CHAPTER

10

Mood Disorders

Paula Stansky was a 57-year-old woman, widow and mother of four children, who was hospitalized . . . because, according to her children, she was refusing to eat and take care of herself.

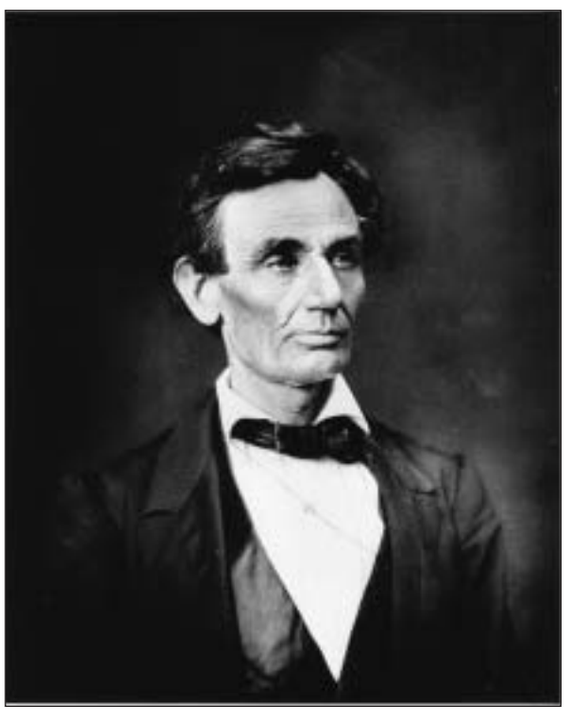
The patient . . . was described as a usually cheerful, friendly woman who took meticulous care of her home. . . . About two months prior to her hospitalization, however, her younger children reported a change in their mother's usual disposition, for no apparent reason. She appeared more easily fatigued, not as cheerful, and lackadaisical about her housework. Over the course of the next few weeks, she stopped going to church and canceled her usual weekly bingo outing with neighborhood women. As the house became increasingly neglected and their mother began to spend more time sleeping or rocking in her favorite chair, apparently preoccupied, the younger children called their married brother and sister for advice. . . .

When her son, in response to the telephone call, arrived at her house, Ms. Stansky denied that anything was wrong. She claimed to be only tired, "possibly the flu." For the ensuing week, her children tried to "cheer her up," but with no success. After several days had gone by without her taking a bath, changing her clothes, or eating any food, her children put her in the car and drove her to the hospital. . . .

On admission, Ms. Stansky was mostly mute, answering virtually no questions except correctly identifying the hospital and the day of the week. She cried periodically throughout the interview, but only shook her head back and forth when asked if she could tell the interviewer what she was feeling or thinking about. She was agitated, frequently wringing her hands, rolling her head toward the ceiling, and rocking in her chair. . . . Her children indicated that during the past week she had been waking up at 3 A.M., unable to fall back to sleep. She also seemed to them to have lost considerable weight. (Spitzer, Skodol, Gibbon, et al., 1983, p. 118)

Many of us go through occasional periods of dejection, where life seems gray and nothing seems worth doing. Some of us have also known the opposite state, a mood of excitement and recklessness in which we become feverishly active and think we can accomplish anything. In other words, **depression** and **mania,** in mild and temporary forms, are part of ordinary existence. In some cases, however, such mood swings become so prolonged and extreme that the person's life is seriously disrupted. These conditions are known as the **mood disorders,** or *affective disorders, affect* meaning "emotion."

The mood disorders have been recognized and written about since the beginning of the history of medicine. Hippocrates described both depression and mania in detail in the fourth century B.C.E. As early as the first century C.E., the Greek physician Aretaeus observed that manic and depressive behaviors sometimes occurred in the same person and seemed to stem from a single disorder. In the early nineteenth century, Philippe Pinel (1801/1967), the reformer of Parisian mental hospitals (Chapter 1), wrote a compelling account of depression, using Roman emperor Tiberius and French king Louis XI as illustrations. Depression has also been vividly described by some of its more famous victims. In one of his recurring episodes of depression, Abraham Lincoln wrote, "If what I feel were equally distributed to the whole human family, there would not be one cheerful face on earth."



Abraham Lincoln, whom many historians consider to be the greatest U.S. president, was subject to recurring bouts of severe depression.

Though they have been scrutinized for centuries, the mood disorders still remain something of a mystery. What is known about them is outlined in the first section of this chapter. In the second section, we turn our attention to suicide, which is often the result of depression. Finally, we describe the theory and treatment of mood disorders according to various perspectives.

Depressive and Manic Episodes

One of the most striking features of the mood disorders is their episodic quality. Within a few weeks, or sometimes within a few days, a person who has been functioning normally is plunged into despair or is scaling the heights of mania. Once the episode has run its course, the person may return to normal or near-normal functioning, though he or she is likely to have further episodes of mood disturbance. The nature of the episode (whether depressive or manic), its severity, and its duration determine the diagnosis and often the treatment—matters we will discuss. For now, let us examine the typical features of severe depressive and manic episodes.

Major Depressive Episode

In some cases, a psychological trauma plunges a person into a **major depressive episode** overnight, but usually the onset of depression is gradual, occurring over a period of several weeks or several months. The episode itself typically lasts several months and then ends, as it began, gradually (Coryell, Akiskal, Leon, et al., 1994).

The person entering a depressive episode undergoes profound changes in most areas of his or her life—in not just mood but also motivation, thinking, and physical and motor functioning. The following are the characteristic features of the major depressive episode, as described by *DSM-IV-TR:*

1. *Depressed mood.* Almost all severely depressed adults report some degree of unhappiness, ranging from a mild melancholy to total hopelessness. Mildly or moderately depressed people may have crying spells; severely depressed patients often say they feel like crying but cannot. Deeply depressed people see no way that they or anyone else can help them—a type of thinking that has been called the **helplessness-hopelessness syndrome.**

2. *Loss of pleasure or interest in usual activities.* Aside from depressed mood, the most common characteristic of a major depressive episode is loss of pleasure and, therefore, lack of interest in one's accustomed activities. This loss of pleasure, known as **anhedonia,** is generally far-reaching. Whatever the person once liked to do—in the case history at the beginning of the chapter, for example, keep house, play bingo, go to church—no longer seems worth doing. Even emotional responses to pleasant stimuli are diminished (Sloan, Strauss, & Wisner, 2001). Severely depressed patients may experience a complete "paralysis of the will"—an inability even to get out of bed in the morning.
3. *Disturbance of appetite.* Most depressed people have poor appetite and lose weight. A minority, however, react by eating more and putting on weight. Whatever the weight change, whether loss or gain, that same change tends to recur with each depressive episode (Kendler, Eaves, Walters, et al., 1996).
4. *Sleep disturbance.* Insomnia is an extremely common feature of depression. Waking up too early and then being unable to get back to sleep is the most characteristic pattern, but depressed people may also have trouble falling asleep initially, or they may awaken repeatedly throughout the night. As with eating, however, sleep may increase rather than decrease, with the patient sleeping 15 hours a day or more. Depressed individuals who sleep to excess are usually the same ones who eat to excess (Kendler, Eaves, Walters, et al., 1996).
5. *Psychomotor retardation or agitation.* Depression can usually be "read" immediately in the person's motor behavior and physical bearing. In the most common pattern, **retarded depression,** the patient seems overcome by fatigue. Posture is stooped, movement is slow and deliberate, gestures are kept to a minimum, and speech is low and halting, with long pauses before answering. In severe cases, individuals may fall into a mute stupor. Some evidence suggests that the symptom of psychomotor retardation is related to low presynaptic dopamine levels (Paillere Martinot, Bragulat, et al., 2001). More rarely, the symptoms take the opposite form, **agitated depression,** marked by incessant activity and restlessness—hand wringing, pacing, and moaning.
6. *Loss of energy.* The depressed person's reduced motivation is usually accompanied by a sharply reduced energy level. Without having done anything, he or she may feel exhausted all the time.
7. *Feelings of worthlessness and guilt.* Typically, depressed people see themselves as deficient in whatever attributes they value most: intelligence, beauty, popularity, health. Their frequent complaints about loss—whether of love, material goods, money, or prestige—may also reflect their sense of personal inadequacy. Such feelings of worthlessness are often accompanied by a profound sense of guilt. Depressed individuals seem to search the environment for evidence of problems they have created. If a child has trouble with schoolwork or the car has a flat tire, it is their fault.
8. *Difficulties in thinking.* In depression, mental processes, like physical processes, are usually slowed down. Depressed people tend to be indecisive, and they often report difficulties in thinking, concentrating, and remembering. The harder a mental task, the more difficulty they have (Hartlage, Alloy, Vázquez, et al., 1993).
9. *Recurrent thoughts of death or suicide.* Not surprisingly, many depressed people have recurrent thoughts of death and suicide. Often, they say that they (and everyone else) would be better off if they were dead.

Manic Episode

The typical **manic episode** begins rather suddenly, over the course of a few days, and is usually shorter than a depressive episode. A manic episode may last from several days to several months and then usually ends as abruptly as it began. *DSM-IV-TR* describes the prominent features as follows:

1. *Elevated, expansive, or irritable mood.* The mood change is the essential, "diagnostic" feature of a manic episode. Typically, manic people feel wonderful, see the world as an excellent place, and have limitless enthusiasm for whatever they are doing or plan to do. This expansiveness is usually mixed with irritability. Manic individuals often see other people as slow, doltish spoilsports and can become quite hostile, especially if someone tries to interfere with their behavior. In some cases, irritability is the manic person's dominant mood, with euphoria either intermittent or simply absent.
2. *Inflated self-esteem.* People with mania tend to see themselves as extremely attractive,

important, and powerful people, capable of great achievements in fields for which they may, in fact, have no aptitude whatsoever. They may begin composing symphonies, designing nuclear weapons, or calling the White House with advice on how to run the country.

3. *Sleeplessness.* The manic episode is almost always marked by a decreased need for sleep. Manic individuals may sleep only 2 or 3 hours a night and yet have twice as much energy as those around them.
4. *Talkativeness.* People with mania tend to talk loudly, rapidly, and constantly. Their speech is often full of puns, irrelevant details, and jokes that they alone find funny.
5. *Flight of ideas.* Manic individuals often have racing thoughts. This is one reason they speak so rapidly—to keep up with the flow of their ideas. Manic speech also tends to shift abruptly from one topic to the next.
6. *Distractibility.* Manic individuals are easily distracted. While doing or discussing one thing, they notice something else in the environment and abruptly turn their attention to that instead. They also show deficits on tasks that require sustained attention (Clark, Inversen, & Goodwin, 2001).
7. *Hyperactivity.* The expansive mood is usually accompanied by restlessness and increased goal-directed activity—physical, social, occupational, and often sexual.
8. *Reckless behavior.* The euphoria and grandiose self-image of manic people often lead them into impulsive actions: buying sprees, reckless driving, careless business investments, sexual indiscretions, and so forth. They are typically indifferent to the needs of others and think nothing of yelling in restaurants, calling friends in the middle of the night, or spending the family savings on a new Porsche.

The following is a clear-cut case of a manic episode:

> Terrence O'Reilly, a single 39-year-old transit authority clerk, was brought to the hospital in May, 1973, by the police after his increasingly hyperactive and bizarre behavior and nonstop talking alarmed his family. He loudly proclaimed that he was not in need of treatment, and threatened legal action against the hospital and police.
>
> The family reported that a month prior to admission Mr. O'Reilly took a leave of absence from his civil service job, purchased a large number of cuckoo clocks and then an expensive car which he planned to use as a mobile showroom for his wares, anticipating that he would make a great deal of money.
>
> He proceeded to "tear around town" buying and selling the clocks and other merchandise, and when he was not out, he was continuously on the phone making "deals." He rarely slept and, uncharacteristically, spent every evening in neighborhood bars drinking heavily and, according to him, "wheeling and dealing." Two weeks before admission his mother died suddenly of a heart attack. He cried for two days, but then his mood began to soar again. At the time of admission he was $3000 in debt and had driven his family to exhaustion. . . . He said, however, that he felt "on top of the world." (Spitzer, Skodol, Gibbon, et al., 1983, p. 115)

For a condition to be diagnosed as a manic episode, it must have lasted at least a week (or less, if hospitalization is required) and must have seriously interfered with the person's functioning. A briefer and less severe manic condition is called a **hypomanic episode.** Sometimes, patients meet the diagnostic criteria for both manic episode and major depressive episode simultaneously. (For example, they show manic grandiosity and hyperactivity, yet weep and threaten suicide.) This combined pattern is called a **mixed episode** and is not uncommon (Dilsaver, Chen, Shoaib, et al., 1999). Whichever type of manic episode a person has, purely euphoric or mixed, subsequent episodes tend to be of the same kind (Woods, Money, & Baker, 2001).

Mood Disorder Syndromes

Major Depressive Disorder

People who undergo one or more major depressive episodes, with no intervening periods of mania, are said to have **major depressive disorder.** This disorder is one of the United States' greatest mental health problems: Its prevalence during any given month is close to 4 percent of men and 6 percent of women. The lifetime risk—that is, the percentage of Americans who will experience major depression at some point in their lives—varies, but is about 17 percent (Ustun, 2001). Depression is second only to schizophrenia in frequency of admissions to American mental hospitals (Olfson & Mechanic, 1996). As for the nonhospitalized, private physicians report that depression leads to more office visits than any other medical

problem except hypertension (IMS Health Canada, 2001), and those patients are more debilitated—lose more workdays, spend more time in bed—than patients with many chronic medical conditions, such as diabetes or heart disease (Druss, Rosenheck, & Sledge, 2000; Wells & Sherbourne, 1999). Further, although there are several effective treatments for depression, most people with major depression do not receive adequate treatment (Young, Klap, Sherbourne, et al., 2001). As grave as the situation is, it is getting worse. Each successive generation born since World War II has shown higher rates of depression (Burke, Burke, Rae, et al., 1991; Klerman, 1988). Major depression is now the fourth leading cause of disability and premature death worldwide (Murray & Lopez, 1996). According to some experts, we are in an "age of depression."

Course In about 80 percent of all cases of major depression, the first episode is not the last (Judd, 1997). The more previous episodes a person has had, the younger the person was when the first episode struck, the fact of being a woman, the more painful events recently endured, the less supportive the family has been, and the more negative cognitions the individual has, the greater the likelihood of recurrence (Belsher & Costello, 1988; Lewinsohn, Rohde, Seeley, et al., 2000; Mueller, Leon, Keller, et al., 1999). Over a lifetime, the median number of episodes per patient is 4, with a median duration of 4½ months per episode (Judd, 1997; Solomon, Keller, Leon, et al., 1997).

The course of recurrent depression varies considerably. For some people, the episodes come in clusters. For others, they are separated by years of normal functioning. As for the quality of the normal functioning, that also varies. Some people also return to their **premorbid adjustment**—that is, their level of functioning prior to the onset of the disorder. As for the others, even 10 years after a major depressive episode, people still showed serious impairment in job status, income, marital adjustment, social relationships, and recreational activities (Judd, Akiskal, Zeller, et al., 2000). Depression also affects the immune system, leaving its victims more susceptible to illness and death (Schleifer, Keller, Bartlett, et al., 1996; Penninx, Geerlings, Deeg, et al., 1999), and increases the risk of cardiac death by 2 to 3 times (Penninx, Beekman, Honig, et al., 2001). All of these effects make it difficult for people coming out of a depressive episode to resume their former lives. Indeed, some research indicates that the symptoms and behaviors characteristic of a depressive episode actually generate stressful life events, which in turn can maintain the depression and produce a cycle of chronic stress and impairment (Daley, Hammen, Burge, et al., 1997; Joiner, 2000). Thus, people snap back, but many of them do not snap back entirely, just as scar tissue is not the same as the original tissue. Not surprisingly, the longer a depressive episode lasts, the less likely it is that the person will fully recover (Keller, Lavori, Mueller, et al., 1992).

