Bob Donaldson was a 22-year-old carpenter referred to the psychiatric outpatient department of a community hospital. During the initial interview Bob was visibly distressed. He appeared tense, worried, and frightened. He sat on the edge of his chair, tapping his foot and fidgeting with a pencil on the psychiatrist’s desk. He sighed frequently, took deep breaths between sentences, and periodically exhaled audibly and changed his position as he attempted to relate his story:

Bob: It’s been an awful month. I can’t seem to do anything. I don’t know whether I’m coming or going. I’m afraid I’m going crazy or something.

Doctor: What makes you think that?

Bob: I can’t concentrate. My boss tells me to do something and I start to do it, but before I’ve taken five steps I don’t know what I started out to do. I get dizzy and I can feel my heart beating and everything looks like it’s shimmering or far away from me or something—it’s unbelievable.

Doctor: What thoughts come to mind when you’re feeling like this?

Bob: I just think, “Oh, Christ, my heart is really beating, my head is swimming, my ears are ringing—I’m either going to die or go crazy.”

Doctor: What happens then?

Bob: Well, it doesn’t last more than a few seconds, I mean that intense feeling. I come back down to earth, but then I’m worrying what’s the matter with me all the time, or checking my pulse to see how fast it’s going, or feeling my palms to see if they’re sweating.

Doctor: Can others see what you’re going through?

Bob: You know, I doubt it. I hide it. I haven’t been seeing my friends. You know, they say “Let’s stop for a beer” or something after work and I give them some excuse—you know, like I have to do something around the house or with my car. I’m not with them when I’m with them anyway—I’m just sitting there worrying. My friend Pat said I was frowning all the time. So, anyway, I just go home and turn on the TV or pick up the sports page, but I can’t really get into that either.

Bob went on to say that he had stopped playing softball because of fatigability and trouble concentrating. On several occasions during the past two weeks he was unable to go to work because he was “too nervous.”

You don’t need to be as troubled as Bob Donaldson to experience fear and anxiety. Think about a time when your breathing quickened, your muscles tensed, and your heart pounded with a sudden sense of dread. Was it when your car almost skidded off the road in the rain? When your professor announced a pop quiz? What about when the person you were in love with went out with someone else, or your boss suggested that your job performance ought to improve? Any time you face what seems to be a serious threat to your well-being, you may react with the state of immediate alarm known as fear (Garrett, 2009). Sometimes you cannot pinpoint a specific cause for your alarm, but still you feel tense and edgy,
Table 4-1

DSM Checklist

GENERALIZED ANXIETY DISORDER
1. Excessive or ongoing anxiety and worry, for at least six months, about numerous events or activities.
2. Difficulty controlling the worry.
3. At least three of the following symptoms: restlessness * easy fatigue * irritability * muscle tension * sleep disturbance.
4. Significant distress or impairment.

Based on APA, 2000.

Generalized Anxiety Disorder

People with generalized anxiety disorder experience excessive anxiety under most circumstances and worry about practically anything. In fact, their problem is sometimes described as free-floating anxiety. Like the young carpenter Bob Donaldson, they typically feel restless, keyed up, or on edge; tire easily; have difficulty concentrating; suffer from muscle tension; and have sleep problems (see Table 4-1). The symptoms last at least six months. Nevertheless, most people with the disorder are able, although with some difficulty, to carry on social relationships and job activities.

Generalized anxiety disorder is common in Western society. Surveys suggest that around 3 percent of the U.S. population have the symptoms of this disorder in any given year, a rate that holds across Canada, Britain, and other Western countries (Ritter, Blackmore, & Heinberg, 2010; Kessler et al., 2005). Altogether, close to 6 percent of all people develop generalized anxiety disorder sometime during their lives. It may emerge at any age, but usually it first appears in childhood or adolescence. Women diagnosed with the disorder outnumber men 2 to 1. Around one-quarter of individuals with generalized anxiety disorder are currently in treatment (Burijon, 2007; Wang et al., 2005).

A variety of factors have been cited to explain the development of this disorder. Here you will read about the views and treatments offered by the sociocultural, psychodynamic, humanistic, cognitive, and biological models. The behavioral perspective will be examined when we turn to phobias later in the chapter because that model approaches generalized anxiety disorder and phobias in basically the same way.
The Sociocultural Perspective: Societal and Multicultural Factors

According to sociocultural theorists, generalized anxiety disorder is most likely to develop in people who are faced with ongoing societal conditions that are dangerous. Studies have found that people in highly threatening environments are indeed more likely to develop the general feelings of tension, anxiety, and fatigue and the sleep disturbances found in this disorder (Andrews & Wilding, 2004).

Take, for example, a classic study that was done on the psychological impact of living near the Three Mile Island nuclear power plant after the nuclear reactor accident of March 1979 (Baum et al., 2004; Wroble & Baum, 2002). In the months following the accident, local mothers of preschool children were found to display five times as many anxiety or depression disorders as mothers living elsewhere. Although the number of disorders decreased during the next year, the Three Mile Island mothers still displayed high levels of anxiety or depression a year later. Similarly, a study conducted more recently found that in the months and years following Hurricane Katrina in 2005, the rate of generalized and other anxiety disorders was twice as high among area residents who lived through the disaster as among unaffected persons living elsewhere (Galea et al., 2007).

One of the most powerful forms of societal stress is poverty. People without financial means are likely to live in run-down communities with high crime rates, have fewer educational and job opportunities, and run a greater risk for health problems (López & Guarnaccia, 2008, 2005, 2000). As sociocultural theorists would predict, such people also have a higher rate of generalized anxiety disorder. In the United States, the rate is twice as high among people with low incomes as among those with higher incomes (Kessler et al., 2005; Blazer et al., 1991). As wages decrease, the rate of generalized anxiety disorder steadily increases (see Table 4-2).

Since race is closely tied to income and job opportunity in the United States, it is not surprising that it is sometimes also tied to the prevalence of generalized anxiety disorder (Blazer et al., 1991). In any given year approximately 6 percent of all African Americans suffer from this disorder, compared to 3.1 percent of white Americans. African American women, perhaps the country’s most socially stressed group, have the highest rate of all—6.6 percent.

Multicultural researchers have not found a heightened rate of generalized anxiety disorder among Hispanics in the United States. They have, however, noted that many Hispanics in both the United States and Latin American suffer from nervios (“nerves”), a

| Table 4-2: Prevalence of Anxiety Disorders (Compared to Rate in Total Population) |
|-----------------------------|-----------------|-----------------|---------------------|------------------|------------------|
| Generalized anxiety disorder | Higher          | Higher          | Higher              | Same             | Higher           |
| Specific phobias             | Higher          | Higher          | Higher              | Higher           | Lower            |
| Social phobia                | Higher          | Higher          | Higher              | Same             | Lower            |
| Panic disorder               | Higher          | Higher          | Same                | Same             | Lower            |
| Obsessive-compulsive disorder | Same           | Higher          | Same                | Same             | Lower            |

Source: Hopko et al., 2008; Nazarian & Cranke, 2008; Schultz et al., 2008; Kessler et al., 2005; López & Guarnaccia, 2005, 2000; Glazer et al., 2004.
Insecurity, Adult Style

Children may cling to blankets or cuddly toys to feel more secure. Adults, too, may hug a beloved object in order to relax: 1 in 5 adult women and 1 in 20 men admit to sleeping with a stuffed animal on a regular basis (Kanner, 1995).

The Psychodynamic Perspective

Sigmund Freud (1933, 1917) believed that all children experience some degree of anxiety as part of growing up and that all use ego defense mechanisms to help control such anxiety (see page 38). Children experience realistic anxiety when they face actual danger; neurotic anxiety when they are repeatedly prevented, by parents or by circumstances, from expressing their id impulses; and moral anxiety when they are punished or threatened for expressing their id impulses. According to Freud, some children experience particularly high levels of such anxiety, or their defense mechanisms are particularly inadequate, and these individuals may develop generalized anxiety disorder.

Psychodynamic Explanations: When Childhood Anxiety Goes Unresolved

According to Freud, when a child is overrun by neurotic or moral anxiety, the stage is set for generalized anxiety disorder. Early developmental experiences may produce an unusually high level of anxiety in such a child. Say that a boy is spanked every time he cries for milk as an infant, messes his pants as a 2-year-old, and explores his genitals as a toddler. He may eventually come to believe that his various id impulses are very dangerous, and he may experience overwhelming anxiety whenever he has such impulses.

Alternatively, a child’s ego defense mechanisms may be too weak to cope with even normal levels of anxiety. Overprotected children, shielded by their parents from all frustrations and threats, have little opportunity to develop effective defense mechanisms. When they face the pressures of adult life, their defense mechanisms may be too weak to cope with the resulting anxieties.

Today’s psychodynamic theorists often disagree with specific aspects of Freud’s explanation for generalized anxiety disorder. Most continue to believe, however, that the disorder can be traced to inadequacies in the early relationships between children and their parents (Sharf, 2008). Researchers have tested the psychodynamic explanations in various ways. In one strategy, they have tried to show that people with generalized anxiety disorder are particularly likely to use defense mechanisms. For example, one team of investigators examined the early therapy transcripts of patients with this diagnosis and found that the patients often reacted defensively. When asked by therapists to discuss upsetting experiences, they would quickly forget (repress) what they had just been talking about, change the direction of the discussion, or deny having negative feelings (Luborsky, 1973).

In another line of research, investigators have studied people who as children suffered extreme punishment for id impulses. As psychodynamic theorists would predict, these people have higher levels of anxiety later in life (Burijon, 2007; Chiu, 1971). In addition, several studies have supported the psychodynamic position that extreme protectiveness by parents may often lead to high levels of anxiety in their children (Hudson & Rapee, 2004; Jenkins, 1968).

Although these studies are consistent with psychodynamic explanations, some scientists question whether they show what they claim to show. When people have difficulty talking about upsetting events early in therapy, for example, they are not necessarily...
repressing those events. They may be focusing purposely on the positive aspects of their lives, or they may be too embarrassed to share personal negative events until they develop trust in the therapist.

**Psychodynamic Therapies** Psychodynamic therapists use the same general techniques to treat all psychological problems: free association and the therapist’s interpretations of transference, resistance, and dreams. Freudian psychodynamic therapists use these methods to help clients with generalized anxiety disorder become less afraid of their id impulses and more successful in controlling them. Other psychodynamic therapists, particularly object relations therapists, use them to help anxious patients identify and settle the childhood relationship problems that continue to produce anxiety in adulthood (Lucas, 2006).

Controlled studies have typically found psychodynamic treatments to be of only modest help to persons with generalized anxiety disorder (Goisman et al., 1999). An exception to this trend is short-term psychodynamic therapy (see Chapter 2), which has in some cases significantly reduced the levels of anxiety, worry, and social difficulty of patients with this disorder (Crits-Christoph et al., 2004).

**The Humanistic Perspective**

Humanistic theorists propose that generalized anxiety disorder, like other psychological disorders, arises when people stop looking at themselves honestly and acceptingly. Repeated denials of their true thoughts, emotions, and behavior make these people extremely anxious and unable to fulfill their potential as human beings.

The humanistic view of why people develop this disorder is best illustrated by Carl Rogers’s explanation. As you saw in Chapter 2, Rogers believed that children who fail to receive unconditional positive regard from others may become overly critical of themselves and develop harsh self-standards, what Rogers called conditions of worth. They try to meet these standards by repeatedly distorting and denying their true thoughts and experiences. Despite such efforts, however, threatening self-judgments keep breaking through and causing them intense anxiety. This onslaught of anxiety sets the stage for generalized anxiety disorder or some other form of psychological dysfunctioning.

Practitioners of Rogers’s treatment approach, client-centered therapy, try to show unconditional positive regard for their clients and to empathize with them. The therapists hope that an atmosphere of genuine acceptance and caring will help clients feel secure enough to recognize their true needs, thoughts, and emotions. When clients eventually are honest and comfortable with themselves, their anxiety or other symptoms will subside. In the following excerpt, Rogers describes the progress made by a client with anxiety and related symptoms:

*Therapy was an experiencing of herself, in all its aspects, in a safe relationship... the experiencing of self as having a capacity for wholeness... a self that cared about others. This last followed... the realization that the therapist cared, that it really mattered to him how therapy turned out for her, that he really valued her... She gradually became aware of the fact that... there was nothing fundamentally bad, but rather, at heart she was positive and sound.*

(Rogers, 1954, pp. 261–264)

In spite of such optimistic case reports, controlled studies have failed to offer strong support for this approach. Although research does suggest that client-centered therapy is usually more helpful to anxious clients than no treatment, the approach is only sometimes superior to placebo therapy (Prochaska & Norcross, 2006, 2003). In addition, researchers have found, at best, only limited support for Rogers’s explanation of generalized anxiety disorder and other forms of abnormal behavior. Nor have other humanistic theories and treatment received much research support.
Followers of the cognitive model suggest that psychological problems are often caused by dysfunctional ways of thinking. Given that excessive worry—a cognitive symptom—is a key characteristic of generalized anxiety disorder (see Figure 4-2), it is not surprising that cognitive theorists have had much to say about the causes of and treatments for this particular disorder (Ritter et al., 2010; Holaway, Rodebaugh, & Heimberg, 2006).

