chapter 1

Understanding Anxiety Sensitivity

Learning to know anxiety is an adventure which every man has to affront if he would not go to perdition either by not having known anxiety or by sinking under it. He therefore who has learned rightly to be in anxiety has learned the most important thing.

—Søren Kierkegaard

Kierkegaard's quote suggests that, to avoid being overwhelmed by anxiety, we must learn to be "in anxiety." This book is designed to do just that, to help people, in particular those who have a high level of anxiety sensitivity, learn to feel anxiety and not "sink under it." This chapter introduces the concept of anxiety sensitivity and explains the relationship among fear, anxiety, panic, and anxiety sensitivity. You'll learn how our bodies normally respond to stress (our natural emergency response system) and how some people are hypersensitive to the sensations produced by this response system. You'll be introduced to the types of concerns that bother people with high anxiety sensitivity.

Case Vignette: Isabel

Isabel is a twenty-three-year-old woman, who, for as long as she can remember, has been prone to bouts of anxiety. As a child, she remembers being particularly frightened by the sensations associated with anxiety, such as stomachaches. As a teenager, she dreaded gym classes because the sensations evoked by the physical activity—increased respiration, perspiration, and heart rate—frightened her. Whenever her heart started racing and she started to sweat, she was filled with a sense of dread that something terrible would happen to her. Isabel feared that she might have a heart attack or something worse—like completely losing control of herself. Moreover, she feared that if the other students noticed her anxiety, they'd tease her and make fun of her. Whenever her mother had asked Isabel to help her carry groceries up the stairs to their apartment, Isabel had made excuses to avoid the risk of having the feared sensations. In her teenage years, Isabel started to experience panic attacks, acute episodes of sudden and intense anxiety that seemingly came on completely out of the blue. These attacks occurred two or three times a month; sometimes she'd wake up in the middle of the night in the throes of a panic attack. When she wasn't having a panic attack, she worried about having one. She started to avoid situations or events that she thought might lead to a panic attack. By her second year in college, her panic attacks were so bad that she sought help at the campus health and counseling center.

Isabel has panic disorder. Panic disorder is one type of anxiety disorder that is characterized by unexpected and repeated episodes of intense fear. This fear is accompanied by a number of physical symptoms that may include chest pain, heart palpitations, shortness of breath, dizziness, or abdominal distress. The exact cause or causes of panic disorder are unknown and are the subject of intense scientific investigation. Heredity, other biological factors, and stressful life events are all believed to play a role in the onset of panic disorder. Another factor known to play a role in causing panic disorder is a high level of anxiety sensitivity.

Anxiety sensitivity (AS) refers to the fear of sensations associated with being in an "aroused" state, such as being anxious or distressed. Fear of these sensations arises from the belief that these sensations signify that harmful consequences will follow. Isabel, for example, was frightened by the sensation of her heart's racing; she feared that something terrible would happen, like a heart attack. Having high AS means that Isabel is predisposed to misinterpreting and catastrophizing about body sensations associated with being anxious. Having high AS increases Isabel's risk of developing panic disorder. Isabel is not alone. Studies tend to show that 10 to 20 percent of people in the general population have elevated levels of anxiety sensitivity (Bernstein et al. 2006; Watt, Stewart, and Cox 1998). These individuals may fear breathing difficulties, thinking that they signify an asthma attack; fear that feelings of detachment and being spacey indicate that they're going crazy; or fear that blushing while anxious will draw unwanted attention and ridicule from others. In other words, these people fear their own fears. This additional fear puts them at risk for a lot of problems, which we'll discuss shortly. First, let's review some related concepts to thoroughly explain what anxiety sensitivity is (and what it is not) and why we need to understand it better.

DISTINGUISHING BETWEEN FEAR AND ANXIETY

Fear sharpens the senses; anxiety paralyzes them.