❖ **Groups at Risk for Depression** Certain groups within the population are more susceptible than others to major depression. The rate for European Americans is higher than for African Americans and Mexican Americans (Zhang & Snowden, 1999; Oquendo, Ellis, Greenwald, et al., 2001); it is higher for separated and divorced people than for married people (Blazer, Kessler, McGonagle, et al., 1994; Harlow, Cohen, Otto, et al., 1999) and for women than for men. Indeed, the risk for women is two times higher than for men (Nolen-Hoeksema, 2001)—a fact that investigators have tried to explain with theories ranging from hormonal differences to the changing social role of women. One promising theory has to do with differences in the way men and women respond to depressed moods. According to Susan Nolen-Hoeksema (1991, 2001), women, when they are "down," tend to ruminate on this, focusing on the depression, wondering why it is happening and what it will lead to. Men take the opposite tack: They try to distract themselves. Because the evidence indicates that rumination exacerbates and prolongs depression, whereas distraction relieves it, women are likely to have longer and more serious depressions (Nolen-Hoeksema, 2001). For a more comprehensive theory of the female disadvantage with regard to depression, see the box on page 250.

Women are about twice as likely as men to experience depression. A possible explanation for this difference in prevalence is that women tend to analyze their depression, whereas men are more likely to try to distract themselves from it.

Research Highlights

Gender Differences in Depression

Women are about twice as likely as men to develop a serious depression, but, curiously, the same is not true of boys and girls. Prior to age 14 or 15, the two genders are at equal risk (Hankin & Abramson, 2001; Nolen-Hoeksema, 2001). (If anything, boys show a slightly higher risk.) What happens to girls in adolescence to make them so much more prone to depression?

To answer that question, several researchers (Cyranowski, Frank, Young, et al., 2000; Hankin & Abramson, 2001; Nolen-Hoeksema, 2001; Kendler, Gardner, Neale, et al., 2001) have proposed integrative models. According to these models, girls already carry a heavier load of risk factors for depression from childhood, but it is not until those factors are activated by the special challenges of adolescence that they crystallize into a greater vulnerability to depression. In defense of this theory, the researchers list a number of characteristics associated with depression: genetic risk, a negative attributional style, a tendency to ruminate on depression, helplessness, need for affiliation, and biological reactivity to stress. Though all these characteristics correlate with depression in both males and females, girls show them to a greater extent than boys long before adolescence.

Then, in adolescence, new risk factors arise, and it is the combination of these with the prior risks that tips the balance. One new risk, for example, is that the number of stressful life events experienced rises at puberty for both boys and girls, but more so for girls (Hankin & Abramson, 2001; Rudolph & Hammen, 1999). A second risk is shame about one's body. Research has shown that boys value the physical changes associated with puberty more than girls do (Harter, 1999; Kostanski & Gullone, 1998). Boys like their newly muscled shoulders; girls, on the other hand, tend to be distressed by the gain in body fat, and they often find menstruation embarrassing. Such "body dissatisfaction" is associated with depression (Hankin & Abramson, 2001; Wichstrom, 1999). So is sexual abuse and rape, another puberty-connected risk factor that is far more common for girls than for boys. It is estimated that girls aged 14 to 15 have a higher risk of being raped than any other age or sex group (Weiss, Longhurst, & Mazure, 1999).

Also, it is in adolescence that girls begin to confront most directly the restricted role carved out for them by their society. Many adopt the role quickly. Youngsters of both genders show less interest in school as they pass from sixth to seventh grade, but girls show a sharper drop in academic ambition (Nolen-Hoeksema, 2001). By the time they enter college, women are sorting themselves into less lucrative, less competitive fields.

Apparently, girls who accept the narrowed role prescribed for women are at higher risk for depression (Nolen-Hoeksema, 2001). Girls who defy such role expectations are *also* more prone to depression (Nolen-Hoeksema & Girgus, 1994)—no doubt a reflection of the widespread disapproval of assertive women. In addition, girls' greater need for affiliation (close interpersonal relationships, intimacy), already present before puberty, intensifies after puberty (Cyranowski, Frank, Young, et al., 2000). When this combines with the greater exposure to stressful life events in girls after puberty, particularly interpersonal events that threaten relationships with friends and romantic partners, adolescent girls are more likely to become depressed.

If they encountered the challenges of adolescence with no disadvantage, girls might weather them well enough. But, because they are already characterized by a higher load of biological, cognitive, and interpersonal risk factors, they are less likely to cope well. And so, according to these recent models, women may develop the patterns that will make them, from then on, twice as vulnerable to depression as men.

As for age, it was once thought that the middle-aged and the elderly were the high-risk groups. But recent research indicates that growing old does not increase one's susceptibility to depression (Roberts, Kaplan, Shema, et al., 1997). If anything, it is the young who are at risk. The rates of depression begin to surge in mid-adolescence (Hankin, Abramson, Moffitt, et al., 1998; Wichstrom, 1999), and the peak age at onset for major depression is now 15 to 19 years for women and 25 to 29 years for men (Burke, Burke, Regier, et al., 1990), though the disorder may strike at any age, even in infancy. Moreover, onset of major depression before puberty is associated with higher rates of major depression, bipolar disorder, and substance use disorder as well as poor school, work, and social functioning as adults (Geller, Zimerman, Williams, et al., 2001; Weissman, Wolk, Wickramaratne, et al., 1999).

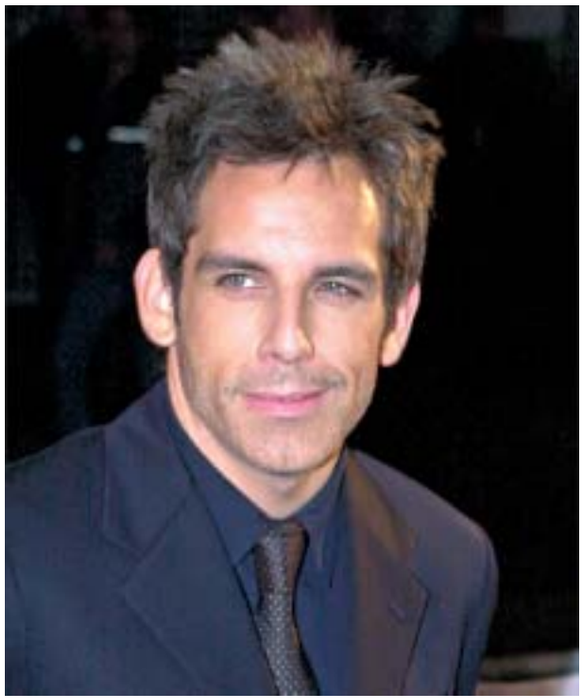
The symptom picture differs somewhat, depending on age group (Harrington, 1993; Kessler, Avenevoli, & Merikangas, 2001). In depressed infants, the most striking and alarming sign is failure to eat. In older children, depression may manifest itself primarily as apathy and inactivity. Alternatively, it may take the form of separation anxiety, in which the child clings frantically to parents, refuses to leave them long enough to go to school, and is haunted by fears of death (or of the parents' deaths). In adolescents, the most prominent symptoms are sulkiness, negativism, low self-esteem, withdrawal, complaints of not being understood, and perhaps antisocial behavior and drug abuse (Kessler, Avenevoli, & Merikangas, 2001; Goodyer, 1992)—in other words, an exaggeration of normal adolescent problems. (See Chapter 16 for further discussion of depression in childhood.) In the elderly, lack of pleasure and motivation, expressions of

hopelessness, and psychomotor retardation or agitation are common signs, as are delusions and hallucinations (Brodaty, Peters, Boyce, et al., 1991). The neurobiological correlates of depression also differ across age groups. Depressed children and adolescents don't show elevated cortisol levels or respond to tricyclic antidepressants as depressed adults do (Kaufman, Martin, King, et al., 2001).

Bipolar Disorder

Whereas major depression is confined to depressive episodes, **bipolar disorder,** as the name suggests, involves both manic and depressive phases. In the usual case, bipolar disorder first appears in late adolescence in the form of a manic episode. Subsequent episodes may occur in any of a variety of patterns. The initial manic episode may be followed by a normal period, then by a depressed episode, than a normal period, and so forth. Or one episode may be followed immediately by its opposite, with normal intervals occurring only between such manic-depression pairs (Rehm, Wagner, & Ivens-Lyndal, 2001). In a less common pattern, called the *rapid-cycling type,* the person (usually a woman) switches back and forth between depressive and manic or mixed episodes over a long period, with little or no "normal" functioning between (Leibenluft, 2000). This pattern, which tends to have a poor prognosis (Leibenluft, 2000), turns up in about one fourth of bipolar patients in response to antidepressant medication (Suppes, Dennehy, & Gibbons, 2000).

The occurrence of manic episodes is not all that differentiates bipolar disorder from major depression (see Table 10.1). The two syndromes differ in many important respects (Rehm, Wagner, & Ivens-Tyndal, 2001). First, bipolar disorder is much less common than major depression, affecting an estimated 0.8 to 1.6 percent of the adult population



Actor Ben Stiller talks openly about his experience with bipolar disorder.

(Kessler, McGonagle, Zhao, et al., 1994). Second, the two disorders show different demographic profiles. Unlike major depression, bipolar disorder occurs in the two sexes with approximately equal frequency, and bipolar disorder is more prevalent among higher socioeconomic groups. Third, age of onset is later for bipolar disorder than for unipolar depression. Fourth, while people who are married or have intimate relationships are less prone to major depression, they have no advantage with respect to bipolar disorder. Fifth, people with major depression tend to have histories of low self-esteem, dependency, and

TABLE 10.1 Differences Between Major Depression and Bipolar Disorder

	MAJOR DEPRESSION	BIPOLAR DISORDER
Prevalence	About 17% of population	1–2% of population
Sex ratio	2:1 (Women:Men)	1:1
Age of onset	Earlier	Later
Marital Status	Less common in married people	Marriage provides no protection
Personality features	Low self-esteem, dependency, and obsessional thinking	Hyperactivity and ADHD
Depressive episodes	Less likely to involve pervasive slowing	More likely to involve pervasive slowing
Course	Episodes longer and less frequent	Episodes briefer and more frequent
Prognosis	Less impairment and better outcome	Greater impairment and worse outcome
Genetics	Weaker genetic component	Stronger genetic component

obsessional thinking, whereas people with bipolar disorder are more likely to have a history of hyperactivity or ADHD (Winokur, Coryell, Endicott, et al., 1993; Sachs, Baldassano, Truman, et al., 2000). Sixth, the depressive episodes in bipolar disorder are more likely to involve a pervasive slowing down—psychomotor retardation, excess sleep, weight/appetite increase—than are those in major depression (Benazzi, 2000, 2001). Seventh, the two disorders differ in their course. Episodes in bipolar disorder are generally briefer and more frequent than are those in major depression (Cusin, Serretti, Lattuada, et al., 2000). Eighth, the two conditions differ in prognosis. In general, bipolar disorder creates greater impairment and has a worse long-term outcome (Gitlin, Swendsen, Heller, et al., 1995; Suppes, Dennehy, & Gibbons, 2000). Finally, bipolar disorder is more likely to run in families. On the basis of these clues, many researchers think that the two disorders, similar as they may appear, spring from different causes.

We may, however, be looking at more than two disorders. Some patients have a manic or mixed episode—or a series of such episodes—with no subsequent depressive episode. Such cases, though they involve only one "pole," are nevertheless classified as bipolar disorder, because, apart from the absence of depressive episodes, they resemble the classic bipolar disorder. (Some researchers suspect that they are simply cases of insufficient follow-up.) Alternatively, some patients have both depressive and manic phases but in the latter are hypomanic rather than fully manic. In recognition of these two patterns—and the need to assemble research groups to test whether they are different disorders—*DSM-IV-TR* has divided bipolar disorder into two types. In *bipolar I disorder,* the person has had at least one manic (or mixed) episode and usually, but not necessarily, at least one major depressive episode as well. In *bipolar II disorder,* the person has had at least one major depressive episode and at least one hypomanic episode but has never met the diagnostic criteria for manic or mixed episode.

The following is a case of bipolar I disorder, involving both full-blown manic and depressive episodes:

> At 17 [Mrs. M. had] suffered from a depression that rendered her unable to work for several months. . . . At 33, shortly before the birth of her first child, the patient was greatly depressed. For a period of four days she appeared in coma. About a month after the birth of the baby she "became excited" and . . . signed a year's lease on an apartment, bought furniture, and became heavily involved in debt. Shortly thereafter, Mrs. M. became depressed and returned to the hospital in which she had previously been a patient. After several months she recovered and . . . remained well for approximately two years.
>
> She then became overactive and exuberant in spirits and visited her friends, to whom she outlined her plans for reestablishing different forms of lucrative business. She purchased many clothes, bought furniture, pawned her rings, and wrote checks without funds. She was returned to a hospital. Gradually her manic symptoms subsided, and after four months she was discharged. For a period thereafter she was mildly depressed. In a little less than a year Mrs. M. again became overactive. . . . Contrary to her usual habits, she swore frequently and loudly, created a disturbance in a club to which she did not belong, and instituted divorce proceedings. On the day prior to her second admission to the hospital she purchased 57 hats.
>
> During the past 18 years this patient has been admitted and dismissed from the hospital on many occasions. At times, with the onset of a depressed period, she has returned to the hospital seeking admission. At such times she complained that her "brain just won't work." She would say, "I have no energy, am unable to do my housework. I have let my family down; I am living from day to day. There is no one to blame but myself." During one of her manic periods, she sent the following telegram to a physician of whom she had become much enamored: "To: You; Street and No.: Everywhere; Place: the remains at peace! We did our best, but God's will be done! I am so very sorry for all of us. To brave it through thus far. Yes, Darling—from Hello Handsome. Handsome is as Handsome does, thinks, lives and breathes. It takes clear air. Brother of Mine, in a girl's hour of need. All my love to the Best Inspiration one ever had." (Kolb, 1982, pp. 376–377)

Dysthymic Disorder and Cyclothymic Disorder

Many people are chronically depressed or chronically pass through depressed and expansive periods, but their condition is not severe enough to merit the diagnosis of major depressive disorder or bipolar disorder. Such patterns, if they last for two years or more, are classified as dysthymic disorder and cyclothymic disorder, respectively.

Dysthymic disorder involves a mild, persistent depression. Dysthymic individuals are typically morose, pessimistic, introverted, overconscientious, and incapable of fun (Akiskal & Cassano, 1997). In addition, they often show the low energy level, low self-esteem, suicidal ideation, and disturbances of eating, sleeping, and thinking that are associated with major depression, but their functioning is worse (Klein,

Schwartz, Rose, et al., 2000). The syndrome is about half as common as major depressive disorder.

Dysthymic Disorder: Seeing the Tunnel, But No Light at the End

The MindMAP video "Dysthymia" illustrates some of the negative thoughts and feelings found among individuals with dysthymic disorder. Under what conditions might the experiences of these thoughts and feelings be quite normal, and under what conditions be quite odd? Why?

