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# Anxiety Disorders



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# The Complexity of Anxiety Disorders

- Describe psychological and biological similarities and differences among anxiety, fear, and a panic attack.
- Identify the genetic and biological vulnerability factors that are known to influence the development of anxiety disorders.

Anxiety is complex and mysterious, as Freud realized many years ago. In some ways, the more we learn about it, the more baffling it seems. “Anxiety” is a specific type of disorder, but it is much more than that. It is an emotion implicated so heavily across the full range of psychopathology that we begin by exploring its general nature, both biological and psychological. Next, we consider fear, a somewhat different but clearly related emotion. We suggest that panic is fear that occurs when there is nothing to be afraid of and, therefore, at an inappropriate time. With these important ideas clearly in mind, we focus on specific anxiety disorders.

## Anxiety, Fear, and Panic: Some Definitions

Have you ever experienced anxiety? A silly question, you might say, because most of us feel some anxiety almost every day of our lives. Did you have a test in school today for which you weren’t “perfectly” prepared? Did you have a date last weekend with somebody new? And how about that job interview coming up? Even thinking about that might make you nervous. But have you ever stopped to think about the nature of anxiety? What is it? What causes it?

**Anxiety** is a negative mood state characterized by bodily symptoms of physical tension and by apprehension about the future (American Psychiatric Association, 1994; Barlow, 2002). It is important to note that anxiety is very hard to study. In humans it can be a subjective sense of unease, a set of behaviors (looking worried and anxious, fidgeting), or a

physiological response originating in the brain and reflected in elevated heart rate and muscle tension. Because anxiety is difficult to study in humans, much of the research has been done with animals. For example, we might teach laboratory rats that a light signals an impending shock. The animals certainly look and act anxious when the light comes on. They may fidget, tremble, and perhaps cower in a corner. We might give them an anxiety-reducing drug and notice a reduction of anxiety in their reaction to the light. But is the rats’ experience of anxiety the same as humans’? It seems to be similar, but we don’t know for sure; research with animals provides only general information about the nature of anxiety in humans. Thus, anxiety remains a mystery, and we are only beginning our journey of discovery. Anxiety is also closely related to depression (Barlow, 2000, 2002; Barlow, Chorpita, & Turovsky, 1996; Mineka, Watson, & Clark, 1998), so much of what we say here is relevant to Chapter 6.

Anxiety is not very pleasant, so why do we seem programmed to experience it almost every time we do something important? Surprisingly, anxiety is good for us, at least in moderate amounts. Psychologists have known for nearly a century that we perform better when we are a little anxious (Yerkes & Dodson, 1908). You would not have done so well on that test the other day if you had had no anxiety. You were a little more charming and lively on that date last weekend because you were anxious. And you will be better prepared for that job interview coming up if you are anxious. In short, physical and intellectual performances are driven and enhanced by anxiety. Without it, very few of us would get much done.

But what happens when you have too much anxiety? You might actually fail the exam because you can’t concentrate on the questions. All you can think about when you’re too anxious is how terrible it will be if you fail. You might blow the interview for the same reason. On that date with a new person, you might spend the evening with perspiration running off your face, a sick feeling in your stomach, unable to think of even one reasonably interesting thing to say. Too much of a good thing can be harmful, and few sensations are more harmful than severe anxiety that is out of control. What makes the situation worse is that severe anxiety usually doesn’t



**Panic Disorder: Steve** “First time it happened to me, I was driving down the highway, and I had a kind of a knot in my chest. I felt like I had swallowed something and it got stuck,

and it lasted pretty much overnight. . . . I felt like I was having a heart attack. . . . I assumed that’s what was happening. I felt very panicky. A flushed feeling came over my whole body. I felt as though I was going to pass out.”



go away—that is, even if we “know” there is really nothing to be afraid of, we remain anxious.

All the disorders discussed in this chapter are characterized by excessive anxiety, which takes many different forms. In Chapter 2 we saw that **fear** is an immediate alarm reaction to danger. Like anxiety, fear can be good for us. It protects us by activating a massive response from the autonomic nervous system (increased heart rate and blood pressure, for example), which, along with our subjective sense of terror, motivates us to escape (flee) or, possibly, to attack (fight). As such, this emergency reaction is often called the flight or fight response.

Although not all emotion theorists agree, there is much evidence that fear and anxiety reactions differ psychologically and physiologically (Barlow, 2002). As noted earlier, anxiety is a future-oriented mood state, characterized by apprehension because we cannot predict or control upcoming events. Fear, on the other hand, is an immediate emotional reaction to current danger characterized by strong escapist action tendencies and, often, a surge in the sympathetic branch of the autonomic nervous system (Barlow, Brown, & Craske, 1994). Someone experiencing fear might say, “I’ve got to get out of here right now or I may not make it.”

What happens if you experience the alarm response of fear when there is nothing to be afraid of, if you have a false alarm? Consider the case of Gretchen, who appeared at one of our clinics.



### Gretchen Attacked by Panic

I was 25 when I had my first attack. It was a few weeks after I’d come home from the hospital. I had had my appendix out. The surgery had gone well, and I wasn’t in any danger, which is why I don’t understand what happened. But one night I went to sleep and I woke up a few hours later—I’m not sure how long—but I woke up with this vague feeling of apprehension. Mostly I remember how my heart started pounding. And my chest hurt; it felt like I was dying—that I was having a heart attack. And I felt kind of queer, as if I were detached from the experience. It seemed like my bedroom was covered with a haze. I ran to my sister’s room, but I felt like I was a puppet or a robot who was under the control of somebody else while I was running. I think I scared her almost as much as I was frightened myself. She called an ambulance (Barlow, 2002).

The roots of the panic experience are deeply embedded in our cultural myths. Pan, the Greek god of nature, lived in the country, presiding over rivers, woods, streams, and grazing animals. But Pan did not look like the typical god. He was very ugly and short, with legs resembling a goat’s. Unfortunately for travelers, Pan habitually napped in a small cave or thicket near the road. When traveling Greeks disturbed him, he let out a bloodcurdling scream so intense that many terrified travelers died of fright. This sudden, overwhelming reaction came to be known as **panic**, after the irate god. In psychopathology, a **panic attack** is defined as an abrupt experience of intense fear or acute discomfort, accompanied by physical symptoms that usually include heart palpitations, chest pain, shortness of breath, and, possibly, dizziness.

Three basic types of panic attacks are described in DSM-IV: situationally bound, unexpected, and situationally predisposed. If you know you are afraid of high places or of driving over long bridges, you might have a panic attack in these situations but not anywhere else; this is a *situationally bound* (cued) panic attack. By contrast, you might experience *unexpected* (uncued) panic attacks if you don’t have a clue when or where the next attack will occur. The third type of panic attack, the *situationally predisposed*, is between these types. You are more likely to, but will not inevitably, have an attack where you have had one before, for example, in a large mall. If you don’t know whether it will happen today, and it does, the attack is situationally predisposed. We mention these types of attacks because they play a role in several anxiety disorders. Unexpected and situationally predisposed attacks are important in *panic disorder*. Situationally bound attacks are more common in *specific phobias* or *social phobia* (see Figure 4.1).

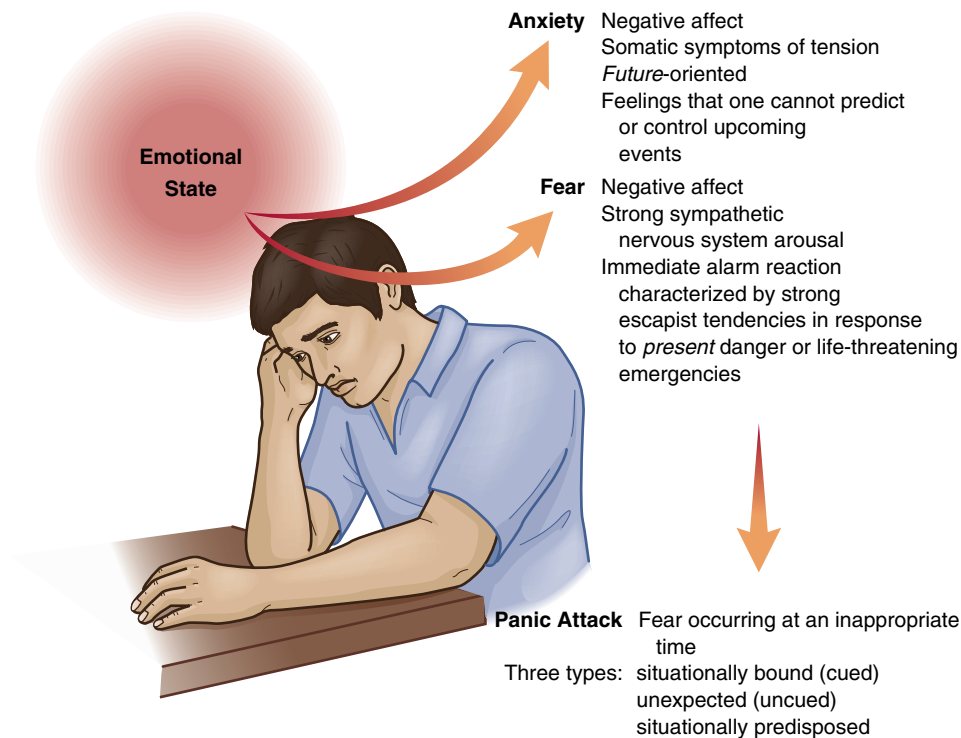
Remember that fear is an intense emotional alarm accompanied by a surge of energy in the autonomic nervous system that motivates us to flee from danger. Does Gretchen’s panic attack sound like it could be the emotion of fear? A variety of evidence suggests it is (Barlow, 2002; Barlow et al.,

**anxiety** Mood state characterized by marked negative affect and bodily symptoms of tension in which a person apprehensively anticipates future danger or misfortune. Anxiety may involve feelings, behaviors, and physiological responses.

**fear** Emotional response consisting of an immediate alarm reaction to present danger or life-threatening emergencies.

**panic** Sudden overwhelming fright or terror.

**panic attack** Abrupt experience of intense fear or discomfort in the absence of danger accompanied by a number of physical symptoms, such as dizziness or heart palpitations.



**Figure 4.1** ■ The relationships among anxiety, fear, and panic attack.

1994), including similarities in reports of the experience of fear and panic, similar behavioral tendencies to escape, and similar underlying neurobiological processes.

### Causes of Anxiety Disorders

You learned in Chapters 1 and 2 that excessive emotional reactions have no simple one-dimensional cause but come from multiple sources.

#### Biological Contributions

Increasing evidence shows that we inherit a tendency to be tense or uptight (Eysenck, 1967; Gray & McNaughton, 1996; Lader & Wing, 1964; McGuffin & Reich, 1984). As with almost all psychological disorders, and unlike hair or eye color, no single gene seems to cause anxiety. Instead, contributions from many genes in several different areas on chromosomes collectively make us vulnerable to anxiety (Kendler et al., 1995; Lesch et al., 1996; Plomin et al., 1997) when the right psychological and social factors are in place. The tendency to panic also seems to run in families and may have a genetic component (Barlow, 2002). Some evidence indicates that genetic contributions to panic and anxiety differ (Craske, 1999; Kendler et al., 1995); but in both situations, genetic vulnerability, particularly in a person who is under stress, may create the condition for panic but does not cause it directly. Recently, sophisticated methods of studying genetics,

called *quantitative trait loci* (see Chapters 2 and 3), have allowed investigators to identify relevant areas on a number of chromosomes in animals, including 1, 12, and 15.

Anxiety is also associated with specific brain circuits and neurotransmitter systems. For exam-

### Disorder Criteria Summary

#### Panic Attack



A panic attack involves experiencing four or more of the following symptoms during a specific period of time:

- Palpitations or pounding heart
- Sweating
- Trembling or shaking
- Shortness of breath
- Feeling of choking
- Chest pain
- Nausea
- Dizziness
- Feeling of unreality
- Fear of losing control
- Fear of dying
- Numbness or tingling sensations
- Chills or hot flashes

Source: Based on DSM-IV-TR. Used with permission from the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision. Copyright 2000. American Psychiatric Association.

ple, depleted levels of GABA, part of the GABA-benzodiazepine system, are associated with increased anxiety, although the relationship is not quite so direct. Increasing attention in the last several years has focused on the role of the corticotropin releasing factor (CRF) system as central to the expression of anxiety (and depression) (Heim & Nemeroff, 1999; Ladd et al., 2000; Sullivan et al., 2000). This is because CRF activates the HPA axis, described in Chapter 2, which is part of the CRF system, and this CRF system has wide-ranging effects on areas of the brain implicated in anxiety including the emotional brain (the limbic system), particularly the hippocampus and the amygdala, the locus cereleus in the brain stem, the prefrontal cortex, and the dopaminergic neurotransmitter system. The CRF system is also directly related to the GABA-benzodiazepine system and the serotonergic and noradrenergic neurotransmitter systems.

The area of the brain most often associated with anxiety is the limbic system (Charney & Drevets, 2002; Gray & McNaughton, 1996; LeDoux, 1995, 1996), which acts as a mediator between the brain stem and the cortex. The more primitive brain stem monitors and senses changes in bodily functions and relays these potential danger signals to higher cortical processes through the limbic system. Jeffrey Gray, a prominent British neuropsychologist, identified a brain circuit in the limbic system of animals that seems heavily involved in anxiety (Gray, 1982, 1985; McNaughton & Gray, 2000) and may be relevant to humans. This circuit leads from the septal and hippocampal area in the limbic system to the frontal cortex. (The septal-hippocampal system is activated by CRF and serotonergic- and noradrenergic-mediated pathways originating in the brain stem.) The system that Gray calls the **behavioral inhibition system (BIS)** is activated by signals from the brain stem of unexpected events, such as major changes in body functioning that might signal danger. Danger signals in response to something we see that might be threatening descend from the cortex to the septal-hippocampal system. The BIS also receives a big boost from the amygdala (Davis, 1992; LeDoux, 1996). When the BIS is activated by signals that arise from the brain stem or descend from the cortex, our tendency is to freeze, experience anxiety, and apprehensively evaluate the situation to confirm that danger is present.

The BIS circuit is distinct from the circuit involved in panic. Gray (1982; Gray & McNaughton, 1996) and Graeff (1987, 1993; Deakin & Graeff, 1991) identified what Gray calls the **fight/flight system (FFS)**. This circuit originates in the brain stem and travels through several midbrain structures, including the amygdala, the ventromedial nucleus of the hypothalamus, and the central gray matter. When stimulated in animals, this circuit produces an im-

mediate alarm-and-escape response that looks very much like panic in humans (Gray & McNaughton, 1996). Gray and McNaughton (1996) and Graeff (1993) think the FFS is activated in part by deficiencies in serotonin.

It is likely that factors in your environment can change the sensitivity of these brain circuits, making you more or less susceptible to developing anxiety and its disorders, a finding that has been demonstrated in several laboratories (Francis, Diorio, Plotsky, & Meaney, 2002). An important study has appeared suggesting that cigarette smoking as a teenager is associated with greatly increased risk for developing anxiety disorders as adults, particularly panic disorder and generalized anxiety disorder (J. G. Johnson et al., 2000). Nearly 700 adolescents were followed into adulthood. Teens who smoked 20 or more cigarettes daily were 15 times more likely to develop panic disorder and 5 times more likely to develop generalized anxiety disorder than teens who smoked less or not at all. One possible explanation is that chronic exposure to nicotine, a drug that increases anxiety, as well as respiratory problems, somehow sensitizes the brain circuits associated with anxiety and increases one's biological vulnerability to develop severe anxiety disorders.

Research into the neurobiology of anxiety and panic is very new, but we have made exciting progress by implicating two seemingly different brain systems and confirming the crucial role of the CRF system and the amygdala. Brain-imaging procedures will undoubtedly yield much more information in the years to come, and this has already begun to happen (Charney & Drevets, 2002).

### Psychological Contributions

In Chapter 2 we reviewed some theories on the nature of psychological causes of anxiety. Remember that Freud thought anxiety was a psychic reaction to danger surrounding the reactivation of an infantile fearful situation. Behavioral theorists view anxiety as a product of early classical conditioning, modeling, or other forms of learning (Bandura, 1986). Evidence is accumulating (e.g., Barlow, 2002) that supports an integrated model of anxiety involving a variety of factors. In childhood we may acquire an awareness that events are not always in our control (Chorpita & Barlow, 1998). The continuum of this perception may range from total confidence in our control of all aspects of our lives to deep un-

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**behavioral inhibition system (BIS)** Brain circuit in the limbic system that responds to threat signals by inhibiting activity and causing anxiety.

**fight/flight system (FFS)** Brain circuit in animals that when stimulated causes an immediate alarm and escape response resembling human panic.

certainty about ourselves and our ability to deal with upcoming events. The perception that events may be out of our control is most evident as a set of danger-laden beliefs. If you are anxious about schoolwork, you may think you will do poorly on the next exam and that there is no way you can pass the course, even though all your grades have been A's and B's. A general "sense of uncontrollability" may develop early as a function of upbringing and other environmental factors.

Interestingly, the actions of parents in early childhood seem to do a lot to foster this sense of control or a sense of uncontrollability (Chorpita & Barlow, 1998). Generally, it seems that parents who interact in a positive and predictable way with their children by responding to their needs, particularly when the child communicates his or her needs for attention, food, relief from pain, and so on, perform an important function. These parents teach their children that they have control over their environment and their responses have an effect on their parents and their environment. In addition, parents who allow their children to explore their world and develop the necessary skills to cope with unexpected occurrences enable their children to develop a healthy sense of control. What seems to be important is providing a "secure home base" for your children so that you are there for them if they need you while they explore their world (Chorpita & Barlow, 1998). In contrast, parents who are overprotective and overintrusive and who "clear the way" for their children, never letting them experience any adversity, also create a situation where children never learn how to cope with adversity when it comes along. Therefore, these children don't learn that they can control their environment. A variety of evidence has accumulated supporting these ideas (Barlow, 2002; Chorpita & Barlow, 1998; Chorpita, Brown, & Barlow, 1998; Lieb et al., 2000; Nolen-Hoeksema, Wolfson, Mumme, & Guskin, 1995). A sense of control that develops from these early experiences is the psychological factor that makes us most vulnerable to anxiety in later life.

Most psychological accounts of panic invoke *conditioning* and *cognitive* explanations that are difficult to separate (Bouton, Mineka, & Barlow, 2001). Thus, a strong fear response initially occurs during extreme stress or perhaps as a result of a dangerous situation in the environment (a true alarm). This emotional response then becomes associated with a variety of external and internal cues. In other words, the cues provoke the fear response and an assumption of danger, whether or not danger is actually present (Bouton, Mineka, & Barlow, 2001; Martin, 1983; Razran, 1961). External cues are places or situations similar to the one where the initial panic attack occurred. Internal cues are increases in heart rate or respiration that were associated with the ini-

tial panic attack, even if they are now due to perfectly normal circumstances, such as exercise. Thus, when your heart is beating fast you are more likely to think of and, perhaps, experience a panic attack than when it is beating normally.

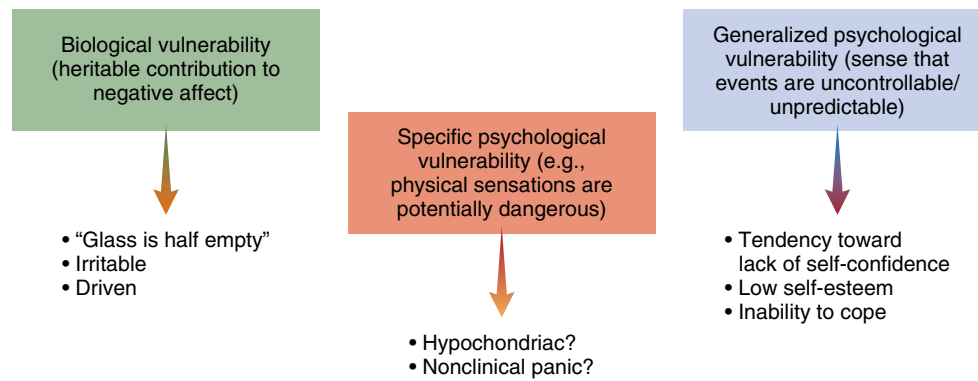
### Social Contributions

Stressful life events trigger our biological and psychological vulnerabilities to anxiety. Most are interpersonal in nature—marriage, divorce, difficulties at work, death of a loved one, and so on. Some might be physical, such as an injury or illness. Social pressures, perhaps to excel in school, might also provide sufficient stress to trigger anxiety.

The same stressors can trigger physical reactions such as headaches or hypertension and emotional reactions such as panic attacks (Barlow, 2002). The particular way we react to stress seems to run in families. If you get headaches when under stress, chances are other people in your family also get headaches. If you have panic attacks, other members of your family probably do also. This finding suggests a possible genetic contribution, at least to initial panic attacks.

### An Integrated Model

Putting the factors together in an integrated way, we have described a theory of the development of anxiety and related disorders called the triple vulnerability theory (Barlow, 2000, 2002). The first vulnerability (or diathesis) is a *generalized biological vulnerability*. We can see that a tendency to be uptight or high-strung might be inherited. But a generalized biological vulnerability to develop anxiety is not anxiety itself. The second vulnerability is a *generalized psychological vulnerability*. That is, you might also grow up believing the world is dangerous and out of control, and you might not be able to cope when things go wrong based on your early experiences. If this perception is strong, you have a generalized psychological vulnerability to anxiety. The third vulnerability is a *specific psychological vulnerability* in which you learn from early experience, such as being taught by your parents, that some situations or objects are fraught with danger (even if they really aren't). Possible examples are dogs, if your father is afraid of dogs, or being evaluated negatively by others, if this is something your parents worry about. These triple vulnerabilities are presented in Figure 4.2 and revisited when we describe each anxiety disorder. If you are under a lot of pressure, particularly from interpersonal stressors, a given stressor could activate your biological tendencies to be anxious and your psychological tendencies to feel you might not be able to deal with the situation and control the stress. Once this cycle starts, it tends to feed on itself, so it might not stop even when the particular life stressor has long since passed. Anxiety can be very general, evoked by many aspects of your



**Figure 4.2** ■ The three vulnerabilities that contribute to the development of anxiety disorders. If an individual possesses all three, the odds are greatly increased that he or she will develop an anxiety disorder after experiencing a stressful situation. (From Barlow, 2002.)

life. But it is usually focused on one area, such as social evaluations or grades (Barlow, 2002).

Panic is also a characteristic response to stress that runs in families and may have a genetic component that’s separate from anxiety. Because an individual associates the panic attack with internal or external cues (conditioning is one form of learning), the attacks are called *learned alarms*. Even if you have a legitimate fear response to a dangerous situation (true alarm), your reaction can become associated with a variety of cues that may then trigger an attack *in the absence* of any danger, making it a learned alarm. Furthermore, anxiety and panic are closely related (Barlow, 2002) in that anxiety increases the likelihood of panic. This relationship makes sense from an ethological point of view, because sensing possible future threat or danger (anxiety) should prepare us to react instantaneously with an alarm response if the danger becomes imminent. Anxiety and panic need not occur together, but it makes sense that they often do.

### Comorbidity of Anxiety Disorders

Before describing the specific anxiety disorders, it is important to note that they often co-occur. As we described in Chapter 3, the co-occurrence of two or more disorders in a single individual is referred to as *comorbidity*. The fact that rates of comorbidity among anxiety disorders (and depression) are high emphasizes that all of these disorders share the common features of anxiety and panic described here. They also share the same vulnerabilities, biological and psychological, to develop anxiety and panic. They differ only in the focus of anxiety (what are they anxious about?) and, perhaps, the patterning of panic attacks. Of course, if each patient with an anxiety disorder also had every other anxiety disorder, there would be little sense in distinguishing among the specific disorders. It would be enough to say, simply, that the patient had an anxiety disorder. But this is not the case, and, al-

though rates of comorbidity are high, they vary somewhat from disorder to disorder. A large-scale study was recently completed at one of our centers, examining the comorbidity of DSM-IV anxiety and mood disorders (Brown, Campbell, Lehman, Grisham, & Mancill, 2001; Brown & Barlow, 2002). Data were collected from 1,127 patients carefully diagnosed using a semistructured interview in our center. If we examine just rates of comorbidity at the time of assessment, the results indicate that 55% of the patients who received a principal diagnosis of an anxiety or depressive disorder had at least one additional anxiety or depressive disorder at the time of the assessment. If we consider whether the patient met criteria for an additional diagnosis at any time in his or her life, rather than just at the time of the assessment, the rate increases to 76%.