Maladaptive Assumptions

Initially, cognitive theorists suggested that generalized anxiety disorder is primarily caused by maladaptive assumptions, a notion that continues to be influential. Albert Ellis, for example, proposed that many people are guided by irrational beliefs that lead them to act and react in inappropriate ways (Ellis, 2008, 2002, 1962). Ellis called these basic irrational assumptions, and he claimed that people with generalized anxiety disorder often hold the following ones:

“It is a dire necessity for an adult human being to be loved or approved of by virtually every significant other person in his community.”

“It is awful and catastrophic when things are not the way one would very much like them to be.”

“If something is or may be dangerous or fearsome, one should be terribly concerned about it and should keep dwelling on the possibility of its occurring.”

“One should be thoroughly competent, adequate, and achieving in all possible respects if one is to consider oneself worthwhile.”

(Ellis, 1962)

When people who make these assumptions are faced with a stressful event, such as an exam or a blind date, they are likely to interpret it as dangerous, to overreact, and to experience fear. As they apply the assumptions to more and more events, they may begin to develop generalized anxiety disorder (Warren, 1997).

Similarly, cognitive theorist Aaron Beck argued that people with generalized anxiety disorder constantly hold silent assumptions (for example, “A situation or a person is unsafe until proven to be safe” or “It is always best to assume the worst”) that imply they are in imminent danger (Beck & Weishaar, 2008; Beck & Emery, 1985). Since the time of Ellis’s and Beck’s initial proposals, researchers have repeatedly found that people with generalized anxiety disorder do indeed hold maladaptive assumptions, particularly about dangerousness (Riskind & Williams, 2005).

New Wave Cognitive Explanations

In recent years, three new explanations for generalized anxiety disorder, sometimes called the new wave cognitive explanations, have emerged (Ritter et al., 2010). Each of them builds on the work of Ellis and Beck and their emphasis on danger.

The metacognitive theory, developed by the researcher Adrian Wells (2009, 2005), suggests that people with generalized anxiety disorder implicitly hold both positive and negative beliefs about worrying. On the positive side, they believe that worrying is a useful way of appraising and coping with threats in life. And so they look for and examine all possible signs of danger—that is, they worry constantly.

At the same time, Wells argues, individuals with generalized anxiety disorder also hold negative beliefs about worrying, and these negative attitudes are the ones that open the door to the disorder. Because society teaches them that worrying is a bad thing, the individuals come to believe that their repeated worrying is in fact harmful (mentally and physically) and uncontrollable. Now they further worry about the fact that they always seem to be worrying (so-called metaworries) (see Table 4-3). The net effect of all this worrying: generalized anxiety disorder.

This explanation has received considerable research support. Studies indicate, for example, that individuals who generally hold both positive and negative beliefs about worrying are particularly prone to developing generalized anxiety disorder (Khawaja &
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(Chapman, 2007; Wells, 2005) and that repeated metaworrying is a powerful predictor of developing the disorder (Wells & Carter, 1999).

According to another new explanation for generalized anxiety disorder, the intolerance of uncertainty theory, certain individuals believe that any possibility of a negative event occurring, no matter how slim, means that the event is likely to occur. Given this intolerance of uncertainty, such persons are inclined to worry and are, in turn, more prone to develop generalized anxiety disorder (Dugas, Buhr, & Ladouceur, 2004). Think of when you meet someone you’re attracted to and how you then feel prior to texting or calling him or her for the first time—or how you feel while you’re waiting for that person to contact you for the first time. The worry that you experience in such moments is a manifestation of the intolerance of uncertainty theory.

Fears, Shmears: The Odds Are Usually on Our Side

People with anxiety disorders have many unreasonable fears, but millions of other people, too, worry about disaster every day. Most of the catastrophes they fear are not probable. Perhaps the ability to live by laws of probability rather than possibility is what separates the fearless from the fearful. What are the odds, then, that commonly feared events will happen? The range of probability is wide, but the odds are usually heavily in our favor.

A city resident will be a victim of a violent crime . . . 1 in 60
A suburbanite will be a victim of a violent crime . . . 1 in 1,000
A small-town resident will be a victim of a violent crime . . . 1 in 2,000
A child will suffer a high chair injury this year . . . 1 in 6,000
The IRS will audit you this year . . . 1 in 100
You will be murdered this year . . . 1 in 12,000
You will be killed on your next bus ride . . . 1 in 500 million
You will be hit by a baseball at a major league game . . . 1 in 300,000
You will drown in the tub this year . . . 1 in 685,000
Your house will have a fire this year . . . 1 in 200
Your carton will contain a broken egg . . . 1 in 10
You will develop a tooth cavity . . . 1 in 6
You will contract AIDS from a blood transfusion . . . 1 in 100,000
You will die in a tsunami . . . 1 in 500,000
You will be attacked by a shark . . . 1 in 4 million
You will receive a diagnosis of cancer this year . . . 1 in 8,000
A woman will develop breast cancer during her lifetime . . . 1 in 9
A piano player will eventually develop lower back pain . . . 1 in 3
You will be killed on your next automobile outing . . . 1 in 4 million
Condom use will eventually fail to prevent pregnancy . . . 1 in 10
An IUD will eventually fail to prevent pregnancy . . . 1 in 10
Coitus interruptus will eventually fail to prevent pregnancy . . . 1 in 5
You will die as a result of a collision between an asteroid and the earth . . . 1 in 500,000
You will die as a result of a lightning strike . . . 1 in 84,000

(Adapted from Britt, 2005)
instances—the sense of sometimes unbearable uncertainty—is, according to this theory, how people with generalized anxiety disorder feel all the time.

According to this theory, people with generalized anxiety disorder keep worrying and worrying in efforts to find “correct” solutions for their various problems and to restore certainty to their situations. However, because they can never really be sure that a given solution is a correct one, they are always left to grapple with intolerable levels of uncertainty, triggering new rounds of worrying and new efforts to find correct solutions. Like the metacognitive theory of worry, considerable research supports this theory. Studies have found, for example, that people with generalized anxiety disorder display greater levels of intolerance of uncertainty than people with normal degrees of anxiety (Dugas et al., 2009, 2005, 2002).

Finally, a third new explanation for generalized anxiety disorder, the avoidance theory, developed by researcher Thomas Borkovec, suggests that people with this disorder have greater bodily arousal (higher heart rate, perspiration, respiration) than other people and that worrying actually serves to reduce this arousal, perhaps by distracting the individuals from their unpleasant physical feelings. In short, the avoidance theory holds that people with generalized anxiety disorder worry repeatedly in order to reduce or avoid uncomfortable states of bodily arousal. When, for example, they find themselves in an uncomfortable job situation or social relationship, they implicitly choose to intellectualize (that is, worry about) losing their job or losing their friend rather than having to stew in a state of intense negative arousal. The worrying serves as a quick, though ultimately maladaptive, way of coping with unpleasant bodily states.

Borkovec’s explanation has also been supported by numerous studies. Research reveals that people with generalized anxiety disorder experience particularly fast and intense bodily reactions, find such reactions overwhelming and unpleasant, worry more than other people upon becoming aroused, and successfully reduce their arousal whenever they worry (Mennin et al., 2005, 2004, 2002; Roemer et al., 2005; Turk et al., 2005).

Cognitive Therapies Two kinds of cognitive approaches are used in cases of generalized anxiety disorder. In one, based on the pioneering work of Ellis and Beck, therapists help clients change the maladaptive assumptions that characterize their disorder. In the other, new-wave cognitive therapists help clients to understand the special role that worrying may play in their disorder and to change their views about and reactions to worrying.

CHANGING MALADAPTIVE ASSUMPTIONS In Ellis’s technique of rational-emotive therapy, therapists point out the irrational assumptions held by clients, suggest more appropriate assumptions, and assign homework that gives the individuals practice at challenging old assumptions and applying new ones (Ellis, 2008, 2005, 2002). Studies suggest that this approach and similar cognitive approaches bring at least modest relief to persons suffering from generalized anxiety (Ellis, 2008, 2005; Tafet et al., 2005). Ellis’s approach is illustrated in the following discussion between him and an anxious client who fears failure and disapproval at work, especially over a testing procedure that she has developed for her company:

**Client:** I’m so distraught these days that I can hardly concentrate on anything for more than a minute or two at a time. My mind just keeps wandering to that damn testing procedure I devised, and that they’ve put so much money into; and whether it’s going to work well or be just a waste of all that time and money. . . .

**Ellis:** Point one is that you must admit that you are telling yourself something to start your worrying going, and you must begin to look, and I mean really look, for the specific nonsense with which you keep reindoctrinating yourself. . . . The false
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statement is: “If, because my testing procedure doesn’t work and I am functioning inefficiently on my job, my co-workers do not want me or approve of me, then I shall be a worthless person.” . . .

Client: But if I want to do what my firm also wants me to do, and I am useless to them, aren’t I also useless to me?

Ellis: No— not unless you think you are. You are frustrated, of course, if you want to set up a good testing procedure and you can’t. But need you be desperately unhappy because you are frustrated? And need you deem yourself completely unworthy because you can’t do one of the main things you want to do in life?

(Ellis, 1962, pp. 160–165)

FOCUSING ON WORRYING

Alternatively, some of today’s new-wave cognitive therapists specifically guide clients with generalized anxiety disorder to recognize and change their dysfunctional use of worrying (Ritter et al., 2010; Beck, 2008). They begin by educating the clients about the role of worrying in their disorder and have them observe their bodily arousal and cognitive responses across various life situations. In turn, the clients come to appreciate the triggers of their worrying, their misconceptions about worrying, and their misguided efforts to control their lives by worrying. As their insights grow, clients are expected to see the world as less threatening (and so less arousing), try out more constructive ways of dealing with arousal, and worry less about the fact that they worry so much. Research has begun to indicate that a concentrated focus on worrying is indeed a helpful addition to the traditional cognitive treatment for generalized anxiety disorder (Ritter et al., 2010; Waters & Craske, 2005).

Treating individuals with generalized anxiety disorder by helping them to recognize their inclination to worry is similar to another cognitive approach that has gained popularity in recent years. The approach, mindfulness-based cognitive therapy, was developed by psychologist Steven Hayes and his colleagues as part of their broader treatment approach called acceptance and commitment therapy (Hayes et al., 2004; Hayes, 2004, 2002). Here therapists help clients to become aware of their streams of thoughts, including their worries, as they are occurring and to accept such thoughts as mere events of the mind. By accepting their thoughts rather than trying to eliminate them, the clients are expected to be less upset and affected by them. Mindfulness-based cognitive therapy has also been applied to a range of other psychological problems such as depression, post-traumatic stress disorder, personality disorders, and substance abuse, often with promising results (Blackledge et al., 2009; Hayes et al., 2004).
Biological Explanations: GABA Inactivity

In recent decades important discoveries by brain researchers have offered clearer evidence that generalized anxiety disorder is related to biological factors. One of the first such discoveries occurred in the 1950s, when researchers determined that benzodiazepines, the family of drugs that includes alprazolam (Xanax), lorazepam (Ativan), and diazepam (Valium), provide relief from anxiety. At first, no one understood why benzodiazepines reduce anxiety. Eventually, however, the development of radioactive techniques enabled researchers to pinpoint the exact sites in the brain that are affected by benzodiazepines (Mohler & Okada, 1977). Apparently certain neurons have receptors that receive the benzodiazepines, just as a lock receives a key.

Investigators soon discovered that these benzodiazepine receptors ordinarily receive gamma-aminobutyric acid (GABA), a common neurotransmitter in the brain. As you read in Chapter 2, neurotransmitters are chemicals that carry messages from one neuron to another. GABA carries inhibitory messages: When GABA is received at a receptor, it causes the neuron to stop firing.

On the basis of such findings, biological researchers eventually pieced together several scenarios of how fear reactions may occur. A leading one began with the notion that in normal fear reactions, key neurons throughout the brain fire more rapidly, triggering the firing of still more neurons and creating a general state of excitability throughout the brain and body. Perspiration, breathing, and muscle tension increase. This state is experienced as fear or anxiety. Continuous firing of neurons eventually triggers a feedback system—that is, brain and body activities that reduce the level of excitability. Some neurons throughout the brain release the neurotransmitter GABA, which then binds to GABA receptors on certain neurons and instructs those neurons to stop firing. The state of excitability ceases, and the experience of fear or anxiety subsides (Ator, 2005; Costa, 1985, 1983).

Some researchers have concluded that a malfunction in this feedback system can cause fear or anxiety to go unchecked (Roy-Byrne, 2005). In fact, when investigators reduced GABA’s ability to bind to GABA receptors, they found that animal subjects reacted with a rise in anxiety (Costa, 1985; Mohler et al., 1981). This finding suggested that people with generalized anxiety disorder might have ongoing problems in their anxiety feedback system. Perhaps they have too few GABA receptors, or perhaps their GABA receptors do not readily capture the neurotransmitter.

