenario into the following sequence of steps: (1) she would become anxious just before speaking, (2) she would say things she shouldn't and jump around illogically or say things unclearly, (3) the attorneys would frown and ask questions, (4) she would be unable to answer these well, (5) they would look confused and displeased with her answers, and (6) she would be humiliated and embarrassed.

The time interpolation technique was used to slow down her perceptions of rapidly progressing danger to counter her feelings of helplessness and to boost her perceptions of her ability and resources to cope. The therapist asked her to imagine the beginning of this sequence of steps or moments where she first feared she would begin to feel anxious. To slow down the pace of time, the therapist instructed her to imagine that time was stretched out from this point to the next point in the sequence. She was told to imagine that she had more than enough time to consider ways to cope with the events. The therapist then said: "Now let's slow down the movement from each scene to the next. Imagine that once you notice you are feeling anxiety as you start your presentation, it is as if you have forever to figure out how to handle your anxiety before it leads to anything else. You have infinite time. And when that happens, you have forever to figure out how to handle the next step before it leads to the next thing you fear will happen."

For example, she came to a point in this imagery exercise where she imagined beginning to give her talk and saying things she shouldn't or "jumping around." She was asked here to picture herself having forever to notice she was about to do it, remind herself how to handle it, and get back on task. Similarly, when the point in the sequence was reached where she imagined the attorneys start to ask questions, she imagined time as slowing down so that she had forever after they asked each question to think of appropriate responses. In the next step in the sequence, she pictured herself as having infinite time to come up with answers when she imagined the attorneys looking at her, confused and displeased with her answers. The goal of this intervention was to create a sense of sufficient time and control and to create a sense of greater time and space with which to cope each step in the catastrophizing sequence by slowing down, or stretching time. She reported that her presentation went quite well.

"Expanding the Margin of Safety"

This strategy was used with a patient who feared she faced behaviorally urgent impending entrapment by problems from "all sides" that she felt were threatening to engulf her. The therapist devised a mental imagery exercise to widen or stretch out the person's perception of their safety zone of personal space from all potential threats. This patient was a young mother who felt she was about to be engulfed on all sides by urgent problems that needed to be mitigated or controlled so they could "go away." In this session, she was given an imagery assignment to practice for homework in which she visualized the safety band of personal space around her as widening and broadening. When she came for the next session, she said that the imagery exercises seemed to help.

Tailoring Methods Tailored to the Unique Circumstances of Patients

As Riskind et al. (2012) illustrated, practitioners can creatively tailor and adapt strategies and concepts that we have described to a variety of novel circumstances. For example, a college student experienced overwhelming anxiety because she pictured herself facing an imminent catastrophe in an upcoming tap dancing performance (Riskind, Long, et al., 2005). She feared that she would lose her scholarship and become humiliated because she would be unable to keep up with the steps of the other dancers and fall further and further behind.

A standard Probability X Cost approach to catastrophizing was used but she remained extremely anxious. In a strategy specifically tailored for her, she was instructed to first picture herself running through her steps in "real time," which was defined as the speed with which she would normally dance her routine and designated as a 65 mph velocity. Next, she was pictured herself dancing at 5 mph, which would be "so slow and deliberate that it would barely resemble movement at all." In this, she was instructed to imagine impersonal details in the environment, such as the individuals dancing and other elements of the room in which she would eventually perform. As she pictured herself dancing at the slowed down pace of 5 mph, she was asked to identify the names of the moves and steps she was about to perform to instill an anchoring point in which there was a degree of confidence and personal efficacy. She reported feeling that it was very easy to dance at this speed because she had time to think about what her next step would be before she had to execute it.