By far, the most common additional diagnosis for all anxiety disorders was major depression, which occurred in 50% of the cases over the course of the patient’s life. This becomes important when we discuss the relationship between anxiety and depression later in this chapter.

We now turn to a description of the individual anxiety disorders. But keep in mind that approximately 50% of individuals with these disorders will present with one or more additional anxiety or depressive disorders and, perhaps, some other disorders, particularly substance abuse disorders, as described later.

### Concept Check 4.1

Complete the following statements about anxiety and its causes with the following terms: (a) comorbidity, (b) panic attack, (c) situationally bound, (d) neurotransmitter, (e) brain circuits, (f) stressful.

1. A \_\_\_\_\_ is an abrupt experience of intense fear or acute discomfort accompanied by physical symptoms, such as chest pain and shortness of breath.
2. A \_\_\_\_\_ panic attack often occurs in certain situations but not anywhere else.
3. Anxiety is associated with specific \_\_\_\_\_ (e.g., behavioral inhibition system or fight/flight system) and \_\_\_\_\_ systems (e.g., noradrenergic).
4. The rates of \_\_\_\_\_ among anxiety disorders are high because they share the common features of anxiety and panic.
5. \_\_\_\_\_ life events can trigger our biological and psychological vulnerabilities to anxiety.

## Generalized Anxiety Disorder

- Describe the essential features of generalized anxiety disorder, its proposed causal factors, and available treatment approaches.

Specific anxiety disorders are complicated by panic attacks or other features that are the focus of the anxiety. In generalized anxiety disorder, the focus is generalized to the events of everyday life. For that reason, we consider generalized anxiety disorder first.

### Clinical Description

Is somebody in your family a worrywart? Is somebody in your family perfectionistic? Perhaps it is you! Most of us worry to some extent. As we have said, worry can be useful. It helps us plan for the future, make sure that we're prepared for that test, or double-check that we've thought of everything before we head home for the holidays. The worry process itself is not pleasant, but without it nothing would go smoothly. But what if you worry indiscriminately about everything? Furthermore, what if worrying is unproductive: No matter how much you worry, you can't seem to decide what to do about an upcoming problem or situation. And what if you *can't stop* worrying, even if you know it is doing you no good and probably making everyone else around you miserable? These features characterize **generalized anxiety disorder (GAD)**. Consider the case of Irene.



### Irene Ruled by Worry

Irene was a 20-year-old college student with an engaging personality but not many friends. She came to the clinic complaining of excessive anxiety and general difficulties in controlling her

life. Everything was a catastrophe for Irene. Although she carried a 3.7 grade point average, she was convinced she would flunk every test she took. As a result, she repeatedly threatened to drop courses after only several weeks of classes because she feared that she would not understand the material.

Irene worried until she dropped out of the first college she attended after 1 month. She felt depressed for a while, then she decided to take a couple of courses at a local junior college, believing she could handle the work there better. After achieving straight A's at the junior college for 2 years, she enrolled once again in a 4-year college as a junior. After a short time she began calling the clinic in a state of extreme agitation, saying she had to drop this or that course because she couldn't handle it. With great difficulty, her therapist and parents persuaded her to stay in the courses and to seek further help. In any course Irene completed, her grade was between an A and a B-minus, but she still worried about every test and every paper, afraid she would fall apart and be unable to understand and complete the work.

Irene did not worry only about school. She was also concerned about relationships with her friends, and whenever she was with her new boyfriend she feared making a fool of herself and losing his interest. In fact, she reported that each date went extremely well, but she knew the next one would probably be a disaster. As the relationship progressed and some sexual contact seemed natural, Irene was worried sick that her inexperience would make her boyfriend consider her naive and stupid. Nevertheless, she reported enjoying the early sexual contact and admitted that he seemed to enjoy it also, but she was convinced that the next time a catastrophe would happen.

Irene was also concerned about her health. She had minor hypertension, probably because she was somewhat overweight. She then approached every meal as if death itself might result if she ate the wrong types or amounts of food. She became reluctant to have her blood pressure checked for fear it would be very high or to weigh herself for fear she was not losing weight. She severely restricted her eating and as a result had an occasional episode of binge eating, although not often enough to warrant concern.

In addition, Irene worried about her religious faith and about her relationships with her family, particularly her mother and sister. Although Irene had an occasional panic attack, this was not a major issue to her. As soon as the panic subsided she focused on the next possible catastrophe. In addition to high blood pressure, Irene had tension headaches and a “nervous stomach,” with a lot of gas, occasional diarrhea, and some abdominal pain. Irene’s life was a series of impending catastrophes. Her mother reported that she dreaded a phone call from Irene, let alone a visit, because she knew she would have to see her daughter through a crisis. For the same reason, Irene had few friends. Even so, when she temporarily gave up her anxiety she was really fun to be with.

Irene suffered from GAD, which is, in many ways, the basic syndrome that characterizes every anxiety disorder considered in this chapter (Brown, Barlow, & Liebowitz, 1994). The DSM-IV criteria specify that at least 6 months of excessive anxiety and worry (apprehensive expectation) must be ongoing more days than not. Furthermore, it must be very difficult to turn off or control the worry process. This is what distinguishes pathological worrying from the normal kind we all experience from time to time as we get ready for an upcoming event or challenge. Most of us worry for a time but can set the problem aside and go on to another task. Even if the upcoming challenge is a big one, as soon as it is over the worrying stops. For Irene, it never stopped. She turned to the next crisis as soon as the current one was over.

The physical symptoms associated with generalized anxiety and GAD differ somewhat from those associated with panic attacks and panic disorder (covered next). Whereas panic is associated with autonomic arousal, presumably as a result of a sympathetic nervous system surge (for instance, heart rate increases and palpitations, perspiration, and trembling), GAD is characterized by muscle tension, mental agitation (Brown, Marten, & Barlow, 1995), susceptibility to fatigue (probably the result of chronic excessive muscle tension), some irritability,

## Disorder Criteria Summary

### Generalized Anxiety Disorder (GAD)



Features of generalized anxiety disorder include:

- Excessive anxiety and worry for 6 months or more about a number of events or activities
- Difficulty in controlling the worry
- At least three of these symptoms: (1) restlessness or feeling all keyed up; (2) becoming fatigued easily; (3) difficulty concentrating; (4) irritability; (5) muscle tension; (6) sleep disturbance
- Significant distress or impairment
- Anxiety is not limited to one specific issue

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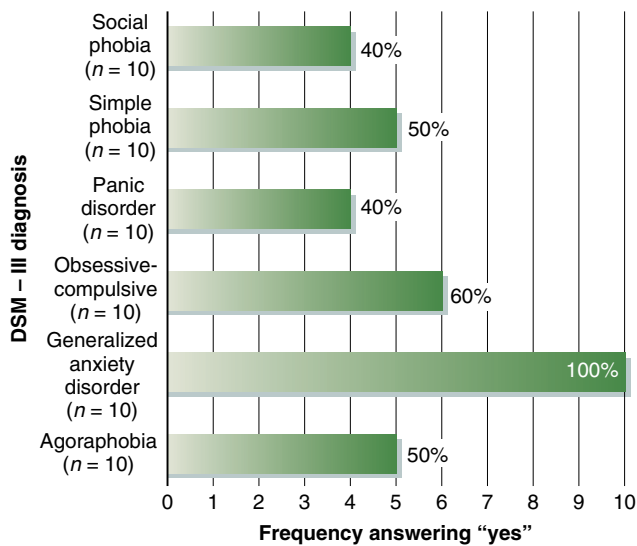
and difficulty sleeping. Focusing attention is difficult as the mind quickly switches from crisis to crisis. For children, only one physical symptom is required, and some research validates this strategy (Tracey, Chorpita, Douban, & Barlow, 1997).

People with GAD worry about minor, everyday life events for the most part, a characteristic that distinguishes GAD from other anxiety disorders. When asked, “Do you worry excessively about minor things?” 100% of individuals with GAD respond “yes” compared with approximately 50% of individuals with other anxiety disorder categories, as displayed in Figure 4.3. Such a difference is statistically significant. Of course, major events quickly become the focus of anxiety and worry, too. Adults typically focus on possible misfortune to their children, family health, job responsibilities, and more minor things such as household chores or being on time for appointments. Children with GAD most often worry about academic, athletic, or social performance and physical injury (Silverman, La Greca, & Wasserstein, 1995; Weems, Silverman, & La Greca, 2000). The elderly tend to focus, understandably, on health (Person & Borkovec, 1995); they also have difficulty sleeping, which seems to make the anxiety worse (Beck & Stanley, 1997).

## Statistics

Although worry and physical tension are common, the severe generalized anxiety experienced by Irene is quite rare. Approximately 4% of the population

**generalized anxiety disorder (GAD)** Anxiety disorder characterized by intense, uncontrollable, unfocused, chronic, and continuous worry that is distressing and unproductive accompanied by physical symptoms of tension, irritability, and restlessness.



**Figure 4.3** ■ Clients' answers to interviewer's question, "Do you worry excessively about minor things?" (From "A Description of Patients Diagnosed with DSM-III-R Generalized Anxiety Disorder," by W. C. Sanderson and D. H. Barlow, 1990, *Journal of Nervous and Mental Disease*, 178, p. 590. Copyright © 1990 by Lippincott, Williams & Wilkins.)

meets criteria for GAD during a given 1-year period (Blazer, Hughes, George, Swartz, & Boyer, 1991; Carter, Wittchen, Pfister & Kessler, 2001; Kessler et al., 1994). This is still quite a large number, making GAD one of the most common anxiety disorders. Similar rates are reported from around the world, for example, rural South Africa (Bhagwanjee, Parekh, Paruk, Petersen, & Subedar, 1998). However, relatively few people with GAD come for treatment compared with patients with panic disorder. Anxiety clinics like ours report that only approximately 10% of their patients meet criteria for GAD compared with 30% to 50% for panic disorder. This may be because most patients with GAD seek help from their primary care doctors, where they are found in large numbers (Roy-Byrne & Katon, 2000).

About two-thirds of individuals with GAD are female in both clinical samples (Woodman, Noyes, Black, Schlosser, & Yagla, 1999; Yonkers, Warshaw, Massion, & Keller, 1996) and epidemiological studies, which include people who do not necessarily seek out treatment (Blazer, George, & Hughes, 1991; Carter et al., 2001; Wittchen, Zhao, Kessler, & Eaton, 1994). But this sex ratio may be specific to developed countries. In the South African study mentioned here, GAD was more common in males.

Some people with GAD report onset in early adulthood, usually in response to a life stressor. Nevertheless, most studies find that GAD is associated with an earlier and more gradual onset than most other anxiety disorders (Anderson, Noyes, & Crowe, 1984; Barlow, 2002; Brown, Barlow, & Liebowitz, 1994; Sanderson & Barlow, 1990; Woodman et al., 1999). Like Irene, many people have felt anxious and

tense all their lives. Once it develops, GAD is chronic. One study found only an 8% probability of becoming symptom free after 2 years of follow-up (Yonkers et al., 1996). Another found that patients with GAD retained their symptoms more consistently over 5 years than patients with panic disorder (Woodman et al., 1999).

GAD is prevalent among the elderly. In the large national comorbidity study, GAD was found to be most common in the group over 45 years of age and least common in the youngest group aged 15 to 24 (Wittchen et al., 1994). Flint (1994) reported prevalence rates of GAD in older adults to be as high as 7%. We also know that the use of minor tranquilizers in the elderly is very high, ranging from 17% to 50% in one study (Salzman, 1991). It is not entirely clear why drugs are prescribed with such frequency for the elderly. One possibility is that the drugs may not be entirely intended for anxiety. Prescribed drugs may be primarily for sleeping problems or other secondary effects of medical illnesses. In any case, benzodiazepines interfere with cognitive function and put the elderly at greater risks for falling down and breaking bones, particularly their hips (Barlow, 2002).

According to studies reported by Judith Rodin and her colleagues (described in Chapter 2), the elderly may be particularly susceptible to anxiety about failing health or other life situations that begin to diminish whatever control they retain over events in their lives. This increasing lack of control, failing health, and the gradual loss of meaningful functions may be a particularly unfortunate by-product of the way the elderly are treated in Western culture. If it were possible to change our attitudes and behavior, we might well reduce the frequency of anxiety, depression, and early death among our elderly citizens.

## Causes

What causes GAD? We have learned a great deal in the past several years. As with most anxiety disorders, there seems to be a generalized biological vulnerability, as is reflected in studies examining a genetic contribution to GAD. This conclusion is based on studies showing that GAD tends to run in families (Noyes, Clarkson, Crowe, Yates, & McChesney, 1987; Noyes et al., 1992). Twin studies strengthen this suggestion. Kendler, Neale, Kessler, Heath, and Eaves (1992a) found that the risk of GAD was somewhat greater for both members of monozygotic (identical) female twin pairs than for dizygotic female twins when one twin already had GAD. But in a later, more broadly focused study, Kendler et al. (1995) confirmed that what seems to be inherited is the tendency to become anxious rather than GAD itself. As noted at the beginning of this chapter, investigations of anxiety as a human trait show a clear

heritable factor, and there is every reason to think that, when all the appropriate studies are done, GAD will be proved at least as strongly heritable as is the trait of anxiety (Barlow, 2002).

For a long time, generalized anxiety disorder has posed a real puzzle to investigators. Although the definition of the disorder is relatively new, originating in 1980 with DSM-III, clinicians and psychopathologists were working with people with generalized anxiety long before diagnostic systems were developed. For years, clinicians thought that people who were generally anxious had simply not focused their anxiety on anything specific. Thus, such anxiety was described as “free floating.” But now scientists have looked more closely and have discovered some interesting distinctions.

The first hints of difference were found in the physiological responsiveness of individuals with GAD. It is interesting that individuals with GAD do not respond as strongly as individuals with anxiety disorders in which panic is more prominent. In fact, several studies have found that individuals with GAD show *less responsiveness* on most physiological measures, such as heart rate, blood pressure, skin conductance, and respiration rate (Roemer, Orsillo, & Barlow, 2002; Borkovec & Hu, 1990; Hoehn-Saric, McLeod, & Zimmerli, 1989) than do individuals with other anxiety disorders.

When individuals with GAD are compared with nonanxious normal subjects, the one physiological measure that consistently distinguishes the anxious group is muscle tension (Marten et al., 1993). People with GAD are chronically tense. To understand this phenomenon we may have to know what’s going on in the minds of people with GAD. With new methods from cognitive science, we are beginning to uncover the sometimes unconscious mental processes ongoing in GAD (McNally, 1996).

The evidence indicates that individuals with GAD are highly sensitive to threat in general, particularly to a threat that has personal relevance. That is, they allocate their attention much more readily to sources of threat than people who are not anxious (Aikins & Craske, 2001; Barlow, 2002; Bradley, Mogg, White, Groom, & de Bono, 1999; Butler & Mathews, 1983; MacLeod, Mathews, & Tata, 1986; Mathews, 1997; Mogg, Mathews, & Weinman, 1989). Furthermore, this acute awareness of potential threat, particularly if it is personal, seems to be entirely automatic or unconscious.

How do mental processes link up with the tendency of individuals with GAD to be autonomic restrictors? Tom Borkovec and his colleagues have suggested some possibilities. These researchers noticed that although the peripheral autonomic arousal of individuals with GAD is restricted, they showed marked increases in EEG beta activity, reflecting intense cognitive processing in the frontal lobes, par-

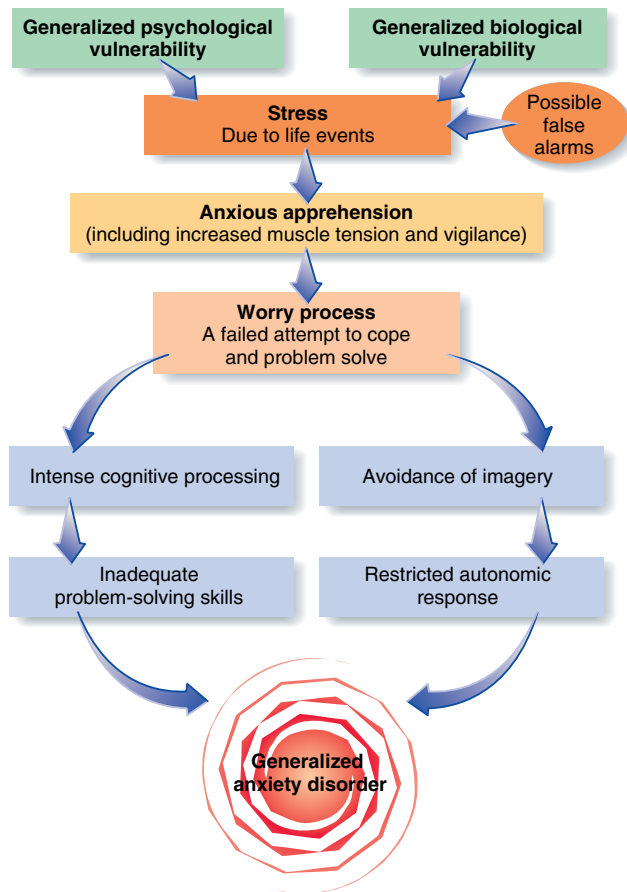
ticularly in the left hemisphere. This finding suggests to Borkovec and Inz (1990) that people with GAD engage in frantic, intense thought processes or worry *without* accompanying images (which would be reflected by activity in the right hemisphere of the brain). Borkovec suggests that this kind of worry may be exactly what causes these individuals to be autonomic restrictors (Borkovec, Shadick, & Hopkins, 1991; Roemer & Borkovec, 1993). That is, they are thinking so hard about upcoming problems, they don’t have the attentional capacity left for the all-important process of creating images of the potential threat, images that would elicit more substantial negative affect and autonomic activity. In other words, they avoid all the negative affect associated with the threat (Craske, 1999).

But from the point of view of therapy, it is important to “process” the images and negative affect associated with anxiety (Craske & Barlow, 1988). Because people with GAD do not seem to engage in this process, they may avoid much of the unpleasantness and pain associated with the negative affect and imagery, but they are never able to work through their problems and arrive at solutions. Therefore, they become *chronic worriers*, with accompanying autonomic inflexibility and quite severe muscle tension. Thus, intense worrying for an individual with GAD may serve the same maladaptive purpose as avoidance does for people with phobias. It prevents the person from facing the feared situation, and so adaptation never occurs.

In summary, some people inherit a tendency to be tense (generalized biological vulnerability), and they develop a sense early on that important events in their lives may be uncontrollable and potentially dangerous (generalized psychological vulnerability). Significant stress makes them apprehensive and vigilant. This sets off intense worry with resulting physiological changes, leading to generalized anxiety disorder (Roemer et al., 2002; Turovsky & Barlow, 1996). This model is very current, as it combines findings from cognitive science with biological data from both the central and the peripheral nervous systems. Time will tell if the model is correct, although supporting data continue to come in (Craske, 1999; DiBartolo, Brown, & Barlow, 1997). In any case, it is consistent with our view of anxiety as a future-oriented mood state focused on potential danger or threat, as opposed to an emergency or alarm reaction to actual present danger. A model of the development of generalized anxiety disorder is presented in Figure 4.4.

## Treatment

GAD is quite common, and available treatments, both drug and psychological, are reasonably effective. Benzodiazepines (minor tranquilizers) are most



**Figure 4.4** ■ An integrative model of generalized anxiety disorder.

frequently prescribed for generalized anxiety, and the evidence indicates that they give some relief, at least in the short term. Few studies have looked at the effects of these drugs for a period longer than 8 weeks. Those that have suggest benefits seem to continue for approximately 6 months (Schweizer & Rickels, 1996). But the therapeutic effect is relatively modest. Furthermore, benzodiazepines carry some risks. First, they seem to impair both cognitive and motor functioning (e.g., Hindmarch, 1986, 1990; O'Hanlon, Haak, Blaauw, & Riemersma, 1982; Van Laar, Volkerts, & Verbaten, 2001). Specifically, people don't seem to be as alert on the job or at school when they are taking benzodiazepines. The drugs may impair driving, and in the elderly they seem to be associated with falls resulting in hip fractures (Ray, Gurwitz, Decker, & Kennedy, 1992; Wang, Bohn, Glynn, Mogun & Avorn, 2001). More important, benzodiazepines seem to produce both psychological and physical dependence, making it difficult for people to stop taking them (Noyes, Garvey, Cook, & Suelzer, 1991; Rickels, Schweizer, Case, & Greenblatt, 1990; Schweizer, Rickels, Case, & Greenblatt, 1990). There is reasonably wide agreement that the optimal use of benzodiazepines is for the short-term relief of anxiety associated with a temporary crisis or

stressful event, such as a family problem. Under these circumstances, a physician may prescribe a benzodiazepine until the crisis is resolved but for no more than several days or a week or two at most. There is increasing evidence for the usefulness of antidepressants in the treatment of GAD (e.g., Rickels, Downing, Schweizer, & Hassman, 1993; Rickels et al., 2003; Schatzberg, 2000). These drugs may, ultimately, prove to be a better choice (Brawman-Mintzer, 2001).

In the short term, psychological treatments seem to confer about the same benefit as drugs in the treatment of GAD but are probably better in the long term (Barlow & Lehman, 1996; Borkovec & Whisman, 1996; Borkovec, Newman, Pincus, & Lytle, 2002; Gould, Otto, Pollack, & Yap, 1997; Roemer, Orsillo, & Barlow, 2002). Recent reports of innovations in brief psychological treatments are encouraging. As we learn more about generalized anxiety, we may find that helping people with this disorder to focus on what is actually threatening is useful. Because we now know that individuals with GAD seem to avoid "feelings" of anxiety and the negative effect associated with images, clinicians have designed treatments to help them process the information on an emotional level, using images, so they will feel anxious. Of course, these treatments have other components, such as teaching patients how to relax deeply to combat tension. Borkovec and his colleagues found such a treatment to be significantly better than a placebo psychological treatment, not only at post-treatment but also at a 1-year follow-up (Borkovec & Costello, 1993).

In the early 1990s, we developed a cognitive-behavioral treatment (CBT) for GAD in which patients evoke the worry process during therapy sessions and confront anxiety-provoking images and thoughts head-on. The patient learns to use cognitive therapy and other coping techniques to counteract and control the worry process (Craske, Barlow, & O'Leary, 1992; Wetherell, Gatz, & Craske, 2003). Borkovec and Ruscio (2001) reviewed 13 controlled studies evaluating CBTs for GAD and found substantial gains compared with no treatment or alternative treatment such as psychodynamic therapy. Studies indicate that brief psychological treatments such as these alter the sometimes unconscious cognitive biases associated with GAD (Mathews, Mogg, Kentish, & Eysenck, 1995; Mogg, Bradley, Millar, & White, 1995). Despite this success, it is clear we need more powerful treatments, both drug and psychological, for this chronic, treatment-resistant condition. Recently we have been developing a new psychological treatment for GAD that incorporates procedures focusing on acceptance rather than avoidance of distressing thoughts and feelings. Meditational approaches help teach the patient to be more tolerant of these feelings

(Orsillo, Roemer & Barlow, 2003; Roemer & Orsillo, 2002; Roemer et al., 2002). Preliminary results are encouraging.