Cyclothymic disorder, like dysthymic disorder, is chronic. For years, the person never goes longer than a few months without a phase of hypomanic or depressive behavior. Because the pattern is mild and persistent, as in dysthymia, it becomes a way of life. In their hypomanic periods, which they come to depend on, cyclothymics work long hours without fatigue—indeed, with their mental powers newly sharpened—before lapsing back into a normal or depressed state. It has been suggested that cyclothymia and bipolar disorder are especially common in creative people and help them get their work done (Jamison, 1992; Post, 1994). (See the box on page 254.) However, more recent evidence suggests that hypomanic symptoms specifically may be associated with enhanced creativity and dysthymia may be linked to reduced creativity (Schuldberg, 1999; Shapiro, 2001; Shapiro & Weisberg, 1999).

Both dysthymia and cyclothymia have a slow, insidious onset in adolescence and may persist for a lifetime. In this sense, they are like the personality disorders, the subject of Chapter 11. Far closer, however, is the link with the major mood disorders. Like people with major depressive disorder or bipolar disorder, dysthymic and cyclothymic individuals have relatives with higher-than-normal rates of mood disorders (Alloy & Abramson, 2000). In addition, dysthymia and cyclothymia show the same gender distribution as their graver counterparts. Dysthymic disorder, like major depression, is one and a half to three times more common in women, whereas in cyclothymic disorder, as in bipolar disorder, the genders are at equal risk (Kessler, McGonagle, Zhao, et al., 1994). Finally, patients with dysthymia and cyclothymia tend to show the same neurophysiological abnormalities and the same reactions to antidepressant drugs as people with major depressive disorder and bipolar disorder (Akiskal, Judd, Lemmi, et al., 1997; Alloy & Abramson, 2000). About 77 percent of people with dysthymia go on to develop major depressive disorder (Klein, Schwartz, Rose, et al., 2000), and 15 to 50 percent of people with cyclothymia eventually show bipolar disorder.

Dimensions of Mood Disorder

In addition to the important distinction between bipolar disorder and depressive disorder, there are certain dimensions, or points of differentiation, that researchers and clinicians have found useful in classifying mood disorders. We shall discuss three dimensions: psychotic-neurotic, endogenous-reactive, and early-late onset.

Psychotic Versus Nonpsychotic As we saw in Chapter 7, historically, psychological disorders were described, in terms of severity, as either psychotic or neurotic—a distinction that hinges on the matter of reality contact. Neurotics do not lose their ability to interact with their environment in a reasonably efficient manner. Psychotics do, partly because their thinking processes are often disturbed by **hallucinations,** or false sensory perceptions, and **delusions,** or false beliefs. However, since the term "neurotic" was dropped from *DSM-III* in 1980, the psychotic-neurotic distinction is now discussed as a psychotic-nonpsychotic differentiation and is often applied to depression. In psychotic depression, hallucinations, delusions, and extreme withdrawal are usually congruent with the depressed mood—such as delusions of persecution due to some personal inadequacy. Manic episodes can also have psychotic features. Mrs. M.'s letter to her doctor (page 252) qualifies as evidence of psychotic-level thought disturbance. However, many cases of major depression and bipolar disorder—and, by definition, all cases of dysthymia and cyclothymia—remain at the nonpsychotic level.

Are nonpsychotic- and psychotic-level mood disorders two different entities altogether? The traditional position is that they are. For example, Kraepelin (Chapter 1), in his original classification system, listed all incapacitating mood disorders under the heading "manic-depressive psychosis," which he considered an organic illness distinct from nonpsychotic-level mood disturbances. Many theorists still hold to this position, and there is some evidence to support it. Psychotic depressed people tend to differ from nonpsychotic depressed individuals not just in reality contact but also in psychomotor symptoms, cognitive deficits, biological signs, family history, and response to

FOCUS ON...

Bipolar Disorder and Creativity: Streams of Fire

The "mad genius" is an ancient idea, but recently it has been restated by Kay Redfield Jamison, a professor of psychiatry at Johns Hopkins School of Medicine. In her 1992 book, *Touched With Fire: Manic-Depressive Illness and the Artistic Temperament,* Jamison argues that artists show an unusually high rate of mood disorder and that this is part of what makes them creative. To assemble her evidence, Jamison studied the lives of a large group of British and Irish poets born between 1705 and 1805. Her conclusion was that they were 30 times more likely to have suffered manic-depressive illness, 20 times more likely to have been committed to an asylum, and 5 times more likely to have killed themselves than were members of the general population. Jamison studied not just poets but artists in many media: Baudelaire, Blake, Byron, Coleridge, Dickinson, Shelley, Tennyson, Whitman, Balzac, Conrad, Dickens, Zola, Handel, Berlioz, Schumann, Tchaikovsky, Michelangelo, van Gogh, Gauguin. All these, Jamison believes, probably suffered from serious mood disorders.

Neither is the evidence confined to past centuries. Jamison provides a list of major American poets of the twentieth century: Hart Crane, Theodore Roethke, Delmore Schwartz, John Berryman, Randall Jarrell, Robert Lowell, Anne Sexton, and Sylvia Plath. Of these, five won the Pulitzer prize, and five committed suicide. All eight were treated for depression, and all but one were treated for mania. Many of Jamison's creative manic-depressives also had family histories of mood disorder. Lord Byron, who once described his brain as "a whirling gulf of fantasy and flame," had a great-uncle known as "Mad Lord Byron" and a father known as "Mad Jack Byron." His mother had violent mood swings; his maternal grandfather, a depressive, committed suicide.

Together with these sad histories, Jamison describes the creative benefits of mania. For one thing, it instills confidence. It also allows its victims to work uninterruptedly for long hours. But, above all, the euphoria, the hyperintense perceptions, the feeling of bursting inspiration that accompanies mania provide rich material for art. Novelist Virginia Woolf wrote, "As an experience madness is terrific . . . and in its lava I still find most of the things I write about." Composer Hugo Wolf described his blood as "changed into streams of fire."

Some observers find Jamison's conclusions more romantic than scientific, particularly insofar as they involve "diagnosing the dead" on the basis of the anecdotal evidence of biographies. There were no *DSM* criteria in the nineteenth century, let alone before; consequently, it is hard to know whether the eccentricities of people such as "Mad Jack Byron" constitute the same condition that we call bipolar disorder. Also, famous artists' lives have been very heavily scrutinized, and this may lead to distortion. Schoolteachers and bus drivers may also feel, now and then, that their brains are licked with fire, but, because they are not artists, they are less likely to interest the public in this fact. Partly because of the "mad genius" stereotype—and because mad geniuses make lively reading—artists' biographers tend to stress the extravagant and the pathological.

However, Jamison's findings have been supported in some measure by studies of living people. Richards and her colleagues found that bipolar and cyclothymic patients and their normal first-degree relatives scored significantly higher on creativity than did either normal controls or people with psychiatric diagnoses other than mood disorder. An interesting aspect of this study was that the research team used a much broader and more "normal" definition of creativity than other researchers have used. The subjects who were involved in social and political causes, who showed a special flair for business, who worked at hobbies—they, too, got points for creativity. The researchers concluded that the most creative people were not those with or without bipolar disorder but those in between, the cyclothymics and the even milder, "subclinical" moody types, together with the normal first-degree relatives of people with pronounced mood disorders (Richards, Kinney, Lunde, et al., 1988).

Novelist Virginia Woolf (1882–1941) struggled with what was probably bipolar disorder throughout her adult life. She finally drowned herself. Peter Ilyich Tchaikovsky (1840–1893), one of the most popular and influential Russian composers of the nineteenth century, suffered severe depressions.

various treatments (Coryell, 1996; Belanoff, Kalehzan, Sund, et al., 2001). They are also more likely to later develop manic or hypomanic episodes and thus convert to bipolar disorder (Goldberg, Harrow, & Whiteside, 2001).

Other theorists argue that the distinction between nonpsychotic and psychotic depression is quantitative rather than qualitative. This theory, known as the **continuity hypothesis,** rests on the idea that depression appears, above all, to be an exaggerated form of everyday sadness (Ruscio & Ruscio, 2000; Solomon, Haaga, & Arrow, 2001). According to the proponents of the continuity hypothesis, psychotic depression, nonpsychotic depression, dysthymia, and normal "blues" are simply different points on a single continuum. The findings that people with low-level mood disorders—not just dysthymia and cyclothymia but also people with "subsyndromal" symptoms (symptoms not severe enough to merit diagnosis)—are at risk for more severe depression and have relatives with higher rates of mood disorder lends some support to the continuity hypothesis (Angst & Merikangus, 1997; Lewinsohn, Solomon, Seeley, et al., 2000).

Endogenous Versus Reactive Many proponents of the continuity hypothesis believe that all mood disorders are largely psychogenic. Those who hold to the Kraepelin tradition, on the other hand, generally believe that only the milder forms are psychogenic. They regard the psychotic forms as biogenic.

Basic to the latter point of view is a second dimension of mood disorder: the endogenous-versus-reactive dimension. Originally, the terms *endogenous* and *reactive* were intended to indicate whether or not a depression was preceded by a precipitating event, such as a death in the family or the loss of a job. Those linked to such an event were called **reactive;** those not linked were called **endogenous** (literally, "born from within"). According to adherents of Kraepelin's position, nonpsychotic depressions were generally reactive and therefore psychogenic, while psychotic depressions were generally endogenous and therefore biogenic (Rehm, Wagner, & Ivens-Tyndal, 2001).

As it turns out, however, the distinction is not so easily made. The research indicates that *most* depressive episodes, including those in bipolar patients, are preceded by stressful life events (Alloy, Reilly-Harrington, Fresco, et al., in press; Johnson & Kizer, 2002), and such stressful events are a major cause of depressive episodes (Kendler, Karkowski, & Prescott, 1999). In many cases, there is a precipitating event for a first episode but not for later episodes (Brown, Harris, & Hepworth, 1994; Lewinsohn, Allen, Seeley, et al., 1999). As a result of these confusions, the terms *endogenous* and *reactive,* despite their dictionary meanings, are now generally used not to indicate the absence or presence of precipitating events but to describe different patterns of symptoms (Rehm, Wagner, & Ivens-Tyndal, 2001). Patients who show pronounced anhedonia together with the more vegetative, or physical, symptoms (e.g., early-morning waking, weight loss, psychomotor changes) and who describe their depression as different in quality from what they would feel after the death of a loved one are classified as endogenous, or, in *DSM-IV-TR's* terminology, as having "melancholic features." Those whose disturbance is primarily emotional or cognitive are called reactive, or without melancholic features. Of these symptoms, psychomotor disturbance is the best at discriminating melancholic from nonmelancholic depression (Parker, Roy, Hadzi-Pavlovic, et al., 2000).

The endogenous-reactive distinction made on the basis of symptoms does seem to describe a genuine difference. Endogenous patients differ from reactive patients in their sleep patterns. They are also more likely than reactive patients to show the biological abnormalities that we will describe later in this chapter and to respond to biological treatments, such as electroconvulsive ("shock") therapy (Rush & Weissenburger, 1994). Accordingly, some researchers still suspect that endogenous cases are more biogenic, but this has not been established, and there is some evidence to the contrary. For example, if endogenous depression were more biochemically based, then we would expect endogenous patients to have greater family histories of depression than do reactive patients, but numerous studies have shown that they do not (Rush & Weissenburger, 1994). Researchers are still investigating this question intensively, and it is partly to help them assemble research groups that the *DSM* requires diagnosticians to specify whether or not a depression has melancholic features.

When depression is preceded by a clearly precipitating event, that event is usually an uncontrollable loss—being laid off from work, losing one's home—and particularly, an interpersonal loss (Cronkite & Moos, 1995; Kendler, Karkowski, & Prescott, 1999). "Exit events"—death, separation, divorce, a child's leaving home—rank high among stressors associated with the onset of depression (Paykel & Cooper, 1992; Monroe, Rohde, Seeley, et al., 1999). By the same token, if a person has a close relationship, and therefore someone to confide in, he or she is less likely to succumb to depression in the face of stressful life events (Panzarella, Alloy, & Whitehouse, 2003). The same principles hold for people recovering from depression. Stress, particularly stress connected with exit

Having the comfort and support of a family member can help a person avoid the onset or relapse of depression that is associated with uncontrollable losses such as death.

events and other losses, is associated with relapses, while positive life events and social support, particularly in the form of a confidant, is associated with quicker recovery, even in the face of stress (Oldehinkel, Ormel, & Neeleman, 2000; Lara, Leader, & Klein, 1997).

Interestingly, recent theory and evidence suggests that stressful life events may be more important in precipitating first onsets than recurrences of major depression. For example, Post's (1992) "kindling" model suggests that certain neurobiological changes occur with each episode of depression such that episodes become more autonomous. As a consequence, stressors are hypothesized to be less likely to precipitate recurrences than first onsets of depression. Consistent with the kindling model, most studies have found that stressful events are less involved in precipitating recurrences than first onsets of depression (Kendler, Thornton, & Gardner, 2000; Lewinsohn, Allen, Seeley, et al., 1999), although one study suggested that an individual's age may be more important than his or her number of prior episodes in determining the role of stressful events in precipitating depression (Hlastala, Frank, Kowalski, et al., 2000).

Early Versus Late Onset In the past few years, evidence has been steadily accumulating that age at onset is an important dimension of mood disorder. The earlier the onset of the disorder, the more likely it is that the person's relatives have, or have had, mood disorders (Klein, Schatzberg, McCullough, et al., 1999). Some of the findings are quite remarkable. In a study of children of people with major depression, when the parent's age at onset was under 20, the lifetime risk of major depression in the child was almost twice as great as the risk when the parent's age at onset was over 30 (Weissman, Warner, Wickramaratne, et al., 1988). Early-onset patients are also more likely to have children and other relatives who are alcoholic (Kupfer, Frank, Carpenter, et al., 1989).

Early onset affects not just the relatives but also the person with the early onset. In a study of dysthymic patients, 94 percent of the early-onset group graduated to major depression, compared with 55 percent of the late-onset group—again, about a 2:1 ratio (Klein, Taylor, Dickstein, et al., 1988). Likewise, in a study of people with chronic major depression, the early-onset patients were more likely to have recurrent major depressive episodes, personality disorders, substance use disorders, and hospitalization (Klein, Schatzberg, McCullough, et al., 1999).

In general, then, the earlier the onset, the harder the road, both for the person and for the rest of the family. These findings may suggest that early-onset patients have a higher "genetic loading" for mood disorder. Alternatively, the higher rates of depression in the relatives of early-onset patients could be due to environmental effects. Relatives of early-onset cases have lived with a depressed person for a longer period of time. In particular, children of an early-onset depressed parent have had greater opportunity to learn depressive behaviors from the parent.

Comorbidity: Mixed Anxiety-Depression

One important trend in the study of depression is the increasing evidence of the **comorbidity,** or co-occurrence, of depressive and anxiety disorders (Pini, Cassano, Simonini, et al., 1997). Indeed, two thirds of depressed patients have a concurrent anxiety disorder and three quarters have had an anxiety disorder in their lifetime (Zimmerman, McDermut, & Mattia, 2000). Bipolar disorder also shows high comorbidity with anxiety disorders (Johnson, Cohen, & Brook, 2000; Suppes, Dennehy, & Gibbons, 2000). The symptomatologies of anxiety and depression show considerable overlap. Both include weeping, irritability, worry, fatigue, insomnia, low self-esteem, dependency, poor concentration, and feelings of helplessness (Alloy, Kelly, Mineka, et al., 1990). People in these two diagnostic groups also tend to respond to the same antidepressant drugs (Fyer, Liebowitz, & Klein, 1990), share similar endocrine abnormalities (Heninger, 1990), and have family histories of both anxiety and depressive disorders (Merikangus, 1990; Weissman, 1990). These findings have reignited an old debate over whether depression and anxiety are, in fact, two distinct entities or whether they are somewhat different manifestations of the same underlying disorder. One theory with considerable support, called the tripartite model, suggests that depression and anxiety each have unique features as well as a common underlying component. Both disorders are characterized by high negative affect (distress). However, depression is unique in also being characterized by low positive affect (low joy, engagement, etc.), whereas anxiety is unique in also being characterized by high autonomic nervous system arousal (Mineka, Watson, & Clark, 1988).

