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Overview and History of Exposure Therapy for Anxiety

The range of human fears is immeasurable. Whereas some people break out in a cold sweat at the thought of riding in an elevator or driving over a bridge, others fear animals (large or small, alive or dead), loss of control, speaking in front of others, or experiencing the sensations of physiological arousal. Still others are afraid of eternal damnation, “immoral” words and “unlucky” numbers, unwanted thoughts about sex or violence, or using public restrooms. There are even those who become immobilized at the sight of a clown, a cemetery, or their own navel.

In order to help people overcome such distressing and disabling anxiety, mental health professionals face the daunting task of selecting an effective treatment strategy from a dizzying array of available options. Some of these strategies are vigorously promoted as “cures” for a wide range of psychological (and medical) problems. Some are touted as short-term or “brief,” whereas others ostensibly work over a longer period. Some are designed for individual therapy and others for group settings. Although proponents of most of these interventions claim that they are effective, convincing scientific evidence to support these claims is lacking in the majority of cases.

With so many possibilities, it is inevitable that many interventions that seem plausible are in the end ineffective or even harmful. Indeed, the treatment of anxiety has a long and colorful history dating back well past the fifth century B.C. Dimopoulos, Robinson, and Fountas (2008) recount instructive examples of “treatment” for panic attacks by “trephination,” as described by contemporaries of Hippocrates. Essentially, “physicians”

of the day—who had little knowledge of human anatomy—bored holes into the sufferer’s skull, presumably to coax out from the brain the demons that were thought to cause “insanity.” Although we may snicker at this practice now, variations of this approach have endured and are still in use in some parts of the world today. Practitioners used trephination because it “worked,” by which we mean that it was occasionally followed by the cessation of panic attacks. However, one can achieve this same *spontaneous remission* of symptoms in about a third of panic sufferers without any intervention at all (Swobota, Amering, Windhaber, & Katschnig, 2001)—which has the added benefit of saving patients a hole in their head! Given the complexity and subtlety of clinical fear and anxiety, it is no surprise that so many different treatments have been tried, and that so many have persisted despite a lack of evidence supporting their effectiveness.

This somewhat unruly state of the field demands not only that treatments prove their muster in carefully conducted research trials, but also that we gain knowledge about the process by which they produce their outcomes. Accomplishing this task requires demarcating potentially useful and valid principles of therapeutic change. Several candidates common to most, if not all, psychological treatments for clinical fear and anxiety include the therapeutic relationship, the milieu in which the patient is treated, and the patient’s (and therapist’s) expectations of improvement (Frank, 1989). Yet another common principle of change—that with which we concern ourselves in this book—derives from the observation that alterations in thoughts, feelings, and behavior appear to occur following a strong emotional response to material presented within the context of therapy. Psychoanalytically oriented therapists, for example, confront patients with information about so-called unconscious conflicts and unacceptable wishes through *free association* and the interpretation of dreams (Freud, 1949/1989). Likewise, Gestalt therapists use imagery, role enactment, and group interactions to coax the patient into confronting information that has been avoided (Perls, 1969). In this volume, we focus on a cognitive-behavioral-oriented approach—namely, exposure therapy—that involves a more direct and systematic sort of encounter with feared stimuli.

Exposure therapy refers to the process of helping a patient approach and engage with anxiety-provoking stimuli that objectively pose no more than everyday risk without the use of anxiety-reduction “coping” skills. Anxiety-evoking stimuli can be alive (e.g., snakes, clowns), inanimate (e.g., balloons, toilets), situational (e.g., funeral homes, bridges), cognitive (e.g., ideas of committing heinous acts, memories of a traumatic event), or physiological (e.g., racing heart, dizziness). Engagement with the objectively safe (or “low-risk”) fear-eliciting stimulus typically precipitates a response ranging from mild apprehension to intense panic, the basis for which is the patient’s exaggerated expectation of danger. It is thought that learning

of one form or another takes place when a person repeatedly confronts a feared stimulus (e.g., a dog) in the absence of the expected feared consequence (e.g., the dog does not bite). Although debate continues regarding what exactly happens in the mind and brain during therapeutic exposure, a new behavioral repertoire seems to be cultivated and strengthened each time an individual effectively handles a previously feared situation without relying on safety cues or strategies for reducing the anxiety. Before we discuss the implementation of exposure therapy, however, let us explore the concept of anxiety and the history of exposure therapy.