There is particularly encouraging evidence that psychological treatments are effective with children who suffer from generalized anxiety. Barrett, Dadds, and Rapee (1996) found significant benefit in children with severe GAD when cognitive-behavioral procedures were combined with family therapy. After treatment, 95% of the children receiving this combination of therapies no longer met criteria for the diagnosis. Even more encouraging was a 6-year follow-up showing that the gains were largely maintained with 85.7% still not meeting criteria for diagnosis (Barrett, Duffy, Dadds, & Rapee, 2001). Similarly, we are making progress in adapting our treatments for the elderly, as important new studies show (Beck & Stanley, 1997; Stanley, Beck, & Glassco, 1997).

After trying a number of different drugs, Irene was treated with the CBT approach developed at our clinic and found herself much more able to cope with life. She completed college and graduate school, married, and is successful in her career as a counselor in a nursing home. But even now, Irene finds it difficult to relax and stop worrying. She con-

tinues to experience mild to moderate anxiety, particularly when under stress; she takes minor tranquilizers on occasion to support her psychological coping skills.

## Concept Check 4.2

True or False?

- \_\_\_\_\_ GAD is characterized by muscle tension, mental agitation, irritability, sleeping difficulties, and susceptibility to fatigue.
- \_\_\_\_\_ Most studies show that in the majority of cases of GAD onset is early in adulthood as an immediate response to a life stressor.
- \_\_\_\_\_ GAD is very prevalent in the elderly and in females in our society.
- \_\_\_\_\_ GAD has no genetic basis.
- \_\_\_\_\_ Cognitive-behavioral treatment and other psychological treatments for GAD are probably better than drug therapies in the long run.

## Panic Disorder with and without Agoraphobia

■ Describe the essential features of panic disorder.

Did you have a relative, an eccentric aunt, for example, who never seemed to leave the house? Family reunions or visits always had to be at her house. She never went anywhere else. Like most people, you may have attributed your old aunt's behavior to her being a little odd or perhaps just not fond of travel. She was warm and friendly when people came to visit, so she retained contact with the family.

In fact, your aunt may not have been just odd or eccentric. She may have suffered from a debilitating anxiety disorder called **panic disorder with agoraphobia (PDA)**, in which individuals experience severe unexpected panic attacks; they may think they're dying or otherwise losing control. Because they never know when an attack might occur, they develop **agoraphobia**, fear and avoidance of situations in which they would feel unsafe in the event of a panic attack or symptoms. These situations include those from which it would be hard or embarrassing to escape to get home or to a hospital. In severe cases, people with PDA are unable to leave the house, sometimes for years, as in the example of Mrs. M.



### Mrs. M. Self-Imprisoned

Mrs. M. was 67 years old and lived in a second-floor walk-up apartment in a lower-middle-class section of the city. Her adult daughter, one of her few remaining contacts with the world, had requested an evaluation with Mrs. M.'s consent. I rang the bell and entered a narrow hallway; Mrs. M. was nowhere in sight. Knowing that she lived on the second floor, I walked up the stairs and knocked on the door at the top. When I

**panic disorder with agoraphobia (PDA)** Fear and avoidance of situations the person believes might induce a dreaded panic attack.

**agoraphobia** Anxiety about being in places or situations from which escape might be difficult.

heard Mrs. M. ask me to come in, I opened the door. She was sitting in her living room, and I could quickly see the layout of the rest of the apartment. The living room was in the front; the kitchen was in the back, adjoining a porch. To the right of the stairs was the one bedroom, with a bathroom opening from it.

Mrs. M. was glad to see me and very friendly, offering me coffee and homemade cookies. I was the first person she had seen in 3 weeks. In fact, Mrs. M. had not left that apartment in 20 years, and she had suffered from panic disorder with agoraphobia for over 30 years.

As she told her story, Mrs. M. conveyed vivid images of a wasted life. And yet she continued to struggle in the face of adversity and to make the best she could of her limited existence. Even areas in her apartment signaled the potential for terrifying panic attacks. She had not answered the door herself for the past 15 years because she was afraid to look into the hallway. She could enter her kitchen and go into the areas containing the stove and refrigerator, but for the past 10 years she had not been to the part of the room that overlooked the backyard or out onto the back porch. Thus, her life for the past decade had been confined to her bedroom, her living room, and the front half of her kitchen. She relied on her adult daughter to bring groceries and visit once a week. Her only other visitor was the parish priest, who came to deliver communion every 2 to 3 weeks when he could. Her only other contact with the outside world was through the television and the radio. Her husband, who had abused both alcohol and Mrs. M., had died 10 years earlier of alcohol-related causes. Early in her very stressful marriage she had her first terrifying panic attack and had gradually withdrawn from the world. As long as she stayed in her apartment, she was relatively free of panic. For this reason, and because in her mind there were few reasons left near the end of her life to venture out, she declined treatment.

### Clinical Description

At the beginning of the chapter we talked about the related phenomena of anxiety and panic. In PDA, anxiety and panic are combined with *phobic avoidance* in an intricate relationship that can become as devastating as it was for Mrs. M. Many people who have panic attacks do not necessarily develop panic disorder. Similarly, many people experience anxiety and panic without developing agoraphobia. In those cases, the disorder is called **panic disorder without agoraphobia (PD)**.

To meet criteria for panic disorder (with or without agoraphobia), a person must experience an unexpected panic attack and develop substantial anxiety over the possibility of having another attack or about the implications of the attack or its consequences. In other words, he or she must think that each attack is a sign of impending death or incapacitation. A few individuals do not report concern about another attack but still change their behavior in a way that indicates the distress the attacks cause them. They may avoid going to certain places or neglect their duties around the house for fear an attack might occur if they are too active.

### The Development of Agoraphobia

Many people with panic disorder develop agoraphobia. The term *agoraphobia* was coined in 1871 by Westphal and, in the original Greek, refers to fear of the marketplace. This is a very appropriate term because the *agora*, the Greek marketplace, was a busy, bustling area. One of the most stressful places for individuals with agoraphobia today is the shopping mall, the modern-day agora.

All the evidence now points to the conclusion that agoraphobic avoidance behavior is simply one complication of severe, unexpected panic attacks (Barlow, 2002; Craske & Barlow, 1988, 2001). Simply put, if you have had unexpected panic attacks and are afraid you may have another one, you want to be in a safe place or at least with a safe person who knows what you are experiencing if another attack occurs so that you can quickly get to a hospital or at least go into your bedroom and lie down (the home is usually a safe place). We know that anxiety is diminished for individuals with agoraphobia if they think a location or person is “safe,” even if there is nothing effective the person could do if something bad did happen. If you are in a shopping mall or a crowded movie theater or church, not only is it difficult to leave but you also are probably going to embarrass yourself if you try. You may think you will have to climb over everyone in church to get out, get up in the middle of the movie and run out, or worse, faint in the movie theater (in fact, individuals with agoraphobia seldom do any of these things). For these reasons, when they do go to church or to the movies, people with agoraphobia always plan for rapid escape (e.g., by sitting near the door). A list of typical situations commonly avoided by someone with agoraphobia is found in Table 4.1.

Though agoraphobic behavior initially is closely tied to the occasions of panic, it can become relatively independent of panic attacks (Craske & Barlow, 1988; Craske, Rapee, & Barlow, 1988). In other words, an individual who has not had a panic attack for years may still have strong agoraphobic avoidance, like Mrs. M. Agoraphobic avoidance seems to be determined by the extent to which you think or expect you

**TABLE 4.1** Typical Situations Avoided by People with Agoraphobia

Shopping malls	Being far from home
Cars (as driver or passenger)	Staying at home alone
Buses	Waiting in line
Trains	Supermarkets
Subways	Stores
Wide streets	Crowds
Tunnels	Planes
Restaurants	Elevators
Theaters	Escalators

Source: From *Mastery of Your Anxiety and Panic III* (p. 5), by D. H. Barlow and M. G. Craske, 2000, Boulder, CO: Graywind Publications. Copyright © 2000 by Graywind Publications. Adapted with permission.

might have another attack rather than by how many attacks you actually have or how severe they are. Thus, agoraphobic avoidance is simply one way of coping with unexpected panic attacks.

Other methods of coping with panic attacks include using (and eventually abusing) drugs and/or alcohol. Some individuals do not avoid agoraphobic situations but endure them with “intense dread.” For example, people who simply must go to work each day or, perhaps, travel as part of the job will suffer untold agonies of anxiety and panic simply to achieve their goals. Thus, DSM-IV notes that agoraphobia may be characterized either by avoiding the situations or by enduring them with marked distress.

Most patients with severe agoraphobic avoidance (and some with little) also display another cluster of avoidant behaviors that we call *interoceptive avoidance* or avoidance of internal physical sensations (Barlow & Craske, 2000; Brown, White, & Barlow,

### Disorder Criteria Summary

#### Panic Disorder with Agoraphobia (PDA)



Features of panic disorder with Agoraphobia include:

- Recurring unexpected panic attacks
- One or more of the following during the month after a panic attack: (1) persistent worry about having an additional attack; (2) worry about the implications of an attack; (3) a significant change in behavior related to the attack
- Anxiety about being in places or social situations from which escape might be difficult or embarrassing, such as being in a crowd, traveling on a bus, or waiting in line

Source: Based on DSM-IV-TR. Used with permission from the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision. Copyright 2000. American Psychiatric Association.



Photo by Matthew Simmons/Getty Images

The well-known actress Kim Basinger has reported widely on her struggles with panic disorders and agoraphobia and the long period of time when it was very difficult for her to leave her house.

2005; Craske & Barlow, 2001; Shear et al., 1997). These behaviors involve removing yourself from situations or activities that might produce the physiological arousal that somehow resembles the beginnings of a panic attack. Some patients might avoid exercise because it produces increased cardiovascular activity or faster respiration that reminds them of panic attacks and makes them think one might be beginning. Other patients might avoid sauna baths or any rooms in which they might perspire. Psychopathologists are beginning to recognize that this cluster of avoidance behaviors is every bit as important as more classical agoraphobic avoidance. A list of situations or activities typically avoided within the interoceptive cluster is found in Table 4.2.

### Statistics

Panic disorder with or without agoraphobia is fairly common. Approximately 3.5% of the population meet the criteria for panic disorder at some point during their lives, two-thirds of them women (Eaton, Kessler, Wittchen, & Magee, 1994), and another 2.2% to 5.3% meet the criteria for agoraphobia (Kessler et al., 1994). These rates drop a bit if we count only those seeking treatment or demonstrably impaired (Narrow, Rae, Robins & Regier, 2002). Also, the rates of agoraphobia may be somewhat overestimated as a result of methodological difficul-

**panic disorder without agoraphobia (PD)** Panic attacks experienced without development of agoraphobia.

**TABLE 4.2** Interoceptive Daily Activities Typically Avoided by People with Agoraphobia

Running up flights of stairs	Watching exciting movies or sports events
Walking outside in intense heat	Getting involved in “heated” debates
Hot, stuffy rooms	Having showers with the doors and windows closed
Hot, stuffy cars	Having a sauna
Hot, stuffy stores or shopping malls	Hiking
Walking outside in very cold weather	Sports
Aerobics	Drinking coffee or any caffeinated beverages
Lifting heavy objects	Eating chocolate
Dancing	Standing quickly from a sitting position
Sexual relations	Getting angry
Watching horror movies	
Eating heavy meals	

Source: From *Mastery of Your Anxiety and Panic III* (p. 11), by D. H. Barlow and M. G. Craske, 2000, Boulder, CO: Graywind Publications. Copyright © 2000 by Graywind Publications. Adapted with permission.

ties, but most people with panic disorder do have agoraphobic avoidance.

Onset of panic disorder usually occurs in early adult life—from mid-teens through about 40 years of age. The mean age of onset is between 25 and 29 (Craske & Barlow, 2001; Öst, 1987). Prepubescent children have been known to experience unexpected panic attacks and occasionally panic disorder, although this is quite rare (Albano, Chorpita, & Barlow, 1996; Kearney, Albano, Eisen, Allan, & Barlow, 1997; Moreau & Weissman, 1992). Most initial unexpected panic attacks begin at or after puberty. In fact, puberty seems a better predictor of unexpected panic attacks than age because higher rates of panic attacks are found in girls after puberty compared with before puberty (Hayward et al., 1992). Furthermore, many prepubertal children who are seen by general medical practitioners have symptoms of hyperventilation that may well be panic attacks. However, these children do not report fear of dying or losing control—perhaps because they are not at a stage of their cognitive development where they can make these attributions (Nelles & Barlow, 1988).

As we have said, 75% or more of those who suffer from agoraphobia are women (Barlow, 2002; Myers et al., 1984; Thorpe & Burns, 1983). For a long time we didn’t know why, but now it seems the most logical explanation is cultural (Arrindell et al., 2003a). It is more accepted for women to report fear and to avoid numerous situations. Men, however, are expected to be stronger and braver, to “tough it out.” In fact, the higher the severity of agoraphobic avoidance, the greater the proportion of women. For example, in our clinic, out of a group of patients suffering from panic disorder with mild agoraphobia, 72%

were women; but if the agoraphobia was moderate, the percentage was 81%. Similarly, if agoraphobia was severe, the percentage was 89%.

What happens to men who have severe unexpected panic attacks? Is cultural disapproval of fear in men so strong that most of them simply endure panic? The answer seems to be “no.” A large proportion of males with unexpected panic attacks cope in a culturally acceptable way: They consume large amounts of alcohol. The problem is that they become dependent on alcohol, and many begin the long downward spiral into serious addiction. Thus, males may end up with an even more severe problem than PDA. Because these men are so impaired by alcohol abuse, clinicians may not realize they also have PDA. Furthermore, even if they are successfully treated for their addiction, the anxiety disorder still requires treatment (Chambless, Cherney, Caputo, & Rheinstein, 1987; Cox, Swinson, Schulman, Kuch, & Reichman, 1993; Kushner, Abrams, & Borchardt, 2000; Kushner, Sher, & Beitman, 1990).

### Cultural Influences

Panic disorder exists worldwide, although its expression may vary from place to place. In Lesotho, Africa, the prevalence of panic disorder (and generalized anxiety disorder) was found to be equal to or greater than in North America (Hollifield, Katon, Spain, & Pule, 1990). In a more comprehensive study, prevalence rates for panic disorder were remarkably similar in the United States, Canada, Puerto Rico, New Zealand, Italy, Korea, and Taiwan, with only Taiwan showing somewhat lower rates (Horwath & Weissman, 1997). Rates are also similar among different ethnic groups in the United States, including African Americans. Furthermore, black and white patients with panic disorder show no significant differences in symptoms (Friedman, Paradis, & Hatch, 1994). However, note that panic disorder co-occurs frequently with hypertension in African American patients (Neal, Nagle-Rich, & Smucker, 1994; Neal-Barnett & Smith, 1997).

Somatic symptoms of anxiety may be emphasized in Third World cultures. Subjective feelings of dread or angst may not be part of the cultural idiom; that is, individuals do not attend to these feelings and do not report them, focusing only on bodily sensations. In Chapter 2 we described a fright disorder called *susto* in Latin America characterized by sweating, increased heart rate, and insomnia but not by reports of anxiety or fear, even though a severe fright is the cause. An anxiety-related, culturally defined syndrome prominent among Hispanic Americans, particularly those from the Caribbean, is called *ataques de nervios* (Liebowitz et al., 1994). The symptoms of an *ataque* seem quite similar to those of panic attacks, although such manifestations as shouting uncontrollably or bursting into tears may be associated more frequently with *ataque* than with panic.

Finally, Devon Hinton, a psychiatrist/anthropologist, and his colleagues have recently described a fascinating manifestation of panic disorder among Khmer (Cambodian) and Vietnamese refugees in the United States. Both of these groups seem to suffer from a high rate of panic disorder. But a substantial number of these panic attacks are associated with orthostatic dizziness (dizziness if one stands up quickly) and “sore neck.” What Hinton’s group discovered is that the Khmer concept of *Kyol goeu* or “wind overload” becomes the focus of catastrophic thinking during panic attacks (Hinton, Pich, Pollack, & Barlow, in press, 2004; Hinton, Pich, Um, Pollack, & Barlow, in press; Hinton, So, Pollack, Pittman, & Orr, 2004; Hinton, Um, & Ba, 2001; Hinton et al., 2001). Specifically, the Khmer and Vietnamese, and to some extent other Asian cultures, conceptualize their bodies as containing vessels that carry blood and wind, and the most important of these vessels are located in the limbs and neck. Stress or disease may partially block these vessels, resulting in increased bodily wind, which in turn gives rise to a variety of bodily symptoms. If the stress becomes too severe, according to these cultures, the blood vessels in the neck may burst as wind attempts to move upward toward the head, which may result in death. If individuals in these cultures suffer anxiety and panic attacks with accompanying dizziness and feelings of faintness, their attention quickly turns to their neck and problems with excessive wind, and any recurrence of these symptoms can trigger panic attacks. Thus, individuals from these cultures come to clinics complaining of “sore neck or dizziness” when standing up, which is a good sign that they have classic cases of panic disorder that they are describing according to the beliefs and idioms of their own cultures. If mental health professionals are not aware of this, these patients might be misdiagnosed and inappropriately treated.

### Nocturnal Panic

Think back to the case of Gretchen, whose panic attack was described earlier. Is there anything unusual about her report? She was sound asleep when it happened! Approximately 60% of the people with panic disorder have experienced such nocturnal attacks (Craske & Rowe, 1997; Uhde, 1994). In fact, panic attacks occur more frequently between 1:30 A.M. and 3:30 A.M. than at any other time (C. B. Taylor et al., 1986). In some cases, people are afraid to go to sleep at night! Are they having nightmares? Research indicates they are not. Nocturnal attacks are studied in a sleep laboratory. Patients spend a few nights sleeping while attached to an electroencephalograph machine that monitors their brain waves (see Chapter 3). We all go through various stages of sleep that are reflected by different patterns on the EEG. (Stages of sleep are discussed fully in Chapter 8.) We have learned that nocturnal panics occur during delta wave or slow wave sleep, which typically occurs sev-

eral hours after we fall asleep and is the deepest stage of sleep. People with panic disorder often begin to panic when they start sinking into delta sleep, and then they awaken in the midst of an attack. Because there is no obvious reason for them to be anxious or panicky when they are sound asleep, most of these individuals think they are dying (Craske & Barlow, 1988; Craske & Rowe, 1997).

What causes nocturnal panic? Our best information at the current time is that the change in stages of sleep to the beginning of slow wave sleep produces physical sensations of “letting go” that are frightening to an individual with panic disorder (Craske et al., 2002). This process is described more fully later when we discuss causes of panic disorder. Several other events also occur during sleep that resemble nocturnal panic and are mistakenly thought to be the cause of nocturnal panic by some. Initially, we thought it might be nightmares, but nightmares and other dreamlike activity occur only during a stage of sleep characterized by rapid eye movement (REM) sleep, which typically occurs much later in the sleep cycle. Therefore, people are not dreaming when they have nocturnal panics, a conclusion consistent with patient reports. Some therapists are not aware of the stage of sleep associated with nocturnal panic attacks and assume that patients are “repressing” their dream material, perhaps because it might relate to an early trauma too painful to be admitted to consciousness. As we’ve seen, this is virtually impossible because nocturnal panic attacks do not occur during REM sleep, so there is no well-developed dream or nightmare activity going on when they happen. Thus, it is not possible for these patients to be dreaming anything.

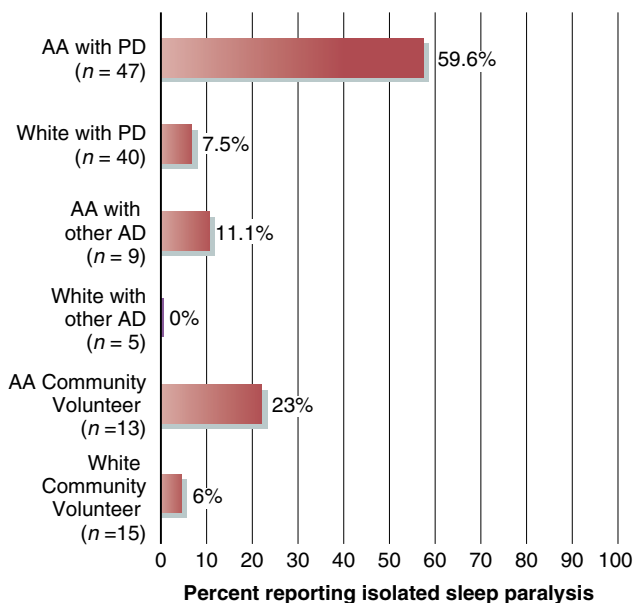
Have you ever heard the expression “the witch is riding you”? If you’re white, you probably haven’t, but if you’re African American, chances are you at least know somebody who has had this frightening experience (Bell, Dixie-Bell, & Thompson, 1986). Isolated sleep paralysis occurs during the transitional state between sleep and waking, when a person is either falling asleep or waking up, but mostly when waking up. During this period the individual is unable to move and experiences a surge of terror that resembles a panic attack; occasionally, there are also vivid hallucinations. One possible explanation is that REM sleep is spilling over into the waking cycle. This seems likely because one feature of REM sleep is lack of bodily movement. Another is vivid dreams, which could account for the experience of hallucination. This event is interesting in that it occurs much less frequently in Caucasians. In the United States it is a common experience of African Americans with panic disorder (Neal-Barnett & Smith, 1997; Paradis, Friedman, & Hatch, 1997). Because a high proportion of these individuals also suffer traditional panic attacks, Bell et al. (1986) hypothesized that panic disorder in African Americans may well be accompanied by the additional feature of isolated sleep paralysis.

Now evidence confirms this hypothesis. Paradis et al. (1997) found that the occurrence of isolated sleep paralysis was significantly higher in African Americans with panic disorder (59.6%) as compared with other groups (see Figure 4.5). Thus, isolated sleep paralysis seems to be common in African Americans with panic disorder. Even more interesting is that the disorder does not seem to occur in Nigerian blacks. In fact, the prevalence in Nigerian blacks is about the same as it is in American whites. The reasons for this distribution are not clear, although all factors point to a cultural explanation.

## Causes

It is not possible to understand panic disorder (with or without agoraphobia) without referring to the triad of contributing factors mentioned throughout this book: biological, psychological, and social. Strong evidence indicates that agoraphobia develops after a person has unexpected panic attacks (or paniclike sensations); but whether agoraphobia develops and how severe it becomes seem to be socially and culturally determined, as we noted earlier. Panic attacks and panic disorder, however, seem to be related most strongly to biological and psychological factors and their interaction.

At the beginning of the chapter we discussed the “triple vulnerability” model of how biological, psychological, and social factors may contribute to the development and maintenance of anxiety and to an initial unexpected panic attack (Bouton et al., 2001, White & Barlow, 2002) (see Figure 4.6).