The comorbidity findings have also led to a proposal that a new category, mixed anxiety-depression, be included in the *DSM*. This would make the *DSM* consistent with the World Health Organization's *ICD-10,* which has such a category. More important, it would provide a diagnostic label for people who have mixed symptoms of anxiety and depression but who do not meet the *DSM-IV-TR* criteria for either disorder alone. Such people may be at risk for more severe mood and anxiety disorders, especially if they are not given appropriate treatment (Stein, Kirk, Prabhu, et al., 1995; Zinbarg, Barlow, Liebowitz, et al., 1994). Having no diagnostic label for them makes appropriate treatment less likely. However, mixed anxiety-depression that doesn't meet criteria for a diagnosis of either depression or anxiety may be infrequent and have few characteristic risk factors (Wittchen, Schuster, & Lieb, 2001).

Suicide

People take their lives for many reasons, but a very common reason is depression and bipolar disorder. People with major depression are at 11 times greater risk of making a suicide attempt, whereas those who also have had a manic episode are at almost 30 times greater risk for making a suicide attempt than people without a mood disorder (Kessler, Borges, & Walters, 1999). Among people who commit suicide, an estimated 55 percent were depressed before the fatal attempt (Isacsson & Rich, 1997).

Accurate statistics on the prevalence of suicide are difficult to obtain, because many people who commit suicide prefer to make their deaths look accidental. It has been estimated that at least 15 percent of all fatal automobile accidents are actually suicides, for example (Finch, Smith, & Pokorny, 1970). In 1998, the last year for which statistics are available, there were just over 30,000 suicides reported in the United States (National Center for Injury Prevention and Control, 2000). In the general population of the United States, it has been estimated that 4.6 percent attempt suicide and 13.5 percent have thought about committing suicide (Kessler, Borges, & Walters, 1999). Many statisticians and public health experts would consider these figures far too low (Madge & Harvey, 1999). As Figure 10.1 shows, other countries have far higher rates—Hungary's is almost four times that of the United States—and recent studies suggest that the worldwide rate is increasing (Harrison, 1997). But even at 30,000 per year, suicide is the ninth most common cause of death in this country.

❖ **Groups at Risk for Suicide** Certain demographic variables are strongly correlated with suicide. Twice as many single people as married people kill themselves—widowed and divorced people, in particular, are at higher risk—and childless women are more likely to commit suicide than are those with children (Brockington, 2001; Kessler, Borges, & Walters, 1999). In general, the likelihood of a person's committing suicide increases as a function of age, especially for men (see Figure 10.2). Three times as many women as men attempt suicide, but four times as many men as women succeed in killing themselves (Peters & Murphy, 1998). The fact that men choose more lethal methods, such as shooting themselves, is one of the reasons more men die (Sachs-Ericsson, 2000). (Only in China and India do women commit suicide more frequently than men—a fact that may be related to the low status of women in those societies

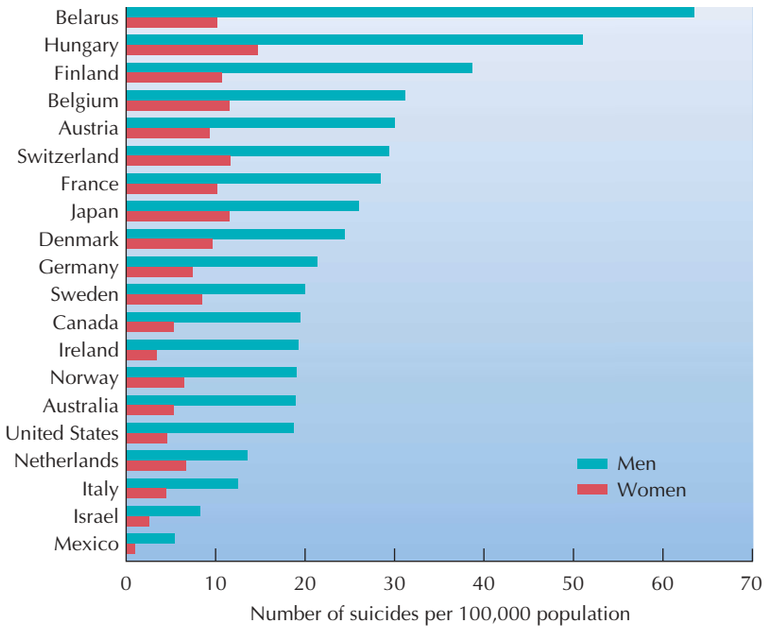


FIGURE 10.1 Age-adjusted suicide rates per 100,000 population for people aged 15 to 74, as of 1998 or most recent date available. (Based on World Health Organization statistics, 2000)

[Brockington, 2001].) Apart from depressed people, drug abusers are at higher risk (Shaffer, Gould, Fisher, et al., 1996), as are people with a history of childhood physical or sexual abuse (Wagner, 1997; Brockington, 2001).

According to a demographic summary put together by Shneidman and Farberow in 1970, the *modal suicide attempter* (i.e., the person who most commonly attempts suicide and survives) is a native-born European American woman, a homemaker in her twenties or thirties, who attempts to kill herself by swallowing barbiturates and gives as her reason either marital difficulties or depression. In contrast, the *modal suicide committer* (i.e., the person who succeeds in taking his or her own life) is a native-born European American man in his forties or older who, for reasons of ill health, depression, or marital difficulties, commits suicide by shooting or hanging himself or by poisoning himself with carbon monoxide (see Figures 10.3 and 10.4).

These generalizations still hold (Kessler, Borges, & Walters, 1999), but there have been some recent shifts

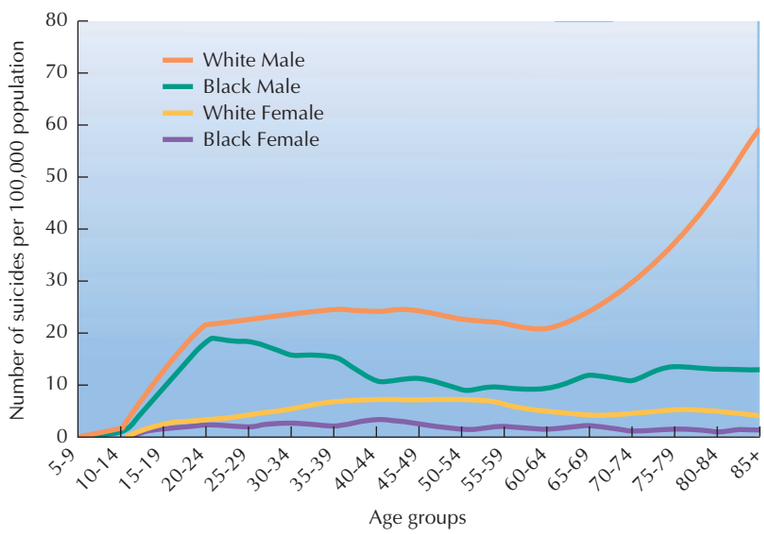


FIGURE 10.2 U.S. suicide rates by age, gender, and ethnic group in 1999. (National Institute of Mental Health, 2002)

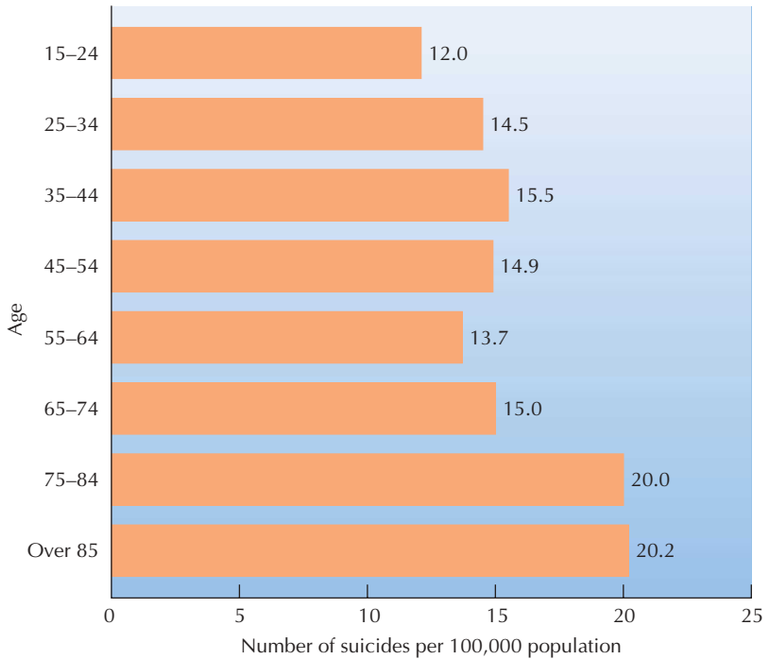


FIGURE 10.3 U.S. suicide rates by age. The largest number of suicides occurs in people over 85 years of age; in this group, there are 20.2 deaths per 100,000 of population. (Peters & Murphy, 1998)

in suicide-related variables, particularly regarding age. Suicide rates among men aged 15 to 34 have increased in the past few decades (Silverman, 1997). Older men are still more likely than younger men to kill themselves, but the gap is narrowing. The ethnic picture is also changing. Though European American men are still at higher risk than African American men (Kessler, Borges, & Walters, 1999), suicide among African American men is on the rise (Joe & Kaplan, 2001; Silverman, 1997).

Teenage Suicide Of special concern among groups at risk are teenagers, whose suicide rate has risen 200 percent since 1960. In 2000, suicide became the third leading cause of death among 15- to 24-year-olds (National Center for Health Statistics, 2000). As many as 15 percent of high school students have made at least one suicide attempt (King, 1997; Centers for Disease Control, 2001). Teenage girls are especially at risk for suicide attempts (Lewinsohn, Rohde, Seeley, et al., 2001). For many of their elders, this is hard to understand. How can people who "have their whole lives ahead of them" want to take those lives?

In some measure, the answer probably lies in the special circumstances of adolescence, the fact that, while teenagers may be exposed to situations as stressful as those facing adults, they lack the resources—emotional self-control, problem-solving capacity, mobility, money—that adults can marshal in order to find relief (Reynolds & Mazza, 1994). At the same time, teenagers today seem to have more cause for distress. Depression and substance abuse, two powerful risk factors for suicide, are both on the rise among adolescents (Gould & Kramer, 2001).

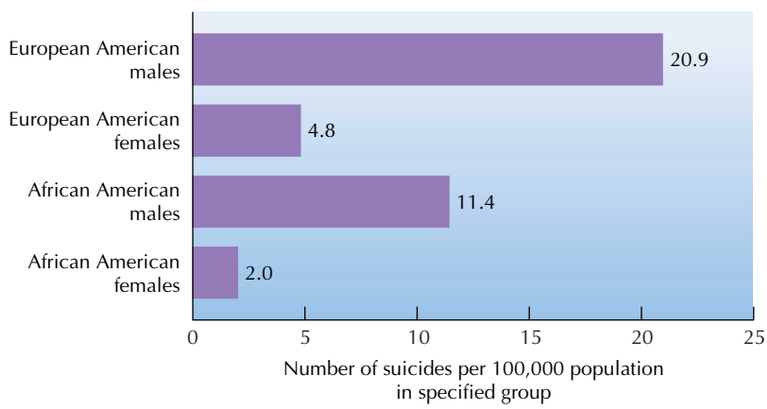
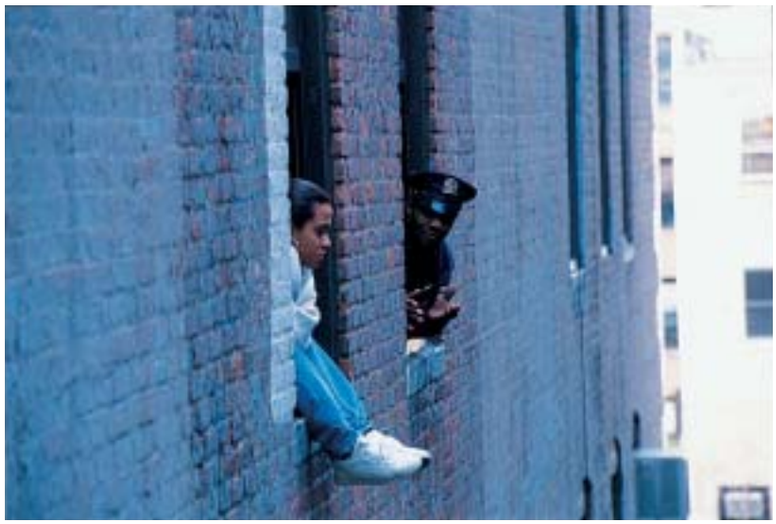


FIGURE 10.4 U.S. suicide rates by ethnicity and gender. Suicide occurs most frequently among white males, least frequently among African American females. (Peters & Murphy, 1998)



Teenage suicide has reached epidemic proportions in the United States. The episode shown here ended well, with the guard talking the young woman back into the building.

Apparently, another major risk factor for adolescent suicide is trouble within the family (Wagner, 1997). One "psychological autopsy" compared 120 teenage suicide victims with 147 controls matched for age, gender, and ethnic group. Compared with the controls, the suicide victims scored higher on several risk factors: depression, substance abuse, school problems, and social isolation. But another important difference between the two groups was the level of disturbance within the families. The suicide victims' families had suffered more suicides; they also showed poorer parent-child communications (Gould, Fisher, Parides, et al., 1996; Shaffer, Gould, Fisher, et al., 1996). Other studies found that, compared with the families of controls, the families of adolescent suicide attempters showed more conflict, more childhood sexual abuse, and poorer parental care (Gould & Kramer, 2001).

Thus, the problems of suicidal teenagers are often rooted in their families' problems. But, for the teenagers, the difficulties are multiplied: They are still dependent on their families for love and support that may not be forthcoming, and many are too young to seek out professional help for themselves. Only one fifth of the teenagers who attempt suicide receive even medical attention, let alone psychotherapy, following their attempt (King, 1997). These young people may, indeed, feel that there is no solution to their problems.

Myths About Suicide

Common as it is, suicide is still surrounded by an aura of mystery and by a number of popular misconceptions (Segal, 2000). One of the most unfortunate myths about suicide is that people who threaten to kill themselves will not carry out the threat—that only the "silent type" will pull it off. This is not true. In a study of 71 completed suicides, more than half the victims had clearly communicated their suicidal intent within 3 months before the fatal act (Isometsä, Henriksson, Aro, et al., 1994). When people threaten suicide, they should be taken seriously (Segal, 2000).

Another myth is that people who attempt suicide and fail are not serious about ending their lives—they are just looking for sympathy (Segal, 2000). On the contrary, about 40 percent of all suicides have made a previous attempt or threat (Maris, 1992), and the more prior attempts, the greater the likelihood of a completed suicide (Goldstein, Black, Nasrallah, et al., 1991).