—German psychiatrist Kurt Goldstein

Everyone has experienced fear and anxiety. Seeing a scary movie, barely avoiding a car accident, walking down a dark alleyway, meeting a bear in the woods—all can elicit feelings of fear and anxiety, resulting in weak knees, pounding heart, shortness of breath, and racing mind. We often use the words "fear" and "anxiety" interchangeably, but they're not simply different labels for the same emotion. On one hand, fear is defined as an emotional state in the presence of a dangerous or unpleasant stimulus. Typically fear is accompanied by an internal, subjective experience of extreme agitation, a desire to flee or attack, as were a variety of arousal sensations (*The Penguin Dictionary of Psychology*, 3rd ed., s.v. "fear"). Whereas fear is a response to a current threat, anxiety is oriented toward the future. In short, fear is a reaction to a somewhat clear and present danger; anxiety is a reaction to an anticipated situation or event in the future.

It's good that we experience fear and anxiety; otherwise, we'd be at risk for harm. Fear is our reaction to an identified threat (we meet the bear); anxiety is our body's response to perceived threat (we anticipate meeting the bear in the near future). Anxiety is the body's way of telling us to prepare for *fight or flight*, a response controlled by our autonomic nervous system (ANS). The ANS regulates many of the major muscles and organs of the body, such as the heart, stomach, and intestines. Most of the time, we're unaware of the ANS, because it operates involuntarily and reflexively. We do, however, notice the operation of the ANS in an emergency because we breathe faster, our heart rate rises, and we start to sweat. For our ancestors, this response was vital for survival; for us, it remains a reaction to stressful situations when we feel threatened. For example, most of us would react with alarm if we encountered a bear while walking in the woods. Our sense of alarm might include an increased heart rate, increased sweating and respiration, dizziness, nausea, and difficulty concentrating. This response prepares the body to act quickly, depending on how we appraise the degree of risk and the action to take.

Of course, we also react with alarm to things that do not necessarily involve a physical threat. Taking a test, making a speech, or performing in front of others also can evoke the same sensations as seeing a bear. All of these situations produce physical sensations, such as nausea, dizziness, shortness of breath, and racing heart. Some people become anxious about the physical sensations themselves. These people (about 19 percent of women and 10 percent of men; Bernstein et al. 2007; Stewart, Taylor, and Baker 1997) are said to have high AS. When highly anxiety-sensitive people experience bodily sensations associated with anxiety, they tend to amplify, or "turn up the volume" on, these sensations; they focus on the sensations, misinterpret their meaning, and begin to catastrophize about what they mean. In contrast, less-anxiety-sensitive individuals tend to reduce the volume, recognizing these sensations to be normal, temporary, and unpleasant but otherwise harmless consequences of being in an anxious state (Reiss 1991).

In short, fear is what we experience when we encounter the bear in the woods, anxiety is what we experience when we think about encountering a bear in the woods in the near future, and anxiety sensitivity is the fear of the consequences of the sensations we experience when we encounter the bear or even think about encountering the bear. First, there's fear, and then there's fear of fear.

WHEN IS ANXIETY A PROBLEM?

Anxiety is a natural emotion that every single person experiences. It's part of being human. Some people, however, experience anxiety more often or more intensely than others. Anxiety is not always bad. In some situations, being anxious may be appropriate or even desirable. For example, if you're preparing for a tennis match or a piano recital, having some anxiety will actually enhance your performance. This is known as the Yerkes-Dodson law, after Robert Yerkes and John Dodson (1908), who first observed that too little or too much arousal can interfere with performance and that a moderate level of arousal is best for maximum performance in a task. Anxiety can vary in severity, from mild uneasiness to extreme distress; it also can vary in frequency, from occasional distress to seemingly constant unease. But when you experience anxiety as recurrent abrupt episodes of intense fear or discomfort (panic attacks), persistent concerns about having more attacks and the potential consequences of those attacks, and a significant change in behavior related to the attacks (escape and avoidance behavior), then it can interfere with your daily life and meet the criteria for panic disorder, as outlined in the diagnostic manual of the American Psychiatric Association (DSM-IV-TR 2000).

WHAT KINDS OF SITUATIONS MAKE YOU ANXIOUS?

Please check off the situations that apply to you.

____ Speaking in public

____ Participating in groups

____ Walking up stairs or hills

____ Darkness

____ Being alone

____ Getting really angry

____ Being in closed spaces (such as elevators or cars with the windows rolled up)

____ Other things _____

HOW DO YOU FEEL WHEN YOU'RE ANXIOUS?

Please check off the situations that apply to you.