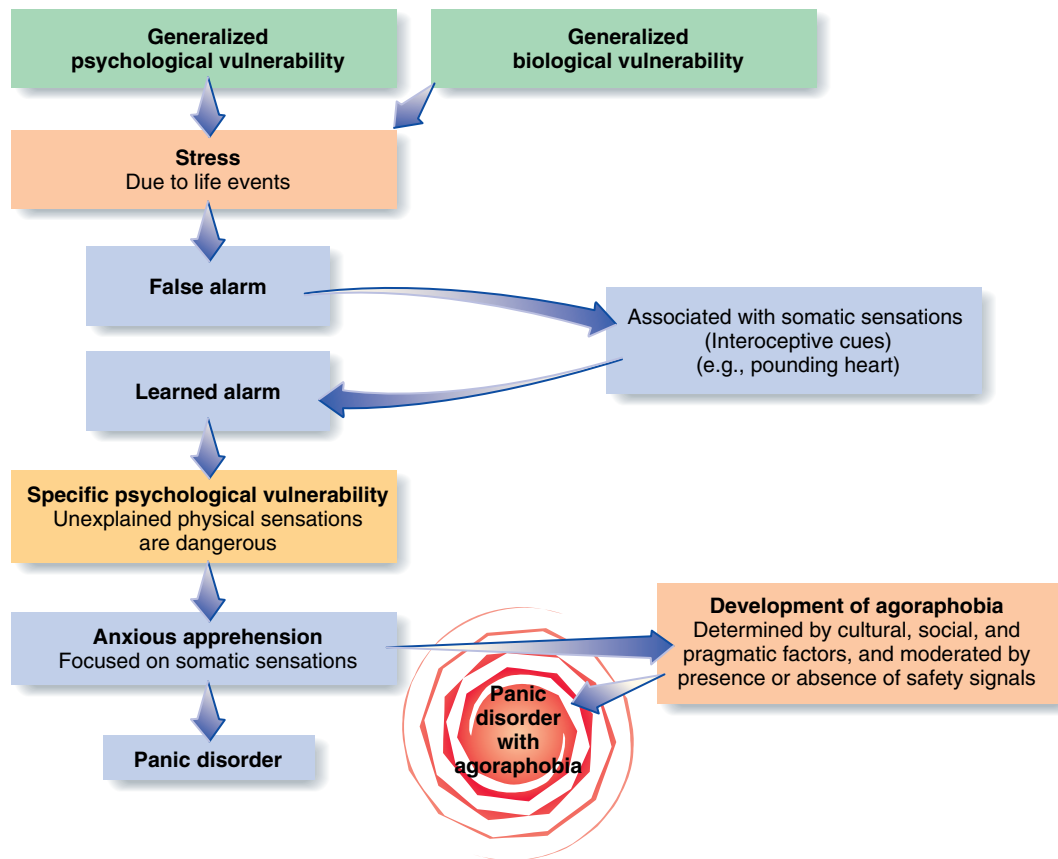


**Figure 4.5** ■ Isolated sleep paralysis in African Americans (AA) and Caucasian Americans (white) with panic disorder (PD), other anxiety disorder (AD) but not panic disorder, and community volunteers with no disorder. (Adapted from Paradis, Friedman, & Hatch, 1997.)

As noted earlier, we all inherit—some more than others—a vulnerability to stress, which is a tendency to be generally neurobiologically overreactive to the events of daily life (generalized biological vulnerability). But some people are also more likely than others to have an emergency alarm reaction (unexpected panic attack) when confronted with stress-producing events. These may include stress on the job or at school, death of a loved one, divorce, and positive events that are nevertheless stressful, such as graduating from school and starting a new career, getting married, or changing jobs. (Remember that other people might be more likely to have headaches or high blood pressure in response to the same kinds of stress.) Particular situations quickly become associated in an individual’s mind with external and internal cues that were present during the panic attack (Bouton et al., 2001). The next time the person’s heart rate increases during exercise, that person might assume he or she is having a panic attack (conditioning). Harmless exercise is an example of an internal cue or a conditioned stimulus (CS) for a panic attack. Being in a movie theater when panic first occurred would be an external cue that might become a CS for future panics. Because these cues become associated with a number of different internal and external stimuli through a learning process, we call them learned alarms.

But none of this would make much difference without the next step. The individuals must be susceptible to developing anxiety over the possibility of having another panic attack (a generalized psychological vulnerability). That is, they think the physical sensations associated with the panic attack mean something terrible is about to happen, perhaps death. This is what creates panic disorder. In other words, when people have a tendency to expect the worst when they experience strong physical sensations, some of them focus their anxiety on the possibility of *future* panic attacks—perhaps because they’ve been taught in childhood that unexpected bodily sensations may be dangerous, whereas other people experiencing these attacks do not. This tendency to believe that unexpected bodily sensations are dangerous reflects a specific psychological vulnerability to develop panic and related disorders.

We know that approximately 8% to 12% of the population has an occasional unexpected panic attack, often during a period of intense stress (Mattis & Ollendick, 2002; Norton, Harrison, Hauch, & Rhodes, 1985; Salge, Beck, & Logan, 1988; Telch, Lucas, & Nelson, 1989). Most of these people do not develop anxiety (Telch, Lucas, & Nelson, 1989). Only approximately 3% go on to develop anxiety over future panic attacks and thereby meet the criteria for panic disorder. What happens to those individuals who don’t develop anxiety? They seem to attribute the attack to events of the moment, such as an argument with a friend, something they ate, or a bad day, and go on



**Figure 4.6** ■ A model of the causes of panic disorder with or without agoraphobia. (From “Panic Disorder and Agoraphobia,” by K. S. White and D. H. Barlow, in *Anxiety and Its Disorders: The Nature and Treatment of Anxiety and Panic*, by D. H. Barlow, 2000, New York: The Guilford Press. Copyright © 2000 by The Guilford Press. Reprinted by permission.)

with their lives, perhaps experiencing an occasional panic attack when they are under stress again.

We can now measure one aspect of this psychological vulnerability, using an instrument known as the *anxiety sensitivity index* (Reiss, Peterson, Gursky, & McNally, 1986). One of the best tests of anxiety sensitivity as a vulnerability to experience panic attacks was demonstrated in an experiment conducted by Brad Schmidt and his colleagues (Schmidt, Lerew, & Jackson, 1997, 1999). Schmidt et al. (1997) administered the anxiety sensitivity index to a large number of military recruits undergoing a stressful basic training regimen. High scores on the anxiety sensitivity index prior to basic training predicted the onset of unexpected panic attacks in the 5 weeks following basic training. It is likely that the anxiety these recruits experienced over their stress-related panic reactions made panic attacks much more noticeable (Barlow, 2002).

The influential cognitive theories of David Clark (1986, 1996) explicate in more detail some of the cognitive processes that may be ongoing in panic disorder. Clark emphasizes the specific psychological vulnerability of people with this disorder to interpret normal physical sensations in a catastrophic way. In other words, although we all typically experience rapid heartbeat after exercise, if you have a psycho-

logical or cognitive vulnerability, you might interpret the response as dangerous and feel a surge of anxiety. This anxiety, in turn, produces more physical sensations because of the action of the sympathetic nervous system; you perceive these additional sensations as even more dangerous; and a vicious cycle begins that results in a panic attack. Thus, Clark emphasizes the cognitive process as most important in panic disorder.

## Treatment

As we noted in Chapter 1, research on the effectiveness of new treatments is important to psychopathology. Responses to certain specific treatments, whether drug or psychological, may indicate the causes of the disorder. We now discuss the benefits and some drawbacks of medication, psychological interventions, and a combination of these two treatments.

## Medication

While studies strongly suggest that anxiety and panic may well be separate processes, the differential effects of the two classes of drugs have not been as strongly supported. It seems that some high-potency benzodiazepines are just as effective for panic disorder as are tricyclic antidepressants such as imipramine, as well as the newer serotonin-specific reuptake inhibitors

(SSRIs) such as Prozac and Paxil. In fact, a large number of drugs affecting either the noradrenergic, serotonergic, or GABA-benzodiazepine neurotransmitter systems or some combination seem effective in treating panic disorder (Barlow, 2002; Spiegel, Wiegel, Baker, & Greene, 2000).

There are advantages and disadvantages to each class of drugs. Imipramine, one of the tricyclic antidepressants, produces strong side effects that include dizziness, dry mouth, and, on occasion, sexual dysfunction, so many patients refuse to stay on it for long. But a person who can become accustomed to the side effects or wait until they wear off may find the drug can reduce panic attacks and associated anxiety. SSRIs are just as effective but produce fewer immediate side effects, so individuals usually continue taking their pills (e.g., Lecrubier, Bakker, et al., 1997; Lecrubier, Judge, et al., 1997). SSRIs are currently the preferred drug for panic disorder, although sexual dysfunction seems to occur in 75% or more of people taking these medications. On the other hand, high-potency benzodiazepines such as *alprazolam* (Xanax), commonly used for panic disorder, work very fast but are hard to stop taking due to psychological and physical dependence and addiction. Also, all benzodiazepines adversely affect cognitive and motor functions to some degree. Therefore, people taking them in high doses often find their ability to drive a car or study somewhat reduced.

Approximately 60% of patients with panic disorder are free of panic as long as they stay on an effective drug (Ballenger et al., 1988; Klosko, Barlow, Tassinari, & Cerny, 1990; Lecrubier, Bakker, et al., 1997), but relapse rates are high once the medication is stopped. Approximately 20% to 50% of patients relapse after stopping tricyclic antidepressants (Spiegel et al., 2000; Telch, 1988; Telch, Tearnan, & Taylor, 1983). The relapse rate is closer to 90% for those who stop taking benzodiazepines (e.g., Fyer et al., 1987).

### Psychological Intervention

Psychological treatments have proven quite effective for panic disorder. Originally, such treatments concentrated on reducing agoraphobic avoidance, using strategies based on exposure to feared situa-

tions. The strategy of exposure-based treatments is to arrange conditions in which the patient can gradually face the feared situations and learn there is really nothing to fear. Of course, most patients with phobias are well aware of this rationally, but they must be convinced on an emotional level by “reality testing” the situation. Sometimes the therapist accompanies the patients on their exposure exercises. At other times, the therapist simply helps patients structure their own exercises and provides them with a variety of psychological coping mechanisms to help them complete the exercises, which are typically arranged from least to most difficult. The therapist identifies situations relevant to the patient and then arranges them in order of difficulty.

Gradual exposure exercises, sometimes combined with anxiety-reducing coping mechanisms such as relaxation or breathing retraining, have proved effective in helping patients overcome agoraphobic behavior. As many as 70% of patients undergoing these treatments substantially improve as their anxiety and panic are reduced and their agoraphobic avoidance greatly diminished. Few, however, are cured, because many still experience some anxiety and panic attacks, though at a less severe level.

Effective psychological treatments have recently been developed that treat panic attacks directly (Barlow & Craske, 1989, 2000; Clark et al., 1994; Klosko et al., 1990). **Panic control treatment (PCT)** developed at one of our clinics (DHB) concentrates on exposing patients with panic disorder to the cluster of interoceptive sensations that remind them of their panic attacks. The therapist attempts to create “mini” panic attacks in the office by having the patients exercise to elevate their heart rates or perhaps by spinning them in a chair to make them dizzy. A variety of exercises have been developed for this purpose (see Table 4.3). Patients also receive cognitive therapy. Basic attitudes and perceptions concerning the dangerousness of the feared but objectively harmless situations are identified and modified. As we learned earlier, many of these attitudes and perceptions are beyond the patient’s awareness. Uncovering these unconscious cognitive processes requires a great deal of therapeutic skill. Sometimes, in addition to exposure to interoceptive sensations and cognitive therapy, patients are taught relaxation or breathing retraining to help them cope with increases in anxiety and to reduce excess arousal, but we are using these strategies less frequently because we find they are not necessary.

These psychological procedures are highly effective for panic disorder. Follow-up studies of patients who receive PCT indicate that most of them remain better after at least 2 years (Barlow & Lehman, 1996; Craske, Brown, & Barlow, 1991). Remaining agoraphobic behavior can then be treated



#### **Virtual Reality: A New Technique on the Treatment of Anxiety Disorders**

*“I just feel really closed in, I feel like my heart is going to start beating really fast. . . .*

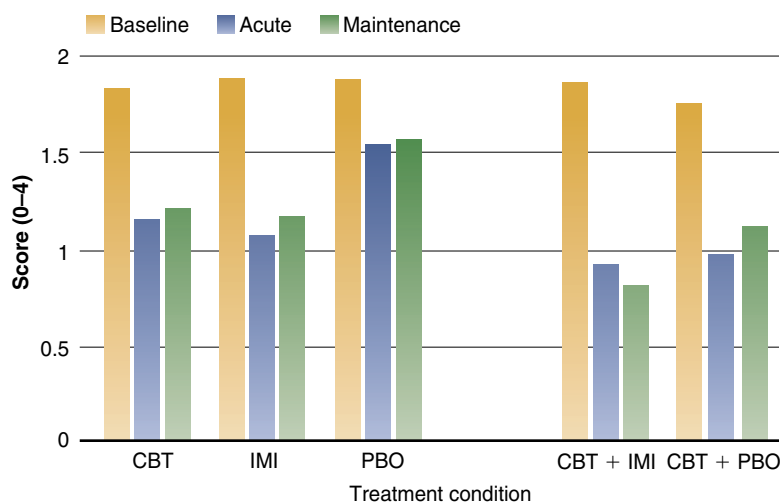
*I won’t be able to get enough air, I won’t be able to breathe, and I’ll pass out.”*



**TABLE 4.3** Exercises to Create the Sensation of Panic

1. Shake your head loosely from side to side for 30 seconds (to produce dizziness or disorientation).
2. Place your head between your legs for 30 seconds and then lift it quickly (to produce lightheadedness or blood rushing).
3. Take one step up—using stairs, a box, or a footstool—and immediately step down. Do this repeatedly at a fast enough rate to notice your heart pumping quickly for 1 minute (to produce racing heart and shortness of breath).
4. Hold your breath for as long as you can or about 30 to 45 seconds (to produce chest tightness and smothering feelings).
5. Tense every part of your body for 1 minute without causing pain. Tense your arms, legs, stomach, back, shoulders, face—everything. Alternatively, try holding a push-up position for 1 minute or for as long as you can (to produce muscle tension, weakness, and trembling).
6. Spin in a chair for 1 minute. If you have a chair that spins, such as a desk chair; this is ideal. It's even better if someone is there to spin you around. Otherwise, stand up and turn around quickly to make yourself dizzy. Be near a soft chair or couch that you can sit in after 1 minute is up. This will produce dizziness and perhaps nausea.
7. Hyperventilate for 1 minute. Breathe deep and fast, using a lot of force. Sit down as you do this. This exercise might produce unreality, shortness of breath, tingling, cold or hot feelings, dizziness, or headache.
8. Breathe through a thin straw for 1 minute. Don't allow any air through your nose; hold your nostrils together (to produce feelings of restricted air flow or smothering).
9. Stare at a small spot on the wall or stare at yourself in the mirror for 2 minutes. Stare as hard as you can to produce feelings of unreality.

Source: From *Mastery of Your Anxiety and Panic III*, by D. H. Barlow and M. G. Craske, 2000. Boulder, CO: Graywind Publications. Reprinted by permission.



**Figure 4.7** ■ Responders based on the panic disorder severity scale average item score after acute and after maintenance conditions. (From Barlow et al., 2000.)

with more standard exposure exercises. Although these treatments are quite effective, they are relatively new and not yet available to many individuals who suffer from panic disorder because administering them requires therapists to have advanced training (Barlow, Levitt, & Bufka, 1999).

### New Evidence on Combined Treatment

Results have now been published from a major study sponsored by the National Institute of Mental Health that looked at the separate and combined effects of psychological and drug treatments (Barlow, Gorman, Shear, & Woods, 2000). In this double-blind study, 312 carefully screened patients with panic disorder were treated at four different sites, two known for their expertise with medication treatments and two known for their expertise with psy-

chological treatments. The purpose of this arrangement was to control for any bias that might affect the results because of the allegiance of investigators committed to one type of treatment or the other. Patients were randomized into five different treatment conditions: psychological treatment alone (CBT); drug treatment alone (imipramine—IMI—a tricyclic antidepressant, was used); a combined treatment condition (CBT + IMI); and two “control” conditions, one using placebo alone (PBO), and one using CBT + PBO (to determine the extent to which any advantage for combined treatment was due to placebo contribution).

Figure 4.7 shows the results in terms of the patients who had responded to treatment by the end of 3 months of active treatment, during which patients were seen weekly (acute response). Data were based on the judgment of an independent evaluator using the panic disorder severity scale and include patients who dropped out along the way and were counted as failures. The data indicate that all treatment groups were significantly better than placebo, with some evidence that, among those who responded to treatment, people taking the drug alone did a little bit better than those receiving the CBT alone, but approximately the same number of patients responded

**panic control treatment (PCT)** Cognitive-behavioral treatment for panic attacks, involving gradual exposure to feared somatic sensations and modification of perceptions and attitudes about them.

to both treatments. Combined treatment was no better than individual treatments.

Figure 4.7 also presents the results after 6 additional months of maintenance treatment (9 months after treatment was initiated) during which patients were seen once per month. At this point the results looked very much as they did after initial treatment, except there was a slight advantage for combined treatment at this point, and the number of people responding to placebo had diminished. Six months after treatment was discontinued, patients on medication, whether combined with CBT or not, had deteriorated somewhat, and those receiving CBT without the drug had retained most of their gains.

Conclusions from this large and important study suggest no advantage to combining drug and CBT treatments because any incremental effect of combined treatment seems to be a placebo effect, not a true drug effect. Furthermore, the psychological treatments seemed to perform better in the long run (6 months after treatment had stopped). The public health recommendation emanating from this study, based on the principle of utilizing the least intrusive treatment first, suggests the psychological treatment should be offered initially, followed by

drug treatment for those patients who do not respond adequately or for whom psychological treatment is not available. Because this was such a large study involving so many different research centers, it has had a substantial impact on national health care policy.

## Concept Check 4.3

True or False?

- \_\_\_\_\_ Panic disorder without agoraphobia (PD) is a disorder in which an individual experiences anxiety and panic with phobic avoidance of what he or she considers an “unsafe” situation.
- \_\_\_\_\_ About 40% of the population meets the criteria for panic disorder at some point in their lives.
- \_\_\_\_\_ Psychological treatments like panic control treatment or CBT are highly effective for treating this disorder.

## Specific Phobia

- *Identify the principal causes of specific phobias and the most typical strategies used to treat them.*

Remember Judy in Chapter 1? When she saw a film of the frog being dissected, Judy began feeling queasy. Eventually she reached the point of fainting if someone simply said, “Cut it out.” Judy has what we call a **specific phobia**.

### Clinical Description

A **specific phobia** is an irrational fear of a specific object or situation that markedly interferes with an individual’s ability to function. Prior to DSM-IV this category was called “simple” phobia to distinguish it from the more complex agoraphobia condition, but we now recognize there is nothing simple about it. Many of you might be afraid of something that is not dangerous, such as going to the dentist, or have a greatly exaggerated fear of something that is only slightly dangerous, such as driving a car or flying. For this reason, most people can identify to some extent with a phobia. Recent surveys indicate that specific fears of a variety of objects or situations occur in a majority of the population (Myers et al., 1984). But the very commonness of fears, even severe fears, often causes people to trivialize the psy-

chological disorder known as a specific phobia. These phobias, in their severe form, can be extremely disabling, as we saw with Judy.

For many people, on the other hand, phobias are a nuisance, sometimes an extremely inconvenient nuisance; but people can adapt to life with a phobia by simply working around it somehow. In upstate New York and New England, some people are afraid to drive in the snow. We have had people come to our clinics who have been so severely phobic that during the winter they were ready to uproot, change their jobs and their lives, and move south. That is one way of dealing with a phobia. We discuss some other ways at the end of this chapter.

Judy’s phobia meets the DSM-IV criterion of marked and persistent fear that is set off by a specific object or situation. She recognizes that her fear and anxiety are excessive or unreasonable and went to considerable lengths to avoid situations where her phobic response might occur.

There are as many phobias as there are objects and situations. The variety of Greek and Latin names contrived to describe phobias stuns the imagination. Table 4.4 gives only the phobias begin-

## Disorder Criteria Summary

### Specific Phobia



Features of specific phobia include:

- Marked and persistent fear that is excessive or unreasonable of a specific object or situation (e.g., heights, animals, seeing blood), with a duration of at least 6 months
- Immediate anxious or fearful response to exposure of phobic object or situation
- Recognition that the fear is excessive and unreasonable or marked distress about having the phobia
- The phobic situation or object is avoided or is endured with intense anxiety or distress

Source: Based on DSM-IV-TR. Used with permission from the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision. Copyright 2000. American Psychiatric Association.

ning with the letter “a” from a long list compiled by Jack D. Maser from medical dictionaries and other diverse sources (Maser, 1985). Of course, this sort of list has little or no value for people studying psychopathology, but it does show the extent of the named phobias.

Before the publication of DSM-IV in 1994, no meaningful classification of specific phobias existed. However, we have now learned that there are distinct types of specific phobia that differ in major ways. Four major subtypes of specific phobia have been identified: (1) animal type, (2) natural environment type (e.g., heights, storms, and water), (3) blood-injury-injection type, and (4) situational type (such as planes, elevators, or enclosed places). A fifth category, “other,” includes phobias that do not fit any of the four major subtypes (e.g., situations that may lead to choking, vomiting, or contracting an illness, or, in children, avoidance of loud sounds or costumed characters). Although this subtyping strategy is useful, we also know that most people who suffer from phobia tend to have multiple phobias of several types (Hofmann, Lehman, & Barlow, 1997). This fact weakens the utility of subtyping a bit.

### Blood-Injury-Injection Phobia

How do phobia subtypes differ from each other? We have already seen one major difference in the case of Judy. Rather than the usual surge of activity in the sympathetic nervous system and increased heart rate and blood pressure, Judy experienced a marked drop in heart rate and blood pressure and fainted as a consequence. Many people who suffer from phobias and experience panic attacks in their feared situations report that they feel like they are going to faint but they never do, because their heart rate and blood pressure are actually increasing. Therefore, those with **blood-**

**TABLE 4.4** Phobias Beginning with “A”

Term	Fear of:
Acarophobia	Insects, mites
Achluophobia	Darkness, night
Acousticophobia	Sounds
Acrophobia	Heights
Aerophobia	Air currents, drafts, wind
Agoraphobia	Open spaces
Agiophobia	Crossing the street
Aichmophobia	Sharp, pointed objects; knives; being touched by a finger
Ailurophobia	Cats
Algophobia	Pain
Amathophobia	Dust
Amychophobia	Laceration; being clawed, scratched
Androphobia	Men (and sex with men)
Anemophobia	Air currents, wind, drafts
Anginophobia	Angina pectoris
Anthropophobia	Human society
Antlophobia	Floods
Apeirophobia	Infinity
Aphephobia	Physical contact, being touched
Apiphobia	Bees, bee stings
Astraphobia	Thunderstorms, lightning
Ataxiophobia	Disorder
Atephobia	Ruin
Auroraphobia	Northern lights
Autophobia	Being alone; solitude; oneself; being egotistical

Source: From “List of Phobias” by J. D. Maser, in *Anxiety and the Anxiety Disorders* (p. 805), edited by A. H. Tuma and J. D. Maser, 1985, Mahwah, NJ: Lawrence Erlbaum Associates. Copyright © 1985 by Lawrence Erlbaum Associates. Reprinted with permission.

**injury-injection phobias** almost always differ in their physiological reaction from people with other types of phobia (Barlow & Liebowitz, 1995; Öst, 1992). We also noted in Chapter 2 that blood-injury-injection phobia runs in families more strongly than any phobic disorder we know. This is probably because people with this phobia inherit a strong vasovagal response to blood, injury, or the possibility of an injection, all of which cause a drop in blood pressure and a tendency to faint. The phobia develops over the possibility of having this response. The average age of onset for this phobia is approximately 9 years (Antony, Brown, & Barlow, 1997a; Öst, 1989).

**specific phobia** Unreasonable fear of a specific object or situation that markedly interferes with daily life functioning.

**blood-injury-injection phobia** Unreasonable fear and avoidance of exposure to blood, injury, or the possibility of an injection. Victims often experience fainting and a drop in blood pressure.



© Chuck Fishman/The Image Bank/Getty Images

People who develop a natural environment phobia intensely fear such places as heights and events such as lightning.

### Situational Phobia

Phobias characterized by fear of public transportation or enclosed places are called **situational phobias**. Claustrophobia, a fear of small enclosed places, is situational, as is a phobia of planes. Situational phobia tends to emerge in an individual's early to mid-20s and has been shown to run in families (Curtis, Hill, & Lewis, 1990). The main difference between situational phobia and panic disorder with agoraphobia (PDA) is that people with situational phobia never experience panic attacks outside the context of their phobic object or situation. Therefore, they can relax when they don't have to confront their phobic situation. People with panic disorder, in contrast, might experience unexpected, uncued panic attacks at any time.