ANXIETY: NORMAL AND ABNORMAL

Although a complete definition of anxiety is outside the scope of the present volume (entire books have been written on the subject; e.g., Barlow, 2002), anxiety is, broadly speaking, an organism's response to the *perception* of threat.¹ This implies that actual threat need not be present in order to experience anxiety. The reader will surely recall instances of his or her own intense fear and apprehension that turned out to be baseless. Similarly, it is possible to actually be in danger, yet not become anxious because the threat is not perceived. We have probably all had experiences in which it was only later that we realized how potentially dangerous a particular situation was. Either way, everyone is familiar with the psychological experience of feeling threatened, whether we label it as *anxiety*, *apprehension*, *fear*, *panic*, *worry*, *stress*, or something else. Moreover, we are all familiar with the physiological arousal that accompanies this emotion.

Normal Anxiety

At a neurophysiological level, the anxiety (fear) response appears to be implemented in various brain structures, including the visual thalamus, visual cortex, and the amygdala (we note, however, that precisely how anxiety manifests in the brain is not completely understood). The brain stimulates the release of adrenaline from the adrenal glands, which activates the sympathetic nervous system and initiates the body's "fight-or-flight response." This response is the body's built-in way of priming the organism for reacting to a perceived threat by attacking (fighting for one's life) or running (fleeing to safety).

¹In this book we use the terms *anxiety* and *fear* somewhat interchangeably, although these concepts can be differentiated from one another. Anxiety is a future-oriented mood state associated with preparation for possible upcoming negative events; fear is an alarm response to present or imminent danger (real or perceived; Barlow, 2002).

The fight-or-flight response occurs simultaneously on three levels. First, at a physiological level, the body prepares for physical exertion by enriching the blood with oxygen, which is converted to energy for use by the body's muscles. This change involves abrupt and noticeable increases in the intensity of the heart rate and depth of breathing. In addition, feelings of nausea are also common since digestion is not typically involved in fleeing or fighting for one's life, and thus resources are diverted away from the digestive system to other areas of the body. Second, at a cognitive level, there is an automatic shift in attention toward the perceived threat (and ways to seek safety from it), so that it might seem difficult to concentrate on any extraneous matters. This focus serves as a constant reminder of the potential for harm and allows for early detection of threats and means of escaping them. Finally, at a behavioral level, the individual is compelled to take actions that are geared toward fighting, avoiding, or escaping the feared stimulus, such as by running away, thereby increasing the odds of survival.

The fight-or-flight response is critical to the survival of humankind (and most other species in the animal kingdom). Just imagine what would happen if you were crossing a busy street in a large city—cars bearing down on you—and you felt absolutely no stress or anxiety. Most of us can recall a time when spontaneous actions motivated by the fight-or-flight response probably saved our life, or at least helped us avoid serious injury. As more than one author has put it, “in times of danger, anxiety can be a person's best friend” (e.g., Rosqvist, 2005, p. 1).

Abnormal Anxiety

Unfortunately, sometimes the fight-or-flight response is the kind of “friend” that relieves us of the need for enemies. This happens when anxiety occurs in the absence of danger or when it is out of proportion relative to the actual threat. In these situations, such as having to speak in front of others, having your body prepared to run for safety probably won't keep you safe, but may make you sweaty or cause you to stutter due to increased muscle tension. Such excessive anxiety—stemming from the misperception of a safe situation as dangerous—appears to form the basis of most clinical anxiety problems (i.e., anxiety disorders; Barlow, 2002; Beck, Emery, & Greenberg, 1985). In such instances, the fight-or-flight response is triggered unnecessarily and may even worsen the situation by leading to more negative thoughts, such as “Everyone will notice my anxiety and think I'm incompetent.” This sort of emotional reasoning bias serves to increase the perception of threat (Arntz, Rauner, & van den Hout, 1995) and maintain physiological responding, thereby creating a vicious cycle in which the perception of threat leads to anxious responding, which leads to more threat perception, and so on.

