DESCRIPTION OF THE STRATEGY

“When you fall off a horse, you need to get right back on.”

Everyday culture has long recognized the importance of exposing ourselves to things we fear in order to overcome those fears. Parents do this with children quite naturally; Mother nudges her reluctant toddler toward the other children in a playgroup, or Dad encourages his teen to “go for it” and try out for the diving team despite the intimidating height of the diving platform. Fears are simply part of everyday life, and being able to face them rather than avoid them is a crucial element of experiencing, learning, and living a full life. Obviously, using exposure to overcome fear isn't the best idea if the feared object or situation is actually harmful; entering the lion's den (in the literal sense) may not be the most effective method of reducing a fear of lions. The realistic possibility of being eaten by the lion outweighs any potential benefit of reduced fear. In addition, exposure may not be the most adaptive method of responding to a realistic danger; reducing fear may reduce a child's future caution in risky situations and increase the chance of being eaten by that lion (or one of his cousins) at a later date. In short, sometimes fear is a good thing, protecting us from danger. However, other times our fears are unreasonable, out of proportion to realistic danger, or excessive. While entering the lion's den may be unwise, being able to enter a friend's house to pet her gentle kitten is an important part of growing up.

Basics of Exposure-Based Treatment

The psychological literature contains many examples of treatments with demonstrated efficacy for helping individuals overcome unrealistic or excessive fears. Exposure-based techniques, or the psychological equivalent of “getting back on the horse,” have proven quite useful in the treatment of phobias, obsessive-compulsive disorder, and other anxiety disorders in which avoidance plays a prominent role. Two major exposure-based techniques are systematic desensitization and flooding. These techniques share in common several ideas, including the notions that (a) fears develop because the individual anticipates (for any number of reasons) that contact with a particular object or event will result in some negative outcome, (b) by virtue of the anxiety being unrealistic or excessive, the feared negative outcome is also unrealistic or excessive, and would either not actually occur or would not be as catastrophic as anticipated, (c) escape or avoidance of the feared situation is reinforced when the anticipated negative outcome does not occur, and escape/avoidance becomes a conditioned response to both the feared stimulus and feelings of anxiety, and (d) successful treatment of excessive or unrealistic anxiety involves breaking the conditioned pairings of the feared stimulus and the anxious affect (stimulus → anxious affect) and avoidance/escape (stimulus → avoidance/escape) responses.

Where these techniques differ is in the specific ways in which exposure is accomplished and the mechanisms by which anxiety and avoidance are presumed to decline. For example, in systematic desensitization, the individual is first taught relaxation, a physiological response considered to be incompatible with anxiety (or anxiety-antagonistic), and then exposed to the feared object or situation. Using relaxation during exposure sessions is presumed to create a conditioned (relaxation) response to the target object/situation that is physiologically incompatible with the stimulus → anxiety response pairing. Relaxation should “displace” the anxiety such that there is now a conditioned stimulus → relaxation pairing. If the object/situation no longer evokes anxiety, there should be no further need for escape or
avoidance. Then the individual can remain in contact with the feared stimulus to learn that it does not lead to the unrealistic feared negative outcome. Variants of systematic desensitization (e.g., distraction, cognitive coping) all emphasize the importance of exposure to the feared stimulus occurring during an anxiety-antagonistic state.

In contrast to systematic desensitization's focus on the stimulus → anxious affect pairing, flooding focuses more on the stimulus → escape/avoidance pairing. The individual is exposed to the feared stimulus and then required to remain in contact with it, without either cognitive or behavioral escape/avoid-ance, until the anxiety diminishes. This approach is based on the notion that anxiety, as a physiological state, cannot last indefinitely and that the individual will eventually habituate, or get used to, the stimulus and stop feeling anxious in its presence. In addition, because the anticipated negative outcome does not occur, the stimulus → escape/avoidance pairing is broken. However, perhaps the most critical aspect of flooding is the notion that “coping” strategies may actually serve to allow the individual to avoid truly experiencing the feared stimulus and may thus interfere with habituation and adaptive functioning. For example, cognitive distraction may allow the individual to avoid thinking about the feared stimulus and to essentially “check out.” This is fine if the stimulus is unlikely to ever occur at a time when the individual must be cognitively present (e.g., most surgical/dental procedures can be completed very successfully without the patient being aware of what is happening) but may not be adaptive in all situations.

**Deciding to Use Flooding**

The decision to use flooding versus systematic desensitization or some other treatment for child anxiety depends on several conceptual, practical, and ethical factors. First, the therapist should consider the function of coping for this child. In other areas of life, does the child use distraction, relaxation, or other coping techniques to “recharge” and prepare to tackle challenges or does the child tend to use them to check out and disengage? Certainly, a style of disengagement would interfere with exposure-based anxiety treatment and would argue strongly for the use of flooding over systematic desensitization.