People's emotional reactions to suicide—fear, horror, curiosity, incomprehension—have given it the status of "unmentionable" in the minds of many, a taboo that is strengthened by the Judeo-Christian prohibition against taking one's own life. Hence, a third myth about suicide is that one should never speak of it to people who are depressed. According to this notion, questioning depressed people about suicidal thoughts will either put the idea into their heads or, if it is already there, give it greater force. In opposition to this belief, most clinicians agree that encouraging patients to talk about suicidal wishes helps them to overcome such wishes (Segal, 2000).

Suicide Prediction

When someone commits suicide, family and friends are often astonished—which shows how often they are oblivious to the signs. As we just saw, most suicidal people clearly communicate their intent. For example, they may say, "I don't want to go on living" or "I

know I'm a burden to everyone." But even those who don't announce their plans usually give signals (Shneidman, 1992). Some withdraw into an almost contemplative state. Others act as if they were going on a long trip. Others give away their most valued possessions. Sometimes the expression of suicidal intent is less direct, however clear in retrospect. For example, a depressed patient leaving the hospital on a weekend pass may say, "I want to thank you for trying so hard to help me." Failure to pick up such signs may be due in part to the fact that depressed people who commit suicide tend to do so as they are coming out of their depression. It is not clear whether they seem less depressed because they have made the decision to commit suicide or whether, being less depressed, they at last have the energy to act upon their suicidal wishes.

Predictably, suicide is often directly related to stress (Gould & Kramer, 2001). There is some evidence that the nature of the stress may vary over the life cycle. One study found that interpersonal conflicts, rejections, and separations most often precede suicide in younger people, whereas economic problems are more critical in middle age, illness in old age (Rich, Warsradt, Nemiroff, et al., 1991). Like the onset of depression, suicide attempts are frequently preceded by "exit" events.

Cognitive variables may be among the most useful predictors of who will attempt suicide. Not surprisingly, the cognitive variable most frequently associated with serious suicidal intent is hopelessness (Abramson, Alloy, Hogan, et al., 2000). In a 10-year follow-up study of hospitalized patients who expressed suicidal thoughts, hopelessness turned out to be the best single predictor of who would eventually kill themselves (Beck, Steer, Kovacs, et al., 1985), and this has proved true with outpatients and adolescents as well (Beck, Brown, Berchick, et al., 1990; Shaffer, Gould, Fisher, et al., 1996). Violent behavior also predicts completed suicide. A recent comparison of 753 victims of suicide with 2,115 accident victims found that the suicides were more likely to have exhibited violent behavior in the prior year (Conner, Cox, Duberstein, et al., 2001). From accounts of people who survived suicide attempts, together with research on those who died, suicide expert Edwin Shneidman (1992) put together a "suicidal scenario," a summary of elements that are usually present in the decision to take one's own life:

Severe stress and feelings of hopelessness drive some people to attempt suicide. This desperate man seized a gun and threatened suicide from the back seat of a police car. He later surrendered.

1. A sense of unbearable psychological *pain,* which is directly related to thwarted psychological *needs*
2. Traumatizing *self-denigration*—a self-image that will not include tolerating intense psychological pain
3. A marked *constriction* of the mind and an unrealistic narrowing of life's actions
4. A sense of *isolation*—a feeling of desertion and the loss of support of significant others
5. An overwhelmingly desperate feeling of *hopelessness*—a sense that nothing effective can be done
6. A conscious decision that *egression*—leaving, exiting, or stopping life—is the *only* (or at least the best possible) solution to the problem of unbearable pain (pp. 51–52)

As this summary shows, many people who commit suicide imagine that it is the only way out of an unbearably painful situation—a conviction that is often clear in the notes they leave. In a study comparing real suicide notes with simulated notes written by a well-matched control group, Shneidman and Farberow (1970) found that the writers of the genuine notes expressed significantly more suffering than the control group. Suicidal anguish is evidently hard to feign. Interestingly, though, the genuine suicide notes also contained a greater number of neutral statements—lists of things to be done after the suicide has taken place, and so forth. Both the ring of authentic hopelessness and the neutral content are illustrated in the following two genuine suicide notes:

Barbara,

I'm sorry. I love you bunches. Would you please do a couple of things for me. Don't tell the kids what I did. When Theresa gets a little older, if she wants to cut her hair please let her. Don't make her wear it long just because you like it that way. Ask your Mom what kind and how much clothes the kids need and then buy double what she says. I love you and the kids very much please try and remember that. I'm just not any good for you. I never learned how to tell you no. You will be much better off without me. Just try and find someone who will love Theresa and Donny.

Love Bunches—Charlie

P. S. Donny is down at Linda's
Put Donny in a nursery school

Dear Steve:

I have been steadily getting worse in spite of everything and did not want to be a burden the rest of my life.

All my love,
Dad

My brown suit is the only one that fits me.

Not all suicides feel unqualified despair, however. According to statistics from a national survey (Kessler, Borges, & Walters, 1999), only about 39 percent of people who attempt suicide are truly determined to die. Another 13 percent fall into what the researchers call the "to be or not to be" group—those who are ambivalent about dying. Finally, about 47 percent of suicide attempters do not really wish to die but, instead, are trying, through the gesture of a suicide attempt, to communicate the intensity of their suffering to family and friends. Regarding the last two groups, it bears repeating that their mixed feelings do not mean that they are not in danger. As we saw, many of those who are not determined this time will be more determined next time (King, 1997). Indeed, believing that one is a burden to one's family may make a person more determined to die. In a recent study comparing the suicide notes of people who attempted suicide with those of people who successfully completed suicide, Joiner and colleagues found that the expressed belief that one was a burden to family members distinguished the completed from the attempted suicide and also predicted use of more lethal methods, such as gunshot or hanging rather than overdose or cutting (Joiner, Pettit, Walker, et al., 2002).

Suicide Prevention

As we just pointed out, most people who attempt suicide do not absolutely wish to die. It was on the basis of this finding, together with the fact that suicide attempters are often reacting to crises in their lives, that the first telephone hotlines for potential suicides were established in the late 1950s. Hotline staffers, often volunteers, try to "tune in" to the caller's distress while presenting arguments against suicide and telling the caller where he or she can go for professional help. Another preventive effort, this one aimed specifically at the newly high-risk adolescent population, involves school-based programs. Here, teachers, parents, and the teenagers themselves are given workshops in which they are informed of the "warning signs" of suicide and are told how and to where to refer someone who seems to be in danger.

Unfortunately, neither of these efforts has been especially successful. Communities with suicide hotlines appear to have lower suicide rates only for one group—young white women, the most frequent hotline users—and, even for them, the decrease is slight (Gould & Kramer, 2001). As for the school-based programs, they seem to be minimally effective in changing attitudes and coping behavior, particularly in boys (Gould & Kramer, 2001), who are less likely than girls to turn to the kind of social and professional support that such workshops recommend (Gould & Kramer, 2001). It is probable, furthermore,

that school-based programs are not reaching their target population. The adolescents most at risk for suicide—delinquents, substance abusers, runaways, incarcerated teenagers—are the ones least likely to be in school, let alone paying close attention to a suicide-prevention workshop. Other suicide-prevention efforts are designed to reduce the risk factors for suicide, such as gun availability, substance abuse, and depression (see the box on page 270). These efforts have been more successful (Gould & Kramer, 2001).

Mood Disorders: Theory and Therapy

Because depression is far more common than mania, most theories of mood disorder have concentrated on depression and suicide, and the therapies focus on depression. However, some theoretical perspectives have addressed bipolar disorder as well, and we will discuss these in turn. Among the theoretical approaches to mood disorders, the behavioral/interpersonal, cognitive, and neuroscience perspectives have had the greatest influence on understanding the causes of and generating treatments for mood disorders. Thus, we will present these three perspectives in greater detail than the psychodynamic and sociocultural models.

The Behavioral and Interpersonal Perspectives

Although the behavioral and interpersonal perspectives on depression and suicide include a collection of theories, we will discuss the two major approaches, one focusing on external reinforcers and the other on interpersonal processes.

Extinction Many behaviorists regard depression as the result of extinction (Ferster, 1973; Lewinsohn, 1974; Jacobson, Martell, & Dimidjian, 2001). That is, once behaviors are no longer rewarded, people cease to perform them. They become inactive and withdrawn—in short, depressed.

What causes the reduction in reinforcement? Lewinsohn (1974) has pointed out that the amount of positive reinforcement a person receives depends on three broad factors: (1) the number and range of stimuli that are reinforcing to that person; (2) the availability of such reinforcers in the environment; and (3) the person's skill in obtaining reinforcement. Sudden changes in a person's environment may affect any one of these factors. A new and reluctant retiree, for example, may find that the world outside the office holds few things that are truly reinforcing. Or a man whose wife has recently died may find that, whereas he had the social skills to make a success of marriage, he is at a loss in the dating situation. In their new circumstances, these people simply do not know how to obtain reinforcement; therefore, they withdraw into themselves.

A number of studies have produced results consistent with the extinction hypothesis. For example, one objection to this hypothesis has been the widely held assumption that depressed people are immune to reinforcement; it is not that they lack sources of pleasure but, rather, that they have lost the ability to experience pleasure. However, even severely depressed people show an elevation of mood if they become more active and thus make contact with reinforcing experiences (Jacobson, Martell, & Dimidjian, 2001). Depressed people also lack skill in obtaining reinforcement, as Lewinsohn suggested. Depressed people are much less adept than nondepressed people at interacting with others (Segrin & Abramson, 1994; Joiner, 2000). They are also less skillful at coping with the impediments to reinforcement. Not surprisingly, this is all the more true of suicide attempters. When a group of teenagers, hospitalized after a suicide attempt, was compared with a group of distressed but nonsuicidal teenagers, the suicidal subjects were far more likely to use social isolation as their way of coping with problems (Spirito, Overholser, & Stark, 1989). Suicidal adolescents are also likely to avoid problems, to see them inaccurately, and to respond to them in a more emotional fashion (Sadowski & Kelley, 1993). Of course, poor coping and avoidance of problems mean that these people are less likely to get help.

Aversive Social Behavior Some research has found that depressed individuals are more likely than nondepressed individuals to elicit negative reactions from people with whom they interact (Coyne, 1990; Joiner, 2000), and this finding has formed the basis of interpersonal theories of depression. According to one theory, people who are depressed have an aversive behavioral style in which, by constantly seeking reassurance, they try to force "caring" behavior from people who, they feel, no longer care enough. Instead of love, however, what depressed people are likely to get from their put-upon families and friends is shallow reassurance of the "now, now" variety or, worse, rejection, which simply aggravates their depression (Coyne, 1976; Joiner, Metalsky, Katz, et al., 1999). Morever, their depression may be contagious, especially if they engage in reassurance seeking, leading family and friends to also become more depressed (Joiner & Katz, 1999). Depression, then, is a cry for help, but one that rarely works. An alternative interpersonal theory is that people with depression actually seek out rejection, for this is more familiar and predictable to them than positive feedback (Giesler,

Josephs, & Swann, 1996). In response, they are rejected, and this deepens their depression (Joiner, 1995).

In support of these interpersonal hypotheses, some studies have found that rejecting responses from friends and family do tend to maintain or exacerbate depression (Joiner, 1995; Swann, Wenzlaff, Krull, et al., 1992). For example, depressed and bipolar patients whose spouses or parents were critical toward them were more likely to suffer a relapse in the next nine months than were those with more accepting families (Butzlaff & Hooley, 1998). Moreover, excessive reassurance seeking predicts later depressive symptoms (Joiner, Metalsky, Katz, et al., 1999). For example, Joiner and Schmidt (1998) found that Air Force cadets who engaged in high reassurance seeking showed subsequent increases in depressive symptoms during basic training. Whether or not aversive social behavior predates the depression, though, depressed individuals' interpersonal skills probably help to maintain their depression.

Increasing Reinforcement and Social Skills In keeping with the extinction theory of depression, behaviorists developed a treatment designed to get depressed people to become more active and thus expose themselves to reinforcing experiences. Jacobson, Martell, and Dimidjian (2001) describe behavioral activation (BA) therapy as a way to break the vicious cycle that can develop between a person's depressed mood, decreased activity and increased withdrawal, and worsened depression. Dispelling the notion that a depressed person's mood must change before his or her behavior can change, behavioral activation therapists have found that engaging in planned, positive activities elevates depressed individuals' moods and helps them reengage in their lives. Patient and therapist work together to identify positively reinforcing behaviors—specific activities the patient believes would be most helpful to him or her. Patients then must engage in these activities according to a schedule, whether or not they feel like it. If the behavior helps patients function better in spite of their mood, or improves their mood, they are encouraged to continue to perform the activity. By completing increasingly difficult tasks, patients gradually begin to fully participate in those activities most likely to encourage further activity and improve their mood.

Another important thrust in the behavioral treatment of depression has been **social-skills training.** As we have seen, depressed people are not popular with others—a problem that social-skills training aims to remedy directly by teaching basic techniques for engaging in satisfying social interactions. Patients are shown how to initiate a conversation, how to keep eye contact, how to make small talk, how to end a conversation—in other words, the nuts and bolts of socializing. Such behaviors are often modeled for patients, after which they are practiced through role playing. The therapist, for example, might pretend to be a guest at a party with whom the patient must open a conversation.

Most behavioral treatments for depression are multifaceted, using the techniques previously described, together with others. For example, Lewinsohn and his colleagues have put together a treatment that includes self-monitoring of mood and activities, instruction in positive coping self-statements, and training in a variety of areas—coping skills, social skills, parenting skills, time management—with the aim of decreasing unpleasant experiences and increasing pleasant experiences (Lewinsohn & Gotlib, 1995). Similar multifaceted programs have been used with suicidal patients.

In evaluating the effectiveness of any treatment (behavioral or otherwise) for depression, one must keep in mind that 85 percent of depressed people recover from an episode within a year, even with no treatment. Furthermore, drug studies indicate that 20 to 40 percent of outpatient depressed patients recover in 2 to 4 months, even if all they receive is a placebo. Thus, it is relatively easy to design a therapy that ends with a substantial rate of recovery. There is going to be substantial recovery, anyway.

Because, as we will see, there are effective antidepressant drugs that are much less expensive than psychotherapy, the latter has to outperform these drugs (and placebos) in order to justify its use. However, because none of the drugs actually *cures* depression—that is, prevents relapses as well as lifts current mood—psychotherapy could prove its usefulness by showing that it does prevent recurrence. Initial findings from studies of BA therapy show that it is effective in both reducing acute depression and preventing relapse over a 2-year period (Jacobson, Dobson, Truax, et al., 1996; Gortner, Gollan, Dobson, et al., 1998).

The Cognitive Perspective

As we saw earlier, depression involves a number of changes: emotional, motivational, cognitive, and physical. Cognitive theorists hold that the critical variable is the cognitive change. In all cognitive formulations, it is the way people *think* about themselves, the world, and the future that gives rise to the other factors involved in depression.

Helplessness and Hopelessness In a cognitive-learning model of depression, Martin Seligman (1975)

has suggested that depression may be understood as analogous to the phenomenon of **learned helplessness.** This phenomenon was first demonstrated with laboratory dogs. After exposing a number of dogs to inescapable electric shocks, Seligman and his colleagues found that when the same dogs were later subjected to escapable shocks, they either did not initiate escape responses or were slow and inept at escaping. The investigators concluded that during the first phase of the experiment, when the shocks were inescapable, the dogs had learned that the shock was *uncontrollable*—a lesson they continued to act upon even in the second phase of the experiment, when it was possible to escape the shocks (Maier, Seligman, & Solomon, 1969; Peterson, Maier, & Seligman, 1993).