Another unfortunate consequence of habitually misperceiving objectively safe stimuli as dangerous is the development of strategies for avoiding these fear cues. These strategies may include “passive avoidance,” such as a student with social anxiety refraining from raising her hand in class because she fears that her peers will laugh at her if she gives an incorrect answer. Other feared stimuli, including germs and traumatic memories, cannot be completely avoided. In such instances, the anxious individual will often develop strategies that serve as an “escape” from the feelings of anxiety that accompany exposure to these triggers (Barlow, 2002). Such “active avoidance” strategies include compulsive washing and cleaning to prevent illness after handling money and remaining close to a “safe person” for protection in a currently safe circumstance reminiscent of a previous traumatic event. By minimizing exposure to stimuli associated with clinical (unrealistic) anxiety, regardless of the form of avoidance, the person never has the opportunity to learn that such stimuli really are objectively safe (i.e., low risk; Clark, 1999). That is, the person cannot correct his or her misperception of the fear trigger, and he or she goes on believing (erroneously) that it is dangerous.

Not only do efforts to escape and avoid perceived threats prevent clinical anxiety from self-correcting over time, they may actually *worsen* the very problems they are intended to alleviate. Accordingly, much of the devastating effects of clinical anxiety result from the extreme lengths to which people go in trying to keep themselves safe by avoiding and escaping from (largely nonthreatening) fear cues. For example, we know of one man with a fear of AIDS who couldn't leave his bedroom for 5 years after someone with HIV had visited his home. A woman drove 45 miles out of her way to work each day to avoid having to cross a certain bridge. Another woman relocated from the West Coast of the United States to Rochester, Minnesota, just so she could be near the Mayo Clinic in case she suffered the extremely unlikely medical emergency she was anticipating. Although medically healthy, this individual restricted herself to traveling no more than a few miles from the clinic, and at all times carried with her various medical devices, self-test kits, and medicines. More detailed information regarding the development and maintenance of abnormal anxiety is presented in Chapter 3.

DSM-5 Diagnoses Characterized by Anxiety

The fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5; American Psychiatric Association, 2013) assumes a categorical stance and defines *psychiatric disorders* on the basis of observable signs and “symptoms.” These diagnoses are intended to inform the clinician about the likely course of the problem and what treatments would

be appropriate. The fifth edition of the DSM includes a number of conditions characterized by anxiety, as listed in Table 1.1. Although treatment manuals have been developed and evaluated for most of these conditions, the DSM diagnostic approach has a number of limitations that encumber its use for treatment planning. To begin with, the categorical delineation of the DSM system cannot fully capture the breadth and depth of human emotional experience. As far as anxiety-related disorders are concerned, the various DSM diagnostic labels merely reflect topographical (and largely superficial) differences among problems that have essentially the same fundamental psychological mechanism (e.g., Abramowitz & Deacon, 2005). That is, the disorders listed in Table 1.1 can all be conceptualized using the framework outlined above in which relatively safe stimuli are misperceived as dangerous, leading to unnecessary anxiety and what amount to unwarranted avoidance or escape behaviors that perpetuate the problem. Each diagnostic entity, however, has a somewhat unique set of fear cues, ways in which these cues are misperceived, and maladaptive coping responses. Table 1.2 shows these phenomena across the anxiety-related disorders in DSM-5.

The DSM also makes an arbitrary distinction regarding the level of severity that constitutes an anxiety (or anxiety-related) disorder (Widiger & Miller, 2008). In this system anxiety disorders are treated like medical diseases, such as cancer, which you either have or (preferably) do not. However, as can be seen from the discussion of normal and abnormal anxiety,

TABLE 1.1. Anxiety-Related Disorders Listed in DSM-5

Anxiety disorders

- Panic disorder with or without agoraphobia
- Specific phobia
- Social anxiety disorder
- Generalized anxiety disorder
- Separation anxiety disorder
- Selective mutism

Obsessive–compulsive-related disorders

- Obsessive–compulsive disorder

Trauma and related disorders

- Posttraumatic stress disorder
- Acute stress disorder

Somatic symptom and related disorders

- Illness anxiety disorder

TABLE 1.2. Fear Cues, Misperceptions, and Maladaptive Coping Responses in the Major Anxiety Disorders