____ Heart racing or fluttering

____ Rapid breathing

____ Head aching

____ Choking or suffocating

____ Chest pains

____ Sweating

____ Dizziness

____ Other sensations _____

WHAT IS PANIC?

Research shows that panic is more than just an extreme form of anxiety. In some ways, the two are distinct emotional experiences. Anxiety is accompanied by apprehension, worry, and tension; panic is accompanied by strong autonomic arousal (racing heart, increased respiration, and sweating), extreme fear, and urges to fight or flee (Barlow 1988, 2002; Craske 1999). By definition, a panic attack is a sudden onset of intense fear, terror, or dread often associated with feelings of impending doom. Panic attacks, particularly a person's first panic attack, seem to occur out of the blue. Some people even have panic attacks in their sleep.

A panic attack is an abrupt surge of intense emotion that can include a racing or pounding heart, or one that skips beats; tightness, pressure, or discomfort in your chest; a lump in your throat or choking sensation; shortness of breath or erratic breathing; light-headedness or dizziness; tingly, prickly sensations or numbness in parts of your body; shakiness or trembling; increased sweating; nausea or butterflies; hot flashes or chills; and thoughts that you're sick, dying, or going crazy. You might think that you'll throw up, suffocate, or have a heart attack. Things might seem unreal, or you might feel detached from your body. You could feel as if you need to escape or flee the situation, or fear that you might lose control and embarrass yourself in front of others. Afterward, you might become anxious about having another panic attack and feel that you have to be on guard in case it occurs. You might avoid places or situations for fear they'll trigger a panic attack. This kind of anxiety can occur anytime you feel that something is potentially dangerous or out of your control.

The sensations associated with panic attacks would be perfectly normal and a natural bodily response to a clearly dangerous event (such as being mugged). What makes a panic attack abnormal is that it occurs unexpectedly and groundlessly, when there's no reason to be emotional or afraid (Barlow, Brown, and Craske 1994). In short, a panic attack is the right reaction at the wrong time.

Have you ever experienced a panic attack? _____

If so, did it occur unexpectedly, seemingly out of the blue? _____

What did you think was happening? _____

STRESS AND PANIC

Panic attacks often occur unexpectedly, when people feel uptight or under a great deal of stress. If someone close to you has died, if you're under considerable pressure at work or at home, or if you're having difficulties in your marriage or with your children, then you're more likely to have panic attacks if you're susceptible to panic reactions. Some people don't have panic attacks when they're emotional or under stress. Rather, they experience other types of symptoms, such as headaches, high blood

pressure, or ulcers. However, if you're susceptible to experiencing panic, then even happy occasions, such as an upcoming marriage, might trigger panic attacks if they involve major changes in your life.

Stress Can Trigger a Panic Attack Even When There's No Emergency

Why do you experience panic and anxiety if you're not frightened to begin with? This is where stress is involved. Stress results in the production of chemicals (hormones) in your body that can produce anxiety symptoms. This is your body's way of staying alert and preparing to deal with the stress. Indeed, stress alone can trigger an emergency (fight or flight) response, especially in people with particular genetic, personality, and experiential vulnerabilities to respond negatively to stress. Researchers such as Mark Bouton, Susan Mineka, and David Barlow (2001) have identified the following vulnerabilities (risk factors) for experiencing panic:

- If your parents or other family members seemed susceptible to the negative effects of stress, then you may be predisposed to panic due to genetic influences.
- Temperamental or personality traits, such as a general tendency to worry or a specific fear of anxiety sensations (anxiety sensitivity), may increase your risk for experiencing panic.
- Early experiences with uncontrollable events such as death, divorce, out-of-control parents due to drinking or anger, and childhood exposure to chronic illnesses in the home have all been associated with an increased risk for panic.
- Finally, some researchers think that early emotional trauma may trigger elevated levels of stress hormones that the body then maintains through adulthood, providing "kindling" for future stress responses.

In short, feeling stressed and experiencing the chemical reactions of stress can set off the emergency response even when there's no emergency. This is particularly true if you're somehow vulnerable to stress in this way.