This explanation continues to have many supporters, but it is also problematic. First, according to recent biological discoveries, other neurotransmitters may also play important roles in anxiety and generalized anxiety disorder, either acting alone or in conjunction with GABA (Garrett, 2009; Burijon, 2007). Second, biological theorists are faced with the problem of establishing a causal relationship. The abnormal GABA responses of anxious persons may be the result, rather than the cause, of their anxiety disorders. Perhaps long-term anxiety eventually leads to poorer GABA reception, for example.
Biological Treatments

The leading biological treatment for generalized anxiety disorder is drug therapy (see Table 4-4). Other biological interventions are relaxation training and biofeedback.

Antianxiety Drug Therapy

In the late 1950s benzodiazepines were originally marketed as sedative-hypnotic drugs—drugs that calm people in low doses and help them fall asleep in higher doses. These new antianxiety drugs seemed less addictive than previous sedative-hypnotic medications, such as barbiturates, and they appeared to produce less tiredness (Meyer & Quenzer, 2005). Thus, they were quickly embraced by both doctors and patients.

Only years later did investigators come to understand the reasons for the effectiveness of benzodiazepines. As you have read, researchers eventually learned that there are specific neuron sites in the brain that receive benzodiazepines and that these same receptor sites ordinarily receive the neurotransmitter GABA. Apparently, when benzodiazepines bind to these neuron receptor sites, particularly those receptors known as GABA-A receptors, they increase the ability of GABA to bind to them as well, and so improve GABA’s ability to stop neuron firing and reduce anxiety (Dawson et al., 2005).

Antianxiety Drug Therapy

Studies indicate that benzodiazepines often provide temporary relief for people with generalized anxiety disorder (Burijon, 2007). However, clinicians have come to realize the potential dangers of these drugs. First, when the medications are stopped, many persons’ anxieties return as strong as ever. Second, we now know that people who take benzodiazepines in large doses for an extended time can become physically dependent on them. Third, the drugs can produce undesirable effects such as drowsiness, lack of coordination, memory loss, depression, and aggressive behavior. Finally, the drugs mix badly with certain other drugs or substances, such as alcohol.

In recent decades, still other kinds of drugs have become available for people with generalized anxiety disorder (Julien, 2008). In particular, it has been discovered that a number of antidepressant medications, drugs that are usually used to lift the moods of depressed persons, are also helpful to many people with generalized anxiety disorder. In fact, a number of today’s clinicians are more inclined to prescribe such antidepressants to treat generalized anxiety disorder than the GABA-enhancing benzodiazepines (Burijon, 2007; Liebowitz et al., 2005).

Relaxation Training

A nonchemical biological technique commonly used to treat generalized anxiety disorder is relaxation training. The notion behind this approach is that physical relaxation will lead to a state of psychological relaxation. In one version, therapists teach clients to identify individual muscle groups, tense them, release the tension, and ultimately relax the whole body. With continued practice, they can bring on a state of deep muscle relaxation at will, reducing their state of anxiety.

Research indicates that relaxation training is more effective than no treatment or placebo treatment in cases of generalized anxiety disorder. The improvement it produces, however, tends to be modest (Leahy, 2004), and other techniques that are known to relax people, such as meditation, often seem to be equally effective (Bourne et al., 2004). Relaxation training is of greatest help to people with generalized anxiety disorder when it is combined with cognitive therapy or with biofeedback (Lang, 2004).

Biofeedback

In biofeedback, therapists use electrical signals from the body to train people to control physiological processes such as heart rate or muscle tension. Clients are connected to a monitor that gives them continuous information about their bodily activities. By attending to the signals from the monitor, they may gradually learn to control even seemingly involuntary physiological processes.

The most widely applied method of biofeedback for the treatment of anxiety uses a device called an electromyograph (EMG), which provides feedback about the level of muscular tension in the body.
body. Electrodes are attached to the client’s muscles—usually the forehead muscles—where they detect the minute electrical activity that accompanies muscle tension (see Figure 4-3). The device then converts electric potentials coming from the muscles into an image, such as lines on a screen, or into a tone whose pitch changes along with changes in muscle tension. Thus clients “see” or “hear” when their muscles are becoming more or less tense. Through repeated trial and error, the individuals become skilled at voluntarily reducing muscle tension and, theoretically, at reducing tension and anxiety in everyday stressful situations.

Research finds that, in most cases, EMG biofeedback, like relaxation training, has only a modest effect on a person’s anxiety level (Brambring, 2004). As you will see in the next chapter, biofeedback has had its greatest impact when it plays *adjunct* roles in the treatment of certain medical problems, including headaches and back pain (Astin, 2004; Engel et al., 2004).

**SUMMING UP**

**Generalized Anxiety Disorder**

People with generalized anxiety disorder experience excessive anxiety and worry about a wide range of events and activities. Most explanations and treatments for this disorder have received only limited research support, although recent cognitive and biological approaches are promising.

According to the sociocultural view, societal dangers, economic stress, or related racial and cultural pressures create a threatening climate in which cases of generalized anxiety disorder are more likely to develop.

In the original psychodynamic explanation, Freud said that this disorder may develop when anxiety is excessive and defense mechanisms break down. Psychoanalytic therapists use free association, interpretation, and related psychodynamic techniques to help people overcome this problem.

Carl Rogers, the leading humanistic theorist, believed that people with generalized anxiety disorder fail to receive unconditional positive regard from significant others during their childhood and so become overly critical of themselves. He treated such individuals with client-centered therapy.

Cognitive theorists believe that generalized anxiety disorder is caused by maladaptive assumptions that lead people to view most life situations as dangerous. Many cognitive theorists also propose that implicit beliefs about the power and value of worrying further contribute to this disorder. Cognitive therapists help clients change such thinking and find more effective ways of coping during stressful situations.

Biological theorists hold that generalized anxiety disorder results from low activity of the neurotransmitter GABA. Common biological treatments are antianxiety drugs, particularly benzodiazepines, and certain antidepressant drugs. Relaxation training and biofeedback are also applied in many cases.

**Phobias**

A phobia (from the Greek word for “fear”) is a persistent and unreasonable fear of a particular object, activity, or situation. People with a phobia become fearful if they even think about the object or situation they dread, but they usually remain comfortable as long as they avoid it or think about it.

We all have our areas of special fear, and it is normal for some things to upset us more than other things. How do such common fears differ from phobias? DSM-IV-TR,
indicates that a phobia is more intense and persistent and the desire to avoid the object or situation is greater (APA, 2000). People with phobias often feel so much distress that their fears may interfere dramatically with their lives.

Most phobias technically fall under the category of specific phobias, DSM-IV-TR’s label for an intense and persistent fear of a specific object or situation. In addition, there are two broader kinds of phobias: social phobia, a fear of social or performance situations in which embarrassment may occur, and agoraphobia, a fear of venturing into public places, especially when one is alone. Because agoraphobia is usually, perhaps always, experienced in conjunction with panic attacks, unpredictable attacks of terror, we shall examine that phobia later within our discussion of panic disorders.

Specific Phobias

A specific phobia is a persistent fear of a specific object or situation (see Table 4-5). When sufferers are exposed to the object or situation, they typically experience immediate fear. Common specific phobias are intense fears of specific animals or insects, heights, enclosed spaces, thunderstorms, and blood. Here Andrew talks about his phobic fear of flying:

We got on board, and then there was the take-off. There it was again, that horrible feeling as we gathered speed. It was creeping over me again, that old feeling of panic. I kept seeing everyone as puppets, all strapped to their seats with no control over their destinies, me included. Every time the plane did a variation of speed or route, my heart would leap and I would hurriedly ask what was happening. When the plane started to lose height, I was terrified that we were about to crash.

(Melville, 1978, p. 59)

Each year close to 9 percent of all people in the United States have the symptoms of a specific phobia (Kessler et al., 2009, 2005). More than 12 percent of individuals develop such phobias at some point during their lives, and many people have more than one at a time. Women with the disorder outnumber men by at least 2 to 1. For reasons that are not clear, the prevalence of specific phobias also differs among racial and ethnic minority groups. In some studies, African Americans and Hispanic Americans report having at least 50 percent more specific phobias than do white Americans, even when economic factors, education, and age are held steady across the groups (Hopko et al., 2008; Breslau et al., 2006). It is worth noting, however, that these heightened rates are at work only among African and Hispanic Americans who were born in the United States, not those who emigrated to the United States at some point during their lives (Hopko et al., 2008).

The impact of a specific phobia on a person’s life depends on what arouses the fear (Scher et al., 2006). People whose phobias center on dogs, insects, or water will keep encountering the objects they dread. Their efforts to avoid them must be elaborate and may greatly restrict their activities. Urban residents with snake phobias have a much easier time. The vast majority of people with a specific phobia do not seek treatment. They try instead to avoid the objects they fear (Roth & Fonagy, 2005).

Social Phobias

Many people worry about interacting with others or about talking or performing in front of others. A number of entertainers, from singer Barbra Streisand to actor Sir Laurence Olivier, have described major bouts of anxiety before performing. Social fears of this kind are unpleasant and inconvenient, but usually the people who have them manage to function adequately, some at a very high level.
People with a social phobia, by contrast, have severe, persistent, and irrational fears of social or performance situations in which embarrassment may occur (see Table 4-6). A social phobia may be narrow, such as a fear of talking in public or writing in front of others, or it may be broad, such as a general fear of functioning poorly in front of others. In both forms, people repeatedly judge themselves as performing less adequately than they actually do.

A social phobia can interfere greatly with one’s life (Koury & Rapaport, 2007). A person who is unable to interact with others or speak in public may fail to perform important responsibilities. One who cannot eat in public may reject dinner invitations and other social opportunities. Since most people with this phobia keep their fears secret, their social reluctance is often misinterpreted as snobbery, lack of interest, or hostility.

Surveys indicate that 7.1 percent of people in the United States and other Western countries—around three women for every two men—experience a social phobia in any given year (see Table 4-7). Around 12 percent develop this problem at some point in their lives (Ruscio et al., 2008). It often begins in late childhood or adolescence and may continue into adulthood (APA, 2000).

In several studies African and Asian American participants have scored higher than white Americans on surveys of social anxiety (Schultz et al., 2008, 2006; Okazaki et al., 2002, APA, 2000). In addition, a culture-bound disorder called taijin kyofusho seems to be particularly common in Asian countries such as Japan and Korea. Although this disorder is traditionally defined as a fear of making other people feel uncomfortable, a number of clinicians now suspect that its sufferers primarily fear being evaluated negatively by other people, a key feature of social phobias.

**What Causes Phobias?**

Each of the models offers explanations for phobias. Evidence tends to support the behavioral explanations. Behaviorists believe that people with phobias first learn to fear certain objects, situations, or events through conditioning (Wolfe, 2005). Once the fears are acquired, the individuals avoid the dreaded object or situation, permitting the fears to become all the more entrenched.

**Behavioral Explanations: How Are Fears Learned?** Behaviorists propose classical conditioning as a common way of acquiring phobic reactions. Here, two events that occur close together in time become closely associated in a person’s mind, and, as you saw in Chapter 2, the person then reacts similarly to both of them. If one event triggers a fear response, the other may also.

In the 1920s a clinician described the case of a young woman who apparently acquired a phobia of running water through classical conditioning (Bagby, 1922). When she was 7 years old she went on a picnic with her mother and aunt and ran off by herself into the woods after lunch. While she was climbing over some large rocks, her feet were caught between two of them. The harder she tried to free herself, the more trapped she became. No one heard her screams, and she grew more and more terrified. In the language of behaviorists, the entrapment was eliciting a fear response.

\[ \text{Entrapment} \rightarrow \text{Fear response} \]

As she struggled to free her feet, the girl heard a waterfall nearby. The sound of the running water became linked in her mind to her terrifying battle with the rocks, and she developed a fear of running water as well.

\[ \text{Running water} \rightarrow \text{Fear response} \]

Eventually the aunt found the screaming child, freed her from the rocks, and comforted her, but the psychological damage had been done. From that day forward, the...
Anxiety Disorders

A girl was terrified of running water. For years family members had to hold her down to bathe her. When she traveled on a train, friends had to cover the windows so that she would not have to look at any streams. The young woman had apparently acquired a phobia through classical conditioning.

In conditioning terms, the entrapment was an unconditioned stimulus (US) that understandably elicited an unconditioned response (UR) of fear. The running water represented a conditioned stimulus (CS), a formerly neutral stimulus that became associated with entrapment in the child's mind and came also to elicit a fear reaction. The newly acquired fear was a conditioned response (CR).

\[
\text{US: Entrapment} \rightarrow \text{UR: Fear} \\
\text{CS: Running water} \rightarrow \text{CR: Fear}
\]

Another way of acquiring a fear reaction is through modeling, that is, through observation and imitation (Bandura & Rosenthal, 1966). A person may observe that others are afraid of certain objects or events and develop fears of the same things. Consider a young boy whose mother is afraid of illnesses, doctors, and hospitals. If she frequently expresses those fears, before long the boy himself may fear illnesses, doctors, and hospitals.