After further research on learned helplessness in animals and humans, Seligman noted that this phenomenon closely resembled depression. He therefore proposed that depression, like learned helplessness, was a reaction to inescapable or seemingly inescapable stressors, which undermined adaptive responses by teaching the person that he or she lacked control over reinforcement. This formulation is consistent with the finding that when there is a clear, precipitating event for a depression, it is often an uncontrollable loss. Learned helplessness also fits with certain neuroscience findings. For example, exposure to uncontrollable (versus controllable) stress results in neurobiological changes consistent with depression (Minor & Saade, 1997), and depressed patients who see themselves as helpless tend to show higher levels of MHPG, a product of norepinephrine metabolism (Samson, Mirin, Hauser, et al., 1992). As we will see, norepinephrine abnormalities are often found in depressed people. In addition, PET scans of people doing unsolvable problems—which tend to produce learned helplessness—show that learned helplessness is associated with increased brain activity in the limbic system. The limbic system is also implicated in the processing of negative emotions such as depression (Schneider, Gur, Alavi, et al., 1996).

Note the difference between the learned helplessness theory and extinction theory. In extinction theory, the crucial factor is an objective environmental condition, a lack of positive reinforcement; in learned helplessness theory, the crucial factor is a subjective cognitive process, the *expectation* of lack of control over reinforcement.

When it was originally formulated, the learned helplessness model had certain weaknesses. As Seligman and his colleagues pointed out, the model explained the passivity characteristic of depression but did not explain the equally characteristic sadness, guilt, and suicidal thoughts. Neither did it account for the fact that different cases of depression vary considerably in intensity and duration. To fill these gaps, Abramson, Metalsky, and Alloy (1989) adapted the model from a helplessness to a hopelessness theory. According to their view, depression depends not just on the belief that there is a lack of control over reinforcement (a *helplessness expectancy*) but also on the belief that negative events will persist or recur (a *negative outcome expectancy*). When a person holds these two expectations—that bad things will happen and that there is nothing one can do about it—he or she becomes hopeless, and it is this hopelessness that is the immediate cause of the depression (Abramson, Metalsky, & Alloy, 1989).

But what is the source of the expectations of helplessness and negative outcomes? According to the researchers, these expectations stem from the *attributions* and *inferences* people make regarding stressful life events—that is, the perceived causes and consequences of such events. People who see negative life events as due to causes that are (1) permanent rather than temporary, (2) generalized over many areas of their life rather than specific to one area of their functioning, and (3) internal, or part of their personalities, rather than external, or part of the environment, are at greatest risk for developing hopelessness and, in turn, severe and persistent depression. Likewise, people who infer that stressful events will have negative consequences for themselves are more likely to become hopeless and depressed. In fact, Abramson, Metalsky, and Alloy have proposed that "hopelessness depression" constitutes a distinct subtype of depression, with its own set of causes (negative inferential styles combined with stress), symptoms (passivity, sadness, suicidal tendencies, low self-esteem), and appropriate treatments. This theory also applies to suicide. Hopelessness is the best single predictor of suicide—even better than depression (Glanz, Haas, & Sweeney, 1995; Abramson, Alloy, Hogan, et al., 2000).

In the past decade, the revised hopelessness theory has been extensively tested with mostly positive results. It has been found that depressed individuals are more likely than controls to explain negative events by means of the kind of attributions listed in the previous paragraph (Joiner & Wagner, 1995; Sweeney, Anderson, & Bailey, 1986) and to exhibit expectations of low control or helplessness (Weisz, Southam-Gerow, & McCarthy, 2001). Moreover, inferential style can help predict who, in a given sample, has been depressed in the past (Alloy, Abramson, Hogan, et al., 2000), who will be depressed or suicidal in the future (Abramson, Alloy, Hogan, et al., 1998; Alloy, Abramson, Whitehouse, et al., 1999; 2003), and who, having recovered from depression, will relapse

(Ilardi, Craighead, & Evans, 1997; Alloy, Abramson, Whitehouse, et al., 1999; 2003). It also predicts the duration of major depressive episodes (McMahon, Alloy, & Abramson, 2003) and who, in a group of depressed people, will recover when exposed to positive events (Needles & Abramson, 1990). Other studies have shown that the reason a combination of stress and negative inferential style predicts depression is that this combination predicts hopelessness. It is hopelessness that, in turn, predicts depression (Alloy & Clements, 1998; Metalsky, Joiner, Hardin, et al., 1993). Finally, people who show this combination also exhibit many of the symptoms said to be part of the hopelessness-depression subtype (Alloy, Just, & Panzarella, 1997; Alloy & Clements, 1998), and these symptoms hang together to form a distinct dimension of depression (Joiner, Steer, Abramson, et al., 2001). At the same time there is conflicting evidence. For example, some researchers have found that the stress-plus-negative-attributions combination did not necessarily lead to depression (Cole & Turner, 1993; Lewinsohn, Joiner, & Rohde, 2001). To summarize, most of the evidence argues that inferential style and hopelessness play a role in predicting risk for depression. What is not clear is whether they actually help *cause* the depression.

Given the evidence that a negative inferential style does act as a vulnerability factor for depression, it becomes important to uncover the developmental origins of this cognitive vulnerability. Recent findings suggest that both social learning factors and a childhood history of maltreatment may contribute to the development of cognitive vulnerability to depression. Individuals whose parents had negative cognitive styles, provided negative inferential feedback about the causes and consequences of stressful events in the individual's life (e.g., told their child, "you weren't invited to that party because you're unpopular, and now you'll be seen as a social outcast at school"), and whose parenting was low in warmth and affection are more likely to have negative cognitive styles as adults (Alloy, Abramson, Tashman, et al., 2001; Garber & Flynn, 2001; Ingram & Ritter, 2000). In addition, people with childhood histories of emotional abuse from either parents or nonrelatives (peers, teachers, etc.) are also more likely to have negative cognitive styles as adults (Gibb, Abramson, & Alloy, in press; Gibb, Alloy, Abramson, et al., 2001). Thus, a history of negative emotional feedback and abuse may help lead to the development of later cognitive vulnerability to depression. However, prospective studies beginning in childhood are needed to truly test this hypothesis.

Negative Self-Schema A second major cognitive theory of depression, Aaron Beck's negative self-schema model, evolved from his findings that the hallucinations, delusions, and dreams of depressed patients often contain themes of self-punishment, loss, and deprivation. According to Beck, this negative bias—the tendency to see oneself as a "loser"—is the fundamental cause of depression. If a person, because of childhood experiences, develops a cognitive "schema" in which the self, the world, and the future are viewed in a negative light, that person is then predisposed to depression. Stress can easily activate the negative schema, and the consequent negative perceptions merely strengthen the schema (Beck, 1987; Clark, Beck, & Alford, 1999).

Recent research supports Beck's claim that depressed individuals have unusually negative self-schemas (Dozois & Dobson, 2001; Williams, Watts, MacLeod, et al., 1997) and that these schemas can be activated by negative cues. In one interesting study, depressed and normal participants performed an emotional Stroop task: They were shown positive and negative self-descriptive adjectives and were asked to name the color of ink the adjectives were printed in. When the participants were exposed to a series of negative self-statements (e.g., "I often feel judged") before performing the Stroop test, the depressed subjects were significantly slower at naming the ink colors for the negative adjectives on the Stroop task (Segal, Gemar, Truchon, et al., 1995). Presumably, their negative self-schemas were primed in the first stage and then, on the Stroop task, went into action. Negative self-schemas can also be activated by sad mood in people who have recovered from depression (Ingram, Miranda, & Siegel, 1998; Gemar, Segal, Sagrati, et al., 2001), and such reactivated negative schemas predict later relapse and recurrence of depression (Segal, Gemar, & Williams, 1999).

Other studies indicate that people at high risk for depression either because they have negative cognitive styles, a past history of major depression, or parents who are depressed selectively attend to and remember more negative than positive information about themselves (Alloy, Abramson, Murray, et al., 1997; Ingram & Ritter, 2000; Taylor & Ingram, 1999). Still other research suggests that depressed individuals may have two distinct negative self-schemas, one centered on dependency, the other on self-criticism (Nietzel & Harris, 1990). For those with dependency self-schemas, stressful social events—in other words, situations in which their dependency would be most keenly felt—lead to depression. For those with self-criticism schemas, failure should trigger depression. Researchers testing this hypothesis have found that it may not work to predict onsets of major depression (Mazure, Bruce, Maciejewski, et al., 2000) and that

in predicting symptoms of depression, it works better for dependency self-schemas and social events than for self-criticism schemas and failure (Coyne & Whiffen, 1995).

An interesting finding is that, while people with depression may be more pessimistic than the rest of us, their pessimism is sometimes more realistic than our optimism. Lewinsohn and his colleagues put a group of depressed outpatients and two control groups through a series of social interactions and then asked the participants (1) how positively or negatively they reacted to the others and (2) how positively or negatively they thought the others reacted to them. As it turned out, the depressed individuals' evaluations of the impression they had made were more accurate than those of the other two groups, both of whom thought they had made more positive impressions than they actually had (Lewinsohn, Mischel, Chaplin, et al., 1980). To quote the report of another Lewinsohn research team, "To feel good about ourselves we may have to judge ourselves more kindly than we are judged" (Lewinsohn, Sullivan, & Grosscup, 1980, p. 212).

We may also have to judge ourselves more capable than we are. Alloy and Abramson (1979) found that depressed people, in doing an experimental task, were far more accurate in judging how much control they had than were nondepressed participants, who tended to overestimate their control when they were doing well and to underestimate it when they were doing poorly. Thus, in certain respects it may be that normal people, not depressed people, are cognitively biased—and that such bias is essential for psychological health (Alloy & Abramson, 1988; Haaga & Beck, 1995). Research supports this view. Alloy and Clements (1992), for example, tested a group for bias in judging personal control. They found that the individuals who had been inaccurately optimistic about their personal control when they were first tested were less likely than more realistic participants to become depressed a month later in the face of stress. Another study suggests that both realistic and unrealistically negative self-perceptions predict later depressive symptoms in children (Hoffman, Cole, Martin, et al., 2000).

Although most research on the cognitive theories of depression (both Beck's theory and the hopelessness theory) has focused on unipolar depression, recent findings suggest that cognitive models may be applicable to bipolar disorder as well. Individuals with bipolar disorders exhibit cognitive styles and self-schemas as negative as those with unipolar depression (Alloy, Reilly-Harrington, Fresco, et al., 1999; Lyon, Startup, & Bentall, 1999; Scott, Stanton, Garland, et al., 2000). Moreover, negative cognitive styles and self-schema information processing combine with stressful life events to predict subsequent increases in manic as well as depressive symptoms among people with bipolar disorder (Reilly-Harrington, Alloy, Fresco, et al., 1999).

While these studies strongly suggest that cognitive variables play an important role in depression, it is by no means clear that the role is causal (Haaga, Dyck, & Ernst, 1991). However, as we have seen before, a factor need not be causal in order to be useful in treatment.

Cognitive Retraining Aaron Beck and his coworkers have developed a multifaceted therapy that includes behavioral assignments, modification of dysfunctional thinking, and attempts to change schemas. The alteration of schemas is considered most important and, according to Beck's theory, will inoculate the patient against future depressions. First, however, the therapist attacks the present depression, through "behavioral activation"—that is, getting the patients to get out and engage in pleasurable activities (see the discussion on page 264)—and by teaching them ways of testing dysfunctional thinking. On a form (Figure 10.5), patients are asked to record their negative thoughts, together with the events that preceded them. Then they are to counter such thoughts with rational responses and record the outcome (Young, Beck, & Weinberger, 1993). An example of countering negative thoughts with more rational responses can be seen in the case of Irene, who felt stupid for not knowing the answer to one of the therapist's questions. In the extended excerpt below, the therapist helped Irene set up an experiment to test the thought, "I look dumb":

T: OK, now let's just do an experiment and see if you yourself can respond to the automatic thought and let's see what happens to your feeling. See if responding rationally makes you feel worse or makes you feel better.

I: OK.

T: OK, why didn't I answer that question right? I look dumb. What is the rational answer to that? A realistic answer?

I: Why didn't I answer that question? Because I thought for a second that was what I was supposed to say, and then when I heard the question over again, then I realized that was not what I heard. I didn't hear the question right, that's why I didn't answer it right.

T: OK, so that is the fact situation. And so is the fact situation that you look dumb or you just didn't hear the question right?

DATE	**SITUATION** Describe: 1. Actual event leading to unpleasant emotion, or 2. Stream of thoughts, daydream, or recollection, leading to unpleasant emotion.	**EMOTION(S)** 1. Specify sad/ anxious/ angry, etc. 2. Rate degree of emotion, 1–100.	**AUTOMATIC THOUGHT(S)** 1. Write automatic thought(s) that preceded emotion(s). 2. Rate belief in automatic thought(s), 0–100%.	**RATIONAL RESPONSE** 1. Write rational response to automatic thought(s). 2. Rate belief in rational response, 0–100%.	**OUTCOME** 1. Rerate belief in automatic thought, 0–100%. 2. Specify and rate subsequent emotions, 1–100.

Explanation: When you experience an unpleasant emotion, note the situation that seemed to stimulate the emotion. (If the emotion occurred while you were thinking, daydreaming, etc., please note this.) Then note the automatic thought associated with the emotion. Record the degree to which you believe this thought: 0% = not at all; 100% = completely. In rating degree of emotion: 1 = a trace; 100 = the most intense possible.

FIGURE 10.5 Form for "daily record of dysfunctional thoughts," as used in the cognitive treatment developed by Beck and his co-workers. (Young, Beck, & Weinberger, 1993, p. 250)

I: I didn't hear the question right.
T: Or is it possible that I didn't say the question in such a way that it was clear.
I: Possible.
T: Very possible. I'm not perfect, so it's very possible that I didn't express the question properly.
I: But instead of saying you made a mistake, I would still say I made a mistake.
T: We'll have to watch the video and see. Whichever. Does it mean if I didn't express the question, if I made a mistake, does it make me dumb?
I: No.
T: And if you made the mistake, does it make you dumb?
I: No, not really.
T: But you felt dumb?
I: But I did, yeah.
T: Do you feel dumb still?
I: No.

A refinement of cognitive retraining is *reattribution training,* which aims to correct negative attributional styles (Beck, Rush, Shaw, et al., 1979). In this approach, patients are taught to explain their difficulties to themselves in more constructive ways ("It wasn't my fault—it was the circumstances, " "It's not my whole personality that's wrong—it's just my way of reacting to strangers") and to seek out information consistent with these more hopeful attributions. A similar approach has been used with suicidal patients. Beck and his colleagues see this as a way of correcting negative bias. As the research cited previously suggests, it may also be a way of instilling positive bias. In any case, it seems to combat hopelessness.

In some encouraging evaluations, cognitive therapies have been shown to be at least as effective as drug therapy and perhaps superior to drugs at 1-year follow-up (Blackburn & Moorhead, 2000; Hollon, Shelton, & Davis, 1993). A combination of cognitive-behavioral therapy and drugs may have a slight advantage when compared with either treatment by itself (Hollon, DeRubeis, Evans, et al., 1992; Kupfer & Frank, 2001). Some experts interpret the evidence as indicating that cognitive-behavioral therapy, unlike drug therapy, has a relapse-prevention effect (Evans, Hollon, DeRubeis, et al., 1992), but there is considerable debate about this (Jacobson & Hollon, 1996; Klein, 1996b). More recent studies have supported a

relapse and recurrence prevention effect for cognitive-behavioral therapy (Jarrett, Kraft, Doyle, et al., 2001; Paykel, Scott, Teasdale, et al., 1999). There is also some question as to whether cognitive-behavioral therapy works as well as drugs for severely depressed patients (DeRubeis, Gelfand, Tang, et al., 1999; Blackburn & Moorhead, 2000).