The Anxiety Cycle

Panic attacks are the culmination of a sequence of events (Conrod 2000). According to Conrod, and reproduced here by permission of the author, the anxiety cycle evolves in the following way:

1. **Unexpected physical sensations.** First, you experience a set of unexpected physical sensations similar to a natural emergency response produced by the body.
2. **Feeling frightened.** Second, you become frightened. The emergency response causes the brain to search for danger. When an obvious external danger can't be found, the mind looks inward and creates a reason (such as, "I'm dying" or "I'm losing control"). You fear the actual physical sensations of the emergency response. If thoughts of illness or heart attacks are in the back of your mind anyway, it's understandable that you would focus on this danger.
3. **Additional anxiety.** Such thoughts lead to additional anxiety, which then leads to further buildup of the emergency response and physical symptoms.
4. **Repetitions.** After a number of repetitions of the panic experience, the anxiety and fear can occur in response to the initial physical sensations without any conscious thoughts of danger.

WHAT IS ANXIETY SENSITIVITY?

Steven Reiss and Richard McNally were the first to propose a link between anxiety sensitivity and panic attacks in 1985. According to Reiss and McNally, anxiety sensitivity is a cognitive style that involves an extreme fear of your own anxiety symptoms. People who are highly sensitive to anxiety symptoms tend to believe that anxiety symptoms have harmful or catastrophic consequences, such as physical and mental illness, loss of control, and social embarrassment. Just as people differ

in how often they have anxiety symptoms, they may also differ in how much they fear these symptoms (Reiss and McNally 1985).

Research shows that it's the fear of anxiety that makes a person susceptible to more frequent and more severe panic attacks (Taylor 1999). In fact, high AS places you at greater risk for several types of problems, such as phobias, panic attacks, substance abuse, depression, and chronic pain, depending on your strategies for coping with your fear of anxiety symptoms and your particular life experiences and circumstances. Moreover, research shows that people with high levels of AS, like Isabel at the beginning of the chapter, tend to avoid physical activity (such as exercise, sex, or stair climbing), because it produces some of the same physiological sensations associated with anxiety (McWilliams and Asmundson 2001). Avoiding physical activity not only serves to maintain fear of the sensations but also cuts you off from an effective strategy for coping with anxiety and depression.

TYPES OF CONCERNS RELATED TO ANXIETY SENSITIVITY

Researchers, such as Richard Zinbarg, Timothy Brown, and David Barlow (1997), have identified three underlying dimensions or types of concerns associated with anxiety sensitivity:

1. **Physical symptoms.** Some people are more concerned about the physical symptoms of AS, due to beliefs that these sensations are signs of physical illness. For example, a person might be frightened by shortness of breath, thinking that it may result in suffocation or fainting.

2. **Psychological symptoms.** Other people are more apt to fear cognitive symptoms of AS, believing that anxiety sensations like *derealization* (feeling spaced out or detached from your immediate surroundings) are signs of mental illness. For example, some people are especially frightened by the inability to keep their minds on task because they fear going crazy.

3. **Social concerns.** Still others may fear publicly observable symptoms due to beliefs that displaying anxiety will lead to embarrassment, public ridicule, and social censure. These people would be embarrassed if others noticed their anxiety or nervousness.

Research on these three dimensions has enhanced our understanding of the relationship between anxiety sensitivity and various forms of anxiety-related disorders. For example, fear of physical sensations is most strongly associated with a diagnosis of panic disorder, as we saw in the case of Isabel. The fear of cognitive symptoms is more apt to be associated with depression, whereas social concerns are most strongly related to the fear of negative evaluation and to a diagnosis of social phobia, or *social anxiety disorder* (Zinbarg, Barlow, and Brown 1997).

GENDER DIFFERENCES IN ANXIETY SENSITIVITY

Studies show that men and women tend to differ when it comes to anxiety sensitivity. Women tend to show higher levels of overall AS than men, and report more physical concerns than men. Men, on the other hand, tend to report more social and psychological concerns than physical concerns related to AS (Stewart, Taylor, and Baker 1997). One study, designed to tap people's automatic associations in memory (known as the Stroop task), found that highly anxiety-sensitive women were more likely to selectively process cue words pertaining to feared physical consequences of anxiety symptoms, such as "coronary" and "suffocated," while highly anxiety-sensitive men were more apt to selectively process cue words pertaining to feared social and psychological consequences of anxiety symptoms, such as "embarrass" and "crazy" (Stewart et al. 1998). The finding that females are more fearful of the physical consequences of anxiety-related sensations than males has been found with child and adolescent samples, as well as adult samples, and could be related to gender-specific learning histories and sex-role socialization practices. Learning factors in acquiring and perpetuating anxiety sensitivity will be covered in the next chapter.