Why should one or a few upsetting experiences or observations develop into a long-term phobia? Shouldn’t the trapped girl see later that running water will bring her no harm? Shouldn’t the boy see later that illnesses are temporary and doctors and hospitals helpful? Behaviorists believe that after acquiring a fear response, people try to avoid what they fear. They do not get close to the dreaded objects often enough to learn that the objects are really quite harmless.

Behaviorists also propose that specific learned fears will blossom into a generalized anxiety disorder when a person acquires a large number of them. This development is presumed to come about through stimulus generalization: Responses to one stimulus are also elicited by similar stimuli. The fear of running water acquired by the girl in the rocks could have generalized to such similar stimuli as milk being poured into a glass or even the sound of bubbly music. Perhaps a person experiences a series of upsetting events, each event produces one or more feared stimuli, and the person’s reactions to each of these stimuli generalize to yet other stimuli. That person may then build up a large number of fears and eventually develop generalized anxiety disorder.

How Have Behavioral Explanations Fared in Research? Some laboratory studies have found that animals and humans can indeed be taught to fear objects...

### Anxiety Disorders Profile

<table>
<thead>
<tr>
<th>Disorder</th>
<th>One-Year Prevalence</th>
<th>Female to Male Ratio</th>
<th>Typical Age at Onset</th>
<th>Prevalence among Close Relatives</th>
<th>Percentage Currently Receiving Clinical Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generalized anxiety disorder</td>
<td>3.0%</td>
<td>2:1</td>
<td>0–20 years</td>
<td>Elevated</td>
<td>25.5%</td>
</tr>
<tr>
<td>Specific phobia</td>
<td>8.7%</td>
<td>2:1</td>
<td>Variable</td>
<td>Elevated</td>
<td>19.0%</td>
</tr>
<tr>
<td>Social phobia</td>
<td>7.1%</td>
<td>3:2</td>
<td>10–20 years</td>
<td>Elevated</td>
<td>24.7%</td>
</tr>
<tr>
<td>Panic disorder</td>
<td>2.8%</td>
<td>5:2</td>
<td>15–35 years</td>
<td>Elevated</td>
<td>34.7%</td>
</tr>
<tr>
<td>Obsessive-compulsive disorder</td>
<td>1.0%</td>
<td>1:1</td>
<td>4–25 years</td>
<td>Elevated</td>
<td>41.3%</td>
</tr>
</tbody>
</table>

Source: Ruscio et al., 2007; Kessler et al., 2005, 1999, 1994; Wang et al., 2005; Regier et al., 1993.
through classical conditioning (Miller, 1948; Mowrer, 1947, 1939). In one famous report, psychologists John B. Watson and Rosalie Rayner (1920) described how they taught a baby boy called Little Albert to fear white rats. For weeks Albert was allowed to play with a white rat and appeared to enjoy doing so. One time when Albert reached for the rat, however, the experimenter struck a steel bar with a hammer, making a very loud noise that frightened Albert. The next several times that Albert reached for the rat, the experimenter again made the loud noise. Albert acquired a fear and avoidance response to the rat.

Research has also supported the behavioral position that fears can be acquired through modeling. Psychologists Albert Bandura and Theodore Rosenthal (1966), for example, had human research participants observe a person apparently being shocked by electricity whenever a buzzer sounded. The victim was actually the experimenter’s accomplice—in research terminology, a confederate—who pretended to experience pain by twitching and yelling whenever the buzzer went on. After the unsuspecting participants had observed several such episodes, they themselves experienced a fear reaction whenever they heard the buzzer.

Although these studies support behaviorists’ explanations of phobias, other research has called those explanations into question (Ressler & Davis, 2003). Several laboratory studies with children and adults have failed to condition fear reactions. In addition, although most case studies trace phobias to incidents of classical conditioning or modeling, quite a few fail to do so. So, although it appears that a phobia can be acquired by classical conditioning or modeling, researchers have not established that the disorder is ordinarily acquired in this way.

A Behavioral-Evolutionary Explanation

Some phobias are much more common than others. Phobic reactions to animals, heights, and darkness are more common than phobic reactions to meat, grass, and houses. Theorists often account for these differences by proposing that human beings, as a species, have a predisposition to develop certain fears (Scher et al., 2006; Seligman, 1971). This idea is referred to as preparedness because human beings, theoretically, are “prepared” to acquire some phobias and not others. The following case makes the point:

A four-year-old girl was playing in the park. Thinking that she saw a snake, she ran to her parents’ car and jumped inside, slamming the door behind her. Unfortunately, the girl’s hand was caught by the closing car door, the results of which were severe pain and several visits to the doctor. Before this, she may have been afraid of snakes, but not phobic. After this experience, a phobia developed, not of cars or car doors, but of snakes. The snake phobia persisted into adulthood, at which time she sought treatment from me.

(Marks, 1977, p. 192)

In a series of studies on preparedness, psychologist Arne Ohman and his colleagues conditioned different kinds of fears in human participants (Lundqvist & Ohman, 2005; Ohman et al., 1975). In one study they showed all participants slides of faces, houses, snakes, and spiders. One group received electric shocks whenever they observed the slides of faces and houses, while the other group received shocks when they looked at snakes and spiders. Were participants more prepared to fear snakes and spiders? Using skin reactions, or galvanic skin responses (GSRs), as a measure of fear, the experimenters
found that both groups learned to fear the intended objects after repeated shock pairings. But then they noted an interesting difference: After a short shock-free period, the persons who had learned to fear faces and houses stopped registering high GSRs in the presence of those objects, while the persons who had learned to fear snakes and spiders continued to show high GSRs in response to them for a long while. One interpretation is that animals and insects are stronger candidates for human phobias than faces or houses.

Phobias, Familiar and Not So Familiar

Anxiety Disorders

A CLOSER LOOK

Animals—zoophobia
Beards—pogonophobia
Being afraid—phobophobia
Blood—hematophobia
Books—bibliophobia
Churches—ecclesiophobia
Corpses—necrophobia
Crossing a bridge—gephyrophobia
Crowds—ochlophobia
Darkness—achluophobia, nyctophobia
Demons or devils—demonophobia
Dogs—cynophobia
Dolls—pediophobia
Drugs—pharmacophobia
Enclosed spaces—claustrophobia
Eyes—ommatophobia
Feces—coprophobia
Fire—pyrophobia
Flood—anthrophobia
Flowers—anthrophobia
Flying—aerophobia
Fog—homiclophobia
Fur—doraphobia
Germs—spermophobia
Ghosts—phasmophobia
God—theophobia
 Graves—taphophobia
Heat—thermophobia
Heights—acrophobia
Homosexuality—homophobia
Horses—hippophobia
Ice, frost—cryophobia
Insects—entomophobia

Machinery—mechanophobia
Marriage—gamophobia
Meat—carnophobia
Mice—musophobia
Mirrors—eisoptrophobia
Money—chrometrophobia
Night—nyctophobia
Noise or loud talking—phonophobia
Odors—osmophobia
Pleasure—hedonophobia
Poison—toxiphobia
Poverty—peniaphobia
Pregnancy—maeiusophobia
Railways—siderodromophobia
Rain—ombrophobia
Rivers—potamophobia
Robbers—harpaxophobia
Satan—Satanophobia
Sexual intercourse—coitophobia, cypridophobia
Shadows—sciophobia
Sleep—hypnophobia
Snakes—ophidiophobia
Snow—chionophobia
Speed—tachophobia
Spiders—arachnophobia
Stings—cnidophobia
Strangers—xenophobia
Sun—heliophobia
Surgery—ergasiophobia
Teeth—odontophobia
Travel—hodophobia
Trees—dendrophobia
Wasps—spheksophobia
Waves—hydrophobia
Wind—anemophobia
Worms—helminthophobia
Wounds, injury—traumatophobia

(AVAN WAGNER, 2007; MELVILLE, 1978)
CHAPTER 4

Where might such predispositions to fear come from? According to some theorists, the predispositions have been transmitted genetically through an evolutionary process. Among our ancestors, the ones who more readily acquired fears of animals, darkness, heights, and the like were more likely to survive long enough to reproduce and to pass on their fear inclinations to their offspring (Ohman & Mineka, 2003; Mineka & Ohman, 2002).

How Are Phobias Treated?

Surveys reveal that 19 percent of individuals with specific phobias and almost 25 percent of those with social phobia are currently in treatment (Wang et al., 2005). Every theoretical model has its own approach to treating phobias, but behavioral techniques are more widely used than the rest, particularly for specific phobias. Research has shown such techniques to be highly effective and to fare better than other approaches in most head-to-head comparisons. Thus we shall focus primarily on the behavioral interventions.

Treatments for Specific Phobias Specific phobias were among the first anxiety disorders to be treated successfully in clinical practice. The major behavioral approaches to treating them are desensitization, flooding, and modeling. Together, these approaches are called exposure treatments because in all of them individuals are exposed to the objects or situations they dread.

People treated by systematic desensitization, a technique developed by Joseph Wolpe (1997, 1987, 1969), learn to relax while gradually facing the objects or situations they fear. Since relaxation and fear are incompatible, the new relaxation response is thought to substitute for the fear response. Desensitization therapists first offer relaxation training to clients, teaching them how to bring on a state of deep muscle relaxation at will. In addition, the therapists help clients create a fear hierarchy, a list of feared objects or situations, ordered from mildly to extremely upsetting.

Then clients learn how to pair relaxation with the objects or situations they fear. While the client is in a state of relaxation, the therapist has the client face the event at the bottom of his or her hierarchy. This may be an actual confrontation, a process called in vivo desensitization. A person who fears heights, for example, may stand on a chair or climb a stepladder. Or the confrontation may be imagined, a process called covert desensitization. In this case, the person imagines the frightening event while the therapist describes it. The client moves through the entire list, pairing his or her relax-

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BETWEEN THE LINES

Famous People, Famous Fears

<table>
<thead>
<tr>
<th>Person</th>
<th>Fear</th>
</tr>
</thead>
<tbody>
<tr>
<td>Napoleon Bonaparte</td>
<td>Cats</td>
</tr>
<tr>
<td>Johnny Depp</td>
<td>Clowns, spiders, ghosts</td>
</tr>
<tr>
<td>Justin Timberlake</td>
<td>Snakes</td>
</tr>
<tr>
<td>Queen Elizabeth I</td>
<td>Roies</td>
</tr>
<tr>
<td>Billy Bob Thornton</td>
<td>Antique furniture</td>
</tr>
<tr>
<td>Edgar Allan Poe</td>
<td>Enclosed places</td>
</tr>
<tr>
<td>Harry Houdini</td>
<td>Enclosed places</td>
</tr>
<tr>
<td>Adolf Hitler</td>
<td>Enclosed places</td>
</tr>
<tr>
<td>Nicole Kidman</td>
<td>Butterflies</td>
</tr>
<tr>
<td>Howard Hughes</td>
<td>Germs</td>
</tr>
<tr>
<td>Madonna</td>
<td>Thunder</td>
</tr>
<tr>
<td>John Madden</td>
<td>Air travel</td>
</tr>
<tr>
<td>Whoopi Goldberg</td>
<td>Air travel</td>
</tr>
<tr>
<td>Aretha Franklin</td>
<td>Air travel</td>
</tr>
<tr>
<td>Christina Ricci</td>
<td>Houseplants</td>
</tr>
<tr>
<td>Cher</td>
<td>Air travel</td>
</tr>
</tbody>
</table>

(abcnews.go.com, 2008; Szegedy-Maszak, 2005)

Recovering lost revenues

These children scream out as they experience a sudden steep drop from the top of an amusement park ride called Super Shot. Several parks offer behavioral programs to help customers overcome their fears of roller coasters and the new wave of horror rides. After “treatment,” some clients are able to ride the rails with the best of them. For others, it’s back to the relative calm of the Ferris wheel.

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SUPER SHOT

Recovering lost revenues

These children scream out as they experience a sudden steep drop from the top of an amusement park ride called Super Shot. Several parks offer behavioral programs to help customers overcome their fears of roller coasters and the new wave of horror rides. After “treatment,” some clients are able to ride the rails with the best of them. For others, it’s back to the relative calm of the Ferris wheel.
Anxiety Disorders

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ation responses with each feared item. Because the first item is only mildly frightening, it is usually only a short while before the person is able to relax totally in its presence. Over the course of several sessions, clients move up the ladder of their fears until they reach and overcome the one that frightens them most of all.

Another behavioral treatment for specific phobias is **flooding**. Flooding therapists believe that people will stop fearing things when they are exposed to them repeatedly and made to see that they are actually quite harmless. Clients are forced to face their feared objects or situations without relaxation training and without a gradual buildup. The flooding procedure, like desensitization, can be either in vivo or covert.