Practical and ethical issues also should be considered. These include assessment of time available for treatment, skills and supports available to the child, and the likely reactions that children and their parents will have to flooding. For example, is there enough time to teach relaxation, an often time-intensive phase of treatment? Does the child have the skills (e.g., attention span, cognitive development) to use relaxation or cognitive coping effectively? If children are young or otherwise unable to use self-control strategies, do they have a parent or other support figure available to help guide relaxation or distracting or calming imagery? Will the parents view it as cruel to require that the child not run away from the feared stimulus? Will parents observe a child's distress after one session and discontinue treatment? Situations in which children are allowed to escape treatment prior to completion (i.e., habituation) can do more harm than good. For situations in which child and parent are willing to participate in exposure, and recognize that short-term anxiety may be distressing but that continued exposure until the anxiety dissipates is vital, flooding can be quite effective.

**Planning and Implementing Flooding**

Once the therapist, child, and parent(s) agree to proceed with flooding, the next step is to develop a detailed treatment plan. The therapist and family must identify and define specific
aspects of the feared stimulus, much as journalists gather information: what, where, when, and how questions serve as useful guides. This information will be used to construct exposure experiences, and so the more detailed the better. For example, for a child who fears school, it is important to know whether the child fears the school building (e.g., is the child claustrophobic?), academic tasks (and if so, in what classes, for what reason—is it fear of being considered stupid by teachers or peers, fear of failing a class and needing to attend summer school?), social/relational aspects of school (is it a fear of being bullied, of talking to unfamiliar children?), or being away from home or parents? Once the feared school situation is identified, increasingly detailed questions might involve identifying specific environmental or sensory cues associated with the feared stimulus (e.g., who is present in the situation? What does the classroom or playground or lunchroom look like? How loud is it? Is the teacher smiling or frowning? Are the other children paying attention or ignoring, laughing or grimacing?).

Next, identifying and defining the child's fear response allows the therapist to incorporate this information into exposure experiences and to know what child responses provide cues about the child's anxious state. Again, details will help increase the effectiveness of flooding. For example, the therapist should identify how the child experiences and expresses his or her anxiety in terms of physiological responses (e.g., sweating, shaking), thoughts (e.g., self-doubts, difficulty concentrating or making sense), and behaviors (e.g., crying, running away, getting irritable and aggressive). Effective exposure should elicit these responses, particularly at the beginning of treatment when anxiety has not yet dissipated. It is also helpful to assess the typical intensity and duration of the child's anxiety response in order to have some idea of how distressing the exposure might be to the child and how long habituation might take.

Based on the practical and ethical issues outlined above, along with an understanding of the feared stimulus and the child's anxiety response, the therapist develops a plan of action for flooding treatment. The literature documents several variants of flooding, depending on the individual child's needs. For example, exposure can be provided in graduated versus intensive fashion. In graduated exposure, the therapist and child together develop a “fear hierarchy” in which encounters with the feared stimulus are rank-ordered from only mildly anxiety provoking (e.g., “only a little bit anxious; I would be nervous but probably wouldn't avoid it”) to severely anxiety provoking (e.g., “the most anxious I have ever been; I would definitely avoid it”). Treatment begins with exposure to the lowest hierarchy item; for a child with a fear of dogs, this might be looking at a photo of a dog or looking at a dog in someone's backyard from the window of the house. Because the fear is mild, habituation to the situation will likely not take long and the child's anxiety should decrease to a minimum. This early and relatively easy success experience frequently increases the child's motivation to take the next hierarchy step. At each step, exposure continues until anxiety decreases (often to whatever level is considered manageable, with which the child could encounter the feared situation and still function adaptively). Usually, each step is repeated in therapy sessions or between-session practice until the child can reliably encounter the feared stimulus with only manageable anxiety. By the end of treatment, the child should have mastered all hierarchy steps and be able to encounter the most anxiety-provoking step without becoming unreasonably distressed or avoidant.

Intensive flooding, rather than following a hierarchical model, begins exposure at a much higher level of anxiety provocation and progresses rapidly (perhaps immediately) to the most intense levels of anxiety. Figuratively speaking, the child is dropped into the deep end of the pool and remains there (albeit with the therapist serving as lifeguard) until habituation has
occurred. Obviously, this is typically much more distressing for the child, and habituation is likely to take much longer within each session. For many researchers and therapists, graduated flooding is preferred over intensive flooding due to its more “humane” nature, its greater acceptability to children and parents, and thus the greater likelihood that the clients will complete treatment. Perhaps the only compelling reasons to choose intensive flooding would be when the fear needs to be extinguished immediately (e.g., a child with a fear of flying needs to take an airplane flight within the next few days in order to participate in a life-saving surgery) or when the fear is really only debilitating at the highest levels.