DSM disorder	Fear cue(s)	Misperception(s)	Maladaptive coping responses
Obsessive–compulsive disorder	Intrusive thoughts, situational cues	Thoughts are highly significant and equivalent to actions; inflated responsibility for preventing harm	Avoidance, compulsive rituals (e.g., checking, washing, covert neutralizing), reassurance seeking
Specific phobia	Snakes, heights, injections, etc.	Overestimation of the likelihood or severity of danger	Avoidance, use of drugs (alcohol, benzodiazepines), distraction
Social anxiety disorder	Social or performance situations	Other people are highly judgmental; negative evaluation is intolerable	Avoidance, in-situation safety behaviors (e.g., using alcohol at a party)
Panic disorder and agoraphobia	Arousal-related body sensations; situational cues	Misinterpretation of arousal-related body sensations as dangerous (e.g., a racing heart means a heart attack)	Agoraphobic avoidance, in-situation safety behaviors (e.g., going to emergency room), and safety signals (e.g., have safe person nearby, carry cellphone)
Illness anxiety disorder	Unexplained bodily sensations (arousal- or non-arousal-related)	Misappraisal of benign unexplained bodily sensations, perturbations, or changes as indicating a serious medical illness (e.g., cancer)	Seeking information from doctors or over the Internet, checking one's own body (including its vital functions and the properties of its waste products), avoidance of reminders of the feared illness
Posttraumatic stress disorder and acute stress disorder	Intrusive memories of traumatic events	Nowhere is safe, recalling a traumatic memory is intolerable	Avoidance of reminders, distraction, safety signals (e.g., carrying a gun)
Generalized anxiety disorder	Thoughts/images of low-probability negative events	Intolerance of uncertainty; overestimation of the likelihood and severity of negative outcomes	Reassurance seeking, worrying as a form of problem solving
Separation anxiety disorder	Physical separation from parents or other caregivers	Overestimation of the likelihood of threat of harm or permanent separation	Clinging to parents, crying, avoiding situations in which separation is required

fears and worries are more like blood pressure; everyone has it, but having too high (as well as too low) levels can be problematic. A categorically based diagnostic system does not provide treatment recommendations for individuals whose symptoms do not fall into a specific category or who have subthreshold symptoms.

Accordingly, we espouse an alternative approach to diagnosis in which a mental disorder is viewed as a “dyscontrolled organismic impairment in psychological functioning” that falls along a continuum of severity (Widiger & Miller, 2008). In other words, some psychological *mechanism* within the individual, such as how he or she is responding to certain fear cues, is not functioning optimally. This operationalization is compatible with the view that effective psychological therapies don’t treat “disorders” as much as they change (or reverse) maladaptive psychological mechanisms that characterize these problems (Abramowitz & Blakey, in press-a). As the reader will find, we approach exposure therapy as targeting key processes underlying the persistence of clinical anxiety rather than a treatment for a specific “disorder” (see Chapter 3).

Although exposure therapy must be modified depending on the particular fear trigger (see the chapters in Part II), this is not the same as using a different *treatment* or *treatment manual* for each different anxiety-related disorder. As we argue in this book, the same basic principles of exposure therapy can be applied to any patient’s anxiety problem, regardless of which DSM diagnostic category best describes it. This *transdiagnostic* approach frees the therapist from the arduous task of learning to use a bookshelf full of treatment manuals for all the anxiety-related DSM disorders, and instead emphasizes understanding and treating the common psychological mechanisms that underlie the maintenance of anxiety-related problems in general.

Etiology versus Maintenance

The reader will also note that exposure therapy and its conceptual framework for understanding clinical anxiety are focused on the psychological processes that *maintain* the problem, rather than those that might lead to its development or *etiology*. One reason for this is that whereas the maintenance factors in anxiety are well understood based on careful clinical observation and empirical research (e.g., Clark, 1999), we understand much less about the factors that dictate why some people are more vulnerable to developing such problems than are others. Mineka and Zinbarg (2006) have proposed a comprehensive etiological model of anxiety disorders that incorporates early learning experiences, the occurrence and context of stressful events, and genetic or temperamental vulnerability. In other words, the tendency to respond in excessively fearful ways—on

physiological, emotional, and behavioral levels—appears to be mediated by both environmental and biological variables.

Psychological treatments, however, cannot “undo” historical events or change genetic and temperamental predispositions. That is, they can’t directly address the etiological factors in anxiety problems. In fact, therapists cannot even reliably determine the precise ways in which learning experiences and vulnerability factors interact to cause a particular individual’s anxiety problem to develop. Yet, treatment can address the *maintenance factors*—that is, those phenomena that interfere with the natural process of overcoming a fear. If we view excessive anxious responding as learned *patterns* of maladaptive thinking and acting, we can help the patient learn healthier patterns to replace maladaptive ones. From this perspective, the following elements are necessary for successful and durable treatment of clinical fear and anxiety: (1) Patients must be presented with information that is incompatible with their maladaptive beliefs about the dangerousness or intolerability of feared stimuli; (2) behaviors that interfere with the acquisition and consolidation of this new information must be eliminated; and (3) this new information must be strengthened in memory and generalized as broadly as possible so that it is recalled in diverse contexts and over time. These elements provide the theoretical basis for the use of exposure therapy to treat most problems involving excessive fear and anxiety (e.g., Craske et al., 2008; Foa, Huppert, & Cahill, 2006). The remainder of this chapter provides a history of the development of this treatment technique.