### Natural Environment Phobia

Sometimes very young people develop fears of situations or events occurring in nature. These fears are called **natural environment phobias**. The major examples are heights, storms, and water. These fears also seem to cluster together (Antony & Barlow, 2002; Hofmann et al., 1997): If you fear one situation or

event, such as deep water, you are likely to fear another, such as storms. Many of these situations have some danger associated with them and, therefore, mild to moderate fear can be adaptive. For example, we should be careful in a high place or in deep water. It is entirely possible that we are somewhat prepared to be afraid of these situations; as we discussed in Chapter 2, something in our genes makes us sensitive to these situations if any sign of danger is present. In any case, these phobias have a peak age of onset of about 7 years. They are not phobias if they are only passing fears. They have to be persistent and to interfere substantially with the person's functioning, leading to avoidance of boat trips or summer vacations in the mountains where there might be a storm.

### Animal Phobia

Fears of animals and insects are called **animal phobias**. Once again, these fears are common but become phobic only if severe interference with functioning occurs. For example, we have seen cases in our clinic where people with snake or mice phobias are unable to read magazines for fear of unexpectedly coming across a picture of one of these animals. There are many places that these people are unable to go, even if they want to very much, such as to the country to visit someone. The fear experienced by people with animal phobias is very different from an ordinary mild revulsion. The age of onset for these phobias, like that of natural environment phobias, peaks around 7 years (Antony et al., 1997a; Öst, 1987).

### Separation Anxiety Disorder

All the anxiety disorders described in this chapter may occur during childhood, and there is one additional anxiety disorder unique to children. **Separation anxiety disorder** is characterized by children's unrealistic and persistent worry that something will happen to their parents or other important people in their life or that something will happen to the children themselves that will separate them from their parents (e.g., they will be lost, kidnapped, killed, or hurt in an accident). Children often refuse to go to school or even to leave home, not because they are afraid of school but because they are afraid of separating from loved ones. These fears can result in refusing to sleep alone and may be characterized by nightmares involving possible separation and by physical symptoms, distress, and anxiety (Barlow, Pincus, Heinrichs, & Choate, 2003).

Of course, all young children experience separation anxiety to some extent; this fear usually decreases as the child grows older. Therefore, a clinician must judge whether the separation anxiety is greater than would be expected at that particular age (Barlow et al., 2003; Ollendick & Huntzinger, 1990). It is also important to differentiate separation anxiety from school phobia. In school phobia,

**TABLE 4.5** Prevalence of Intense Fears and Phobias

Intense Fear	Prevalence per 1,000 Population	Sex Distribution	SE by Sex
Snakes	253	M: 118 F: 376	M: 34 F: 48
Heights	120	M: 109 F: 128	M: 33 F: 36
Flying	109	M: 70 F: 144	M: 26 F: 38
Enclosures	50	M: 32 F: 63	M: 18 F: 25
Illness	33	M: 31 F: 35	M: 18 F: 19
Death	33	M: 46 F: 21	M: 21 F: 15
Injury	23	M: 24 F: 22	M: 15 F: 15
Storms	31	M: 9 F: 48	M: 9 F: 22
Dentists	24	M: 22 F: 26	M: 15 F: 16
Journeys alone	16	M: 0 F: 31	M: 0 F: 18
Being alone	10	M: 5 F: 13	M: 7 F: 11
Phobia	Prevalence per 1,000 Population	Sex Distribution	SE by Sex
Illness/injury	31 (42%)	M: 22 F: 39	M: 15 F: 20
Storms	13 (18%)	M: 0 F: 24	M: 0 F: 15
Animals	11 (14%)	M: 6 F: 18	M: 8 F: 13
Agoraphobia	6 (8%)	M: 7 F: 6	M: 8 F: 8
Death	5 (7%)	M: 4 F: 6	M: 6 F: 8
Crowds	4 (5%)	M: 2 F: 6	M: 5 F: 7
Heights	4 (5%)	M: 7 F: 0	M: 9 F: 0

\*Percentages of the total of those with phobias are in parentheses.

Source: From "The Epidemiology of Common Fears and Phobias" by S. Agras, D. Sylvester, and D. Oliveau, 1969, *Comprehensive Psychiatry*, 10, 151–156. Copyright © 1969 by Elsevier. Adapted with permission. SE = Standard error.

the fear is clearly focused on something specific to the school situation; the child can leave the parents or other attachment figures to go somewhere other than school. In separation anxiety, the act of separating from the parent or attachment figure provokes anxiety and fear.

Francis, Last, and Strauss (1987) found that the prevalence of certain symptoms varies as a function of age. For example, the prominent symptom among the youngest children was worry that something would happen to their loved ones. Excessive distress on being separated was prominent in the middle age group of children, and physical complaints on school days characterized separation anxiety in adolescents.

## Statistics

Specific fears occur in a majority of people. The ones most commonly found in the population at large, categorized by Agras, Sylvester, and Oliveau (1969), are presented in Table 4.5. Not surprisingly, fears of snakes and heights rank near the top. Notice also that the sex ratio among common fears is overwhelmingly female with a couple of exceptions. Among these exceptions is fear of heights, for which the sex ratio is approximately equal. Few people who report specific fears qualify as having a phobia, but for approximately 11% of the population, their fears are at some point severe enough to be classified as disorders and earn the label "phobia," and these numbers seem to be increasing in younger generations (Magee, Eaton, Wittchen, McGonagle, & Kessler, 1996). This is a very high percentage, making specific phobia one of the most common psychological disorders in the United States and around the world (Arrindell et al., 2003b). As with common fears, the sex ratio for specific phobias is, at 4:1, overwhelmingly female; this is also consistent around the world (Arrindell et al., 2003b).

Even though phobias may interfere with an individual's functioning, only the most severe cases actually come for treatment, because affected people tend to work around their phobias; for example, someone with a fear of heights arranges her life so she never has to be in a tall building or other high place. People with situational phobias of such things as driving, flying, or small enclosed places most frequently come for treatment. However, there is reason to believe that people with blood-injury-injection phobias are quite prevalent in the population (Agras et al., 1969; Myers et al., 1984); they might seek help if they knew good treatments are available.

Once a phobia develops, it tends to last a lifetime (run a chronic course) (e.g., Antony, Brown, &

**situational phobia** Fear of enclosed places (e.g., claustrophobia) or public transportation (e.g., fear of flying).

**natural environment phobia** Fear of situations or events in nature, especially heights, storms, and water.

**animal phobia** Unreasonable, enduring fear of animals or insects that usually develops early in life.

**separation anxiety disorder** Excessive, enduring fear in some children that harm will come to them or their parents while they are apart.



Tamarra Reynolds/Getty Images

A child with separation anxiety disorder persistently worries that parting with an important person drastically endangers either the loved one or the child.

Barlow, 1997a; Barlow, 2002); thus, the issue of treatment, described shortly, becomes important.

Although most anxiety disorders look much the same in adults and children, clinicians must be aware of the types of normal fears and anxieties experienced throughout childhood so that they can distinguish them from specific phobias (Albano et al., 1996; King, 1993; Silverman & Rabian, 1993). Infants, for example, show marked fear of loud noises and strangers. At 1 to 2 years of age, children quite normally are anxious about separating from parents, and fears of animals and the dark develop and may persist into the fourth or fifth year of life. Fear of various monsters and other imaginary creatures may begin about age 3 and last for several years. At age 10, children may fear evaluation by others and feel anxiety over their physical appearance. Generally, reports of fear decline with age, although performance-related fears of such activities as taking a test or talking in front of a large group may increase with age. Specific phobias seem to decline with old age (Blazer, George, & Hughes, 1991; Sheikh, 1992).

The prevalence of specific phobias varies from one culture to another. Hispanics are two times more

likely to report specific phobias than white Americans (Magee et al., 1996) for reasons not entirely clear. A variant of phobia in Chinese cultures is called *Pa-leng*, sometimes *frigo phobia* or “fear of the cold.” *Pa-leng* can be understood only in the context of traditional ideas—in this case the Chinese concept of *yin* and *yang* (Tan, 1980). Chinese medicine holds that there must be a balance of *yin* and *yang* forces in the body for health to be maintained. *Yin* represents the cold, dark, windy, energy-sapping aspects of life; *yang* refers to the warm, bright, energy-producing aspects of life. Individuals with *Pa-leng* have a morbid fear of the cold. They ruminate over loss of body heat and may wear several layers of clothing even on a hot day. They may complain of belching and flatulence (passing gas), which indicate the presence of wind and therefore of too much *yin* in the body. As discussed previously, these ideas also play a role in phobia and anxiety disorders in other Asian cultures (Hinton, Pich, Pollack, & Barlow, 2003).

### Causes

For a long time we thought that most specific phobias began with an unusual traumatic event. For example, if you were bitten by a dog you would develop a phobia of dogs. We now know this is not always the case (Barlow, 2002; Öst, 1985; Rachman, 2002). This is not to say that traumatic conditioning experiences do not result in subsequent phobic behavior. Almost every person with a choking phobia has had some kind of a choking experience. An individual with claustrophobia who recently came to our clinic reported being trapped in an elevator for an extraordinarily long period of time. These are examples of phobias acquired by *direct experience*, where real danger or pain results in an alarm response (a true alarm). This is one way of developing a phobia, and there are at least three others: *experiencing* a false alarm (panic attack) in a specific situation, *observing* someone else experience severe fear (vicarious experience), or, under the right conditions, *being told* about danger.

Remember our earlier discussion of unexpected panic attacks? Studies show that many phobics do not necessarily experience a true alarm resulting from real danger at the onset of their phobia. Many initially have an unexpected panic attack in a specific situation, related, perhaps, to current life stress. A phobia of that situation may then develop. Munjack (1984) studied people with specific phobias of driving. He noted that about 50% of the people who could remember when their phobia started had experienced a true alarm due to a traumatic experience such as a car accident. The others had had nothing terrible happen to them while they were driving, but they had experienced an unexpected panic attack during which they felt they were going to lose control of the car and wipe out half the peo-



Chinese medicine is based on the concept that *yin* (dark, cold, energizing forces) and *yang* (bright, warm, energizing forces) must harmonize in the body. In this traditional representation of the yin/yang balance, note that each aspect contains something of the other.

ple on the highway. In fact, their driving was not impaired and their catastrophic thoughts were simply part of the panic attack.

We also learn fears vicariously. Seeing someone else have a traumatic experience or endure intense fear may be enough to instill a phobia in the watcher. Öst (1985) describes how a severe dental fear developed in this way. An adolescent boy sat in the waiting room at the school dentist's office partly observing, but fully hearing, his friend who was being treated. Evidently, the boy's reaction to pain caused him to move suddenly, and the drill punctured his cheek. The boy in the waiting room who overheard the accident bolted from the room and developed a severe and long-lasting fear of dental situations. Nothing actually happened to the second person, but you can certainly understand why he developed his phobia.

Sometimes just being warned repeatedly about a potential danger is sufficient for someone to develop a phobia. Öst (1985) describes the case of a woman with an extremely severe snake phobia who had never encountered a snake. Rather, she had been told repeatedly while growing up about the dangers of snakes in the high grass. She was encouraged to wear high rubber boots to guard against this imminent threat—and she did so even when walking down the street. We call this mode of developing a phobia *information transmission*.

Terrifying experiences alone do not create phobias. As we have said, a true phobia also requires

anxiety over the possibility of another extremely traumatic event or false alarm. Remember, when we are anxious, we persistently anticipate something terrible, and we are likely to avoid situations where that terrible thing might occur. If we don't develop anxiety, our reaction would presumably be in the category of normal fears experienced by more than half the population. Normal fear can cause mild distress, but it is usually ignored and forgotten. A diagram of the etiology of specific phobia is presented in Figure 4.8.

In summary, several things have to occur for a person to develop a phobia. First, a traumatic conditioning experience often plays a role (even hearing about a frightening event is sufficient for some individuals). Second, fear is more likely to develop if we are "prepared"; that is, we seem to carry an inherited tendency to fear situations that have always been dangerous to the human race, such as being threatened by wild animals or trapped in small places (see Chapter 2).

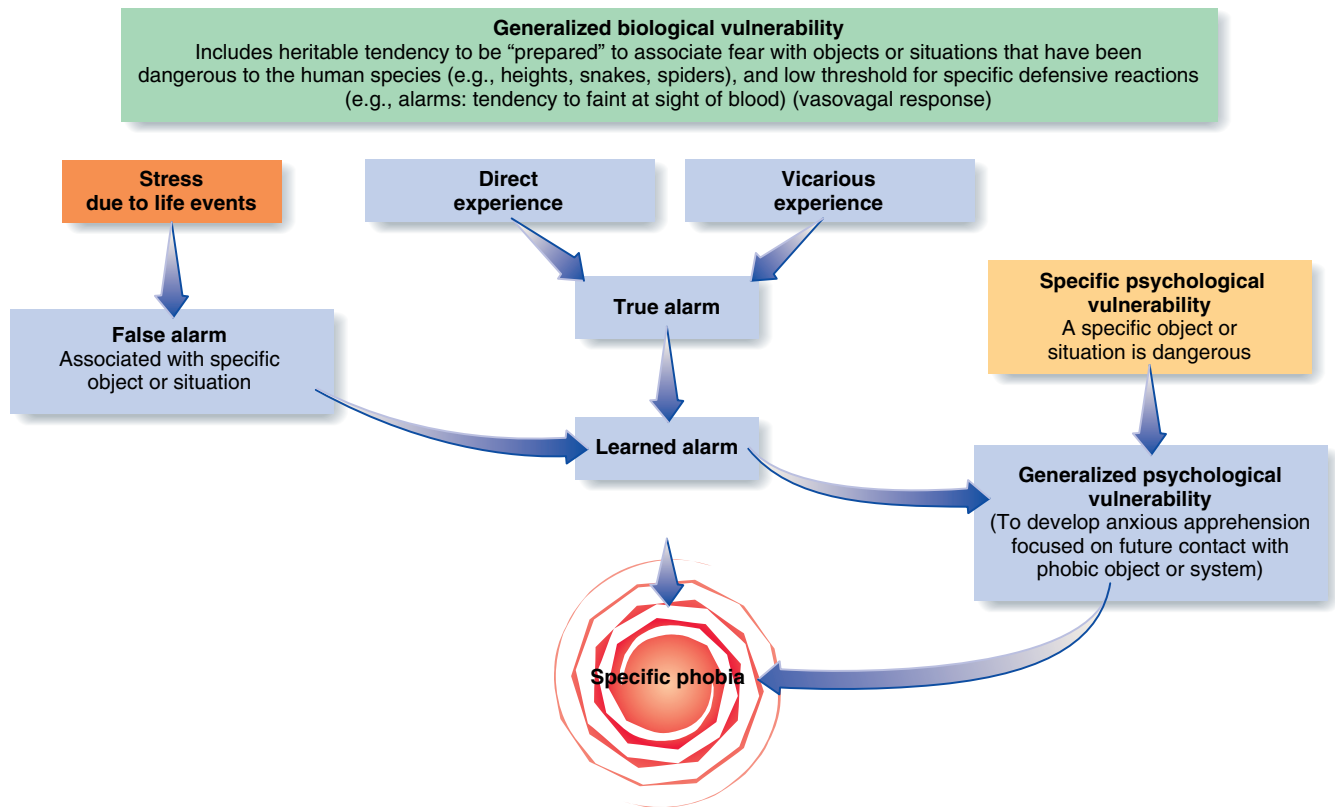
We also have to be susceptible to developing anxiety focused on the possibility that the event will happen again. We have discussed the biological and psychological reasons for anxiety and have seen that at least one phobia, blood-injury-injection phobia, is highly heritable (Öst, 1989; Page & Martin, 1998). Patients with blood phobia probably also inherit a strong vasovagal response that makes them susceptible to fainting. This alone would not be sufficient to ensure their becoming phobic but combines with anxiety to produce strong vulnerability.

Several years ago, Fyer et al. (1990) demonstrated that approximately 31% of the first-degree relatives of people with specific phobias also had a phobia, compared with 11% of the first-degree relatives of normal controls. Interestingly, it seems that each subtype of phobia "bred true," in that relatives were likely to have identical types of phobia. Kendler, Karkowski, and Prescott (1999) and Page and Martin (1998) found relatively high estimates for heritability of individual specific phobias. We do not know for sure whether the tendency for phobias to run in families is due to genes or to modeling, but the findings are at least suggestive of a unique genetic contribution to specific phobia (Antony & Barlow, 2002).



**Rapid Behavioral Treatment of a Specific Phobia (Snakes)** "Since I remember, I remember being afraid of snakes. . . . I have dreams of snakes, it's horrible."





**Figure 4.8** ■ A model of the various ways a specific phobia may develop. (From Barlow, 2002.)

Finally, social and cultural factors are strong determinants of who develops and reports a specific phobia. In most societies, it is almost unacceptable for males to express fears and phobias. Thus, the overwhelming majority of reported specific phobias occur in women (Arrindell, et al. 2003b). What happens to the males? Possibly, they work hard to overcome their fears by repeatedly exposing themselves to their feared situations. A more likely possibility is that they simply endure their fears without telling anyone about them and without seeking any treatment (Antony & Barlow, 2002).

## Treatment

Although the development of phobias is relatively complex, the treatment is fairly straightforward. Almost everyone agrees that specific phobias require structured and consistent exposure-based exercises. Nevertheless, most patients who expose themselves gradually to what they fear must be under therapeutic supervision. Individuals who attempt to carry out the exercises alone often attempt to do too much too soon and end up escaping the situation, which may strengthen the phobia. In addition, if they fear having another unexpected panic attack in this situation, it is helpful to direct therapy at panic attacks in the manner described for panic disorder (Antony, Craske, & Barlow, 1995;

Craske, Antony, & Barlow, 1997). For separation anxiety, parents are often included to help structure the exercises and work with parental reaction to childhood anxiety (Pincus, Choate, Eyberg, & Barlow, 2003). Finally, in cases of blood-injury-injection phobia, where fainting is a real possibility, graduated exposure-based exercises must be done in specific ways. Individuals must tense various muscle groups during exposure exercises to keep their blood pressure sufficiently high to complete the practice (Öst & Sterner, 1987). New developments make it possible to treat many specific phobias, including blood phobia, in a single, day long session (e.g., Antony & Barlow, 2002; Antony et al., 1995; Craske et al., 1997; Öst, Ferebee, & Furmark, 1997; Öst, Svensson, Hellström, & Lindwall, 2001). Basically, the therapist spends most of the day with the individual, working through exposure exercises with the phobia object or situation. The patient then practices approaching the phobic situation at home, checking in occasionally with the therapist. It is interesting that in these cases not only does the phobia disappear but the tendency to experience the vasovagal response at the sight of blood also lessens considerably. It is also now clear based on brain imaging work that these treatments change brain functioning by modifying neural circuitry. That is, these treatments “rewire” the brain (Paquette et al., 2003).

# Social Phobia

- *Identify the principal causes of social phobias and the most typical strategies used to treat them.*

Are you shy? If so, you have something in common with 20% to 50% of college students, depending on which survey you read. A much smaller number of people, who suffer severely around others, have **social phobia**. Consider the case of Billy, a 13-year-old boy.



## Billy Too Shy

Billy was the model boy at home. He did his homework, stayed out of trouble, obeyed his parents, and was generally so quiet and reserved he didn't attract much attention. However, when he got to junior high school, something his parents had noticed earlier became painfully evident. Billy had no friends. He was unwilling to attend social or sporting activities connected with school, even though most of the other kids in his class went to these events. When his parents decided to check with the guidance counselor, they found that she had been about to call them. She reported that Billy did not socialize or speak up in class and was sick to his stomach all day if he knew he was going to be called on. His teachers had difficulty getting anything more than a yes-or-no answer from him. More troublesome was that he had been found hiding in a stall in the boy's restroom during lunch, which he said he had been doing for several months instead of eating. After Billy was referred to our clinic, we diagnosed a severe case of social phobia, an irrational and extreme fear of social situations. Billy's phobia took the form of extreme shyness. He was afraid of being embarrassed or humiliated in the presence of almost everyone except his parents.

## Clinical Description

Social phobia is more than exaggerated shyness (Schneier et al., 1996). The cases described here are typical of many that appear from time to time in the press.



## Star Player?

In the second inning of an All-Star game, Los Angeles Dodger second baseman Steve Sax fielded an easy grounder, straightened up for the lob to first, and bounced the ball past first baseman Al Oliver, who was less than 40 feet away. It was a startling error even in an All-Star game studded with bush-league mishaps. But hardcore baseball fans knew it was one more manifestation of a leading mystery of the 1983 season: Sax, 23, the National League Rookie of the Year, could not seem to make routine throws to first base. (Of his first 27 errors that season, 22 were bad throws.)

Chuck Knoblauch won the Golden Glove Award in 1997 but led the league in errors in 1999 with 26, most of them throwing errors. Announcers and reporters observed that his throws would be hard and on target to first base if he made a difficult play and had to quickly turn and throw the ball "without thinking about it." But if he fielded a routine ground ball and had time to think about the accuracy of his throw, he would throw awkwardly, slowly, and often off target. The announcers and reporters concluded that, because his arm seemed fine on the difficult plays, his problem must be "mental." For the 2001 season, he was moved to left field to avoid having to make that throw and by 2003 was out of baseball.

Whereas Chuck Knoblauch continued to struggle, Steve Sax overcame his problem and went on to play for a number of major league teams. Many other athletes are not so fortunate. This problem is not limited to athletes but is also developed by well-known lecturers and performers. Singer Carly Simon actually gave up live shows for several years because of intolerable performance anxiety, as did the singer and performer Donny Osmond, who described his problem vividly in an interview

**social phobia** Extreme, enduring, irrational fear and avoidance of social or performance situations.

with *People* magazine several years ago. The inability of a skilled athlete to throw a baseball to first base or a seasoned performer to appear on stage certainly does not match the concept of “shyness” with which we are all familiar. In fact, many of these performers may well be among our more gregarious citizens. What holds these two seemingly different conditions together? Billy, Chuck Knoblauch, Steve Sax, Carly Simon, and Donny Osmond all experienced marked and persistent fear of one or more social or performance situations. In Billy’s case, these situations were any in which he might have to interact with people. For Chuck Knoblauch and Carly Simon, they were specific to performing some special behavior in public. Individuals with performance anxiety usually have no difficulty with social interaction, but when they must do something in front of people, anxiety takes over and they focus on the possibility that they will embarrass themselves.

The most common type of performance anxiety, to which most people can relate, is public speaking. Other common situations are eating in a restaurant; signing a paper in front of a clerk; or, for males, urinating in a public rest room (“bashful bladder”). Males with this problem must wait until a stall is available, a difficult task at times. What these examples have in common is that the individual is required to *do* something while others are watching and, to some extent, evaluating their behavior. This is truly a social phobia because the people have no difficulty eating, writing, or urinating in private. Only when others are watching does the behavior deteriorate.

Individuals who are extremely and painfully shy in almost all social situations meet DSM-IV criteria for the subtype *social phobia generalized type*, occasionally called *social anxiety disorder*. It is particularly prominent in children. In the child program in one of our clinics, 100% of children and adolescents with social phobia met criteria for generalized type (Albano, DiBartolo, Heimberg, & Barlow, 1995). Billy also fits this subtype (Schneier et al., 1996).

## Statistics

As many as 13.3% of the general population suffer from social phobia at some point in their lives (Kessler et al., 1994). This makes social phobia the most prevalent psychological disorder, afflicting more than 35 million people in the United States alone, based on current population estimates. Of course, many more people are shy but not severely enough to meet criteria for social phobia. The sex ratio favors females only somewhat (1.4:1.0), unlike other anxiety disorders where females predominate (Magee et al., 1996). This distribution differs a bit from the sex ratio of social phobics appearing at clinics, which is nearly 50:50 (Hofmann & Barlow, 2002; Marks, 1985), suggesting that males may seek help more fre-

## Disorder Criteria Summary

### Social Phobia



Features of social phobia include:

- Marked and persistent fear of one or more social or performance situations that involve exposure to unfamiliar people or possible scrutiny by others, with the fear that one will be embarrassed or humiliated
- Exposure to the feared social situation almost always provokes anxiety, sometimes as a panic attack
- Recognition (in adults) that the fear is excessive and unreasonable
- The feared social or performance situation is avoided or endured with intense anxiety or distress
- The avoidance, anxious anticipation, or distress interferes significantly with the person's life and healthy functioning

Source: Based on DSM-IV-TR. Used with permission from the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision. Copyright 2000. American Psychiatric Association.

quently, perhaps because of career-related issues. Social phobia usually begins during adolescence, with a peak age of onset about 15 years, later than specific phobias but earlier than panic disorder. Social phobia also tends to be more prevalent in people who are young (18–29 years), undereducated, single, and of low socioeconomic class. Prevalence declines slightly among the elderly (Magee et al., 1996; Sheikh, 1992).