Similarly, exposure can take place imaginally or in vivo (in real life). Imaginal exposure is exactly that—the child imagines himself or herself in the anxiety-provoking situation and remains in that scene until anxiety declines to the preset manageable level. Typically, the therapist and child develop scenes together, including as many details as possible to ensure that they will elicit an anxiety response. During imaginal exposure, the therapist narrates the scene and may ask the child to help narrate or answer questions about the scene in order to confirm that the child is indeed experiencing the feared stimulus. The therapist also asks the child to indicate, using a previously defined rating scale, the level of anxiety the child is experiencing. Exposure continues until anxiety dissipates. Benefits of imaginal exposure include the ability to maintain control of a stimulus event that in real life may develop in unanticipated ways (e.g., a “friendly dog” stimulus may growl) and the ease of exposing the child to situations that may be difficult to engineer in real life. For example, airplane flights are expensive and imaginal exposure is a convenient way to practice boarding, taking off, landing, and so on.

Imaginal exposure is almost never conducted without combining it with in vivo exposure. After all, improving the child's ability to function effectively in everyday (real) life is the ultimate goal of treatment. In vivo exposure follows the same basic procedures as imaginal and involves the child looking at or interacting with the feared stimulus (e.g., petting a dog, giving a speech in front of others). Where possible, the therapist comments or asks the child to comment on anxiety-provoking aspects of the situation, again to ensure that the child is not avoiding mentally. As with imaginal exposure, the child remains in the situation until anxiety peaks (indicating true engagement vs. disengagement or avoidant coping) and then declines. Frequently, a child is first exposed to the feared situation imaginally and, after habituation, moves to in vivo exposure to the same situation.

**RESEARCH BASIS**

Research has demonstrated the utility of exposure-based techniques with anxious children. Although the necessity of a relaxation or other anxiety-antagonist component (i.e., systematic desensitization) is still the subject of debate, several investigators have demonstrated that exposure alone can lead to significant and meaningful reductions in child anxiety and avoidant behavior. What seems to be more important than the inclusion of an incompatible response is the exposure component. For example, relaxation alone has not shown the same effectiveness as exposure, either alone or along with relaxation. Most researchers seem to agree that a hierarchical or graduated approach to exposure is preferable, not only because it seems more humane and ethical but also because dropouts are minimized. Research also generally supports the notion that in vivo exposure (either alone or in combination with imaginal) is preferable to imaginal alone.
RELEVANT TARGET POPULATIONS AND EXCEPTIONS

Flooding is appropriate for children with anxiety disorders that involve an identifiable fear stimulus (e.g., phobias, obsessive-compulsive disorder) but may be less appropriate for children with more diffuse anxiety (e.g., generalized anxiety disorder). One distinct benefit of flooding over more cognitive treatments such as cognitive coping or anxiety management training is that it does not require the same level of attention span, cognitive ability, or self-motivation and is thus suitable for children who are relatively young or developmentally immature in these areas. However, imaginal flooding does require that the child have the attentional and cognitive ability to visualize details of the feared stimulus. Flooding is also more useful than systematic desensitization with action-oriented children who may be unable to sit still and focus on relaxation. However, for very young children (i.e., infants, toddlers), it may be preferable to give parents more responsibility for assisting the child's coping with anxiety-provoking situations by providing distraction or comfort. Finally, because of the effort required to participate in flooding and the distress that is part of the exposure sessions, a motivated child and parents are essential.

COMPLICATIONS

Even if flooding is the treatment of choice for a particular child, certain conditions can complicate the course of treatment or render flooding less effective. For example, even in motivated children, psychological conditions such as depression or extreme anxiety can lessen the child's ability to participate effectively in treatment. Depressed children may be unable to engage fully in exposure sessions or may fail to complete between-session exposure homework. Extremely anxious children may become “frozen” and incapacitated during exposure. In these situations, treatment of the depression or extreme anxiety (e.g., through alternative forms of psychological or pharmacological treatment) is indicated prior to flooding. Similarly, reluctant or nonsupportive caregivers may allow the child to escape the feared situations during exposure because they find it easier or less offensive to do this rather than to help the child work through his or her distress. Finally, many excessive or unrealistic fears still contain a kernel of realism (e.g., an airplane could crash), and cognitive interventions may be required to help children put their fears in perspective (e.g., yes, the airplane could crash, but the chance of this is lower than all sorts of things the child does not fear).