CONTEMPORARY EXPOSURE THERAPY: AN OVERVIEW

As we detail in the pages of this volume, exposure therapy is both a science and an art. Although there is more than adequate empirical support for its conceptual basis and efficacy (see Chapter 2), implementing exposure still requires careful artistry and therapeutic know-how. No two anxious individuals present with precisely the same fears and avoidance patterns, and therefore no two exposure therapy programs will be exactly the same. This need for a patient-specific, or *idiosyncratic*, approach is one important challenge and a key characteristic of exposure therapy. In Chapter 4, we describe how to conduct a careful assessment that allows the clinician to tailor the treatment to the needs of the patient. The need to persuade anxious individuals to confront their greatest fears also represents a hurdle to successful exposure therapy. In Chapter 5, we present suggestions for conveying a clear and coherent rationale for treatment. What follows next is a general overview of contemporary exposure therapy procedures as commonly implemented. Later, we step back and take a historical perspective.

Assessment and Treatment Planning

In general, exposure therapy begins with a thorough assessment of the patient's problem with anxiety. This "functional (or *behavioral*) assessment" (as we discuss in detail in Chapter 4) focuses on understanding (1) the contexts in which anxiety is triggered, (2) the anticipated feared consequences of encountering fear triggers, and (3) the strategies used to seek safety from harm and reduce anxiety by avoiding and escaping from these triggers. The therapist next thoroughly explains the exposure procedures and why they are expected to be helpful. Providing a clear rationale, along with use of helpful metaphors, helps to motivate the patient to see that engaging in exposure is worthwhile, even though it will likely provoke anxiety and distress. As we describe in Chapter 5, an effective rationale includes not only a clear and coherent explanation of the problem in terms that are readily understandable to the patient, but also information about how exposure therapy is commonly experienced, including the provocation of distress and the importance of learning that anxiety is safe and tolerable. The therapist's role as a coach and ally is also described. Information gleaned from the functional assessment is then used to plan the exposure exercises that will be pursued.

The preparatory stage of therapy also introduces the patient to the importance of eliminating subtle and not-so-subtle avoidance and escape (i.e., "coping") strategies that prevent the natural extinction of fear, that is, response prevention. Depending on the nature of the patient's anxiety problem and type of anxiety reduction strategies he or she uses, response prevention may take different forms. For example, individuals with compulsive rituals are taught to abstain from such ritualizing. Those who use benzodiazepine medication or alcohol to cope with anxious feelings are helped to safely reduce the use of these agents. Those who use safety cues such as not leaving home without a "safe person," cellphone, or water bottle are helped to complete exposure exercises without these safety signals.

Practicing Exposure

How exposure therapy is carried out depends on the nature of the individual's fear as well as his or her goals for treatment. Although patients might begin by confronting moderately distressing stimuli and gradually working up to more difficult situations (i.e., using a hierarchy), exposure stimuli do not need to be encountered in any particular order. They might be confronted according to the patient's priorities, for example, in terms of how much addressing each item would improve quality of life. Exposure might occur in imagination when the feared stimulus is a thought or memory, such as for someone with intrusive unwanted sexual images or memories of traumatic experiences. Here, mentally visualizing this event (i.e., exposure

in imagination, perhaps along with exposure to situational cues) would be the technique of choice. In cases where physiological states, such as anxious arousal itself, are the feared stimuli, the preferred method is interoceptive exposure in which the patient purposely elicits such internal stimuli (e.g., by engaging in physical activity or using caffeine). In any case, the aim of a particular exposure is to engage the patient with the fear stimulus in a systematic way and without the use of safety-seeking or anxiety-reducing coping strategies so that the patient can learn that the feared outcome is not as likely or as severe as was predicted *and* that feelings of anxiety are safe and manageable regardless of their intensity or duration.