When flooding therapists guide clients in imagining feared objects or situations, they often exaggerate the description so that the clients experience intense emotional arousal. In the case of a woman with a snake phobia, the therapist had her imagine the following scene, among others:

*Close your eyes again. Picture the snake out in front of you, now make yourself pick it up. Reach down, pick it up, put it in your lap, feel it wiggling around in your lap, leave your hand on it, put your hand out and feel it wiggling around. Kind of explore its body with your fingers and hand. You don’t like to do it, make yourself do it. Make yourself do it. Really grab onto the snake. Squeeze it a little bit, feel it. Feel it kind of start to wind around your hand. Let it. Leave your hand there, feel it touching your hand and winding around it, curling around your wrist.*

*(Hogan, 1968, p. 423)*

In **modeling** it is the therapist who confronts the feared object or situation while the fearful person observes (Bandura, 2004, 1977, 1971; Bandura et al., 1977). The behavioral therapist acts as a model to demonstrate that the person’s fear is groundless. After several sessions many clients are able to approach the objects or situations calmly. In one version of modeling, **participant modeling**, the client is actively encouraged to join in with the therapist.

Clinical researchers have repeatedly found that each of the exposure treatments helps people with specific phobias (Farmer & Chapman, 2008; Pull, 2005). The key to success in all of these therapies appears to be actual contact with the feared object or situation. In vivo desensitization is more effective than covert desensitization, in vivo flooding more effective than covert flooding, and participant modeling more helpful than strictly observational modeling. In addition, a growing number of therapists are using virtual reality—3D computer graphics that simulate real-world objects and situations—as a useful exposure tool (Winerman, 2005).

**Treatments for Social Phobias** Only in recent years have clinicians been able to treat social phobias successfully (Rosenberg, Ledley, & Heimberg, 2010; Ruscio et al., 2008). Their newfound success is due in part to the growing recognition that social phobias have two distinct features that may feed upon each other: (1) People with such phobias may have overwhelming social fears, and (2) they may lack skill at starting conversations, communicating their needs, or meeting the needs of others. Armed with this insight, clinicians now treat social phobias by trying to reduce social fears, by providing training in social skills, or both.

**HOW CAN SOCIAL FEARS BE REDUCED?** Unlike specific phobias, which do not typically respond to psychotropic drugs, social fears are often reduced through medication (Julien, 2008). Somewhat surprisingly, it is antidepressant medications that seem to be the drugs of most help for this disorder, often more helpful than benzodiazepines or other kinds of antianxiety medications (Burijon, 2007).
At the same time, several types of psychotherapy have proved to be at least as effective as medication at reducing social fears, and people helped by such psychological treatments appear less likely to relapse than those treated with medications alone (Rodebaugh, Holaway, & Heimberg, 2004). This finding suggests to some clinicians that the psychological approaches should always be included in the treatment of social fears.

One psychological approach is exposure therapy, the behavioral intervention so effective with specific phobias. Exposure therapists encourage clients with social fears to expose themselves to the dreaded social situations and to remain until their fears subside. Usually the exposure is gradual, and it often includes homework assignments that are carried out in the social situations. In addition, group therapy offers an ideal setting for exposure treatments by allowing people to face social situations in an atmosphere of support and caring (McEvoy, 2007). In one group, for example, a man who was afraid that his hands would tremble in the presence of other people had to write on a blackboard in front of the group and serve tea to the other members (Emmelkamp, 1982).

Cognitive therapies have also been widely used to treat social fears, often in combination with behavioral techniques (Rosenberg et al., 2010; McEvoy, 2007). In the following discussion, Albert Ellis uses rational–emotive therapy to help a man who fears he will be rejected if he speaks up at gatherings. The discussion took place after the man had done a homework assignment in which he was to identify his negative social expectations and force himself to say anything he had on his mind in social situations, no matter how stupid it might seem to him:

After two weeks of this assignment, the patient came into his next session of therapy and reported: “I did what you told me to do... [Every] time, just as you said, I found myself retreating from people, I said to myself: ‘Now, even though you can’t see it, there must be some sentences. What are they?’ And I finally found them. And there were many of them! And they all seemed to say the same thing.”

“What thing?”

“That I, uh, was going to be rejected... [If] I related to them I was going to be rejected. And wouldn’t that be perfectly awful if I was to be rejected. And there was no reason for me, uh, to take that, uh, sort of thing, and be rejected in that awful manner...”
“And did you do the second part of the homework assignment?”
“The forcing myself to speak up and express myself?”
“Yes, that part.”
“That was worse. That was really hard. Much harder than I thought it would be. But I did it.”
“And?”
“Oh, not bad at all. I spoke up several times; more than I’ve ever done before. Some people were very surprised. Phyllis was very surprised, too. But I spoke up.” . . .
“And how did you feel after expressing yourself like that?”
“Remarkable! I don’t remember when I last felt this way. I felt, uh, just remarkable—good, that is. It was really something to feel! But it was so hard. I almost didn’t make it. And a couple of other times during the week I had to force myself again. But I did. And I was glad!”

(Ellis, 1962, pp. 202–203)

Studies show that rational-emotive therapy and other cognitive approaches do indeed help reduce social fears (Rosenberg et al., 2010; Hollon et al., 2006). And these reductions typically persist for years. On the other hand, research also suggests that while cognitive therapy often reduces social fears, it does not consistently help people perform effectively in social settings. This is where social skills training has come to the forefront.

**HOW CAN SOCIAL SKILLS BE IMPROVED?** In social skills training, therapists combine several behavioral techniques in order to help people improve their social skills. They usually model appropriate social behaviors for clients and encourage the individuals to try them out. The clients then role-play with the therapists, rehearsing their new behaviors until they become more effective. Throughout the process, therapists provide frank feedback and reinforce (praise) the clients for effective performances.

Reinforcement from other people with similar social difficulties is often more powerful than reinforcement from a therapist alone. In social skills training groups and assertiveness training groups, members try out and rehearse new social behaviors with other group members. The group can also provide guidance on what is socially appropriate. According to research, social skills training, both individual and group formats, has helped many people perform better in social situations (Fisher et al., 2004).

**SUMMING UP**

**Phobias**

A phobia is a severe, persistent, and unreasonable fear of a particular object, activity, or situation. There are three main categories of phobias: specific phobias, social phobias, and agoraphobia. Behavioral explanations of phobias, particularly specific phobias, are the most influential. Behaviorists believe that phobias are learned through classical conditioning or modeling, and then are maintained by avoidance behaviors.

Specific phobias have been treated most successfully with behavioral exposure techniques. The exposure may be gradual and relaxed (desensitization), intense (flooding), or vicarious (modeling).

Therapists who treat social phobias typically separate two features of this disorder: social fears and poor social skills. They try to reduce clients’ social fears by drug, exposure, group, or cognitive therapy—or a combination of these interventions. They may try to improve social skills by social skills training.

**BETWEEN THE LINES**

**Playlist Anxiety**

Many individuals in today’s digital music world share music playlists, so it may not be surprising that researchers have observed that a growing number of people are experiencing “playlist anxiety”—intense concern about the image they are projecting through the music they make available to others. The problem is particularly common among college students and office workers. A respondent in one study disclosed, “I just went through my playlist and said, ‘I wonder what kind of image this is giving of me.’ I went through it to see if there was stuff that I would not like people to know I had.”

Sometimes an anxiety reaction takes the form of a smothering, nightmarish panic in which people lose control of their behavior and, in fact, are practically unaware of what they are doing. Anyone can react with panic when a real threat looms up suddenly. Some people, however, experience panic attacks—periodic, short bouts of panic that occur suddenly, reach a peak within 10 minutes, and gradually pass. The attacks feature at least four of the following symptoms of panic: palpitations of the heart, tingling in the hands or feet, shortness of breath, sweating, hot and cold flashes, trembling, chest pains, choking sensations, faintness, dizziness, and a feeling of unreality. Small wonder that during a panic attack many people fear they will die, go crazy, or lose control.

I was inside a very busy shopping precinct and all of a sudden it happened: in a matter of seconds I was like a mad woman. It was like a nightmare, only I was awake; everything went black and sweat poured out of me—my body, my hands and even my hair got wet through. All the blood seemed to drain out of me—I went as white as a ghost. I felt as if I were going to collapse; it was as if I had no control over my limbs; my back and legs were very weak and I felt as though it were impossible to move. It was as if I had been taken over by some stronger force. I saw all the people looking at me—just faces, no bodies, all merged into one. My heart started pounding in my head and in my ears; I thought my heart was going to stop. I could see black and yellow lights. I could hear the voices of the people but from a long way off. I could not think of anything except the way I was feeling and that now I had to get out and run quickly or I would die. I must escape and get into the fresh air.

(Hawkrigg, 1975)

More than one-quarter of all people have one or more panic attacks at some point in their lives (Kessler et al., 2006). Some people, however, have panic attacks repeatedly and unexpectedly and without apparent reason. They may be suffering from panic disorder. In addition to the panic attacks, people who are diagnosed with panic disorder experience dysfunctional changes in their thinking or behavior as a result of the attacks (see Table 4-8). They may, for example, worry persistently about having additional attacks, have concerns about what such attacks mean (“Am I losing my mind?”), or plan their lives around the possibility of future attacks.

Panic disorder is often accompanied by agoraphobia, one of the three categories of phobia mentioned earlier. People with agoraphobia are afraid to leave the house and travel to public places or other locations where escape might be difficult or help unavailable should panic-like symptoms develop. In severe cases, people become virtual prisoners in their own homes. Their social life dwindles, and they cannot hold a job.

Until recently, clinicians failed to recognize the close link between agoraphobia and panic attacks. They now realize that panic attacks, or at least some panic-like symptoms, typically set the stage for agoraphobia: After experiencing one or more unpredictable attacks, certain individuals become fearful of having new attacks in public places where help or escape might be difficult.

Not everyone with panic disorder develops agoraphobia, but many such persons do. Thus DSM-IV–TR distinguishes panic disorder without agoraphobia from panic disorder with agoraphobia. Around 2.8 percent of all people in the United States suffer from one or the other of these patterns in a given year; close to 5 percent develop one of the patterns at some point in their lives (Kessler et al., 2009, 2006, 2005). Both kinds of panic disorder tend to develop in late adolescence or early adulthood and are at least twice as common among women as among men (APA, 2000). The prevalence of panic disorder is the same across various cultural and racial groups in the United States. Similarly,
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The disorder seems to occur in equal numbers in cultures across the world, although its specific context differs from country to country (Nazarian & Craske, 2008). Surveys indicate that around 35 percent of individuals with panic disorder in the United States are currently in treatment (Wang et al., 2005).

The Biological Perspective

In the 1960s, clinicians made the surprising discovery that panic disorder was helped more by certain antidepressant drugs, drugs that are usually used to reduce the symptoms of depression, than by most of the benzodiazepine drugs, the drugs useful in treating generalized anxiety disorder (Klein, 1964; Klein & Fink, 1962). This observation led to the first biological explanations and treatments for panic disorder.

What Biological Factors Contribute to Panic Disorder? To understand the biology of panic disorder, researchers worked backward from their understanding of the antidepressant drugs that seemed to control it. They knew that these particular antidepressant drugs operate in the brain primarily by changing the activity of norepinephrine, yet another one of the neurotransmitters that carry messages between neurons. Given that the drugs were so helpful in eliminating panic attacks, researchers began to suspect that panic disorder might be caused in the first place by abnormal norepinephrine activity.

Several studies produced evidence that norepinephrine activity is indeed irregular in people who suffer from panic attacks. For example, the locus ceruleus is a brain area rich in neurons that use norepinephrine. When this area is electrically stimulated in monkeys, the monkeys have a panic-like reaction, suggesting that panic reactions may be related to changes in norepinephrine activity in the locus ceruleus (Redmond, 1981, 1979, 1977). Similarly, in another line of research, scientists were able to produce panic attacks in human beings by injecting them with chemicals known to affect the activity of norepinephrine (Bourin et al., 1995; Charney et al., 1990, 1987).

These findings strongly tied norepinephrine and the locus ceruleus to panic attacks. However, research conducted in recent years indicates that the root of panic attacks is probably more complicated than a single neurotransmitter or single brain area. Researchers have determined, for example, that emotional reactions of various kinds are tied to brain circuits—networks of brain structures that work together, triggering each other into action and producing a particular kind of emotional reaction. It turns out that the circuit that produces panic reactions includes brain areas such as the amygdala, ventromedial nucleus of the hypothalamus, central gray matter, and locus ceruleus (Ninan & Dunlop, 2005) (see Figure 4-4). When a person confronts a frightening object or situation, the amygdala, a small almond-shaped structure that processes emotional information, is stimulated. In turn, the amygdala stimulates the other brain areas in the circuit, temporarily setting into motion an “alarm-and-escape” response (increased heart rate, respiration, blood pressure, and the like) that is very similar to a panic reaction (Gray & McNaughton, 1996). Most of today’s researchers believe that this brain circuit—including the neurotransmitters at work throughout the circuit—probably functions improperly in people who experience panic disorder (Burijon, 2007; Bailey et al., 2003).