Social phobias distribute relatively equally among different ethnic groups (Magee et al., 1996). In Japan, the clinical presentation of anxiety disorders is best summarized under the label *shinkeishitsu*. One of the most common subcategories is referred to as *taijin kyofusho* (Kirmayer, 1991; Kleinknecht, Dinnel, Kleinknecht, Hiruma, & Harada, 1997). Japanese people with this form of social phobia strongly fear looking people in the eye and are afraid that some aspect of their personal presentation (blushing, stuttering, body odor, and so on) will appear reprehensible. Thus, the focus of anxiety in this disorder is on offending or embarrassing others rather than embarrassing oneself as in social phobia, although these two disorders overlap considerably (Dinnel, Kleinknecht & Tanaka-Matsumi, 2002). Japanese males with this disorder outnumber females by a 3:2 ratio (Takahasi, 1989).

## Causes

We have noted that we seem to be prepared by evolution to fear certain wild animals and dangerous situations in the natural environment. Similarly, it seems we are prepared to fear angry, critical, or rejecting people (Mineka & Zinbarg, 1995, 1996; Öhman, 1986). In a series of studies, Öhman and colleagues

(e.g., Dimberg & Öhman, 1983; Öhman & Dimberg, 1978) noted that we learn more quickly to fear angry expressions than other facial expressions, and this fear diminishes much more slowly than other types of learning. Lundh and Öst (1996) demonstrated that social phobics who saw a number of pictures of faces were likely to remember critical expressions, whereas normals remembered the accepting expressions. More recently, one study demonstrated that even normals show more activation of their emotional brain to new and possibly threatening faces compared with familiar faces (Schwartz et al., 2003), and another study showed that individuals with generalized social phobia react to angry faces with greater activation of the amygdala than normals (Stein, Golden, Sareen, Zorrilla, Brown, 2002). Why should we inherit a tendency to fear angry faces? Our ancestors probably avoided hostile, angry, domineering people who might attack or kill them. In fact, in all species, dominant aggressive individuals, high in the social hierarchy, tend to be avoided. Possibly, individuals who avoided people with angry faces were more likely to survive and pass their genes down to us. Of course, this is just a theory.

Jerome Kagan and his colleagues (e.g., Kagan, 1994, 1997; Kagan, Reznick, & Snidman, 1988; Kagan

& Snidman, 1991, 1999) have demonstrated that some infants are born with a temperamental profile or trait of inhibition or shyness that is evident as early as 4 months of age. Four-month-old infants with this trait become more agitated and cry more frequently when presented with toys or other normal stimuli than infants without the trait. There is now evidence that individuals with excessive behavioral inhibition are at increased risk for developing phobic behavior (Biederman et al., 1990; Hirschfeld et al., 1992). In any case, inhibition relates more to generalized social phobia than to discrete performance anxiety such as public speaking. A model of the etiology of social phobia would look somewhat like models of panic disorder and specific phobia.

Three pathways to social phobia are possible, as depicted in Figure 4.9. First, one could inherit a generalized biological vulnerability to develop anxiety and/or a biological tendency to be socially inhibited. The existence of a generalized psychological vulnerability as reflected in a sense that events, particularly stressful events, are potentially uncontrollable would increase an individual's vulnerability. When under stress, anxiety and self-focused attention could increase to the point of disrupting performance, even in the absence of an alarm (panic attack). Second, when

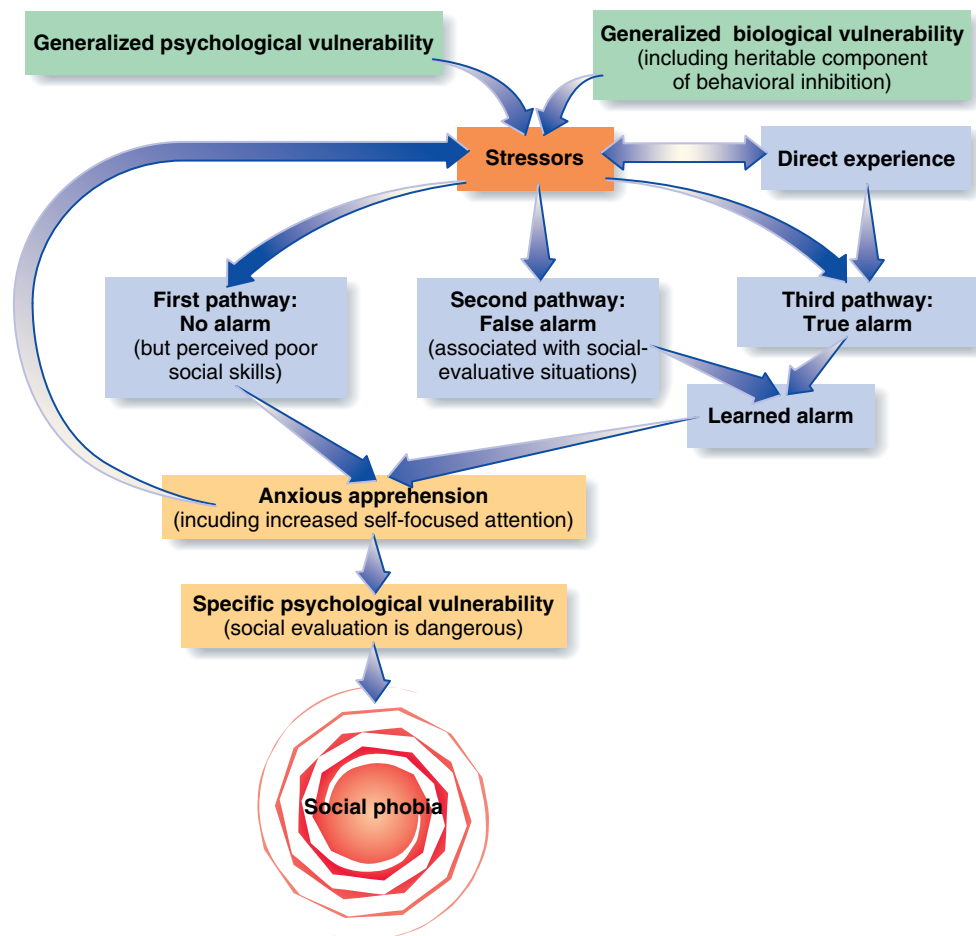


Figure 4.9 ■ A model of the various ways a social phobia may develop. (From Barlow, 1988.)

under stress, one might have an unexpected panic attack (false alarm) in a social situation that would become associated (conditioned) to social cues. The individual would then become anxious about having additional (learned) alarms (panic attacks) in the same or similar social situations. Third, someone might experience a real social trauma resulting in a true alarm. Anxiety would then develop (be conditioned) in the same or similar social situations. Traumatic social experiences may also extend back to difficult periods in childhood. Early adolescence—usually ages 12 through 15—is when children may be brutally taunted by peers who are attempting to assert their own dominance. This experience may produce anxiety and panic that are reproduced in future social situations.

But one more factor must fall into place to make it a social anxiety disorder. The individual with the vulnerabilities and experiences just described must also have learned growing up that social evaluation in particular can be dangerous, creating a specific psychological vulnerability to develop social anxiety. In fact, evidence indicates that some social phobics are predisposed to focus their anxiety on events involving social evaluation. Some investigators (Bruch & Heimberg, 1994; Rapee & Melville, 1997) suggest that the parents of patients with social phobia are significantly more socially fearful and concerned with the opinions of others than are the parents of patients with panic disorder and that they pass this concern on to their children (Lieb et al., 2000). Fyer, Mannuzza, Chapman, Liebowitz, and Klein (1993) reported that the relatives of people with social phobia had a significantly greater risk of developing it than the relatives of individuals without social phobia (16% versus 5%)—thus, the specific psychological vulnerability depicted in Figure 4.9. As you can see, a combination of biological and psychological events seem to lead to the development of social phobia.

## Treatment

Effective treatments have been developed for social phobia only in the past several years (Barlow & Lehman, 1996; Hofmann, 2004; Taylor, 1996; Turk, Heimberg, & Hope, 2001). Rick Heimberg and colleagues developed a cognitive-behavioral group therapy (CBGT) program in which groups of patients rehearse or role-play their socially phobic situations in front of one another (Heimberg et al., 1990; Turk et al., 2001). The group members participate in the role playing, for example, acting as audience for someone who has extreme difficulty giving a speech. At the same time the therapist conducts rather intensive cognitive therapy aimed at uncovering and changing the automatic or unconscious perceptions of danger that the socially phobic client assumes to exist. These treatments have been much more effective than education about anxiety and social phobia and social

support for stressful life events. More important, a follow-up after 5 years indicates that the therapeutic gains are maintained (Heimberg, Salzman, Holt, & Blendell, 1993).

Some studies have suggested that the exposure-based behavioral rehearsal of anxiety-provoking situations is a more important part of treatment than the cognitive therapy component (Feske & Chambless, 1995; Gould, Buckminster, Pollack, Otto, & Yap, 1997; Hofmann & Barlow, 2002) but that to be effective all treatments must change socially phobic cognitive processes (Hofmann, 2004). We have adapted these protocols for use with adolescents, directly involving parents in the group treatment process. Preliminary results suggest that severely socially phobic adolescents can attain relatively normal functioning in school and other social settings (Albano & Barlow, 1996) and that including the parents in the treatment process produces better outcomes than treating the adolescents alone (Albano, Pincus, Tracey, & Barlow, 2003).

Effective drug treatments have been discovered as well. For a time clinicians assumed that beta-blockers (drugs that lower heart rate and blood pressure, such as Inderol) worked well, particularly for performance anxiety, but the evidence does not seem to support that contention (Liebowitz et al., 1992; Turner, Beidel, & Jacob, 1994). Most recently, tricyclic antidepressants and, particularly, monoamine oxidase (MAO) inhibitors have been found to be more effective than placebo in the treatment of severe social anxiety (Liebowitz et al., 1992). Since 1999, the SSRIs, Paxil, Zoloft, and Effexer have received approval from the Food and Drug Administration for treatment of social anxiety disorder based on studies showing effectiveness compared with placebo (e.g., Stein et al., 1998).

Two major studies have compared psychological and drug treatments. One large and important study compared MAO inhibitors, among the most powerful drugs for social anxiety disorder, with the psychological treatments described earlier. In this study (Heimberg et al., 1998; Liebowitz et al., 1999) 133 patients were randomly assigned to phenelzine, CBGT, drug placebo, or an educational-supportive group therapy that served as a placebo or the psychological treatment because it did not contain the cognitive-behavioral component. Results show that both active treatments are highly and equally effective compared with the two placebo conditions but that relapse tends to be more common after treatment stops among those taking medication. The combined effect of these treatments is currently being evaluated. An impressive study has appeared comparing cognitive therapy with the SSRI drug Prozac, along with instructions to the patients to attempt to engage in more social situations (self-exposure) for patients with generalized social phobia. A third group received placebo plus instruc-

tions to attempt to engage in more social activities. Assessments were conducted before the 16-week treatment, at the midpoint of treatment, posttreatment, and after 3 months of booster sessions. Finally, patients in the two treatment groups were followed up 12 months later. Both treatments did well, but the psychological treatment was substantially better at all points in time. This study is notable because of the *extent* of change in treatment (most patients were cured or nearly cured with few remaining symptoms) but will need to be replicated. Both drug and psychological treatments change brain function in similar areas of the emotional brain (Furmark et al., 2002).

### Concept Check 4.4

Identify the following specific phobias: (a) blood-injury-injection, (b) acrophobia, (c) animal, (d) social, (e) natural environment, (f) other.

1. Mark had no friends at school and hid in the boys' bathroom during both lunch and recess. \_\_\_\_\_
2. Dennis fears and strenuously avoids storms. Not surprisingly, on his first oceangoing cruise, he found that deep water terrified him, too. \_\_\_\_\_
3. Rita was comfortable at the zoo until the old terror gripped her at the insect display. \_\_\_\_\_
4. Armando would love to eat fish with his fishing buddies, but he experiences an inordinate fear of choking on a bone. \_\_\_\_\_
5. John had to give up his dream of becoming a surgeon because he faints at the sight of blood. \_\_\_\_\_
6. Rachel turned down several lucrative job offers that involved public speaking for a low-paying desk job. \_\_\_\_\_
7. Farrah can't visit her rural friends because of her fear of snakes. \_\_\_\_\_

## Posttraumatic Stress Disorder

- Describe the essential features of posttraumatic stress disorder, its proposed causal factors, and available treatment approaches.

In recent years we have heard a great deal about the severe and long-lasting emotional disorders that can occur after a variety of traumatic events. Perhaps the most impressive traumatic event is war, but emotional disorders also occur after physical assault (particularly rape), car accidents, natural catastrophes, or the sudden death of a loved one. One emotional disorder that follows a trauma is known as **posttraumatic stress disorder (PTSD)**.

### Clinical Description

DSM-IV describes the setting event for PTSD as exposure to a traumatic event during which one feels fear, helplessness, or horror. Afterward, victims reexperience the event through memories and nightmares. When memories occur suddenly and the victims find themselves reliving the event, they are having a *flashback*. Victims avoid anything that reminds them of the trauma. They display a characteristic restriction or numbing of emotional responsiveness, which may be disruptive to interpersonal relationships. They are sometimes unable to remember certain aspects of the event. It is possible that victims unconsciously attempt to avoid the experience of emotion, like people with panic disorder, because intense emotions could bring back memories of the

trauma. Finally, victims typically are chronically overaroused, easily startled, and quick to anger.

Consider the case of the Joneses from one of our clinics.

### The Joneses One Victim, Many Traumas

Mrs. Betty Jones and her four children arrived at a farm to visit a friend. (Mr. Jones was at work.) Jeff, the oldest child, was 8 years old. Marcie, Cathy, and Susan were 6, 4, and 2 years of age. Mrs. Jones parked the car in the driveway, and they all started across the yard to the front door.

**posttraumatic stress disorder (PTSD)** Enduring, distressing emotional disorder that follows exposure to a severe helpless- or fear-inducing threat. The victim reexperiences the trauma, avoids stimuli associated with it, and develops a numbing of responsiveness and an increased vigilance and arousal.

Suddenly Jeff heard growling somewhere near the house. Before he could warn the others, a large German shepherd charged and leapt at Marcie, the 6-year-old, knocking her to the ground and tearing viciously at her face. The family, too stunned to move, watched the attack helplessly. After what seemed like an eternity, Jeff lunged at the dog and it moved away. The owner, in a state of panic, ran to a nearby house to get help. Mrs. Jones immediately put pressure on Marcie’s facial wounds in an attempt to stop the bleeding. The owner had neglected to retrieve the dog, and it stood a short distance away, growling and barking at the frightened family. Eventually the dog was restrained and Marcie was rushed to the hospital. Marcie, who was hysterical, had to be restrained on a padded board so emergency room physicians could stitch her wounds.

This case is unusual because not only did Marcie develop PTSD but so did her 8-year-old brother. In addition, Cathy, 4, and Susan, 2, although quite young, also showed symptoms of the disorder, as did their mother (see Table 4.6) (Albano, Miller, Zarate, Côté, & Barlow, 1997). Jeff evidenced classic survivor guilt symptoms, reporting that he should have saved Marcie or at least put himself between Marcie and the dog. Both Jeff and Marcie regressed developmentally, wetting the bed and experiencing nightmares and separation fears. In addition, Marcie, having been strapped down and given local anesthetic and stitches, became frightened of any medical procedures and even of such routine daily events as having her nails trimmed or taking a bath. Furthermore, she refused to be tucked into bed, something she had en-

**TABLE 4.6** Symptoms of Posttraumatic Stress Disorder (PTSD) Evidenced by Marcie and Her Siblings

Symptoms	Jeff	Marcie	Cathy	Susan
Repetitive play—trauma themes		X	X	X
Nightmares	X	X	X	X
Reexperiencing			X	
Distress at exposure to similar stimuli	X	X	X	X
Avoidance of talk of trauma		X	X	
Avoidance of trauma recollections		X		
Regressive behavior	X	X		
Detachment	X	X		
Restricted affect	X	X		
Sleep disturbance	X	X	X	X
Anger outbursts	X	X		
Hypervigilance		X	X	
Startle response	X	X		
DSM-III-R PTSD diagnosis met	X	X		

Source: From “Behavioral and Assessment and Treatment of PTSD in Prepubertal Children: Attention to Developmental Factors and Innovative Strategies in the Case Study of a Family,” by A. M. Albano, P. P. Miller, G. Côté, and D. H. Barlow, 1997, *Cognitive and Behavioral Practice*, 4, 245–262. Copyright © 1997 by Association for Advancement of Behavior Therapy.

joyed all her life, probably because it reminded her of the hospital board. Jeff started sucking his fingers, which he had not done for years. These behaviors, along with intense separation anxiety, are common, particularly in younger children (Eth, 1990; Silverman & La Greca, 2002). Cathy, the 4-year-old, evidenced considerable fear and avoidance when tested but denied having any problem when she was interviewed by a child psychologist. Susan, the 2-year-old, also had some symptoms, as shown in Table 4.6, but was too young to talk about them. However, for several months following the trauma she repeatedly said, without provocation, “Doggy bit sister.”

Children’s memories of traumatic events can become embellished over the years. For example, some children incorporate a superhero coming to the rescue. These intense memories are malleable and subject to distortion.

PTSD is subdivided into *acute* and *chronic*. *Acute PTSD* can be diagnosed 1 month after the event occurs. When PTSD continues longer than 3



REUTERS/Evan Schneider, UN /Lantov

People who develop a natural environment phobia intensely fear such places as heights and events such as storms.

months, it is considered chronic. *Chronic PTSD* is usually associated with more prominent avoidance behaviors (Davidson, Hughes, Blazer, & George, 1991), as well as with the more frequent co-occurrence of additional diagnoses such as social phobia. In *PTSD with Delayed Onset*, individuals show few if any symptoms immediately after a trauma, but later, perhaps years afterward, they develop full-blown PTSD. Why onset is delayed in some individuals is not yet clear.

As we noted, PTSD cannot be diagnosed until a month after the trauma. New to DSM-IV is a disorder called **acute stress disorder**. This is really PTSD occurring within the first month after the trauma, but the different name emphasizes the very severe reaction that some people have immediately. PTSD-like symptoms are accompanied by severe dissociative symptoms, such as amnesia for all or part of the trauma, emotional numbing, derealization, or feelings of unreality. According to one study, 63% to 70% of individuals with acute stress disorder from motor vehicle accidents went on to develop PTSD up to 2 years after the trauma. In addition, 13% who did not meet criteria for acute stress disorder went on to develop PTSD. If the victim experienced very strong arousal and emotional numbing as part of his or her acute stress disorder, the likelihood of later developing PTSD was greater (Harvey & Bryant, 1998). Acute stress disorder was included in DSM-IV because many people with very severe early reactions to trauma could not otherwise be diagnosed and, therefore, could not receive insurance coverage for immediate treatment.

## Statistics

Determining the prevalence rates for PTSD seems relatively straightforward: Simply observe victims of a trauma and see how many are suffering from PTSD. But a number of studies have demonstrated the remarkably low prevalence of PTSD in populations of trauma victims. Rachman (1978) studied the British citizenry who endured numerous life-threatening air raids during World War II. He concluded that “a great majority of people endured the air raids extraordinarily well, contrary to the universal expectation of mass panic. Exposure to repeated bombings did not produce a significant increase in psychiatric disorders. Although short-lived fear reactions were common, surprisingly few persistent phobic reactions emerged” (Rachman, 1991, p. 162). Similar results have been observed after disastrous fires, earthquakes, and floods (Green, Grace, Lindy, Titchener, & Lindy, 1983).

On the other hand, some studies have found a very high incidence of PTSD after trauma. Kilpatrick et al. (1985) sampled more than 2,000 adult women who had personally experienced such trauma as rape, sexual molestation, robbery, and aggravated

**TABLE 4.7** Proportion of Victimization Groups Experiencing Major Mental Health Problems

	Problem					
	Nervous Breakdown		Suicidal Ideation		Suicide Attempt	
Group	n	%	n	%	n	%
Attempted rape	7	9.0	23	29.5	7	8.9
Completed rape	16	16.3	44	44.0	19	19.2
Attempted molestation	2	5.4	12	32.4	3	8.1
Completed molestation	1	1.9	12	21.8	2	3.6
Attempted robbery	0	0.0	3	9.1	4	12.1
Completed robbery	5	7.8	7	10.8	2	3.1
Aggravated assault	1	2.1	7	14.9	2	4.3
Nonvictims	51	3.3	106	6.8	34	2.2

Source: From “Mental Health Correlates of Criminal Victimization: A Random Community Survey,” by D. G. Kilpatrick, C. L. Best, L. V. Veronen, A. E. Amick, L. A. Villeponteaux, and G. A. Ruff, 1985, *Journal of Consulting and Clinical Psychology*, 53, 866–873. Copyright © 1985 by the American Psychological Association. Reprinted by permission.

assault. Subjects were asked whether they had thought about suicide after the trauma, attempted suicide, or had a *nervous breakdown* (a lay term that has no meaning in psychopathology but is commonly used to refer to a severe psychological upset). The authors also analyzed the results based on whether the attack was completed or attempted, as shown in Table 4.7. Rape had the most significant emotional impact. Compared with 2.2% of nonvictims, 19.2% of rape victims had attempted suicide, and 44% reported suicidal ideation at some time following the rape. Similarly, Resnick, Kilpatrick, Dansky, Saunders, and Best (1993) found that 32% of rape victims met criteria for PTSD at some point in their lives. Looking at all types of trauma (e.g., physical assault and accidents) in a large sample of U.S. adult women, Resnick et al. (1993) found that 17.9% experienced PTSD. Taylor and Koch (1995) found that 15% to 20% of people experiencing severe auto accidents developed PTSD. Other surveys indicate that among the population as a whole, 7.8% have experienced PTSD (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995), and combat and sexual assault are the most common traumas.

**acute stress disorder** Severe reaction immediately following a terrifying event, often including amnesia about the event, emotional numbing, and derealization. Many victims later develop posttraumatic stress disorder.

## Disorder Criteria Summary

### Posttraumatic Stress Disorder (PTSD)



Features of PTSD include:

- Exposure to a traumatic event in which the person experienced, witnessed, or was confronted by a situation involving death, threatened death, or serious injury, in response to which the person reacted with intense fear, helplessness, or horror
- The traumatic event is persistently reexperienced in one or more of the following ways: (1) recurrent and intrusive distressing recollections of the event, including images, thoughts, or perceptions; (2) recurrent distressing dreams of the event; (3) a sense that the traumatic event is recurring, including illusions, hallucinations, and dissociative flashbacks; (4) intense psychological distress at exposure to cues that call to mind the event; (5) physiological reaction to cues that call to mind the event
- Persistent avoidance of stimuli associated with the trauma, and numbing of general responsiveness
- Persistent symptoms of increased arousal, such as difficulty sleeping, irritability, and hypervigilance
- Clinically significant distress or impairment in social, occupational, or other important areas of functioning
- Duration of the disturbance for more than 1 month

Source: Based on DSM-IV-TR. Used with permission from the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision. Copyright 2000. American Psychiatric Association.