Each individual exposure exercise concludes when the patient's expectations of the danger and/or intolerability of the stimulus have been contradicted to the fullest possible extent. Learning is focused on whether the expected negative outcome occurred, how manageable it was if it did occur, and the degree to which the patient's distress was tolerable. In some cases, this will require that exposures be prolonged and repeated multiple times and in different settings. When the exposure practice is over, patients are helped to further consolidate the newly gained information by discussing what they learned during the experience. Did their fears come true? Were the feelings of anxiety actually *unbearable*? What surprised them about doing the exposure? Patients are also helped to recognize that regardless of how anxious they felt, and how long those feelings persisted, they were able to get through the experience. As alluded to above, exposure therapy has been rigorously evaluated with thousands of anxious patients, treated by hundreds of therapists in a variety of clinics located around the world. This literature, which we review in Chapter 2, consistently demonstrates the efficacy (success in controlled studies) and effectiveness (success in clinical practice) of therapeutic exposure.

A HISTORY OF EXPOSURE THERAPY

Exposure, as a therapy procedure for reducing clinical fear, has its roots in the behavior therapy movement of the 1950s. The first behavior therapists emerged from multiple schools of psychotherapy, including the then-dominant psychoanalytic view in the United States and the United Kingdom (Krasner, 1971; Krasner & Houts, 1984). Some of the earliest efforts to treat phobias and other anxiety-related problems came from research-oriented psychologists and psychiatrists in South Africa, many of whom eventually made their way to England and the Maudsley Hospital training program directed by Hans Eysenck (Houts, 2005).

As a psychiatrist who was enthusiastic about learning theory and experimental psychology, Joseph Wolpe (1915–1997) turned to his psychologist

colleagues to find like-minded individuals with whom to discuss clinical problems from a behavioral point of view. Among those he consulted was James G. Taylor (1897–1973) in the Psychology Department of the University of Capetown, South Africa. In the 1950s Taylor had used behavioral therapy procedures for the treatment of anxiety. Unfortunately, he did not publish most of his case studies, and only hints of his work survive in published form. In an interview with Leonard Krasner, Taylor described treating several patients with anxiety using techniques we would today call *situational exposure with response prevention* (Krasner, 1971). For example, in a case of driving phobia, he accompanied the patient on drives designed to elicit anxiety. He also exposed patients with compulsive handwashing behaviors to more and more anxiety-provoking circumstances and blocked their washing behavior. Although Taylor might have been the first behavior therapist to use systematic exposure techniques, more prolific investigators usually receive credit for bringing this form of therapy to the forefront of anxiety treatment.

Systematic Desensitization

One of the first forms of exposure to emerge in the era of behavior therapy was *systematic desensitization (SD)*. Initially described by Salter (1949), but later elaborated by Wolpe (1958), SD involves weakening the association between anxiety and an objectively nondangerous phobic stimulus by pairing the phobic stimulus with a physiological state that is incompatible with anxiety. Procedurally, the patient and therapist first develop a fear hierarchy—a list of the patient's phobic situations and objects, ordered from the least to the most fear-provoking. Next, the therapist helps the patient become relaxed. Then, the anxiety-provoking stimuli are either gradually visualized or actually presented to the patient while he or she is in the relaxed state. Stimuli are confronted in order from the least to the most distressing. If the patient becomes anxious, the feared stimulus may be withdrawn until the patient can once more reestablish a relaxed state.

The goal of SD is for the patient to be completely relaxed while in the presence of his or her phobic stimuli. Wolpe adopted Jacobson's (1938) progressive muscle relaxation technique as the primary anxiety-inhibiting procedure. Once mastered by the patient, Wolpe believed that this technique could be employed at almost any time and in various circumstances both in and outside of the therapist's office. Wolpe also found that the use of imagined, rather than actual, exposure to feared stimuli expanded the range of phobic stimuli that could be addressed by SD. Therefore, although presentation of actual phobic material was occasionally used, SD usually involved exposure to thoughts and images of feared situations and stimuli.