She was then instructed to imagine increasing her speed by 10 mph increments so long as she still felt "confident and comfortable" at that speed. At 65 mph (normal speed), she described herself as confident that she could dance through the performance quite well with few, if any, errors. Next, she was instructed to continue with the 10 mph increments and describe how they felt. At 95 mph, she described her feet as "muddy," and on reaching 115 mph, she described her images as "jerky, puppet-like dancing" and felt she was struggling to "stay in step" and "really messing it up." The practitioner asked her to return to normal speed and to imagine herself becoming lighter, each step was becoming "springy and light," and the sounds

of her taps were as "sharp as a tack." She was asked to imagine that she could hear each of her individual steps in a well-defined manner until she reaches 95 mph. On processing the experience, she reported that imagining [herself] dancing at excessively high speeds significantly reduced her anxiety about the upcoming performance. As the client phrased it, "if I can do it at that speed, then 65 mph is no problem." This looming reduction/decatastrophizing exercise apparently worked and she subsequently reported she had successfully performed the dance.

Homework Assignments

As in standard CBT protocols, patients can be given a variety of homework assignments to enhance the efficacy of treatment. For example, therapists can provide sheets that list (a) distorted cognitions (e.g., time compression, all at once distortions) that cause distorted looming appraisals, as well as (b) prewritten rational responses to those distortions. Likewise, they can be given imagery or behavioral experiments and exercises.

Conclusion

Although work on CBT for looming vulnerability distortions is still in its preliminary stages, we believe that the concepts and techniques we have presented here are promising. It should be obvious that further individual case studies, and eventually, treatment outcome studies, and randomized controlled trials would be necessary to evaluate how much they can augment standard CBT protocols.

Several interesting questions remain for these CBT procedures. We must not only examine whether they work and which ones work best but ascertain which ones work best for which patients. Another question is how are patients who don't change in their perceptions and distortions of growing threat different from those who do change? Relatedly, we can ask questions about relapse and cognitive mediation. Are anxious patients who don't change in looming vulnerability distortions with standard CBT or other approaches such as mindfulness training more likely to relapse? Moreover, is change in looming vulnerability distortions a major mechanism of change in effective CBT treatment? A further question (Riskind et al., 2012) is whether the efficacy of a CBT approach that targets looming vulnerability distortions differs for different anxiety and anxiety-related disorders? Likewise, might they work differently for patients with certain personality disorders such as those with avoidant personality styles?

We suggest that CBT interventions to target looming vulnerability distortions have the potential to enhance standard CBT procedures when standard procedures fail to produce the expected changes. For example, even though it is known that exposure is one of the most powerful treatments for anxiety, some individuals don't

respond. For example, despite being given exposure to spiders, spider phobics may still fail to habituate. It may be that if spider phobics are imagining spiders as crawling all around on their bodies, this can impede desensitization, much as the "movement imagery" manipulation in the Dorfan and Woody study (Dorfan & Woody, 2006) impeded desensitization and distress reduction to urine drops placed on participants arms. When anxious patients have looming vulnerability distortions that exaggerate dynamic growing threat, simple exposure (or other CBT procedures) may have weaker effects unless the distortions are addressed.

Elsewhere, we have described the distinction between CBT for looming vulnerability distortions and thought stopping (Riskind et al., 2012). In thought stopping, for example, patients are taught to deliberately suppress anxiety-evoking thoughts, perceptions, and images. In our guided imagery exercises, in contrast, patients are taught methods for slowing down threat progression while keeping thoughts, perceptions, and images in mind. Finally, one might also wonder whether looming reduction is at variance with a behavioral model in which flooding and the intensification of anxiety are necessary for habituation. From a cognitive perspective, however, exposure works by producing changes in beliefs or harm expectancies, and flooding may not be necessary (Salkovskis, 1991; Wells et al., 1995). Looming reduction is regarded as a cognitively oriented set of strategies for providing new information for restructuring and changing beliefs, and not just habituation through flooding.

A final caveat is that for patients who were to simply use methods as ways of avoiding immediate feelings of anxiety without doing further therapeutic work and changing danger beliefs, looming reduction could have only transient, limited benefit (Riskind et al., 2012). Looming reduction could also become a problem in its own right if it were to develop into compulsive behavior by OCD patients. Therapists must obviously monitor such potential risks.

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