It is worth noting that the brain circuit responsible for panic reactions appears to be different from the circuit responsible for anxiety reactions (reactions that are more diffuse, ongoing, and worry-dominated than panic reactions) (see Figure 4-5 on the next page). The anxiety brain circuit, which functions improperly in people with generalized anxiety disorder, includes the amygdala, prefrontal cortex, and anterior cingulate cortex (McClure et al., 2007).
Although some of the brain areas and neurotransmitters in the two circuits obviously overlap—particularly the amygdala, which seems to be at the center of each circuit—the finding that the panic brain circuit and the anxiety brain circuit are different has further convinced researchers that panic disorder is biologically different from generalized anxiety disorder and, for that matter, from other kinds of anxiety disorders.

Why might some people have abnormalities in norepinephrine activity, locus ceruleus functioning, and other parts of the panic brain circuit? One possibility is that a predisposition to develop such abnormalities is inherited (Burijon, 2007; Torgersen, 1990, 1983). Once again, if a genetic factor is at work, close relatives should have higher rates of panic disorder than more distant relatives. Studies do find that among identical twins (twins who share all of their genes), if one twin has panic disorder, the other twin has the same disorder in as many as 31 percent of cases (Tsuang et al., 2004). Among fraternal twins (who share only some of their genes), if one twin has panic disorder, the other twin has the same disorder in only 11 percent of cases (Kendler et al., 1995, 1993).

**Drug Therapies** As you have just read, researchers discovered in 1962 that certain antidepressant drugs could prevent panic attacks or reduce their frequency. Since the time of this surprising finding, studies across the world have repeatedly confirmed the initial observation (Julien, 2008; Burijon, 2007).

It appears that all antidepressant drugs that restore proper activity of norepinephrine in the locus ceruleus and other parts of the panic brain circuit are able to help prevent or reduce panic symptoms (Pollack, 2005; Redmond, 1985). Such drugs bring at least some improvement to 80 percent of patients who have panic disorder, and the improvement can last indefinitely, as long as the drugs are continued (McNally, 2001). In recent years alprazolam (Xanax) and other powerful benzodiazepine drugs have also proved effective in the treatment of panic disorder (Julien, 2005; Pollack, 2005). Apparently, the benzodiazepines help individuals with this disorder by indirectly affecting the activity of norepinephrine throughout the brain. Clinicians also have found the same antidepressant drugs and powerful benzodiazepines to be helpful in cases of panic disorder with agoraphobia (Clum & Febbraro, 2001).

**The Cognitive Perspective**

Cognitive theorists have come to recognize that biological factors are only part of the cause of panic attacks. In their view, full panic reactions are experienced only by people who further misinterpret the physiological events that are occurring within their bodies. Cognitive treatments are aimed at correcting such misinterpretations.

**The Cognitive Explanation: Misinterpreting Bodily Sensations** Cognitive theorists believe that panic-prone people may be very sensitive to certain bodily sensations; when they unexpectedly experience such sensations, they misinterpret them as signs of a medical catastrophe (Casey et al., 2004). Rather than understanding the probable cause of their sensations as “something I ate” or “a fight with the boss,” the panic-prone grow increasingly upset about losing control, fear the worst, lose all perspective, and rapidly plunge into panic. For example, many people with panic disorder seem to “overbreathe,” or hyperventilate, in stressful situations. The abnormal breathing makes them think that they are in danger of suffocation, so they panic (Dratcu, 2000). Such individuals further develop the belief that these and other “dangerous” sensations may return at any time and so set themselves up for future panic attacks.

In **biological challenge tests**, researchers produce hyperventilation or other biological sensations by administering drugs or by instructing clinical research participants...
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People with panic disorder are not the only ones to experience panic. In fact, many people panic when faced with a threat that unfolds very rapidly. The following news report describes the crowd reaction and human stampede that occurred at a trendy Chicago nightclub on February 17, 2003:

Police and fire officials yesterday began an investigation into how a fight in a Chicago nightclub caused a stampede in which 21 people were crushed to death. Witnesses claimed a fight between two women led to security guards using a pepper spray or mace to separate them early yesterday morning. As the fumes caused a panic, the fleeing clubbers found the rear doors of the E2 club were chained shut, forcing an estimated 1,500 people inside to surge down a narrow stairwell as they attempted to flee.

About 150 people, including two firefighters involved in the rescue operation, were injured, at least ten of whom were in critical condition last night. Eyewitnesses described how a “mound of people” built up on the stairs as they fled towards an exit, with many trampled and suffocated in the panic. Others passed out from the effect of the chemical fumes, it was claimed.

Cory Thomas, 33, who was waiting outside to collect two friends, said: “People were stacking on top of each other screaming and gagging. The door got blocked because there were too many people stacked up against it. I saw at least ten lifeless bodies.” Others staggered from the building breathless and incoherent. “Everybody smashed; people crying, couldn’t breathe,” said one clubber, Reggie Clark. “Two ladies next to me died. A guy under me passed out.”

Most of those who died were killed at the bottom of the main front door stairwell. Kristy Mitchell, 22, was one of those rescued after falling on the stairway and being trampled as the crowd continued to pour over her. She said: “People were stomping my legs. When they pulled me up, I was dizzy and I couldn’t breathe.”

Another of those rescued, Lamont James, said: “We heard the DJ say there was a fight and that caused a panic. People started heading for the corridor leading to the exit. There were people on top of me, people underneath me, people pressed up against the wall. . . .

It was by far the worst fatal incident of its kind in the US. In 1979, 11 people were killed and 200 injured as a panicked crowd raced for the front door after the heavy metal band Great White set off fireworks that began burning out of control.

Note: On February 20, 2003, just three days later, in a nightclub called The Station in Warwick, Rhode Island, 100 people were killed and 200 injured as a panicked crowd raced for the front door after the heavy metal band Great White set off fireworks that began burning out of control.
Why might some people be prone to such misinterpretations? One possibility is that panic-prone individuals generally experience, through no fault of their own, more frequent or more intense bodily sensations than other people do (Nardi et al., 2001). In fact, the kinds of sensations that are most often misinterpreted in panic disorders seem to be carbon dioxide increases in the blood, shifts in blood pressure, and rises in heart rate—bodily events that are controlled in part by the locus ceruleus and other regions of the panic brain circuit.

Whatever the precise causes of such misinterpretations may be, research suggests that panic-prone individuals generally have a high degree of what is called anxiety sensitivity; that is, they focus on their bodily sensations much of the time, are unable to assess them logically, and interpret them as potentially harmful (Wilson & Hayward, 2005). One study found that people who scored high on an anxiety sensitivity survey were five times more likely than other people to develop panic disorder (Maller & Reiss, 1992). Other studies have found that individuals with panic disorder typically earn higher anxiety sensitivity scores than other persons do (Dattilio, 2001; McNally, 2001).

**Cognitive Therapy**

Cognitive therapists try to correct people’s misinterpretations of their body sensations (McCabe & Antony, 2005). The first step is to educate clients about the general nature of panic attacks, the actual causes of bodily sensations, and the tendency of clients to misinterpret their sensations. The next step is to teach clients to apply more accurate interpretations during stressful situations, thus short-circuiting the panic sequence at an early point. Therapists may also teach clients to cope better with anxiety—for example, by applying relaxation and breathing techniques—and to distract themselves from their sensations, perhaps by striking up a conversation with someone.

In addition, cognitive therapists may use biological challenge procedures to induce panic sensations, so that clients can apply their new skills under watchful supervision (Meuret et al., 2005). Individuals whose attacks typically are triggered by a rapid heart rate, for example, may be told to jump up and down for several minutes or to run up a flight of stairs. They can then practice interpreting the resulting sensations appropriately, without dwelling on them.

According to research, cognitive treatments often help people with panic disorder (Marchand et al., 2009; Otto & Deveney, 2005). In a number of international studies, 85 percent of participants given these treatments have been found to be free of panic for two years or more, compared to only 13 percent of control participants. Such cognitive

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**•anxiety sensitivity•** A tendency to focus on one’s bodily sensations, assess them illogically, and interpret them as harmful.

**•obsession•** A persistent thought, idea, impulse, or image that is experienced repeatedly, feels intrusive, and causes anxiety.

**•compulsion•** A repetitive and rigid behavior or mental act that a person feels driven to perform in order to prevent or reduce anxiety.

**•obsessive-compulsive disorder•** A disorder in which a person has recurrent and unwanted thoughts, a need to perform repetitive and rigid actions, or both.
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treatments also are helpful for many persons whose panic disorders are accompanied by agoraphobia. For some individuals with the agoraphobic pattern, therapists further add exposure techniques to the cognitive treatment program—an addition that has produced particularly high success rates.

Cognitive therapy has proved to be at least as helpful as antidepressant drugs or alprazolam in the treatment of panic disorder, sometimes even more so (McCabe & Antony, 2005). In view of the effectiveness of both cognitive and drug treatments, many clinicians have tried combining them (Julien, 2008; Baskin, 2007). It is not yet clear, however, whether this strategy is more effective than cognitive therapy alone.

SUMMING UP

Panic Disorder

Panic attacks are periodic, short bouts of panic that occur suddenly. Sufferers of panic disorder experience such attacks repeatedly and unexpectedly and without apparent reason. When panic disorder leads to agoraphobia, it is termed panic disorder with agoraphobia.

Some biological theorists believe that abnormal norepinephrine activity in the brain’s locus ceruleus is the key to panic disorder. Others believe that related neurotransmitters and structures in the panic brain circuit also play key roles. Biological therapists use certain antidepressant drugs or powerful benzodiazepines to treat people with this disorder.

Cognitive theorists suggest that panic-prone people are very sensitive to their bodily sensations and misinterpret them as signs of medical catastrophe. Such persons have a high degree of anxiety sensitivity and also experience greater anxiety during biological challenge tests. Cognitive therapists teach patients to interpret their physical sensations more accurately and to cope better with anxiety.

Obsessive-Compulsive Disorder

Obsessions are persistent thoughts, ideas, impulses, or images that seem to invade a person’s consciousness. Compulsions are repetitive and rigid behaviors or mental acts that people feel they must perform in order to prevent or reduce anxiety. As Figure 4-6 on the next page indicates, minor obsessions and compulsions are familiar to almost everyone. You may find yourself filled with thoughts about an upcoming performance or exam or keep wondering whether you forgot to turn off the stove or lock the door. You may feel better when you avoid stepping on cracks, turn away from black cats, or arrange your closet in a particular manner.

Minor obsessions and compulsions can play a helpful role in life. Little rituals often calm us during times of stress. A person who repeatedly hums a tune or taps his or her fingers during a test may be releasing tension and thus improving performance. Many people find it comforting to repeat religious or cultural rituals, such as touching a mezuzah, sprinkling holy water, or fingering rosary beads.

According to DSM-IV-TR, a diagnosis of obsessive-compulsive disorder is called for when obsessions or compulsions feel excessive or unreasonable, cause great distress, take up much time, or interfere with daily functions (see Table 4-9). The disorder is classified as an anxiety disorder because the obsessions cause intense anxiety, while the compulsions are aimed at preventing or reducing anxiety. In addition, anxiety rises if individuals try to resist their obsessions or compulsions.

A woman with this disorder observed: “I can’t get to sleep unless I am sure everything in the house is in its proper place so that when I get up in the morning, the house is organized. I work like mad to set everything straight before I go to bed, but, when I get up in the morning, I can think of a thousand things that I ought to do. . . . I can’t stand to know something needs doing and I haven’t done it” (McNeil, 1967, pp. 26–28).
Between 1 and 2 percent of the people in the United States and other countries throughout the world suffer from obsessive-compulsive disorder in any given year (Björgvinsson & Hart, 2008; Wetherell et al., 2006). As many as 3 percent develop the disorder at some point during their lives. It is equally common in men and women and among people of different races and ethnic groups. The disorder usually begins by young adulthood and typically persists for many years, although its symptoms and their severity may fluctuate over time (Angst et al., 2004). It is estimated that more than 40 percent of people with obsessive-compulsive disorder seek treatment (Kessler et al., 1999, 1994).

What Are the Features of Obsessions and Compulsions?

Obsessive thoughts feel both intrusive and foreign to the people who experience them. Attempts to ignore or resist these thoughts may arouse even more anxiety, and before long they come back more strongly than ever. Like the woman quoted at the bottom of page 121, people with obsessions are quite aware that their thoughts are excessive.

Obsessions often take the form of obsessive wishes (for example, repeated wishes that one’s spouse would die), impulses (repeated urges to yell out obscenities at work or in church), images (fleeting visions of forbidden sexual scenes), ideas (notions that germs are lurking everywhere), or doubts (concerns that one has made or will make a wrong decision). In the following excerpt, a clinician describes a 20-year-old college junior who was plagued by obsessive doubts.

He now spent hours each night “rehashing” the day’s events, especially interactions with friends and teachers, endlessly making “right” in his mind any and all regrets. He likened the process to playing a videotape of each event over and over again in his mind, asking himself if he had behaved properly and telling himself that he had done his best, or...
had said the right thing every step of the way. He would do this while sitting at his desk, supposedly studying; and it was not unusual for him to look at the clock after such a period of rumination and note that, to his surprise, two or three hours had elapsed.