CULTURAL DIFFERENCES IN ANXIETY SENSITIVITY

Culture is presumed to shape the concerns of anxious patients (Hinton, Um, and Ba 2001). It follows that the catastrophic concerns linked to anxiety sensitivity may differ across different cultural groups. Research shows that the fear of fear can manifest in slightly different ways across different cultural groups. For some cultural groups, physical sensations, particularly heart and respiratory (wind) related symptoms, seem to cause people the most concern (Hinton et al. 2006). For other cultural groups, psychological concerns related to control are more prominent (Ramsawh 2006). Studies have found that Latin American children and adolescents express more fear of anxiety-related sensations than their white non-Latino counterparts (Weems et al. 2002b; Pina and Silverman 2004). Interestingly, because fear of anxiety-related phenomena, and physiological symptoms of anxiety in particular, may be more normative in Latino culture, there is some evidence that high AS in Latin American youth does not amplify somatic complaints in the same way as it does for white non-Latino youth (Varela et al. 2007).

CHAPTER SUMMARY

First there's fear, and then there's fear of fear. Fear is our response to an immediate threat (bear in the woods); anxiety is our anticipation of a threat (we worry that we'll meet a bear in the woods); and anxiety sensitivity is our fear of the sensations we experience when we're fearful or anxious. High levels of AS increase a person's risk for panic and other anxiety disorders. Women tend to have more physical concerns related to AS than men. Men tend to report more psychological and social concerns than physical concerns. Research shows that fears of anxiety-related sensations can vary across cultural groups.

Chapter 2

Where Does Anxiety Sensitivity Come From?

This chapter will focus on how fear of fear develops. Some evidence suggests that we inherit the tendency to be highly sensitive to anxiety-related sensations. Other evidence suggests that we learn to be especially sensitive to anxiety. Understanding the origins of a risk factor like high AS carries implications, not only for those with high AS but also for their children and other family members. For example, understanding the origins of AS may help explain why we're prone to panic attacks, why we get anxious about social situations, or why we turn to cigarettes in times of stress.

HOW DOES HIGH ANXIETY SENSITIVITY DEVELOP?

It has been over twenty years since Steven Reiss and Richard McNally proposed the idea of AS to explain why people react to anxiety in different ways. Nevertheless, we have just begun to learn about the origins of AS. Reiss and McNally believed that it could be acquired through learning, influenced by genetic factors, or both (Reiss and McNally 1985). We know that panic disorder tends to run in families, but it's

not clear exactly what is passed down from one generation to the next. As researchers came to appreciate the role of AS as a risk factor for anxiety disorders, the question arose as to whether AS might explain the transmission of panic disorder.

The Role of Genetics in Anxiety Sensitivity

In 1999, Murray Stein, Kerry Jang, and John Livesley conducted the first study to examine the *heritability* of anxiety sensitivity. Heritability refers to the proportion of a characteristic that can be explained by genes. For example, if you read that shyness has a heritability factor of .40, it would mean that, on average, about 40 percent of the individual differences or variations observed in shyness may be attributable to genetics. To study heritability, researchers like to look at the differences between identical twins (twins who share *identical* DNA, the genetic blueprint for development) and fraternal twins (twins who share 50 percent of the same DNA, the same amount of DNA that sisters or brothers share, which is why these twins are called *fraternal* twins). If the levels of a certain characteristic are found to correspond more closely in identical twins than in fraternal twins, then that characteristic is presumed to have a certain measure of heritability. The greater the correspondence between identical twin pairs, the greater the heritability of that characteristic. For their study, Stein and his colleagues measured AS in 179 identical and 158 fraternal twin pairs. Results showed a greater correspondence between AS levels in identical twins than in fraternal twins. The strength of the correspondence suggested that about half of the variation in AS levels could be explained by genetic factors. When these researchers examined the data more closely, they found that AS appeared to be heritable in women but not in men. This finding may explain the increased rates of panic disorder in women as compared with men.