What accounts for the discrepancies between the low rate of PTSD in citizens who endured bombing and shelling in London and the relatively high rate in victims of crime? Investigators have now concluded that during air raids many people *may not have directly experienced the horrors of dying, death, and direct attack*. Close exposure to the trauma seems to be necessary to developing this disorder (Keane & Barlow, 2002; King, King, Foy, & Gudanowski, 1996). Nowhere is this more starkly evident than in the tragedy of 9/11. Schlenger et al. (2002) interviewed a nationally representative sample of adults and found that the percentage of people who probably met criteria for PTSD was higher in New York City (11.2%) than in other major cities (between 2.3% and 3.6%). Galea and colleagues (2002) contacted a representative sample of adults living south of 110th Street in Manhattan and found that 7.5% reported symptoms consistent with a diagnosis of acute stress disorder or PTSD. But among respondents who lived close to the World Trade Center (south of Canal Street) the prevalence of the disorder was 20%. Once again, those who experienced the disaster most personally and directly seemed to be the ones most affected.

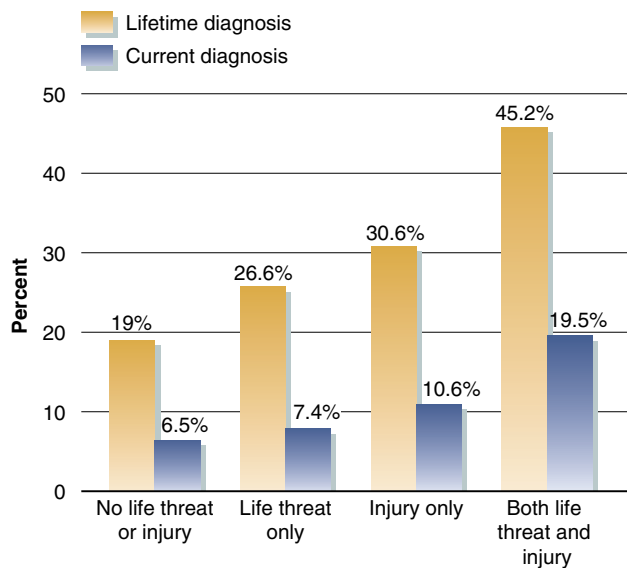
In addition, tens of thousands of public school children in New York City who lived close to the disaster experienced chronic nightmares, fear of public places, and other symptoms of PTSD. After the attack a large study conducted with the help of federal agencies estimates that 75,000 school children in New York City in grades 4 through 12, or 10.5% of children in those grades, suffered PTSD after September 11 (Goodnough, 2002). In addition, 155 suffered from agoraphobia, or a fear of leaving a safe place such as home. Many of these children feared riding public transportation. Two-thirds of the children sampled lived near the World Trade Center or in other neighborhoods directly affected by the tragedy, such as Staten Island, home to many who were killed, or Brooklyn, where smoke drifted over its neighborhoods for days.

But is this the whole story? It seems not. Some people experience the most horrifying traumas imaginable and emerge psychologically healthy. For others, even relatively mild stressful events are sufficient to produce a full-blown disorder. To understand how this can happen we must consider the etiology of PTSD.

## Causes

PTSD is the one disorder for which we are sure of the etiology: Someone personally experiences a trauma and develops a disorder. However, whether a person develops PTSD or not is a surprisingly complex issue involving biological, psychological, and social factors. David Foy and his colleagues (Foy, Sippelle, Rueger, & Carroll, 1984) concluded that the intensity of combat exposure contributed to the etiology of PTSD in a group of Vietnam War veterans but did not account for all of it. For example, approximately 67% of prisoners of war developed PTSD (Foy, Resnick, Sippelle, & Carroll, 1987). This means that 33% of the prisoners who endured long-term deprivation and torture *did not* develop the disorder. Similarly, Resnick, Kilpatrick, Dansky, Saunders, and Best (1993) demonstrated that the percentage of female crime victims who developed PTSD increased as a function of the severity of the trauma (see Figure 4.10). At lower levels of trauma, some people develop PTSD but most do not. What accounts for these differences?

As with other disorders, we bring our own generalized biological and psychological vulnerabilities with us. The greater the vulnerability, the more likely we are to develop PTSD. If certain characteristics run in your family, you have a much greater chance of developing the disorder (Davidson, Swartz, Storck, Krishnan, & Hammett, 1985; Foy et al., 1987). A family history of anxiety suggests a generalized biological vulnerability for PTSD. True et al. (1993) reported that, given the same amount of



**Figure 4.10** ■ Prevalence of lifetime and current posttraumatic stress disorder associated with assault characteristics. (From “Prevalence of Civilian Trauma and Posttraumatic Stress Disorder in a Representative National Sample of Women” by H. S. Resnick, D. G. Kilpatrick, B. S. Dansky, B. E. Sanders, and C. L. Best, 1993, *Journal of Consulting and Clinical Psychology*, 61, 984–991. Copyright © 1993 by the American Psychological Association. Reprinted with permission.)

combat exposure and one twin with PTSD, a monozygotic (identical) twin was more likely than a dizygotic twin to develop PTSD.

Breslau, Davis, and Andreski (1995) demonstrated among a random sample of 1,200 individuals that characteristics such as a tendency to be anxious and factors such as minimal education and ethnic group membership predict exposure to traumatic events in the first place and, therefore, an increased risk for PTSD. That is, personality and other characteristics, some of them at least partially heritable, may predispose someone to the experience of trauma by making it likely that the person will be in (risky) situations where trauma is likely to occur. This is reminiscent of the studies on reciprocal gene–environment interactions we described in Chapter 2, in which existing vulnerabilities, some of them heritable, may help determine the kind of environment in which someone lives and, therefore, the type of psychological disorder that person may develop.

Also, there seems to be a *generalized psychological vulnerability* described in the context of other disorders based on early experiences with unpredictable or uncontrollable events. Foy et al. (1987) discovered that at very high levels of trauma, these vulnerabilities did not matter as much, because most prisoners (67%) developed PTSD. However, at low levels of stress or trauma, vulnerabilities matter a great deal in determining whether the disorder will develop. Family instability is one factor that may instill a sense that the world is an uncontrol-

lable, potentially dangerous place (Chorpita & Barlow, 1998), so it is not surprising that individuals from unstable families are at risk for developing PTSD if they experience trauma. This factor was relevant in a study of more than 1,600 male and female Vietnam veterans (King et al., 1996).

Finally, social and cultural factors play a major role in the development of PTSD (e.g., Carroll, Rueger, Foy, & Donahoe, 1985). The results from a number of studies are consistent in showing that, if you have a strong and supportive group of people around you, it is much less likely you will develop PTSD after a trauma. In a particularly interesting study, Vernberg, La Greca, Silverman, and Prinstein (1996) studied 568 elementary school children 3 months after Hurricane Andrew hit the coast of south Florida. More than 55% of these children reported moderate to very severe levels of PTSD symptoms, a typical result for this type of disaster (La Greca & Prinstein, 2002). When the authors examined factors contributing to who developed PTSD symptoms and who didn't, social support from parents, close friends, classmates, and teachers was an important protective factor. Similarly, positive coping strategies involving active problem solving seemed to be protective, whereas becoming angry and placing blame on others were associated with higher levels of PTSD. The broader and deeper the network of social support, the less chance of developing PTSD. Schuster et al. (2002) reported that people who experienced PTSD symptoms following the attack of 9/11 coped with the stress mostly by looking to friends and family for support.

Why is this? We are all social animals and something about having a loving, caring group of people around us directly affects our biological and psychological responses to stress. In fact, a number of studies show that support from loved ones reduces cortisol secretion and HPA axis activity in children during stress (e.g., Nachmias, Gunnar, Mangelsdorf, Parritz, & Buss, 1996). It is likely that one reason for the very high prevalence of PTSD in Vietnam veterans is the tragic absence of social support when they returned from the war.

It seems clear that PTSD involves a number of neurobiological systems (Charney, Deutch, Krystal, Southwick, & Davis, 1993; Heim & Nemeroff, 1999; Ladd et al., 2000; Southwick, Krystal, Johnson, & Charney, 1992; Sullivan et al., 2000). Dennis Charney and other investigators conducted research on animals, mostly rats who were exposed to strong uncontrollable stress such as repeated shock. Their findings revealed that stressful and threatening cues may activate input from several regions of the brain. These inputs then activate the CRF system, as noted earlier in the chapter.

Evidence of damage to the hippocampus has appeared in groups of patients with war-related PTSD

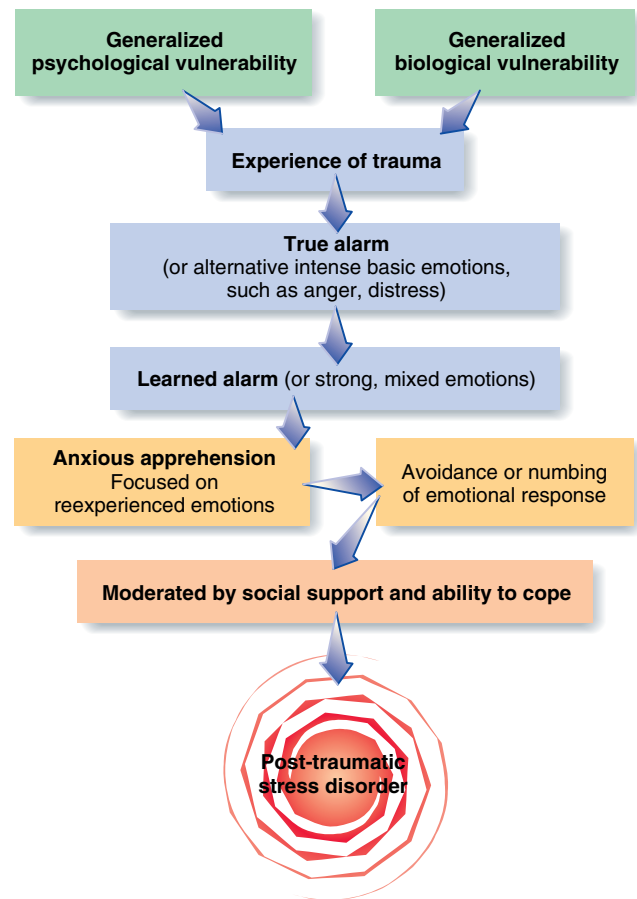
(Gurvits et al., 1996) and adult survivors of childhood sexual abuse (Bremner, et al., 1995). The hippocampus is a part of the brain that plays an important role in learning and memory. Thus, if there is damage to the hippocampus, we might expect some disruptions in learning and memory. In fact, disruptions in memory functions, including short-term memory and recalling events, have been demonstrated in patients with PTSD (Sass et al., 1992). These memory deficits are also evident in veterans of the Gulf War (Vasterling et al., 1998) and holocaust survivors with PTSD.

Fortunately, as Bremner (1999) points out, some evidence indicates this damage to the hippocampus may be reversible. For example, Starkman et al. (1999) report results from patients who had some damage to their hippocampus due to Cushing's disease, which causes chronic activation of the HPA axis and increased flow of cortisol, and found increases of up to 10% in hippocampal volume following successful treatment for this disease. Further studies will confirm if the changes as a result of trauma can be reversed by treatment.

Earlier we described a panic attack as an adaptive fear response occurring at an inappropriate time. It is not surprising that Southwick et al. (1992) trace a brain circuit for PTSD that is similar to the brain circuit for panic attacks, originating in the locus coeruleus in the brain stem. We have speculated that the alarm reaction is much the same in both panic disorder and PTSD, but in panic disorder the alarm is false. In PTSD, the initial alarm is true in that real danger is present (Keane & Barlow, 2002; Jones & Barlow, 1990). If the alarm is severe enough, we may develop a conditioned or learned alarm reaction to stimuli that remind us of the trauma (e.g., being tucked into bed reminded Marcie of the emergency room board). We may also develop anxiety about the possibility of additional uncontrollable emotional experiences (such as flashbacks, which are common in PTSD). Whether or not we develop anxiety depends in part on our vulnerabilities. This model of the etiology of PTSD is presented in Figure 4.11.

## Treatment

From the psychological point of view, most clinicians agree that victims of PTSD should face the original trauma to develop effective coping procedures and thus overcome the debilitating effects of the disorder. (Barlow & Lehman, 1996; Foa & Meadows, 1997; Keane & Barlow, 2002). In psychoanalytic therapy, reliving emotional trauma to relieve emotional suffering is called *catharsis*. The trick, of course, is in arranging the reexposure so



**Figure 4.11** ■ A model of the causes of posttraumatic stress disorder. (From *Anxiety and Its Disorders: The Nature and Treatment of Anxiety and Panic*, by D. H. Barlow. Copyright © 2002 by Guilford Press. Reprinted by permission.)

it will be therapeutic rather than traumatic again. Unlike the object of a specific phobia, a traumatic event is difficult to recreate, and few therapists want to try. Therefore, *imaginal exposure*, in which the content of the trauma and the emotions associated with it are worked through systematically, has been used for decades under a variety of names.

Another complication is that trauma victims often repress the emotional side of their memories of the event and sometimes, it seems, the memory itself. This happens automatically and unconsciously. On occasion, with treatment, the memories flood back and the patient dramatically relives the episode. Although this may be frightening to both patient and therapist, it can be therapeutic if handled appropriately. Evidence is now accumulating that early, structured interventions delivered as soon after the trauma as possible in those who require help are useful in preventing the development of PTSD (Bryant, Moulds, & Nixon, 2003; Ehlers et

**TABLE 4.8** Fear and Avoidance Hierarchy for Marcie

	Pretreatment Fear Rating	Posttreatment Fear Rating
Being strapped on a board	4	0
Having an electrocardiogram	4	0
Having a chest X-ray	4	0
Having a doctor listen to heart with stethoscope	3	0
Lying on examination table	3	0
Taking a bath after sustaining an accidentally inflicted cut	3	0
Allowing therapist to put Band-Aid on a cut	2	0
Letting therapist listen to heart with stethoscope	1	0
Having pulse taken	1	0
Allowing therapist to examine throat with tongue depressor	1	0

Source: From "Behavioral Assessment and Treatment of PTSD in Prepubertal Children: Attention to Developmental Factors and Innovative Strategies in the Case Study of a Family," by A. M. Albano, P. P. Miller, G. Côté, and D. H. Barlow, 1997, *Cognitive and Behavioral Practice*, 4, 254. Copyright © 1997 by Association for Advancement of Behavior Therapy.

al., 2003; Litz, Gray, Bryant, & Adler, 2002). For example, in the Ehlers et al. (2003) study of patients who had experienced a scary car accident and were clearly at risk for developing PTSD, only 11% developed PTSD after 12 sessions of cognitive therapy, compared with 61% of those receiving a detailed self-help booklet or 55% of those who were first assessed repeatedly over time. All patients who needed it were then treated with cognitive therapy. On the other hand, there is evidence that subjecting trauma victims to a single debriefing session in which they are forced to express their feelings, whether they are distressed or not, can be harmful (Ehlers & Clark, 2003).

Both Marcie, the young girl bitten by the dog, and her brother were treated simultaneously. The primary difficulty was Marcie's reluctance to be seen by a doctor or to undergo any physical examinations, so a series of experiences was arranged from least to most intense (see Table 4.8). Mildly anxiety-provoking procedures for Marcie included having her pulse taken, lying on an examination table, and taking a bath after accidentally cutting herself. The most intense challenge was being strapped on a restraining board. First Marcie watched her brother go through these exercises. He was not afraid of these particular procedures,

although he was anxious about being strapped to a board because of Marcie's terror at the thought. After she watched her brother experience these situations with little or no fear, Marcie tried each one in turn. The therapist took instant photographs of her that she kept after completing the procedures. Marcie was also asked to draw pictures of the situations. The therapist and her family warmly congratulated her as she completed each exercise. Because of Marcie's age, she was not adept at imaginatively recreating memories of the traumatic medical procedures. Therefore, her treatment offered experiences designed to alter her current perceptions of the situations. Marcie's PTSD was successfully treated, and her brother's guilt was greatly reduced as a function of helping in her treatment.

Some drug treatments have also been tried with PTSD, but the investigation of effective ones is just beginning (Lydiard, Brawman-Mintzer, & Ballenger, 1996). Preliminary experience suggests that some of the same drugs, such as SSRIs (Prozac and Paxil), effective for anxiety disorders in general might be helpful with PTSD, perhaps because they relieve the severe anxiety and panic attacks so prominent in this disorder.

## Concept Check 4.5

Match the correct preliminary diagnosis with the following cases: (a) acute posttraumatic stress disorder, (b) acute stress disorder, (c) delayed onset posttraumatic stress disorder.

- Judy witnessed a horrific tornado level her farm 3 weeks ago. Since then, she's had many flashbacks of the incident, trouble sleeping, and a fear of going outside in storms. \_\_\_\_\_
- Jack was involved in a car accident 6 weeks ago in which the driver of the other car was killed. Since then, Jack has been unable to get in a car because it brings back the horrible scene he witnessed. Nightmares of the incident haunt him and interfere with his sleep. He is irritable and has lost interest in his work and hobbies. \_\_\_\_\_
- Patricia was raped at the age of 17, 30 years ago. Just recently, she has been having flashbacks of the event, difficulty sleeping, and fear of sexual contact with her husband. \_\_\_\_\_

# Obsessive-Compulsive Disorder

- Describe the symptoms, defining characteristics, and integrative model of obsessive-compulsive disorder.

**Obsessive-compulsive disorder (OCD)** is the devastating culmination of the anxiety disorders. It is not uncommon for someone with OCD to experience severe generalized anxiety, recurrent panic attacks, debilitating avoidance, and major depression, all occurring simultaneously with obsessive-compulsive symptoms. With OCD, establishing even a foothold of control and predictability over the dangerous events in life seems so utterly hopeless that victims resort to magic and rituals.

## Clinical Description

In other anxiety disorders the danger is usually in an external object or situation, or at least in the memory of one. In OCD the dangerous event is a thought, image, or impulse that the client attempts to avoid as completely as someone with a snake phobia avoids snakes. For example, has anyone ever told you not to think of pink elephants? If you really concentrate on not thinking of pink elephants, using every mental means possible, you will realize how difficult it is to suppress a suggested thought or image. Individuals with OCD fight this battle all day, every day, sometimes for most of their lives, and they usually fail miserably. In Chapter 3 we discussed the case of Frank, who experienced involuntary thoughts of epilepsy or seizures and prayed or shook his leg to try to distract himself. **Obsessions** are intrusive and mostly nonsensical thoughts, images, or urges that the individual tries to resist or eliminate. **Compulsions** are the thoughts or actions used to suppress the obsessions and provide relief. Frank had both obsessions and compulsions, but his disorder was mild compared with the case of Richard.



**Obsessive-Compulsive Disorder: Chuck**  
*"I'm a little bit obsessive-compulsive. . . . It's a little difficult to deal with. The obsessive part—I'll get a thought in my head,*

*and I can't put it out. It's just there all the time. I think about it when I go to bed, I think about it when I get up. . . . I'm a 'checker'—I have to check things. . . . I don't cook, but I have to check the stove every morning. . . . not always really rational."*



## Richard Enslaved by Ritual

Richard, a 19-year-old college freshman majoring in philosophy, withdrew from school because of incapacitating ritualistic behavior. He abandoned personal hygiene because the compulsive rituals that he had to carry out during washing or cleaning were so time consuming that he could do nothing else. Almost continual showering gave way to no showering. He stopped cutting and washing his hair and beard, brushing his teeth, and changing his clothes. He left his room infrequently and, to avoid rituals associated with the toilet, defecated on paper towels, urinated in paper cups, and stored the waste in the closet. He ate only late at night when his family was asleep. To be able to eat he had to exhale completely, making a lot of hissing noises, coughs, and hacks, and then fill his mouth with as much food as he could while no air was in his lungs. He would eat only a mixture of peanut butter, sugar, cocoa, milk, and mayonnaise. All other foods he considered contaminants. When he walked he took very small steps on his toes while continually looking back, checking and rechecking. On occasion he ran quickly in place. He withdrew his left arm completely from his shirt sleeve as if he were crippled and his shirt was a sling.

Like everyone with OCD, Richard experienced intrusive and persistent thoughts and impulses; in his case they were about sex, aggression, and religion. His various behaviors were efforts to suppress sexual and aggressive thoughts or to ward off the disastrous consequences he thought would ensue if he did not perform his rituals. Richard performed most of the repetitive behaviors and mental acts mentioned in the DSM-IV criteria. Compulsions can be either behavioral (handwashing or checking) or mental (thinking about certain words in a specific order; counting, praying, and so on) (Foa et al., 1996; Steketee & Barlow, 2002). The important thing is that they are believed to reduce stress or prevent a dreaded event. Compulsions are often

“magical” in that they frequently bear no logical relation to the obsession.

### Obsessions

Jenike, Baer, and Minichiello (1986) noted that the most common obsessions in a sample of 100 patients were contamination (55%), aggressive impulses (50%), sexual content (32%), somatic concerns (35%), and the need for symmetry (37%). Sixty percent of those sampled displayed multiple obsessions. “Need for symmetry” refers to keeping things in perfect order or doing something in a very specific way. As a child were you careful not to step on cracks in the sidewalk? You and your friends might have kept this up for a few minutes before tiring of it. But what if you had to spend your whole life avoiding cracks, on foot or in a car? You wouldn’t have much fun. People with obsessive impulses may feel they are about to yell out a swear word in church.

### Compulsions

Leckman et al. (1997a) analyzed types of compulsions in several large groups of patients and found that checking and ordering and arranging, along with washing and cleaning, were the major categories of rituals. Most patients with OCD present with cleaning and washing or checking rituals. For people who fear contact with objects or situations that may be contaminating, washing or cleaning restores a sense of safety and control. Checking rituals prevent an imagined disaster or catastrophe. Most are logical, such as repeatedly checking the stove to see whether you turned it off, but severe cases can be illogical. For example, Richard thought that if he did not eat in a certain way he might become possessed. If he didn’t take small steps and look back, some disaster might happen to his family. A mental act, such as counting, can also be a compulsion. Like Richard, many patients have both kinds of rituals.

Certain kinds of obsessions are strongly associated with certain kinds of rituals (Leckman et al., 1997a). For example, aggression and sexual obsessions seem to lead to checking rituals. Obsessions with symmetry lead to ordering and arranging or repeating rituals; obsessions with contamination lead, of course, to washing rituals. In addition, a small group of patients compulsively hoard things, fearing that if they throw something away, even a 10-year-old newspaper, they then might urgently need it (Black et al., 1998; Frost, Steketee, & Williams, 2002; Samuels et al., 2002). One patient’s house and yard were condemned by the city because junk was piled so high it was both unsightly and a fire hazard. Among her hoard was a 20-year collection of used sanitary napkins! It is also common for tic disorder, characterized by involuntary movement (sudden jerking of limbs for example) or involuntary vocalizations to co-occur

## Disorder Criteria Summary

### Obsessive-Compulsive Disorder (OCD)



Features of OCD include:

- **Obsessions:** Recurrent and persistent thoughts, impulses, or images that are experienced as intrusive and inappropriate and that cause marked anxiety or distress; more than just excessive worries about real-life problems; the person attempts to ignore or suppress or neutralize them; the person recognizes that the thoughts, impulses, or images are a product of her or his own mind
- **Compulsions:** Repetitive behaviors (e.g., frequent hand-washing or checking) or mental acts (e.g., praying or counting) that the person feels driven to perform in response to an obsession or according to rules that must be applied rigidly
- Recognition that the obsessions or compulsions are excessive or unreasonable
- The thoughts, impulses, or behaviors cause marked distress, consume more than an hour a day, or significantly interfere with a person’s normal functioning or relationships

*Source:* Based on DSM-IV-TR. Used with permission from the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision. Copyright 2000. American Psychiatric Association.

in patients with OCD or in their families (Grados et al., 2001). In some cases these movements may be compulsions, as they were in the case of Frank.

On rare occasions, patients, particularly children, will present with few if any identifiable obsessions. We saw an 8-year-old child who felt compelled to undress, put on his pajamas, and turn down the covers in a time-consuming fashion each night; he always repeated the ritual three times! He could give no particular reason for his behavior; he simply had to do it.