CASE ILLUSTRATION

“Sammy” was a 10-year-old boy brought to treatment by his parents because of an excessive fear of germs. Sammy avoided touching telephones, door knobs, papers, playground equipment, toys, and so on that he thought had been touched by other people, particularly children. Sammy did not have any known immune function problems or other conditions that might place him at increased risk for becoming ill from touching everyday objects. He reported knowing logically that his fear was unreasonable but still found himself unable to touch things comfortably. He would either avoid touching things entirely or would tremble and become dizzy and nauseous when forcing himself to touch things. Sammy was becoming increasingly embarrassed by his inability to “be like other kids” and was having increasing
difficulty hiding his avoidance while interacting with peers. One of his treatment goals was to be able to play on a baseball team when the season started in 3 months.

During the assessment phase of treatment, Sammy and the therapist identified the range of anxiety-provoking stimuli and Sammy's anxiety response symptoms and agreed to focus on baseball-related situations. They then developed a 10-step fear hierarchy, ranging from a relatively mild fear stimulus of Sammy standing next to the equipment bag containing bats, balls, and so on belonging to his friend's baseball team (which Sammy rated as 3 on a 1–10 scale of anxiety) to a strongly anxiety-provoking situation involving Sammy picking up and using a bat (bare-handed) that he'd just seen a peer use after spitting on his hands (rated a 10). Sammy and the therapist developed detailed imaginal scenes for each hierarchy step, and they and Sammy's parents discussed pragmatics of arranging in vivo exposures at each step.

Treatment began with imaginal exposure to the first scene. Sammy had defined a rating of 3 as a manageable level of anxiety—the highest level at which his discomfort would not be visible to others or interfere with his ability to participate in activities. Thus, a rating of 3 was used as the goal for ending each exposure session. However, because Sammy's first scene had been rated (prior to actual exposure) as a 3, the goal for this session was that Sammy's anxiety decline to a 1. Imaginal exposure involved having Sammy sit comfortably in a beanbag chair in a dimly lit room, close his eyes, and rate his preexposure anxiety (he rated it as 2). Then the therapist began narrating the exposure scene while Sammy envisioned it and occasionally responded to therapist prompts to note and describe aspects of the scene itself (e.g., the look, smell, etc. of the equipment bag, the heat of the day, the activity around him) and his anxiety experience (e.g., physical symptoms, anxious thoughts, anxiety rating). Over the course of 20 minutes, Sammy's anxiety rose to a 4 and gradually declined to 1.

Sammy was proud of his ability to imagine the first scene successfully, and was excited to complete his homework assignment of daily imaginal exposure to the same scene over the next week. Because of Sammy's facility with the exposure and motivation, he was allowed to do the homework relatively independently. He kept a log of his beginning, peak, and ending anxiety levels for each exposure session, as well as the duration of the session. His parents helped to remind him to complete and record his homework (he rarely needed reminding) and independently noted the duration of exposure (Sammy told them when he was going into his room to begin, as well as when he came out). The therapist made arrangements with Sammy and his parents to complete the same scene in vivo as the last homework assignment prior to the next session, contingent upon successful mastery of anxiety during imaginal sessions. For less competent or motivated families, or for more highly anxiety-provoking exposures, the therapist would have super-vised the in vivo exposure at least the first time it was attempted.

As treatment progressed, Sammy moved smoothly and fairly rapidly through his hierarchy steps. For early steps, he was often able to master two steps a week—imaginal sessions became briefer as they were repeated two or three times, and in vivo scenes were completed with minimal difficulty. For later steps, a week or more was often required for each step, with three to four imaginal exposures plus three to four in vivo exposures required before Sammy's anxiety level was peaking at lower levels (e.g., 5/moderate vs. 8/extreme) and declining quickly. At the end of 10 weeks of treatment, Sammy was handling baseball equipment willingly, playing ball with family and friends, and could laugh when anyone suggested how germy the equipment might be. At that point, the therapist and Sammy focused on maintenance and preparation for his baseball tryouts in 2 weeks and made plans to apply exposure treatment to other germ concerns. Sammy had actually requested this and was
looking forward to it. Sammy, his family, and the therapist all anticipated that the treatment gains for baseball-related fears would generalize to other fears and that treatment of these areas would proceed quickly and smoothly. In fact, some generalization had been noted already, with Sammy reporting that he had used the telephone at a friend's house with almost no anxiety and had pushed all the buttons on an elevator “just for fun” (a previously avoided activity).

—Debora J. Bell

Further Reading

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