Finding that genes have a role to play in development of AS was exciting, but because genes accounted for only half of the variance in AS, environmental factors appeared to play an important role as well. Learning is one important environmental factor that influences many personality characteristics. That's what we'll look at now.

The Role of Learning in Anxiety Sensitivity

When adults get frightened, it's contagious, and children catch it too.

—Anonymous

Our behavior in adulthood is largely shaped by what we learned in childhood and adolescence. According to learning theory, most behavior is acquired in one of three ways:

1. Classical conditioning
2. Operant conditioning (also known as instrumental learning)
3. Vicarious conditioning

Classical conditioning is the type of learning made famous by Russian scientist Ivan Pavlov (1927) and his experiments with dogs. Pavlov was interested in the digestive system of dogs and what triggered the salivation response. First, he presented dogs with food and measured how much they drooled. Then he began ringing a bell just before presenting the food. At first, the dogs did not begin drooling until the food was presented, but after a while, the dogs began to salivate when they heard the sound of the bell. Pavlov concluded that the dogs had *learned* to associate the sound of the bell with the presentation of the food. This type of learning actually is quite common. Indeed, if you have cats, you may have noticed that they come running when you take out the can opener, even if you're opening a can of beans. The cats have *learned* to associate the sound of the can opener with their food.

This type of learning is called *classical conditioning*. Classical conditioning has been implicated in the formation of many specific fears. In 1920, John B. Watson and Rosalie Rayner conducted an experiment with an eleven-month-old baby, Little Albert, to see how emotions are learned. Watson presented a white rat and a loud noise to Little Albert. After several pairings, Albert showed fear of the white rat. It's possible that AS might develop through classical conditioning. For example, if symptoms such as dizziness or heart palpitations are paired with some inherently frightening event, such as an unexpected panic attack from out of the blue, then a person might learn to fear those symptoms in

the future (Forsyth, Eifert, and Thompson 1996). However, in a study of 425 college students, Christopher Donnell and Richard McNally (1990) found that two-thirds of the students with high anxiety sensitivity had never experienced a panic attack. This suggests that classical conditioning cannot be the sole explanation for development of AS.

Take a moment to think back to when you were a child and had such symptoms as a racing heart, dizziness, shortness of breath, or strong nausea. Answer the following questions:

Did you begin to panic? _____

Did you feel weak and light-headed? _____

Did you feel as if you needed to lie down or fall down? _____

Did something frightening happen as a result of these symptoms? _____

_____

Whereas classical conditioning is based on learning an association between two events (such as the bell and food in Pavlov's experiments with the dogs), *operant conditioning* is based on learning an association between a behavior and a consequence. Psychologist B. F. Skinner (1938), who developed the concept of operant conditioning, was influenced by the experiments of both Ivan Pavlov and John Watson. Skinner thought that the consequences of the behavior—and their impact on future behavior—were more important than the stimulus that brought on the actions. Skinner concluded that if the consequences of behavior are positive, then the behavior will more likely be repeated. On the other hand, if the consequences of behavior are negative, it's less likely to be repeated and more likely to eventually stop.

Operant conditioning is also known as *instrumental learning*, because the person's behavior is instrumental in getting something he or she wants (positive reinforcement or a reward) or removing something he or she does not want (negative reinforcement). Reinforcement, either positive or negative, increases the probability that the behavior will occur in the future. In contrast, punishment decreases the probability that a behavior will occur again in the future. Positive punishment occurs when a behavior is followed by an unpleasant consequence, such as a shock or a loud noise. Negative punishment occurs when a behavior is followed by the removal of a favorable consequence, such as taking away a child's toy after misbehavior.

Operant conditioning might contribute to development of AS if, as a child, your anxiety symptoms were rewarded in some way, such as being given special attention or positive reinforcement. Operant conditioning might also be at play in the origins of AS if you received some special dispensation as a child because of your anxiety, such as being allowed to miss school because of your anxiety symptoms. On the other hand, if your parents showed disapproval when you complained about your anxiety symptoms or they didn't listen to your complaints, the symptoms would be less likely to be displayed in the future. Research has found that positive reinforcement is the most powerful of these consequences in shaping behavior, followed by negative reinforcement and negative punishment (Mazur 2002). Positive punishment, on the other hand, such as yelling at a child to stop crying, may be effective in reducing behavior in the short term but may not be effective in modifying behavior in the long term. In fact, positive punishment may make things worse by invoking other negative responses, such as anger and resentment.