Wolpe derived his techniques for SD largely from his earlier laboratory research (Wolpe, 1958), and from the work of Mary Cover Jones (1924),

which demonstrated that phobic responses (in animals and humans) could be weakened if a response that was the opposite of anxiety (and incompatible with it) occurred in the presence of the phobic stimulus. Wolpe, for example, conditioned cats to become afraid of their cage through the administration of electric shocks to the floor of the cage. He then found that he could weaken this phobic response by giving the cats food at locations progressively closer to the cage. Eating was viewed as a pleasant response antagonistic to phobic anxiety. Wolpe hypothesized that the cats were undergoing a process called *reciprocal inhibition* (i.e., anxiety inhibits feeding and feeding inhibits anxiety), which became the theoretical basis of SD.

A large body of clinical and experimental research amply demonstrates the efficacy and effectiveness of SD, particularly for specific phobias, social anxiety, and agoraphobia. In a classic study of patients with fears of public speaking, Paul (1966) found that SD was more effective than insight-oriented therapy. After only five treatment sessions, 100% of patients receiving SD were improved or much improved, compared to 47% who received insight-oriented treatment. Moreover, the therapists in this study had not been schooled in behavior therapy, suggesting that SD did not require intensive behaviorally oriented training. However, as other behavioral therapies that deemphasized the relaxation part of SD emerged in the 1970s and 1980s, research and clinical interest in SD began to decline (McGlynn, Smitherman, & Gothard, 2002).

Flooding and Implosive Therapy

Other precursors to contemporary exposure include flooding and implosive therapy (implosion). *Flooding* refers to a nongraduated approach in which the patient rapidly confronts his or her most feared stimuli, either in imagination or in real life, while minimizing escape from the fear-provoking context (i.e., response prevention). For example, a child with a phobia of large dogs might be placed in a room with such a dog and prevented from leaving until his anxiety subsides. Alternatively, the child might imagine strongly anxiety-eliciting scenes involving a large dog for a prolonged period of time. The assumption is that flooding results in the activation of anxiety, which then subsides over time in the absence of avoidance patterns and results in the extinction of the fear.

Implosive therapy was considered a variation of flooding (Stampfl & Levis, 1967), with the following differences. First, all presentations of fear-evoking situations were done in imagination. Second, the imagined scenes were often exaggerated or impossible situations designed to provoke as much anxiety as possible. Third, although derived from learning theory (Stampfl, 1966) and considered a behavioral technique, implosive therapy contained psychodynamic elements. Specifically, the scenes were

often based on dynamic sources of anxiety such as hostility toward parental figures, rejection, sex, death wishes, and concepts such as the Oedipus complex. In illustrating implosive therapy for a person with snake phobia, Hogan (1968) described scenes including images of a snake crawling in the patient's lap, biting the patient's fingers off and blood dripping from the fingers, the snake biting the patient's face and pulling the eyes out and eating them, and the snake crawling into the eye socket and nose. Another scene involved falling into a pit filled with thousands of snakes. Assuming the snake is a symbol of male sexuality, a female patient might imagine a large snake sexually violating her and mutilating her sexual organs.

As fear reduction strategies, flooding and implosive therapy derive from the well-established laboratory principle of *extinction*, in which the repetition of the feared stimulus in the absence of the feared consequence and any escape or avoidance behaviors will result in the reduction of the fear. The use of these strategies to successfully treat phobias, posttraumatic stress reactions, and obsessive-compulsive problems proliferated in the 1960s and 1970s. Soon, influential behavior therapists and researchers such as Victor Meyer (1966), Jack Rachman (Rachman, Hodgson, & Marks, 1971; Rachman, Marks, & Hodgson, 1973), and Issac Marks (1973) realized that flooding, implosion, and SD all involved exposure to fear-provoking stimuli and abstinence from fear-reducing escape and avoidance responses. In the 1970s and 1980s, this recognition led to the development and testing of gradual (hierarchy-driven) exposure therapy that is devoid of the relaxation component of SD and the psychodynamic element of implosive therapy.

Cognitive-Behavioral Therapy

Throughout the 1990s and 2000s, manualized cognitive-behavioral treatments (CBT) to address anxiety disorders proliferated and were tested in numerous randomized controlled trials. Popular empirically supported programs from this tradition include the Coping Cat for anxious youth (Kendall & Hedtke, 2006) and panic control treatment for adults with panic disorder (Craske & Barlow, 2006). These multicomponent manuals typically include exposure along with strategies to manage or reduce anxiety, such as cognitive restructuring, controlled breathing, and relaxation training. In some programs, patients are encouraged to use anxiety management strategies as coping skills during exposure tasks, in order to be able to tolerate and benefit from confronting feared stimuli. Although this approach is understandable, given that exposure has the potential to provoke high levels of anxious responding, many therapists emphasize anxiety-reducing coping skills with their anxious patients due to concerns that exposure is dangerous, intolerable, and unethical (Deacon, Farrell, et al., 2013; Whiteside,

Deacon, Benito, & Stewart, 2016). As we have discussed, however, anxiety, although uncomfortable, is a universal and safe experience, and more intensive exposure approaches that do not include coping skills are highly effective—perhaps even more so than coping approaches (Ale, McCarthy, Rothschild, & Whiteside, 2015).