(Spitzer et al., 1981, pp. 20–21)

Certain basic themes run through the thoughts of most people troubled by obsessive thinking (Abramowitz, McKay, & Taylor, 2008). The most common theme appears to be dirt or contamination (Tolin & Meunier, 2008). Other common ones are violence and aggression, orderliness, religion, and sexuality. The prevalence of such themes may vary from culture to culture. Religious obsessions, for example, seem to be more common in cultures or countries with strict moral codes and religious values (Björgvinsson & Hart, 2008).

Compulsions are similar to obsessions in many ways. For example, although compulsive behaviors are technically under voluntary control, the people who feel they must do them have little sense of choice in the matter. Most of these individuals recognize that their behavior is unreasonable, but they believe at the same time something terrible will happen if they don’t perform the compulsions. After performing a compulsive act, they usually feel less anxious for a short while. For some people the compulsive acts develop into detailed rituals. They must go through the ritual in exactly the same way every time, according to certain rules.

Like obsessions, compulsions take various forms. Cleaning compulsions are very common. Like the woman we heard from earlier, people with these compulsions feel compelled to keep cleaning themselves, their clothing, or their homes. The cleaning may follow ritualistic rules and be repeated dozens or hundreds of times a day. People with checking compulsions check the same items over and over—door locks, gas taps, important papers—to make sure that all is as it should be (Radomsky et al., 2008). Another common compulsion is the constant effort to seek order or balance (Coles & Pietrefesa, 2008). People with this compulsion keep placing certain items (clothing, books, foods) in perfect order in accordance with strict rules. Touching, verbal, and counting compulsions are also common.

Although some people with obsessive-compulsive disorder experience obsessions only or compulsions only, most of them experience both (Clark & Guyitt, 2008). In fact, compulsive acts are often a response to obsessive thoughts. One study found that in most cases, compulsions seemed to represent a yielding to obsessive doubts, ideas, or urges (Akhtar et al., 1975). A woman who keeps doubting that her house is secure may yield to that obsessive doubt by repeatedly checking locks and gas jets. Or a man who obsessively fears contamination may yield to that fear by performing cleaning rituals.

Many people with obsessive-compulsive disorder worry that they will act out their obsessions. A man with obsessive images of wounded loved ones may worry that he is but a step away from committing murder, or a woman with obsessive urges to yell out in church may worry that she will one day give in to them and embarrass herself. Most such concerns are unfounded. Although many obsessions lead to compulsive acts—particularly to cleaning and checking compulsions—they usually do not lead to violence or immoral conduct.

Obsessive–compulsive disorder was once among the least understood of the psychological disorders. In recent decades, however, researchers have begun to learn more about it. The most influential explanations and treatments come from the psychodynamic, behavioral, cognitive, and biological models.
The Psychodynamic Perspective

As you have seen, psychodynamic theorists believe that an anxiety disorder develops when children come to fear their own id impulses and use ego defense mechanisms to lessen the resulting anxiety. What distinguishes obsessive-compulsive disorder from other anxiety disorders, in their view, is that here the battle between anxiety-provoking id impulses and anxiety-reducing defense mechanisms is not buried in the unconscious but is played out in overt thoughts and actions. The id impulses usually take the form of obsessive thoughts, and the ego defenses appear as counterthoughts or compulsive

Dining Out: The Obsessive-Compulsive Experience

In this February 2008 New York Times article, Jeff Bell, a radio news anchor, describes the ordeal that he and other people with similar obsessive-compulsive disorders confront whenever they go to a restaurant for a “pleasurable” night out.

Restaurants are designed to be calming and relaxing. That is one of the main reasons people like to eat out. To many of us with obsessive-compulsive disorder, those pleasures are invisible. We walk into a calm and civilized dining room and see things we won’t be able to control. . . .

Personally, I am fine with just about any table, although the wobbly ones can spell big trouble. I have harm obsessions, which means I am plagued by the fear that other people will be hurt by something I do, or don’t do. Seated at a less-than-sturdy table, I conjure images of fellow diners being crushed or otherwise injured should I fail to notify the restaurant’s management. This is called a reporting compulsion in the vernacular of the disorder, and before I learned to fight these urges, many a manager heard from me. . . .

Forget the tabletop, my friend Matt S. tells me; it’s what’s on top of the table, and precisely where, that really matters. Mr. S. is a 39-year-old lawyer in Fort Worth with order compulsions. To enjoy a meal he needs to separate the salt and pepper shakers, and, ideally, place a napkin holder or other divider midway between them. . . .

Some of our other concerns may seem familiar. I imagine most diners, for example, have noticed and perhaps even struggled to remove white detergent spots that can sometimes be seen on silverware. But few, I suspect, have gone to the lengths Jared K. has to get rid of them. Mr. K. is a 24-year-old research assistant living outside of Boston who has obsessive fears of contamination. . . .

As part of my harm obsession, one of my concerns is that germs from my mouth will hurt others. Although I try to keep my fingers away from my lips and their germs while I’m eating, I’m rarely successful (it’s not as easy as it sounds). By the end of the meal I believe that my hands are contaminated. The problem is that I need them to scribble my signature on the check. If I’m lucky, I will have remembered to “table-wash” my hands, a little trick I developed over the years: I use the condensation on the outside of a cold water glass to rinse off the germs. . . .

Once the check is signed, I must be sure that it is really signed. At my worst, I have opened and closed the vinyl check holder again and again, seeing my signature each time, yet unable to feel certain. I’ve left the table, only to return to check again. And again. . . .

[Postscript: After exposure and response prevention therapy]

Today I travel extensively, sharing my recovery story and working with groups like the Obsessive Compulsive Foundation to raise awareness. . . . I wind up eating in a lot of restaurants. I can honestly say I’m starting to enjoy it. In fact, while I still like ice water with my meal, I often find myself drinking from the glass, not washing with it.

Now when I say check, please, I’m simply asking for my bill.

actions. A woman who keeps imagining her mother lying broken and bleeding, for example, may counter those thoughts with repeated safety checks throughout the house.

According to psychodynamic theorists, three ego defense mechanisms are particularly common in obsessive-compulsive disorder: isolation, undoing, and reaction formation. People who resort to isolation simply disown their unwanted thoughts and experience them as foreign intrusions. People who engage in undoing perform acts that are meant to cancel out their undesirable impulses. Those who wash their hands repeatedly, for example, may be symbolically undoing their unacceptable id impulses. People who develop a reaction formation take on a lifestyle that directly opposes their unacceptable impulses. A person may live a life of compulsive kindness and devotion to others in order to counter unacceptable aggressive impulses.

Sigmund Freud traced obsessive-compulsive disorder to the anal stage of development (occurring at about 2 years of age). He proposed that during this stage some children experience intense rage and shame as a result of negative toilet-training experiences. Other psychodynamic theorists have argued instead that such early rage reactions are rooted in feelings of insecurity (Erikson, 1963; Sullivan, 1953; Horney, 1937). Either way, these children repeatedly feel the need to express their strong aggressive id impulses while at the same time knowing they should try to restrain and control the impulses. If this conflict between the id and ego continues, it may eventually blossom into obsessive-compulsive disorder. Overall, research has not clearly supported the psychodynamic explanation (Fitz, 1990).

When treating patients with obsessive-compulsive disorder, psychodynamic therapists try to help the individuals uncover and overcome their underlying conflicts and defenses, using the customary techniques of free association and therapist interpretation. Research has offered little evidence, however, that a traditional psychodynamic approach is of much help (Bram & Björgvinsson, 2004). Thus some psychodynamic therapists now prefer to treat these patients with short-term psychodynamic therapies, which, as you saw in Chapter 2, are more direct and action-oriented than the classical techniques.

The Behavioral Perspective

Behaviorists have concentrated on explaining and treating compulsions rather than obsessions. They propose that people happen upon their compulsions quite randomly. In a fearful situation, they happen just coincidentally to wash their hands, say, or dress a certain way. When the threat lifts, they link the improvement to that particular action.

**Origins of Superstitions**

- Avoid walking under a ladder: Egypt (3000 B.C.)
- Knock on wood: North America (2000 B.C.)
- Carry a rabbit’s foot: Western Europe (pre-600 B.C.)
- Break a wishbone: Italy (pre-400 B.C.)
- Cross fingers: Western Europe (pre-100 B.C.)
- Avoid broken mirrors: Rome (first century)
- Hang a horseshoe: Greece (fourth century)
- Avoid black cats: England (Middle Ages) (Panati, 1987)
After repeated accidental associations, they believe that the action is bringing them good luck or actually changing the situation, and so they perform the same actions again and again in similar situations. The act becomes a key method of avoiding or reducing anxiety (Frost & Steketee, 2001).

The famous clinical scientist Stanley Rachman and his associates have shown that compulsions do appear to be rewarded by a reduction in anxiety. In one of their experiments, for example, 12 research participants with compulsive hand-washing rituals were placed in contact with objects that they considered contaminated (Hodgson & Rachman, 1972). As behaviorists would predict, the hand-washing rituals of these participants seemed to lower their anxiety.

If people keep performing compulsive behaviors in order to prevent bad outcomes and ensure positive outcomes, can’t they be taught that such behaviors are not really serving this purpose? In a behavioral treatment called exposure and response prevention (or exposure and ritual prevention), first developed by psychiatrist Victor Meyer (1966), clients are repeatedly exposed to objects or situations that produce anxiety, obsessive fears, and compulsive behaviors, but they are told to resist performing the behaviors they feel so bound to perform. Because people find it very difficult to resist such behaviors, therapists may set an example first.

Many behavioral therapists now use exposure and response prevention in both individual and group therapy formats. Some of them also have people carry out self-help procedures at home (Foa et al., 2005). That is, they assign homework in exposure and response prevention, such as these assignments given to a woman with a cleaning compulsion:

- Do not mop the floor of your bathroom for a week. After this, clean it within three minutes, using an ordinary mop. Use this mop for other chores as well without cleaning it.
- Buy a fluffy mohair sweater and wear it for a week. When taking it off at night do not remove the bits of fluff. Do not clean your house for a week.
- You, your husband, and children all have to keep shoes on. Do not clean the house for a week.
- Drop a cookie on the contaminated floor, pick the cookie up and eat it.
- Leave the sheets and blankets on the floor and then put them on the beds. Do not change these for a week.

(Emmelkamp, 1982, pp. 299–300)

Eventually this woman was able to set up a reasonable routine for cleaning herself and her home.

Between 55 and 85 percent of clients with obsessive-compulsive disorder have been found to improve considerably with exposure and response prevention, improvements that often continue indefinitely (McKay, Taylor, & Abramowitz, 2010; Abramowitz et al., 2008). The effectiveness of this approach suggests that people with this disorder are like the superstitious man in the old joke who keeps snapping his fingers to keep elephants away. When someone points out, “But there aren’t any elephants around here,” the man replies, “See? It works!” One review concludes, “With hindsight, it is possible to see that the [obsessive-compulsive] individual has been snapping his fingers, and unless he stops (response prevention) and takes a look around at the same time (exposure), he isn’t going to learn much of value about elephants” (Berk & Efran, 1983, p. 546).

At the same time, research has revealed certain limitations in exposure and response prevention. Few clients who receive the treatment overcome all their symptoms, and as many as one-quarter fail to improve at all (Foa et al., 2005; Frost & Steketee, 2001). Also, the approach is of limited help to those who have obsessions but no compulsions (Hohagen et al., 1998).

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**BETWEEN THE LINES**

**Losing Battle**

People who try to avoid all contamination and rid themselves and their world of all germs are fighting a losing battle. While talking, the average person sprays 300 microscopic saliva droplets per minute, or 2.5 per word.
The Cognitive Perspective

Cognitive theorists begin their explanation of obsessive–compulsive disorder by pointing out that everyone has repetitive, unwanted, and intrusive thoughts. Anyone might have thoughts of harming others or being contaminated by germs, for example, but most people dismiss or ignore them with ease (Baer, 2001). Those who develop this disorder, however, typically blame themselves for such thoughts and expect that somehow terrible things will happen (Shafran, 2005; Salkovskis, 1999, 1985). To avoid such negative outcomes, they try to neutralize the thoughts—thinking or behaving in ways meant to put matters right or to make amends (Salkovskis et al., 2003).

Neutralizing acts might include requesting special reassurance from others, deliberately thinking “good” thoughts, washing one’s hands, or checking for possible sources of danger. When a neutralizing effort brings about a temporary reduction in discomfort, it is reinforced and will likely be repeated. Eventually the neutralizing thought or act is used so often that it becomes, by definition, an obsession or compulsion. At the same time, the individual becomes more and more convinced that his or her unpleasant intrusive thoughts are dangerous. As the person’s fear of such thoughts increases, the thoughts begin to occur more frequently and they, too, become obsessions.