### Statistics

A large epidemiological study put the lifetime prevalence of OCD at approximately 2.6% (Karno & Golding, 1991), and recent reanalyses seem to con-

**obsessive-compulsive disorder (OCD)** Anxiety disorder involving unwanted, persistent, intrusive thoughts and impulses as well as repetitive actions intended to suppress them.

**obsessions** Recurrent intrusive thoughts or impulses the client seeks to suppress or neutralize while recognizing they are not imposed by outside forces

**compulsions** Repetitive, ritualistic, time-consuming behaviors or mental acts a person feels driven to perform

firm these approximate figures (Narrow et al., 2002). Of course, not all cases meeting criteria for OCD are as severe as Richard's. Obsessions and compulsions can be arranged along a continuum, like most clinical features of anxiety disorders. Randy Frost and his colleagues found that between 10% and 15% of "normal" college students engaged in checking behavior substantial enough to score within the range of patients with OCD (Frost, Sher, & Geen, 1986).

It would also be unusual *not* to have an occasional intrusive or strange thought. Many people have bizarre, sexual, or aggressive thoughts, particularly if they are bored—for example, when sitting in class. Gail Steketee and her colleagues collected examples of thoughts from ordinary people who do not have OCD. Some of these thoughts are listed in Table 4.9.

Have you had any of these thoughts? Most people do, but they let these thoughts go in one ear and out the other, so to speak. Certain individuals, however, are horrified by such thoughts, considering them signs of an alien, intrusive, evil force. The majority of individuals with OCD are female, but the ratio is not as large as for some other anxiety disorders. Rasmussen and Tsuang (1984, 1986) reported that 55% of 1,630 patients were female. The ECA epidemiology study noted 60% females in their sample of OCD (Karno & Golding, 1991). Interestingly, in children the sex ratio is reversed, with more males than females (Hanna, 1995). This seems to be because boys tend to develop OCD earlier. By mid-adolescence the sex ratio is approximately equal before becoming predominantly female in adulthood (Albano et al., 1996). Average age of onset ranges from early adolescence to mid-20s but typically peaks earlier in males (13 to 15) than in females (20 to 24) (Rasmussen & Eisen, 1990). Once OCD develops, it tends to become chronic (Eisen & Steketee, 1998; Steketee & Barlow, 2002).

In Arabic countries, OCD is easily recognizable, although as always cultural beliefs and concerns influence the content of the obsessions and the nature of the compulsions. In Saudi Arabia and Egypt, obsessions are primarily related to religious practices, specifically the Muslim emphasis on cleanliness. Contamination themes are also highly prevalent in India. Nevertheless, OCD looks remarkably similar across cultures. Insel (1984) reviewed studies from England, Hong Kong, India, Egypt, Japan, and Norway and found essentially similar types and proportions of obsessions and compulsions, as did Weissman et al. (1994) reviewing studies from Canada, Finland, Taiwan, Africa, Puerto Rico, Korea, and New Zealand.

## Causes

Many of us sometimes have intrusive, even horrific thoughts and occasionally engage in ritualistic behavior, especially when we are under stress (Parkinson &

**TABLE 4.9** Obsessions and Intrusive Thoughts Reported by Nonclinical Samples\*

### Harming

Impulse to jump out of a high window  
Idea of jumping in front of a car  
Impulse to push someone in front of a train  
Wishing a person would die  
While holding a baby, having a sudden urge to kick it  
Thoughts of dropping a baby  
Thought that if I forget to say goodbye to someone, they might die  
Thought that thinking about horrible things happening to a child will cause it

### Contamination or Disease

Thought of catching a disease from public pools or other public places  
Thoughts I may have caught a disease from touching a toilet seat  
Idea that dirt is always on my hand

### Inappropriate or Unacceptable Behavior

Idea of swearing or yelling at my boss  
Thought of doing something embarrassing in public, like forgetting to wear a top  
Hoping someone doesn't succeed  
Thought of blurting out something in church  
Thought of "unnatural" sexual acts

### Doubts about Safety, Memory, Etc.

Thought that I haven't locked the house up properly  
Idea of leaving my curling iron on the carpet and forgetting to pull out the plug  
Thought that I've left the heater and stove on  
Idea that I've left the car unlocked when I know I've locked it  
Idea that objects are not arranged perfectly

\*Examples were obtained from Rachman and deSilva (1978) and from unpublished research by Dana Thordarson, Ph.D., and Michael Kyrios, Ph.D. (personal communications, 2000).

Source: From "Obsessive-Compulsive Disorder," by G. Steketee and D. H. Barlow, in *Anxiety and Its Disorders: The Nature and Treatment of Anxiety and Panic* (2nd ed.) (p. 529). Copyright © 2002 by Guilford Press. Reprinted by permission.

Rachman, 1981a, 1981b). But few of us develop OCD. Once again, as with panic disorder and PTSD, one must develop anxiety focused on the possibility of having additional intrusive thoughts.

The repetitive, intrusive, unacceptable thoughts of OCD may be regulated by the hypothetical brain circuit described in Chapter 2. However, the tendency to develop anxiety over having additional compulsive thoughts may have the same generalized biological and psychological precursors as anxiety in general.

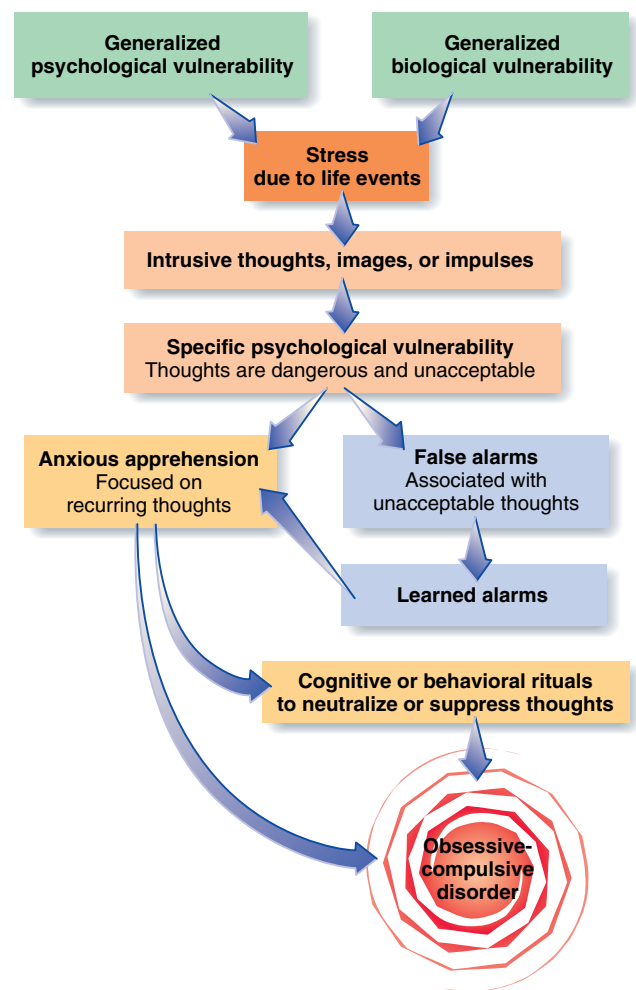
Why would people with OCD focus their anxiety on the occasional intrusive thought rather than on the possibility of a panic attack or some other external situation? One hypothesis is that early experiences

taught them that some thoughts are dangerous and unacceptable because the terrible things they are thinking might actually happen and they would be responsible. The experiences would result in a specific psychological vulnerability to develop OCD. They learn this through the same process of misinformation that convinced the person with snake phobia that snakes were dangerous and could be everywhere.

Clients with OCD equate thoughts with the specific actions or activity represented by the thoughts. This is called *thought-action fusion*. Thought-action fusion may, in turn, be caused by attitudes of excessive responsibility and resulting guilt developed during childhood, where even a bad thought is associated with evil intent (Salkovskis, Shafran, Rachman, & Freeston, 1999; Steketee & Barlow, 2002). One patient believed thinking about abortion was the moral equivalent of having an abortion. Richard finally admitted to having strong homosexual impulses that were unacceptable to him and to his minister father, and he believed the impulses were as sinful as actual acts. Many people with OCD who believe in the tenets of fundamental religions, whether Christian, Jewish, or Islamic, present with similar attitudes of inflated responsibility and thought-action fusion. Several studies showed that the strength of religious belief, but not the type of belief, was associated with thought-action fusion and severity of OCD (Rassin & Koster, 2003; Steketee, Quay, & White, 1990). Of course, the vast majority of people with fundamental beliefs do not develop OCD. But what if the most frightening thing in your life was not a snake, or speaking in public, but a terrible thought that happened to pop into your head? You can't avoid it as you would a snake, so you resist this thought by attempting to suppress it or "neutralize" it using mental or behavioral strategies such as distraction, praying, or checking. These strategies become compulsions, but they are doomed to fail in the long term, because these strategies backfire and actually increase the frequency of the thought (Purdon, 1999; Wegner, 1989). Once again, generalized biological and psychological vulnerabilities must be present for this disorder to develop. Believing some thoughts are unacceptable and therefore must be suppressed (a *specific psychological vulnerability*) may put people at greater risk of OCD (Amir, Cashman, & Foa, 1997; Parkinson & Rachman, 1981b; Salkovskis & Campbell, 1994). A model of the etiology of OCD that is somewhat similar to other models of anxiety disorders is presented in Figure 4.12.

## Treatment

Studies evaluating the effects of drugs on OCD are showing some promise (Steketee & Barlow, 2002; Zohar et al., 1996). The most effective seem to be those that specifically inhibit the reuptake of serotonin, such as clomipramine or SSRIs, which bene-



**Figure 4.12** ■ A model of the causes of obsessive-compulsive disorder. (From "Obsessive-Compulsive Disorder," by G. Steketee and D. H. Barlow, in *Anxiety and Its Disorders: The Nature and Treatment of Anxiety and Panic* (2nd ed.), by D. H. Barlow (p. 536). Copyright © 2002 by Guilford Press. Reprinted by permission.)

fit up to 60% of patients with OCD with no particular advantage to one drug over another. However, the average treatment gain is moderate at best (Greist, 1990), and relapse frequently occurs when the drug is discontinued (Lydiard et al., 1996).

Highly structured psychological treatments work somewhat better than drugs, but they are not readily available. The most effective approach is called exposure and ritual prevention (ERP), a process whereby the rituals are actively prevented and the patient is systematically and gradually exposed to the feared thoughts or situations (Barlow & Lehman, 1996; Foa & Franklin, 2001; Steketee & Barlow, 2002). Richard would be systematically exposed to harmless objects or situations that he thought were contaminated, including certain foods and household chemicals, and his washing and checking rituals would be prevented. Usually this can be done by simply working closely with patients to see that they do not wash or check. In severe cases, patients may be hospitalized and the faucets removed from the bathroom sink for

a period of time to discourage repeated washing. However the rituals are prevented, the procedures seem to facilitate “reality testing,” because the client soon learns, at an emotional level, that no harm will result whether he carries out the rituals or not. Studies are now available examining the combined effects of medication and psychological treatments. In the largest study to date (Kozak, Liebowitz, & Foa, 2000), ERP was compared with the drug clomipramine and to a combined condition. ERP, with or without the drug, produced superior results to the drug alone, with 85% responding to ERP alone versus 50% to the drug alone. Combining the treatments did not produce any additional advantage. Also, relapse rates were high from the medication-only group when the drug was withdrawn.

Psychosurgery is the most radical treatment for OCD. “Psychosurgery” is a misnomer that refers to neurosurgery for a psychological disorder. Jenike et al. (1991) reviewed the records of 33 patients with OCD, most of them extremely severe cases who had failed to respond to either drug or psychological treatment. After a specific surgical lesion to the cingulate bundle (cingulotomy), approximately 30% benefited substantially. Considering that these pa-

tients seemed to have no hope from other treatments, surgery deserves consideration as a last resort. Each year we understand more about the causes of OCD, and our treatments are improving. Before long, such radical treatments as psychosurgery will no longer be employed.

## Concept Check 4.6

Fill in the blanks to form facts about obsessive-compulsive disorder.

- \_\_\_\_\_ are intrusive and nonsensical thoughts, images, or urges an individual tries to eliminate or suppress.
- The practices of washing, counting, and hoarding to suppress obsessions and provide relief are called \_\_\_\_\_.
- The lifetime prevalence of OCD is approximately \_\_\_\_\_%, or even lower.
- \_\_\_\_\_ is a radical treatment for OCD involving a surgical lesion to the cingulate bundle.

## Summary

### The Complexity of Anxiety Disorders

- Anxiety is a future-oriented state characterized by negative affect in which a person focuses on the possibility of uncontrollable danger or misfortune; in contrast, fear is a present-oriented state characterized by strong escapist tendencies and a surge in the sympathetic branch of the autonomic nervous system in response to current danger.
- A panic attack represents the alarm response of real fear, but there is no actual danger.
- Panic attacks may be (1) unexpected (without warning), (2) situationally bound (always occurring in a specific situation), or (3) situationally predisposed (likely but unpredictable in a specific situation).
- Panic and anxiety combine to create different anxiety disorders.

### Generalized Anxiety Disorder

- In generalized anxiety disorder (GAD), anxiety focuses on minor everyday events, not one major worry or concern.
- Both genetic and psychological vulnerabilities seem to contribute to the development of GAD.
- Though drug and psychological treatments may be effective in the short term, drug treatments are no more effective in the long term than placebo

treatments. Successful treatment may help individuals with GAD focus on what is really threatening to them in their lives.

### Panic Disorder With and Without Agoraphobia

- In panic disorder with or without agoraphobia (a fear and avoidance of situations considered to be “unsafe”), anxiety is focused on the next panic attack.
- We all have some genetic vulnerability to stress, and many of us have had a neurobiological overreaction to some stressful event—that is, a panic attack. Individuals who develop panic disorder then develop *anxiety* over the possibility of having another panic attack.
- Both drug and psychological treatments have proved successful in the treatment of panic disorder. One psychological method, *panic control treatment*, concentrates on exposing patients to clusters of sensations that remind them of their panic attacks.

### Specific Phobia

- In phobic disorders, the individual avoids situations that produce severe anxiety and/or panic. In

specific phobia, the fear is focused on a particular object or situation.

- Phobias can be acquired by experiencing some traumatic event; they can also be learned vicariously or even be taught.
- Treatment of phobias is rather straightforward, with a focus on structured and consistent exposure-based exercises.

## Social Phobia

- Social phobia is a fear of being around others, particularly in situations that call for some kind of “performance” in front of other people.
- Though the causes of social phobia are similar to those of specific phobias, treatment has a different focus that includes rehearsing or role-playing socially phobic situations. In addition, drug treatments have been effective.

## Posttraumatic Stress Disorder

- Posttraumatic stress disorder (PTSD) focuses on avoiding thoughts or images of past traumatic experiences.

## Key Terms

anxiety, ●●●	panic disorder with agoraphobia (PDA), ●●●	blood-injection-injury phobia, ●●●	posttraumatic stress disorder (PTSD), ●●●
fear, ●●●	agoraphobia, ●●●	situational phobia, ●●●	acute stress disorder, ●●●
panic, ●●●	panic disorder without agoraphobia (PD), ●●●	natural environment phobia, ●●●	obsessive-compulsive disorder (OCD), ●●●
panic attack, ●●●	panic control treatment (PCT), ●●●	animal phobia, ●●●	obsessions, ●●●
behavioral inhibition system (BIS), ●●●	specific phobia, ●●●	separation anxiety disorder, ●●●	compulsions, ●●●
fight/flight system (FFS), ●●●		social phobia, ●●●	
generalized anxiety disorder (GAD), ●●●			

- The underlying cause of PTSD is obvious—a traumatic experience. But mere exposure is not enough. The intensity of the experience seems to be a factor in whether an individual develops PTSD; biological vulnerabilities, as well as social and cultural factors, appear to play a role.
- Treatment involves reexposing the victim to the trauma to overcome the debilitating effects of PTSD.

## Obsessive-Compulsive Disorder

- Obsessive-compulsive disorder (OCD) focuses on avoiding frightening or repulsive intrusive thoughts (obsessions) or neutralizing these thoughts through the use of ritualistic behavior (compulsions).
- As with all anxiety disorders, biological and psychological vulnerabilities seem to be involved in the development of OCD.
- Drug treatment seems to be only modestly successful in treating OCD. The most effective treatment approach is exposure and response prevention.

## Answers to Concept Checks

4.1 1. b 2. c 3. e, d 4. a 5. f

4.2 1. T 2. F (more gradual) 3. T 4. F 5. T

4.3 1. F (with agoraphobia) 2. F (3.5%) 3. T 4. T

4.4 1. d 2. e 3. c 4. f 5. a 6. d 7. c

4.5 1. b 2. a 3. c

4.6 1. obsessions 2. compulsions 3. 2.6 4. psychosurgery

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## Abnormal Psychology Live CD-ROM

- **Steve, a Patient with Panic Disorder:** Steve discusses how panic attacks have disrupted his life.
- **Chuck, a Client with Obsessive-Compulsive Disorder:** Chuck discusses how his obsessions affect his everyday life, going to work, planning a vacation, and so on.
- **Virtual Reality Therapy:** A virtual reality program helps one woman overcome her fear of riding the subway.
- **Snake Phobia Treatment:** A demonstration of exposure therapy that helps a snake phobic overcome her severe fear of snakes in just 3 hours.

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## Video Concept Review

For concepts that typically take more than one explanation, Mark Durand provides an onscreen video on the following topic:

- Describing the value of medical versus psychological treatments of anxiety disorders.

## Chapter Quiz

---

- \_\_\_\_\_ is a psychological experience characterized by concern about future events, and \_\_\_\_\_ is characterized by concern about current circumstances.
  - Panic; anxiety
  - Fear; anxiety
  - Anxiety; fear
  - Depression; anxiety
- In an integrated model of anxiety, which childhood experience appears to make an individual more vulnerable to anxiety in adulthood?
  - negative and inconsistent attention from parents
  - exposure to situations that reinforce a rigid sense of personal control
  - interactions with peers that are violent
  - academic failures in preschool
- Which of the following is true about generalized anxiety disorder?
  - It is most common in individuals aged 15–24 years.
  - Its course tends to be chronic.
  - It is the least common of the anxiety disorders.
  - It is more common in men.
- Why are the majority of people who suffer from agoraphobia women?
  - Chromosomal features related to sensitivity of the hypothalamus–pituitary axis are more common in women.
  - Women are more likely to employ cognitive distortions in which they appraise events as threatening.
  - The hormonal system in women sensitizes the female nervous system to stress.
  - Cultural factors make it more acceptable for women to avoid situations and to report their fears.
- Marty has a fear of dogs. Which of the following suggests that his fear qualifies as a specific phobia rather than just an everyday fear?
  - Marty's fear of dogs comes and goes following an episodic pattern.
  - Marty owns a cat but no dog.
  - Marty believes that his fear of dogs is reasonable and appropriate.
  - Marty will only work night shifts, a time when he thinks all dogs will be safely inside.
- Which technique appears to be the most effective treatment for phobias?
  - exposure to the feared stimulus under therapeutic supervision
  - rapid and repeated exposure to the feared stimulus followed by immediate escape
  - hypnosis during which fear-related conflicts are banished from the unconscious
  - challenging the client to see that the fears are irrational, unrealistic, and excessive
- Which of the following is the most essential characteristic of social phobia?
  - fear of being in public places
  - fear of being left alone
  - fear of evaluation by other people
  - fear of having a panic attack
- Which feature differentiates posttraumatic stress disorder from acute stress disorder?
  - the time since the traumatic event occurred
  - the severity of the symptoms
  - the nature of the symptoms
  - the presence of emotional numbing
- Every morning when he leaves for work Anthony has recurring doubts about whether he locked his front door. He continues thinking about this throughout the day, to the distraction of his work. Anthony is experiencing:
  - obsessions.
  - derealization.
  - panic.
  - compulsions.
- When a person believes that thinking about hurting someone is just as bad as actually hurting someone, that person is experiencing:
  - an obsession.
  - a false alarm.
  - a panic attack.
  - thought-action fusion.

(See the Appendix on page ••• for answers.)

# Exploring Anxiety Disorders

People with anxiety disorders:

- Feel overwhelming tension, apprehension, or fear when there is no actual danger
- May take extreme action to avoid the source of their anxiety

## Biological Influences

- Inherited vulnerability to experience anxiety and/or panic attacks
- Activation of specific brain circuits, neurotransmitters, and neurohormonal systems

## Social Influences

- Social support reduces intensity of physical and emotional reactions to triggers or stress
- Lack of social support intensifies symptoms

## CAUSES

## Behavioral Influences

- Marked avoidance of situations and/or people associated with fear, anxiety, or panic attack

## Emotional and Cognitive Influences

- Heightened sensitivity to situations or people perceived as threats
- Unconscious feeling that physical symptoms of panic are catastrophic (intensifies physical reaction)

## TRIGGER

## TREATMENT FOR ANXIETY DISORDERS

### Cognitive–Behavioral Therapy

- Systematic exposure to anxiety-provoking situations or thoughts
- Learning to substitute positive behaviors and thoughts for negative ones
- Learning new coping skills: relaxation exercises, controlled breathing, etc.

### Drug Treatment

- Reduces the symptoms of anxiety disorders by influencing brain chemistry
  - antidepressants (Tofranil, Paxil, Effexor)
  - benzodiazepines (Xanax, Klonopin)

### Other Treatments

- Managing stress through a healthy lifestyle: rest, exercise, nutrition, social support, moderate alcohol or other drug intake



## TYPES OF ANXIETY DISORDERS

### Panic Disorders

People with panic disorders have had one or more panic attacks and are very anxious and fearful about having future attacks.

#### What is a panic attack?

A person having a panic attack feels:

- Apprehension leading to intense fear
- Sensation of “going crazy,” or of losing control
- Physical signs of distress: racing heartbeat, rapid breathing, dizziness, nausea, sensation of heart attack or imminent death

#### When/why do panic attacks occur?

Panic attacks can be:

- *Situationally bound*: always occurring in the same situation, which may lead to extreme avoidance of triggering persons, places, or events (see specific and social phobias)
- *Unexpected*: can lead to extreme avoidance of any situation or place felt to be unsafe (agoraphobia)
- *Situationally predisposed*: attacks may or may not occur in specific situations (between situationally bound and unexpected)



### Phobias

People with phobias avoid situations that produce severe anxiety and/or panic. There are three main types:



#### Agoraphobia

- Fear and avoidance of situations, people, or places where it would be unsafe to have a panic attack: malls, grocery stores, buses, planes, tunnels, etc.
- In the extreme, inability to leave the house or even a specific room
- Begins after a panic attack, but can continue for years even if no other attacks occur

#### Specific Phobia

- Fear of specific object or situation that triggers attack: heights, closed spaces, insects, snakes, flying
- Develops from personal or vicarious experience of traumatic event with the triggering object or situation, or from misinformation

#### Social Phobia

- Fear of being called for some kind of “performance” that may be judged: speaking in public, using a public restroom (for males), or generally interacting with people



### Other Types of Anxiety Disorders

#### Generalized Anxiety Disorder

- Uncontrollable unproductive worrying about everyday events
- Feeling impending catastrophe even after successes
- Inability to stop the worry/anxiety cycle: e.g., Irene’s fear of failure about school relationships and health even though everything seemed fine
- Physical symptoms of muscle tension

#### Posttraumatic Stress Disorder

- Fear of reexperiencing a traumatic event: rape, war, life-threatening situation, etc.
- Nightmares or flashbacks (of the traumatic event)
- Avoidance of the intense feelings of the event through emotional numbing

#### Obsessive–Compulsive Disorder

- Fear of unwanted and intrusive thoughts (obsessions)
- Repeated ritualistic actions or thoughts (compulsions) designed to neutralize the unwanted thoughts: e.g., Richard’s attempts to suppress “dangerous” thoughts about sex, aggression, and religion with compulsive washing and cleaning rituals