Reflect again upon when you had such symptoms as a racing heart, dizziness, shortness of breath, or strong nausea. What did your parents do when you experienced these symptoms? How did they respond to your symptoms?

Did they encourage you to stay home from school? _____

Did you receive special care? For example, did your parents sit with you or give you special foods or presents? _____

Did your parents warn you of the possible dangers of your symptoms?

_____

Did they give you medication? _____

Did they insist you go to your family doctor? _____

A third type of learning is called *observational learning* or *vicarious conditioning*. This type of learning involves learning by watching others (Bandura 1986). Albert Bandura did not believe that learning was dependent on the child's being directly rewarded or reinforced for his or her behavior. He proposed that sometimes learning occurs by observing the consequences of the behavior of role models (like parents). For example, if, as a child, you witnessed your parents exhibiting fear of anxiety symptoms and other people reinforcing their complaints about the fear by giving them more attention and care, then you might be more apt to exhibit fear of these symptoms in adulthood.

Think back again to when you were a child. Do you recall your parents displaying such symptoms as a racing heart, dizziness, shortness of breath, or strong nausea? Do you remember how they reacted to their own symptoms?

Did they stay home from work or cut back on household chores? _____

Did they cut back on social activities? _____

Did they seem to worry about their symptoms? _____

Did they take medication? _____

Did other people seem sympathetic to their symptoms? _____

Indirect learning could also happen if your parents verbally transmitted their fears of anxiety symptoms by warning you of the harmfulness of such symptoms. Support for the role of operant conditioning in AS development comes from a study by Christopher Donnell and Richard McNally in 1990, who found that a family history of panic was associated with high AS levels in a sample of university students. The authors suggested that high AS may result from children's exposure to parental models who displayed fear of their own anxiety experiences. Of course, it could be argued that finding a familial link between AS and panic is just further evidence for the role of genetics.

In one of our own studies, we found that both operant and observational learning contribute to AS development (Watt, Stewart, and Cox 1998). We found that AS levels in early adulthood corresponded to the participants' reports of their experiences in childhood. Young adults with high AS reported more instances in which they were rewarded by parents for exhibiting anxiety symptoms in childhood as compared with controls. These young adults with high AS also reported more instances in which their parents modeled fear reactions to anxiety symptoms or verbally communicated their beliefs about the harmfulness of such symptoms. For example, their parents may have appeared frightened by the symptoms and warned them that such symptoms could quickly get worse and run out of control. These findings were replicated in two subsequent studies (Stewart et al. 2001; Watt and Stewart 2000).

The Role of Attachment in Anxiety Sensitivity

Another important learning experience derives from our early experience of forming attachment relationships with others. According to attachment theory (Bowlby 1988), the way our primary caregivers (typically parents) respond to our needs early in life establishes our enduring expectancies regarding how others will respond to us when we're in distress. For example, if your parents provided consistent and responsive care, you'd likely develop a secure attachment style. In other words, you'd develop an internal model of yourself as being valued and self-sufficient, as well as a model of others as being caring and trustworthy. If your parents were inconsistently responsive or rejecting, however, you might've developed an insecure attachment style, which means that you'd develop negative internalized models of yourself and others.

Our model of self may range from no anxiety about rejection or abandonment to intense anxiety about rejection based on beliefs of personal unworthiness. Our model of others could range from interpersonal trust to mistrust, avoidance of others, and discomfort with interpersonal closeness. Researchers generally agree that there are four possible attachment styles: *secure* (positive self and positive others), *preoccupied* (negative self and positive others), *fearful* (negative self and negative others), and *dismissing* (positive self and negative others). Although secure attachment is considered to be a protective factor, insecure attachment has been found to be associated with psychopathology (Mickelson, Kessler, and Shaver 1997; Rutter 1997). Wendy Silverman and Carl Weems (1999) first raised