Furthermore, there is controversy about the mechanisms by which cognitive-behavioral therapy produces change. For example, there is evidence that cognitive-behavioral therapy produces changes both in negative cognitions, as it is hypothesized to work, as well as in abnormal biological processes (Blackburn & Moorhead, 2000). So whether it works through the proposed cognitive mechanism or by changing biological processes is unclear. Also, as noted, Beck's treatment is multifaceted, including behavioral activation together with cognitive tasks. A recent study by Jacobson and his colleagues found that the behavioral activation component of cognitive-behavioral therapy worked as well as the entire treatment package, both at alleviating depression and at preventing relapse (Gortner, Gollan, Dobson, et al., 1998; Jacobson, Dobson, Truax, et al., 1996). Thus, it could be that cognitive-behavioral therapy is just as effective without its cognitive components. Regardless of how it works, cognitive-behavioral therapy does indeed work. Thus, recent efforts have extended this approach to the prevention of depression in children and adolescents (see the box on the Penn Optimism Project, page 270). Cognitive-behavioral therapy has also been extended to the treatment of patients with bipolar disorder as an adjunct to mood-stabilizing medications (Basco, 2000; Newman, Leahy, Beck, et al., 2002). And recent findings suggest that it is promising in improving bipolar patients' medication compliance, symptoms, and interpersonal functioning (Newman, Leahy, Beck, et al., 2002; Scott, Garland, & Moorhead, 2001).

The Psychodynamic Perspective

Reactivated Loss The first serious challenge to Kraepelin's biogenic theory of mood disorder came from Freud and other early psychoanalytic theorists, who argued that depression was not a symptom of organic dysfunction but a massive defense mounted by the ego against intrapsychic conflict. In his now-classic paper "Mourning and Melancholia" (1917/1957), Freud described depression as a response to loss (real or symbolic), but one in which the person's sorrow and rage in the face of that loss remain unconscious, thus weakening the ego. This formulation was actually an elaboration of a theory put forth by one of Freud's students, Karl Abraham (1911/1948, 1916/1948). Abraham had suggested that depression arises when one loses a love object toward whom one had ambivalent, positive and negative, feelings. In the face of the love object's desertion, the negative feelings turn to intense anger. At the same time, the positive feelings give rise to guilt, a feeling that one failed to behave properly toward the now-lost love object. Because of this guilt—and because of early memories in which the primary love object was symbolically "eaten up, " or incorporated, by the infant—the grieving person turns his or her anger inward rather than outward, thus producing the self-hatred and despair that we call depression. In the case of suicide, the person is actually trying to kill the incorporated love object. "Anger in" has escalated to "murder in."

While "anger in" still figures importantly in traditional psychoanalytic discussions of depression and suicide, modern theorists have expanded and revised this early position. There are now many psychodynamic theories of depression, yet they share a certain number of core assumptions (Bemporad, 1988; Blatt & Homann, 1992). First, it is generally believed that depression is rooted in a very early defect, often the loss or threatened loss of a parent (Bowlby, 1973). Second, the primal wound is reactivated by a recent blow, such as a divorce or job loss. Whatever the precipitating event, the person is plunged back into the infantile trauma. Third, a major consequence of this regression is a sense of helplessness and hopelessness—a reflec-tion of what was the infant's actual powerlessness in the face of harm. Feeling incapable of controlling his or her world, the depressed person simply withdraws from it. Fourth, many theorists, while perhaps no longer regarding anger as the hub of depression, feel that ambivalence toward introjected objects (i.e., love objects who have been "taken in" to the self) is fundamental to the depressed person's emotional quandary. Fifth, it is widely agreed that loss of self-esteem is a primary feature of depression. Otto Fenichel (1945) described depressed people as "love addicts," trying continually to compensate for their own depleted self-worth by seeking comfort and reassurance from others. This leads to the sixth common psychodynamic assumption about depression: that it has a functional role. It is not just something that people feel but something that they *use*, particularly in the form of dependency, in their relationships with others.

Like most psychodynamic theories, these assumptions are not fully open to empirical validation, but two claims have been tested. First, a high level of dependency on others does appear to characterize some depressed persons (Bornstein, 1992), and these highly dependent people are more likely to become depressed

Prevention The Penn Optimism Project

If you are more than 18 years old and have not experienced an episode of depression, you have passed one of the important periods of risk for this disorder. A recent longitudinal study of more than 600 people from birth to age 21 (Hankin, Abramson, Moffitt, et al., 1998) revealed that almost 25 percent of the girls and 10 percent of the boys experienced a clinically significant case of depression by the age of 21. As seen in Figure 10.6, the greatest increase in cases occurred during the period from 15 to 18 years of age. Prior to age 15, only about 1 percent of the boys and 4 percent of the girls had experienced a serious case of depression. These findings suggest that, if we are to prevent the majority of adolescent cases of depression, the time to intervene would be prior to age 15. Intervention for girls would be especially important, because of their dramatically greater incidence at this time.

Effective prevention programs for adolescent depression are just being developed. In a very promising effort known as the Penn Optimism Project, researchers at the University of Pennsylvania (Gillham, Reivich, Jaycox, et at., 1995; Gillham & Reivich, 1999) reported some success in preventing the incidence of depressive symptoms in a group of 69 fifth- and sixth-grade children from a Philadelphia suburban school district. The children were selected because they were above the average in their school on a screening test for childhood depression. A comparison group of 49 children from a different school but with similar screening scores was formed to assess the natural increase in depressive symptoms that were expected to occur in the absence of intervention. Both groups were assessed shortly before the intervention, shortly after the intervention, and at 6-month intervals for a 2-year period.

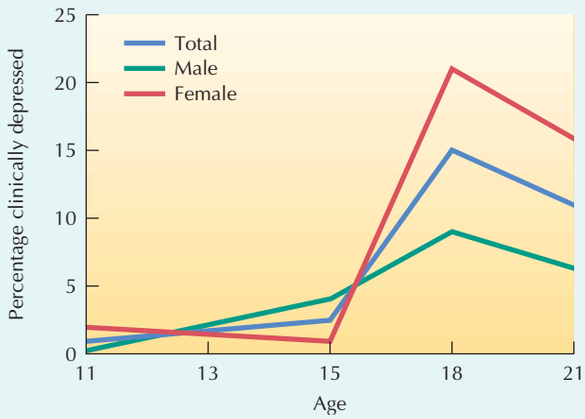


FIGURE 10.6 Development of new cases of clinical depression by age and gender. (Hankin, Abramson, Moffitt, et al., 1998)

The intervention took place in small groups (of about 10 children) with a professional leader who conducted exercises and training sessions that lasted about 1½ hours. The sessions occurred once a week for 12 weeks. One component of the training was based on cognitive therapy for depression. Children were taught to reconsider negative beliefs about themselves and to think about more realistic and constructive beliefs. They were also taught to identify pessimistic (stable, general) attributions for their successes and failures and to replace them with more optimistic (unstable, specific) attributions. Another component of the training centered on problem-solving skills that would enable the children to cope more effectively with stressful events, such as conflicts with parents and peers. Training exercises were also conducted to give the children practice in solving problems and in role-playing effective coping behaviors.

The results of the program were quite impressive. After 1 year of follow-up,

when they experience social rejections (Coyne & Whiffen, 1995; Spasojevic & Alloy, 2002). Second, research has examined the role of parental loss, though the results are mixed. There is evidence for the link. Women who have lost their mothers in childhood through either death or separation are apparently more likely to succumb to depression (Harris, Brown, & Bifulco, 1990), and depressed patients who have suffered a serious childhood loss, particularly separation from a parent, are more likely to attempt suicide (Bron, Strack, & Rudolph, 1991). But many researchers now believe that the crucial risk factor, at least for depression is not so much parental loss as poor parenting (Kendler, Neale, Kessler, et al., 1992a; Lara & Klein, 1999). Recent research has focused especially on a parenting pattern called *affectionless control*—that is, too much protectiveness combined with too little real warmth and care. This pattern may leave children feeling chronically helpless and overdependent. As adults, when they encounter stress, they are more vulnerable to depression because they feel helpless (Alloy, Abramson, Tashman, et al., 2001; Garber & Flynn, 2001).

The recent focus on poor parenting in the histories of depressed individuals is consistent with a more modern psychoanalytic theory, **attachment theory** (Cassidy & Shaver, 1999). According to attachment theory, people who had close, caring bonds with a caregiver while growing up are more apt to develop an adaptive interpersonal style of relating to others, called a "secure" attachment style. In contrast, people exposed to punitive or inconsistent parenting are likely to develop a more maladaptive interpersonal style, described as an "insecure" attachment style. Such insecure attachment has been found to be associated with problems in later interactions with

the children in the prevention group began to report less severe symptoms of depression than the children in the comparison group. As seen in Figure 10.7, only about 7 percent of the children in the prevention group reported high levels of depressive symptoms at the 12-month follow-up, while nearly 30 percent of the control group did. This pattern continued through the second year of follow-up. It was also encouraging that the beneficial effects of the program occurred for children who had very few symptoms at the outset of the program as well as for children who had already begun to show symptoms of childhood depression when the program began. In either case, one would expect symptoms of depression to increase, but it was primarily the untreated group that showed the developmentally predicted increases. Unfortunately, the beneficial effects of the intervention on depressive symptoms faded after 2 years, although more positive attributional styles appeared to be a lasting effect of the intervention (Gillham & Reivich, 1999). However, another team of researchers found that a cognitive-behavioral prevention program reduced the likelihood of major depressive episodes in children of depressed parents (Clarke, Hornbrook, Lynch, et al., 2001).

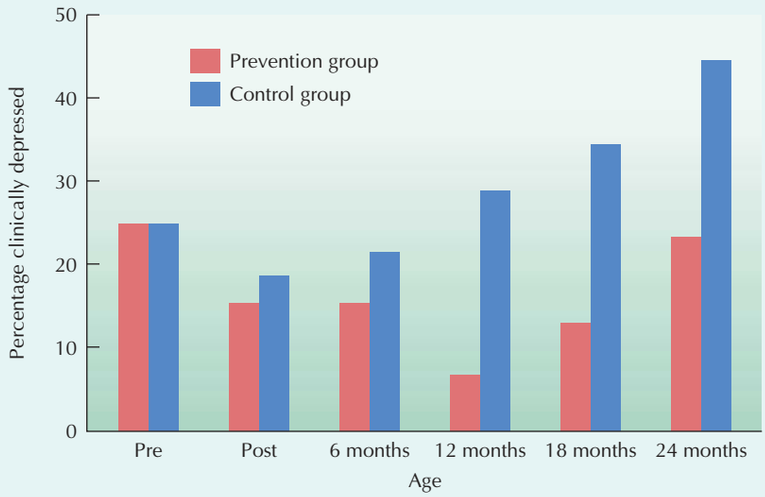


FIGURE 10.7 Depressive symptoms in children. (Gillham, Jaycox, & Seligman, 1995)

The children in this program had not yet entered the critical 15- to 18-year age period of risk at the time of the 2-year follow-up. Future research will also be needed to determine how well the program works with children from different socioeconomic backgrounds and whether it is equally successful for boys and girls. However, this initial research suggests that it will be possible to prevent early onset of depression by providing children with cognitive and social skills that can be used to cope with stress and other risk factors for depression.

A similar cognitive-behavioral program has been developed for college students considered at risk for depression because they exhibit negative attributional styles. Those who received the preventive intervention had fewer moderate (but not severe) depressive episodes and showed greater improvement in their attributional styles, sense of hopelessness, and dysfunctional attitudes than the control group (Seligman, Schulman, DeRubeis, et al., 1999).

significant others and with depression (Safford, Alloy, Crossfield, et al., in press).

Repairing the Loss In Chapter 7, we described the basic psychodynamic treatment for the "neuroses." Such treatment is used for nonpsychotic depression as well. Through free association, dream analysis, and analysis of resistance and transference, the therapist tries to uncover the childhood roots of the current depression and to explore the patient's ambivalent feelings toward the lost object, both primal and current.

As we have noted, however, today's psychodynamic therapists tend to be more directive than their predecessors, as well as more concerned with the patient's present circumstances than with the past. Hence, many therapists focus less on childhood trauma than on the current cause of the depression and on how the patient uses the depression in his or her dealings with others. This pragmatism is even more pronounced in short-term therapy. Klerman and his co-workers have devised a treatment, based on the work of Harry Stack Sullivan (Chapter 5), called **interpersonal psychotherapy,** or **IPT.** In this 12- to 16-session therapy, therapist and patient first identify the core problem. The four most common core problems are assumed to be grief, interpersonal disputes (e.g., a failing marriage), role transition (e.g., retirement), and lack of social skills. Once the problem is identified, however, therapist and patient do not spend time on interpretation or analysis. Instead, they attack the problem directly through discussion of possible solutions and strategies for carrying out those solutions (Klerman, Weissman, Rounsaville, et al., 1984). Recent studies indicate that IPT does prevent relapses in formerly depressed patients who have

discontinued drug treatment (Frank, Kupfer, Perel, et al., 1990). It also appears to be effective in helping people who are depressed (Mufson, Weissman, Moreau, et al., 1999). Although IPT has not been subjected to as many studies as cognitive therapy for depression, it seems to work just as well, at least in the short run (Shea, Elkin, Imber, et al., 1992). For severely depressed patients, it may be even more effective than cognitive treatments (Elkin, Shea, Watkins, et al., 1989).

Psychodynamic treatment of the suicidal patient tends to follow the same lines as treatment for depression, but with special emphasis on emotional support. With potential suicides, therapists are careful to avoid doing or saying anything that could be viewed as rejection. In their analysis of the patient's behavior, they are likely to interpret suicidal threats as an appeal for love, whether from the therapist or from others.

The Sociocultural Perspective

Society and Depression One of the first scholars to study suicide scientifically was French sociologist Émile Durkheim, writing in the late nineteenth century (1897/1951). Durkheim saw suicide as an act that occurred within a society and, in some measure, under the control of that society. Today, it is widely recognized that socioeconomic factors affect suicide rates. In 1932, at the height of the Depression, the suicide rate in the United States almost doubled in one year. During the recession of the 1970s, it rose again (Wekstein, 1979).

An even more dramatic indicator of social determinants of hopelessness is the rise in rates of depression in the past century. The first clear evidence of this phenomenon came from a study conducted in the mid-1980s (Robins, Helzer, Weissman, et al., 1984). The researchers surveyed 9,500 people randomly selected from urban and rural areas to see how many had had an episode of serious depression in their lives. In the 20- to 25-year-old group, 5 to 6 percent had at least 1 episode; in the 25- to 44-year-old group, the rate was higher: 8 to 9 percent. That made sense—the longer you have lived, the greater your chance of having experienced depression. But what were the researchers to make of the fact that the 70-year-olds in the survey showed a rate of only 1 percent? The people who had lived the *longest* had the least experience of depression. These results were essentially duplicated by a study of close relatives of depressed patients (Klerman, Lavori, Rice, et al., 1985). Even among people at risk for depression, the young adults were 6 times as likely as the over-65 group to have had a depressive episode, and these findings, too, have been confirmed (Blazer, Kessler, McGonagle, et al., 1994; Lewinsohn, Rohde, Seeley, et al., 1993). The conclusion is that the prevalence of depression in the United States has increased steadily and the age of onset has dropped precipitously in the past hundred years.