In support of this explanation, studies have found that people who have obsessive–compulsive disorder experience intrusive thoughts more often than other people, resort to more elaborate neutralizing strategies, and experience reductions in anxiety after using neutralizing techniques (Shafran, 2005; Salkovskis et al., 2003).

Although everyone sometimes has undesired thoughts, only some people develop obsessive–compulsive disorder. Why do these individuals find such normal thoughts so disturbing to begin with? Researchers have found that this population tends (1) to be more depressed than other people (Hong et al., 2004), (2) to have exceptionally high standards of conduct and morality (Rachman, 1993), (3) to believe that their intrusive negative thoughts are equivalent to actions and capable of causing harm (Steketee et al., 2003), and (4) generally to believe that they should have perfect control over all of their thoughts and behaviors (Coles et al., 2005).

Cognitive therapists help clients focus on the cognitive processes involved in their obsessive–compulsive disorder. Initially, they educate the clients, pointing out how misinterpretations of unwanted thoughts, an excessive sense of responsibility, and neutralizing acts help produce and maintain their symptoms. The therapists then guide the clients to identify, challenge, and change their distorted cognitions. It appears that cognitive techniques of this kind often help reduce the number and impact of obsessions and compulsions (Rufer et al., 2005; Eddy et al., 2004).

While the behavioral approach (exposure and response prevention) and the cognitive approach have each been of help to clients with obsessive–compulsive disorder, some research suggests that a combination of the two approaches is often more effective than either intervention alone (McKay et al., 2010; Foa et al., 2005). In such cognitive-behavioral treatments, clients are first taught to view their obsessive thoughts as inaccurate occurrences rather than as valid and dangerous cognitions for which they are responsible and upon which they must act. As they become better able to identify and recognize the thoughts for what they are, they also become less inclined to act on them, more willing to subject themselves to the rigors of exposure and response prevention, and more likely to make gains in that behavioral technique.

The Biological Perspective

In recent years two lines of research have uncovered evidence that biological factors play a key role in obsessive–compulsive disorder, and promising biological treatments for the disorder have been developed as well. This research points to (1) abnormally low activity of the neurotransmitter serotonin and (2) abnormal functioning in key regions of the brain.

As we have observed previously, serotonin, like GABA and norepinephrine, is a brain chemical that carries messages from neuron to neuron. The first clue to its role in obsessive–compulsive disorder was, once again, a surprising finding by clinical

**Obsessive Love**

One team of researchers found that the serotonin activity of participants who claimed to be newly in love was about as low as that of participants with obsessive–compulsive disorder (Marazziti et al., 1999; Asimov, 1997).
researchers—this time that two antidepressant drugs, **clomipramine** and **fluoxetine** (Anafranil and Prozac), reduce obsessive and compulsive symptoms (Stein & Fineberg, 2007). Since these particular drugs increase serotonin activity, some researchers concluded that the disorder might be caused by low serotonin activity. In fact, only those antidepressant drugs that increase serotonin activity help in cases of obsessive-compulsive disorder; antidepressants that mainly affect other neurotransmitters typically have no effect on it (Jenike, 1992). Still other studies have recently suggested that other neurotransmitters, particularly **glutamate**, GABA, and dopamine, may also play important roles in the development of obsessive-compulsive disorder (Lambert & Kinsley, 2005).

Another line of research has linked obsessive-compulsive disorder to abnormal functioning by specific regions of the brain, particularly the **orbitofrontal cortex** (just above each eye) and the **caudate nuclei** (structures located within the brain region known as the basal ganglia). These regions are part of a brain circuit that usually converts sensory information into thoughts and actions (Stein & Fineberg, 2007). The circuit begins in the orbitofrontal cortex, where sexual, violent, and other primitive impulses normally arise. These impulses next move on to the caudate nuclei, which act as filters that send only the most powerful impulses on to the thalamus, the next stop on the circuit (see Figure 4-7). If impulses reach the thalamus, the person is driven to think further about them and perhaps to act. Many theorists now believe that either the orbitofrontal cortex or the caudate nuclei of some people are too active, leading to a constant eruption of troublesome thoughts and actions (Lambert & Kinsley, 2005). Additional parts of this brain circuit have also been identified in recent years, including the cingulate cortex and, once again, the amygdala (Stein & Fineberg, 2007). It may turn out that these regions also play key roles in obsessive-compulsive disorder.

In support of this brain circuit explanation, medical scientists have observed for years that obsessive-compulsive symptoms do sometimes arise or subside after the orbitofrontal cortex, caudate nuclei, or other regions in the circuit are damaged by accident or illness (Coetzer, 2004). Similarly, brain scan studies have shown that the caudate nuclei and the orbitofrontal cortex of research participants with obsessive-compulsive disorder are more active than those of control participants (Chamberlain et al., 2005; Baxter et al., 2001, 1990).

The serotonin and brain circuit explanations may themselves be linked. It turns out that serotonin—along with the neurotransmitters glutamate, GABA, and dopamine—plays a key role in the operation of the orbitofrontal cortex, caudate nuclei, and other parts of the brain circuit; certainly abnormal activity by one or more of these neurotransmitters could be contributing to the improper functioning of the circuit.

Ever since researchers first discovered that certain antidepressant drugs help to reduce obsessions and compulsions, these drugs have been used to treat obsessive-compulsive disorder (Julien, 2008). We now know that the drugs not only increase brain serotonin activity but also help produce more normal activity in the orbitofrontal cortex and caudate nuclei (Stein & Fineberg, 2007; Baxter et al., 2000, 1992). Studies have found that clomipramine (Anafranil), fluoxetine (Prozac), fluvoxamine (Luvox), and similar antidepressant drugs bring improvement to between 50 and 80 percent of those with obsessive-compulsive disorder (Bareggi et al., 2004). The obsessions and compulsions do not usually disappear totally, but on average they are cut almost in half within eight weeks of treatment (DeVeau–Geiss et al., 1992). People who are treated with such drugs alone, however, tend to relapse if their medication is stopped. Thus, more and more individuals with obsessive-compulsive disorder are now being treated by a combination of behavioral, cognitive, and drug therapies.
According to research, such combinations often yield higher levels of symptom reduction and bring relief to more clients than do each of the approaches alone—improvements that may continue for years (Kordon et al., 2005; Rufer et al., 2005).

Obviously, the treatment picture for obsessive–compulsive disorder has improved greatly over the past 15 years, and indeed, this disorder is now helped by several forms of treatment, often used in combination. In fact, at least two studies suggest that the behavioral, cognitive, and biological approaches may ultimately have the same effect on the brain. In these investigations, both participants who responded to cognitive–behavioral treatments and those who responded to antidepressant drugs showed marked reductions in activity in the caudate nuclei (Stein & Fineberg, 2007; Baxter et al., 2000, 1992).

**SUMMING UP**

**Obsessive–Compulsive Disorder**

People with obsessive–compulsive disorder experience obsessions and/or perform compulsions. Compulsions are often a response to a person’s obsessive thoughts. According to the psychodynamic view, obsessive–compulsive disorder arises out of an overt battle between id impulses and ego defense mechanisms. Behaviorists, on the other hand, believe that compulsive behaviors develop through chance associations. The leading behavioral treatment combines prolonged exposure with response prevention. Cognitive theorists believe that obsessive–compulsive disorder grows from a normal human tendency to have unwanted and unpleasant thoughts. The misguided efforts of some people to understand, eliminate, or avoid such thoughts actually lead to obsessions and compulsions. Cognitive therapy for this disorder includes correcting and helping clients change their misinterpretations of their unwanted thoughts. Research suggests that a combined cognitive–behavioral approach often is more effective than either cognitive or behavioral therapy alone.

Biological researchers have tied obsessive–compulsive disorder to low serotonin activity and abnormal functioning in the orbitofrontal cortex, the caudate nuclei, or other regions in the obsessive–compulsive brain circuit. Antidepressant drugs that raise serotonin activity are a useful form of treatment.

**PUTTING IT... together**

**Diathesis–Stress in Action**

Clinicians and researchers have developed many ideas about generalized anxiety disorder, phobias, panic disorder, and obsessive–compulsive disorder. At times, however, the sheer quantity of concepts and findings makes it difficult to grasp what is really known about the disorders.

Overall, it is fair to say that clinicians currently know more about the causes of phobias, panic disorder, and obsessive–compulsive disorder than about generalized anxiety disorder. It is worth noting that the insights about panic disorder and obsessive–compulsive disorder—once among the field’s most puzzling patterns—did not emerge until clinical theorists took a look at the disorders from more than one perspective and integrated those views. Today’s cognitive explanation of panic disorder, for example, builds squarely on the biological idea that the disorder begins with abnormal brain activity and unusual physical sensations. Similarly, the cognitive explanation of obsessive–compulsive disorder takes its lead from the biological position that some people are predisposed to experience more unwanted and intrusive thoughts than others.

It may be that a fuller understanding of generalized anxiety disorder awaits a similar integration of the various models. In fact, such an integration has already begun to unfold. Recall, for example, that one of the new wave cognitive explanations for generalized

**BETWEEN THE LINES**

**Young Dreams**

Studies indicate that infants who are generally anxious or “difficult” are more likely than other infants to later experience nightmares throughout their childhood (Simard et al., 2008).
**Critical Thoughts**

1. If fear is such an unpleasant experience, why do many people enjoy and even seek out the feelings of fear brought about by amusement park rides, scary movies, bungee jumping, and other such experiences? pp. 95–96, 102, 103, 112

2. Why are antianxiety drugs so popular in today’s world? p. 105

3. Why do so many professional performers seem particularly prone to social anxiety? Wouldn’t their repeated exposure to audiences lead to a reduction in fear? pp. 107–108, 112–114

4. Today’s human-participant research review boards probably would not permit Watson and Rayner to conduct their study on Little Albert. What concerns might they raise about the procedure? pp. 109–110

5. Can you think of instances when you instinctively tried a simple version of exposure and response prevention in order to stop behaving in certain ways? Were your efforts successful? p. 126

**Key Terms**

- Anxiety disorder
- Generalized anxiety disorder
- Unconditional positive regard
- Client-centered therapy
- Basic irrational assumptions
- Cognitive techniques
- Diathesis-stress principles
- Metacognitive and avoidance theories
- Rational-emotive therapy
- Mindfulness-based cognitive therapy
- CBT
- Relocation therapy
- Family pedigree study
- Benzodiazepines
- Gamma-aminobutyric acid (GABA)
- Relaxation training

Anxiety disorder links the cognitive process of worrying to heightened bodily arousal in individuals with the disorder.

Similarly, a growing number of theorists are adopting a diathesis-stress view of generalized anxiety disorder. They believe that certain individuals have a biological vulnerability toward developing the disorder—a vulnerability that is eventually brought to the surface by psychological and sociocultural factors. Indeed, genetic investigators have discovered that certain genes may determine whether a person reacts to life’s stressors calmly or in a tense manner, and developmental researchers have found that even during the earliest stages of life some infants become particularly aroused when stimulated (Burijon, 2007; Kalin, 1993). Perhaps these easily aroused infants have inherited defects in GABA functioning or other biological limitations that predispose them to generalized anxiety disorder. If, over the course of their lives, the individuals also face intense societal pressures, learn to interpret the world as a dangerous place, or come to regard worrying as a useful tool, they may be candidates for developing generalized anxiety disorder.

Diathesis-stress principles may also be at work in the development of phobias. Several studies suggest, for example, that certain infants are born with a style of social inhibition or shyness that may increase their risk of developing a social phobia (Smoller et al., 2003; Kagan & Snidman, 1999, 1991). Perhaps people must have both a genetic predisposition and unfortunate conditioning experiences if they are to develop particular phobias.

In the treatment realm, integration of the models is already on display for each of the anxiety disorders. Therapists have discovered, for example, that treatment is at least sometimes more effective when medications are combined with cognitive techniques to treat panic disorder and when medications are combined with cognitive-behavioral techniques to treat obsessive–compulsive disorder. Similarly, cognitive techniques are now often combined with relaxation training or biofeedback in the treatment of generalized anxiety disorder—a treatment package known as a stress management program (Lee et al., 2007; Taylor, 2006). And treatment programs for social phobias often include a combination of medications, exposure therapy, cognitive therapy, and social skills training. For the millions of people who suffer from these various anxiety disorders, such treatment combinations are a welcome development.
Anxiety Disorders:

1. What are the key principles in the sociocultural, psychodynamic, humanistic, cognitive, and biological explanations of generalized anxiety disorder? pp. 97–106
2. How effective have treatments been for generalized anxiety disorder? pp. 97–106
3. Define and compare the three kinds of phobias. pp. 107–108
5. Describe the three behavioral exposure techniques used to treat specific phobias. pp. 112–113
6. What are the two components of a social phobia, and how is each of them addressed in treatment? pp. 113–115
7. How do biological and cognitive theorists explain panic disorder? What are the leading biological and cognitive treatments for this disorder? pp. 117–121
8. Describe various types of obsessions and compulsions. pp. 121–123
10. Describe and compare the effectiveness of exposure and response prevention and antidepressant medications as treatments for obsessive-compulsive disorder. pp. 126, 128–129

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