the possibility that insecurely attached individuals could be predisposed to misinterpret benign symptoms of anxiety as catastrophic (high AS). Carl Weems, Steven L. Berman, and other researchers (2002a) tested this hypothesis that insecurely attached individuals have higher levels of AS with a sample of high-school students and a sample of undergraduate students. They found that those who were classified as preoccupied and fearful revealed significantly higher levels of AS than those with secure and dismissing attachment styles. One of the authors (Margo Watt), along with Lachlan McWilliams and Anna Campbell (2005), conducted a study that successfully replicated and extended the 2002 findings of Weems and his research partners'. We found that attachment insecurity in both romantic and nonromantic relationships, particularly insecurity characterized by a negative model of self (fearful and preoccupied), was associated with elevated levels of AS. The model of others played a more limited role in relation to AS.

In another investigation of the origins of AS, Christine Scher and Murray Stein (2003) examined the degree to which rejection and hostile, threatening, or aggressive behavior by parents affected the severity of anxiety symptoms in young adults. In this study, Scher and Stein explored the role of childhood exposure to parental threatening, hostile, and rejecting behavior in AS development. They found that the degree of childhood exposure to these three types of parental behaviors predicted levels of AS in a sample of young adults. Even more interesting was that different types of parental behaviors predicted different types of concerns related to AS. For example, threatening behavior in the parent predicted social concerns related to AS for the young adult, whereas hostile and rejecting behavior of the parent predicted psychological concerns related to AS, such as loss of control or mental illness.

Research suggests that not only do the learning experiences of men and women differ, but these different learning experiences may also explain the different manifestations of AS in men and women. As discussed in the previous chapter, men tend to report more social concerns (fear of public embarrassment) and psychological concerns (fear of insanity or losing control) than physical concerns related to anxiety sensitivity. Women, in turn, tend to report more physical concerns (fear of death or illness) than either social or psychological concerns. The finding that women are more apt to fear potentially harmful physical consequences of anxiety symptoms is consistent with gender differences in the relative focus of common fears (Stewart, Taylor, and Baker 1997). It's possible that women may have experienced greater rewards in their learning histories for expressing body-focused complaints than men. This might explain why women have a higher frequency of medically unexplained physical complaints and worries about physical illness.

According to the American Psychiatric Association (APA 2000), worry about physical illness may represent a culturally shaped "idiom of distress" that people learn to employ in order to express concerns about more general personal and social problems. In other words, talking about physical symptoms may be a more socially acceptable way of expressing distress in some cultures. If this "idiom of distress" is more encouraged among women than men in our culture, then women who fear anxiety may come to focus on anticipated physical consequences (illness or death) when experiencing anxiety symptoms, consistent with their gender-specific learning histories. In contrast, males learn at an early age that it's less acceptable for them to lose control or display their anxiety publicly (Bronson 1966). This might explain why males who fear their anxiety symptoms may be concerned about breaking established social conventions about how men are supposed to behave, and spend more time than women worrying about losing control or acting in an embarrassing manner as a result of their anxiety.

While each child is born with his or her own distinct genetic potential for physical, social, emotional, and cognitive development, the possibilities for reaching that potential remain tied to early life experiences and the parent-child relationship within the family.

—Bernice Weissbourd

So it seems that the origins of anxiety sensitivity appear to lie partly in our genes and partly in our environment. Indeed, it's likely that genetic and learning factors interact, although this has not been investigated yet. For example, parents may respond more to a child with an inherited propensity to fear bodily sensations, and vicarious and instrumental learning factors may serve to activate or intensify inherited susceptibilities toward AS. We cannot change our genes or our learning histories; neither can we avoid anxiety. What we can do, however, is *learn* new ways of thinking and behaving when confronted with anxiety, which

is the focus of this book. It's also worth noting that, whereas we can't change our own learning histories, we can influence (though not entirely control) the learning histories of our children. The skills you'll learn in this book can benefit your children as much as yourself.

CHAPTER SUMMARY

There's evidence that genes play a role in anxiety-sensitivity development, especially in women. Life experience also plays a role; in particular, if your parents responded to your anxiety symptoms and complaints, such as allowing you to miss school or skip a play rehearsal because you were too anxious, you're at greater risk for developing high AS. We still don't know how genetic and learning factors interact, but hopefully, further research will be conducted in this area.