Promoting Fear Tolerance and Inhibitory Learning

Anxiety reduction (i.e., habituation) within and between sessions has traditionally been considered a key indicator of therapeutic change (e.g., Foa & Kozak, 1986), and therapists often use a gradual approach to exposure by which patients work their way (i.e., using a fear hierarchy) from lesser to greater anxiety-provoking stimuli (in part) to foster fear habituation. More recently, however, some authors have pointed to limitations of this emphasis on anxiety reduction during exposure. Craske and colleagues (2008; Craske, Treanor, Conway, Zbozinek, & Vervliet, 2014), for example, noted research showing that fear levels during exposure are not consistently reliable or valid indices of long-term fear extinction. Indeed, some patients who seemingly experience habituation in treatment later have a return of their fears, whereas others who do not experience habituation somehow show durable long-term fear extinction. Moreover, authors (e.g., Jacoby & Abramowitz, 2016) have argued that stressing gradual exposure and fear reduction (habituation) shames the experience of anxiety; reinforces the maladaptive belief that fear and other forms of distress are inherently bad, dangerous, or intolerable; and promotes the detrimental idea that exposure therapy is only successful if one is anxiety-free.

Accordingly, a more updated model to account for the effects of exposure focuses on inhibitory learning mechanisms to explain the discrepancies between performance during exposure and postexposure levels of fear. Within the context of exposure therapy, *inhibitory learning* refers to the notion that fear-based cognitions (e.g., thunderstorms are dangerous) are not *removed* during extinction, but rather remain *intact* as new learning about the feared stimulus occurs (e.g., thunderstorms are safe; Bouton, 1993). Put another way, following successful exposure, the feared stimulus is thought to possess two meanings: the original fear-based (excitatory) meaning as well as a safety-based (inhibitory) meaning. Thus, even if fear subsides following successful exposure, the original fear-based meaning is retained in memory and may be recovered under certain circumstances, such as a change in context or the passage of time (i.e., spontaneous recovery; Bouton, 2002). From this perspective, the aim of exposure therapy is to help patients develop (1) new nonthreatening cognitions and (2) ways of enhancing the accessibility of these new safety-based cognitions (relative to the older fear-based cognitions) in different contexts and over time.

As we discuss in later chapters, one of the important implications of inhibitory learning is that instead of teaching patients to resist, control, or “fix” their fear or anxiety, exposure is used to promote *fear tolerance*, given that fear and anxiety are universal, inevitable, and safe. This idea is consistent with recent developments in acceptance-based models and treatments for anxiety (e.g., Twohig et al., 2015), as we also discuss in Chapter 22. In the context of inhibitory learning, fear tolerance is accomplished by introducing *desirable difficulties* (Bjork, 1994) into the implementation of exposure therapy, for example, by restricting the use of anxiety coping strategies or by choosing exposure stimuli randomly rather than using a fear hierarchy. Such procedures may be considered “difficulties” because they present added challenges for the patient during exposure and may slow the rate of within- and between-session habituation of fear. On the other hand, they are “desirable” in that they help maximize long-term learning by introducing ubiquitous real-world challenges (e.g., surprise) that have the added benefit of maximizing the retrieval of newly learned information (Bjork, 1994). These desirable difficulties are thought to strengthen fear tolerance (Craske et al., 2008), as patients learn that fear is an opportunity to practice managing distress, as opposed to a sign of relapse or failure.

CONCLUSIONS

This chapter provides a historical and theoretical framework for using exposure therapy to treat clinical anxiety and fear-based problems. Although the idea that facing one’s fears will lead to a reduction in fear responses has probably been recognized for millennia, it is only within the last century that research has been applied to understand the extent to which it does so and the reasons this approach works. In the next chapter, we review the treatment outcome literature that speaks to the efficacy and effectiveness of this form of therapy.