Why? Presumably, social change has something to do with it. We know, for example, that rates of depression tend to be lower in highly traditional social groups. Depression does not seem to exist, for instance, in a New Guinea tribe called the Kaluli (Scheiffelin, 1984). And, among the Amish living in Pennsylvania, the incidence of major depression is one fifth to one tenth the rate of depression among people living in Baltimore, only 100 miles away (Egeland & Hostetter, 1983). The common denominator of the Kaluli and the Amish is that each is a traditional, tight-knit, nonindustrialized community with stable families, a stable social structure, and long-held customs and beliefs. In our society, on the other hand, what we see predominantly is change, as people move away from their families, away from their birthplaces, and up and down the socioeconomic ladder. As Martin Seligman (1988) notes, "The modern individual is not the peasant of yore with a fixed future yawning ahead. He (and now she, effectively doubling the market) is a battleground of decisions and preferences" (p. 91). What this means is that young people today cannot rely on the support systems that were in place in their grandparents' day: the family, the church, the traditions and customs that once dictated choices. People must rely on themselves, and, if the answer is not there, apparently, a sense of helplessness sets in, greatly increasing the risk of depression. (For sociocultural factors that may contribute to women's increased vulnerability to depression, see the box on page 250.)

Changing the Society As we saw earlier, there have been some attempts—hotlines, school programs—at preventing suicide on the social level, but they have not been especially effective. A recent review of such programs suggests that efforts might be better spent attacking the social problems most closely associated with suicide: delinquency, truancy, substance abuse, teen pregnancy, and family distress (Gould & Kramer, 2001). Several researchers have also called for stricter gun-control laws (Gould & Kramer, 2001) and for educating journalists about the possible imitative effects of suicide coverage. There is some evidence, though mixed, that highly publicized suicides may negatively inspire others, particularly young people who share characteristics such as age, gender, and ethnicity, with the celebrity suicide (Velting & Gould, 1997). In 1977, for example, there was a

significant increase in suicide by gunshot in Los Angeles County during the week following comedian Freddie Prinze's suicide by gunshot (Berman, 1988).

The Neuroscience Perspective

Genetic Research Family studies have shown that first-degree relatives of people with major mood disorders are much more likely than other people to develop these disorders. For major depression, their risk is almost 3 times higher, and for bipolar disorder it is fully 10 times higher, than that of the general population (Goodwin & Jamison, 1990; Sullivan, Neale, & Kendler, 2000). As we have seen, the family risk for both conditions is even greater when the index case had an early onset. Although unipolar patients are found among the relatives of bipolar patients, the reverse seldom occurs (Winokur, Coryell, Keller, et al., 1995)—further support for the theory that the two syndromes spring from different causes. Finally, suicide also runs in families, even when the association with depression is controlled (Mitchell, Mitchell, & Berk, 2000).

As we know, it is difficult in family studies to separate environmental from genetic influence. However, twin studies also support the role of genetic inheritance in the mood disorders and suicide. In a review of genetic research on mood disorders in twins, M. G. Allen (1976) found that the concordance rate for bipolar disorder was 72 percent among monozygotic twins, as compared with 14 percent among dizygotic twins. A review by Sullivan, Neale, and Kendler (2000) found that the concordance rate for unipolar disorder was around 43 percent among monozygotic twins, as compared with around 28 percent among dizygotic twins. Moreover, the genetic contribution to major depression is similar for men and women (Sullivan, Neale, & Kendler, 2000). The difference between the bipolar and unipolar concordance rates among monozygotic twins (72 percent versus 43 percent) suggests that genetic factors are more important in bipolar disorder than in depression. But more recent twin studies indicate that genes play a crucial role in major depression as well. According to this research, about 37 percent of the difference in depression rates between MZ and DZ twins is attributable solely to genes. The rest of the difference, the results indicated, is due to individual-specific environment—in other words, life events specific to each member of the twin pair—and not at all to shared environmental factors such as social class, parental child-rearing practices, or early parental loss (Sullivan, Neale, & Kendler, 2000). Even more current research suggests that the way genes increase risk for major depression is by increasing the person's sensitivity to stressful life events (Kendler, Kessler, Walters, et al., 1995).

But the most impressive evidence for the heritability of mood disorders comes from adoption studies. In a study of the biological and adoptive parents of bipolar adoptees as compared with the biological and adoptive parents of normal adoptees, Mendlewicz and Rainer (1977) found a 31 percent prevalence of mood disorders in the biological parents of the bipolar adoptees, as opposed to 2 percent in the biological parents of the normal adoptees—a striking difference. A more recent study (Wender, Kety, Rosenthal, et al., 1986), this time of the biological and adoptive parents, siblings, and half-siblings of adoptees with a broad range of mood disorders, found that the prevalence of unipolar depression was 8 times greater—and the suicide rate *15* times greater—in the biological relatives of the mood disorder cases than in the biological relatives of the normal adoptees. These two studies constitute firm support for a genetic component in both bipolar and unipolar mood disorder (Sullivan, Neale, & Kendler, 2000).

An important new direction in the genetic study of mood disorders is linkage and association analyses (Chapter 6). In an intriguing linkage-analysis study, blood samples were taken from every person in an 81-member Amish clan. Then, for each participant, the researchers isolated the DNA molecule and searched the molecule for evidence of a characteristic that tended to be inherited with bipolar disorder. They found what appeared to be the characteristic on chromosome 11. Furthermore, when they compared the chromosomes of the 19 family members diagnosed as suffering from psychiatric disorders (primarily bipolar disorder) with those of the 62 members considered psychiatrically well, they consistently found a difference at chromosome 11 (Egeland, Gerhard, Pauls, et al., 1987).

Unfortunately, other studies have had mixed results. Some have failed to show linkage between bipolar disorder and markers on chromosome 11 (Gill, McKeon, & Humphries, 1988; Hodgkinson, Sherrington, Gurling, et al., 1987). Other newer studies of bipolar disorder using association analysis have found evidence of abnormalities of the serotonin transporter protein gene on chromosome 17 (Mundo, Walker, Cate, et al., 2001) and the monoamine oxidase A gene on the X chromosome (Preisig, Bellivier, Fenton, et al., 2000) although these findings have not been obtained in all studies either. Both of these genes play a role in serotonin transmission, which has been strongly associated with mood disorders (see the section "Neurotransmitter Imbalance," page 278). Rather than viewing the discrepant results across studies as a negation of the genetic findings, many scientists see

Research among the Amish links a chromosomal characteristic and bipolar disorder. Such studies can shed light on the heritability of mood disorders.

them as an indication that bipolar disorder is not a single disease but a group of related diseases, with a variety of genetic (and environmental) causes that await identification. In the 1990s, the National Institutes of Health sponsored a project to map the entire human chromosome set, the Human Genome Project, most of which remained unexplored. This project is basically complete, and we may see the emergence of genes that are consistently linked to bipolar disorder.

Neurophysiological Research Given that organic factors are implicated in the mood disorders, the next question is, *what* organic factors? According to neurophysiological researchers, the problem may have to do with biological rhythms. As we have seen, sleep disturbance is one of the most common symptoms of depression. Depressed people also consistently show abnormalities in their progress through the various stages of sleep and in their sleep efficiency (Benca, Obermeyer, Thisted, et al., 1992; Emslie, Armitage, Weinberg, et al., 2001), possibly as a result of overarousal (Ho, Gillin, Buchsbaum, et al., 1996). One such abnormality is shortened rapid eye movement (REM) latency—that is, in depression the time between the onset of sleep and the onset of REM sleep, the stage of sleep in which dreams occur, is unusually short. And this characteristic may indicate a biological vulnerability to depression, for depressed individuals who have shortened REM latency (1) are more likely to have the endogenous symptom pattern and to respond to antidepressant drugs, but not to psychotherapy, (2) tend to go on showing shortened REM latency, even after the depressive episode has passed, (3) are likely to have first-degree relatives who also have shortened REM latency, and (4) are more likely to relapse (Buysse & Kupfer, 1993; Giles, Kupfer, Rush, et al., 1998).

These sleep disturbances, together with the hormonal abnormalities associated with depression, suggest that in depression the "biological clock" has somehow gone out of order—a hypothesis that Ehlers and her colleagues have combined with the findings on loss and depression to produce an integrated biopsychosocial theory. According to this theory, our lives are filled with social *zeitgebers* (literally, "time givers"): personal relationships, jobs, and other responsibilities and routines that help to activate and regulate our biological rhythms. Having someone with whom you sleep, for example, helps to enforce your sleep rhythms. When he or she goes to bed, so do you. Consequently, when an important social zeitgeber is removed from a person's life—when a spouse dies, for example—the removal may not only produce an important loss but also may disrupt the survivor's circadian rhythms, or biological cycles, leading to a range of consequences (sleep disturbance, eating disturbance, mood disturbance, hormonal imbalance) that we call depression (Ehlers, Frank, & Kupfer, 1988; Frank, Swartz, & Kupfer, 2000). In keeping with this

The Social Rhythm Metric (SRM)
MacArthur Foundation Mental Health Research Network I

Please fill this out at the end of the day

Respondent #: Day of Week: Date:

PEOPLE
0 = Alone
1 = Others just present
2 = Others actively involved
3 = Others very stimulating

ACTIVITY	TIME	AM or PM	DAY OF WEEK S	M	T	W	T	F	S
TAKE AN AFTERNOON NAP	Earlier								
	Exact earlier time								
	2:00								
	2:15								
	2:30								
	2:45						0		
mid-point of your normal range →	3:00	PM						0	0
	3:15								
	3:30								
	3:45		0						
	4:00								
	Later								
	Exact later time								
	Check if did not do			✓	✓	✓			
HAVE DINNER	Earlier								
	Exact earlier time								
	5:30								
	5:45								
	6:00								
	6:15								
mid-point of your normal range →	6:30	PM			2		2	2	
	6:45			1		2			
	7:00								
	7:15								
	7:30		0						
	Later								3
	Exact later time								9:00
	Check if did not do								

Frank, E., Swartz, H. A., & Kupfer, D. J. (2000). Interpersonal and social rhythm therapy: Managing the chaos of bipolar disorder. *Biological Psychiatry*, *48*, 598.

FIGURE 10.8 Sample page from the Social Rhythm Metric.

disrupted-rhythm theory, some evidence suggests that depriving a depressed patient of sleep, particularly of REM sleep, may have a therapeutic effect (Liebenluft & Wehr, 1992; Orth, Shelton, Nicholson, et al., 2001). Moreover, in bipolar individuals, sleep reduction can precipitate mania (Leibenluft, Albert, Rosenthal, et al., 1996). Thus, the social zeitgebers theory has been extended to bipolar disorder as well. People with bipolar disorders are thought to be especially vulnerable to psychosocial stressors that disrupt social rhythms and, thus, circadian rhythms. Consistent with this model, recent studies found that stressful life events that disrupt social rhythms are associated with the onset of manic, but not depressed, episodes in bipolar individuals (Malkoff-Schwartz, Frank, Anderson, et al., 2000). This theory has led to a treatment for bipolar disorder that extends interpersonal therapy for depression (see pages 271–272) to include behavioral strategies for regularizing daily social rhythms and sleep-wake cycles. This new therapy, called interpersonal and social rhythm therapy (IPSRT), adds monitoring of daily social rhythms (see Figure 10.8) and strategies for regularizing these rhythms to standard IPT (Frank, Swarz, & Kupfer, 2000). Preliminary evidence suggests that IPSRT may be an effective adjunctive treatment along with medication for patients with bipolar disorder (Frank, Swarz, & Kupfer, 2000).

One form of depression that may be closely related to the body's biological rhythms is **seasonal affective disorder,** or **SAD.** Beginning with Hippocrates, physicians over the centuries have noted that many depressions come on in winter. In the late nineteenth century, surgeon and Arctic explorer Frederick Cook made the connection between this phenomenon and light exposure. In the Eskimos, and also in the members of his expeditionary team, Cook observed a depressed mood, together with fatigue and decreased sexual desire, during the long, dark Arctic winter. Recently, this seasonal depression, which includes not only increased sleeping but also increased eating and

Sometimes the treatment for a troubling disorder is as blessedly simple as a few extra hours of sunshine each day. Many people with the aptly named SAD, or seasonal affective disorder, benefit from sitting in front of an ultraviolet light box for a prescribed amount of time during the short days of winter.

a craving for carbohydrates, has been added to the *DSM*. Many people experience it in a mild degree. In order for the diagnosis of SAD to be made, however, the patient must meet the criteria for major depressive episode; remission as well as onset must be keyed to the seasons; and the pattern must have lasted for at least 2 years. There is a summer version of SAD that may be more frequent in Asians (Han, Wang, Du, et al., 2000), but the winter version is much more common in the West. As Cook suspected, the latter seems to be tied to the much shorter photoperiod, or period of daylight, during the winter (Young, Meaden, Fogg, et al., 1997) and the resulting increase in the duration of secretion of the hormone, melatonin, at night, in SAD patients (Wehr, Duncan, Sher, et al., 2001). Women are at far higher risk—60 to 90 percent of patients are female—and so are the young. The average age of onset is 23 (Oren & Rosenthal, 1992). Recent studies suggest that the disorder has a genetic component (Jang, Lam, Livesley, et al., 1997).

The most promising current theory of SAD is that it is caused by a lag in circadian rhythms; thus, during the day, the person experiences the kind of physical slowdown he or she should be undergoing at night (Teicher, Glod, Magnus, et al., 1997; Nurnberger, Adkins, Debomoy, et al., 2000). About three quarters of SAD patients improve when given the same kind of light therapy that is used for circadian rhythm sleep disorders (Chapter 9): exposure to bright artificial light for several hours a day (Oren & Rosenthal, 1992). In some cases, light therapy, if it is applied at the first sign of symptoms, can actually prevent a full-blown episode (Meesters, Jansen, Beersma, et al., 1993). If this circadian rhythm theory is correct, then light therapy should work best if it is applied in the morning, because extra morning light advances circadian rhythms, whereas extra evening light does not. Several studies support this prediction (e.g., Lewy, Bauer, Cutler, et al., 1998; Terman, Terman, Lo, et al., 2001), although not all do (Lee, Blashko, Janzen, et al., 1997). Moreover, consistent with the circadian rhythm theory, Terman and colleagues found that the greater the circadian rhythm advance produced by morning light, the greater the improvement in depression symptoms (Terman, Terman, Lo, et al., 2001).

Neuroimaging Research Recent CT and MRI studies suggest that mood disorders involve abnormalities in brain structure. People with mood disorders tend to show enlargement of the ventricles and the sulci (the spaces between brain tissues). They also show reduced volume in the frontal lobe, the hippocampus, and the basal ganglia, all of which are brain regions thought to be involved in mood regulation (Baumann & Bogerts, 2001; Bremner, Narayan, Anderson,

et al., 2000). In addition, the reduced volume of the prefrontal cortex is associated with the attentional difficulties of manic patients (Sax, Strakowksi, Zimmerman, et al., 1999), whereas reduced activation of the prefrontal cortex seen in PET studies may be associated with the poor judgment seen in manic patients (Blumberg, Stern, Ricketts, et al., 1999). Moreover, recent studies using PET scans have found that sadness is associated with reciprocal increases in activation of limbic areas and decreases in activation of frontal cortical areas, whereas recovery from depression is associated with the opposite pattern of activation of limbic and frontal cortical areas (Mayberg, Liotti, Brannan, et al., 1999). Treatment of the depression is associated with normalization of metabolism in these brain regions (Brody, Saxena, Stoessel, et al., 2001).

Biochemical Research At present, perhaps the most vital area of research on mood disorders is biochemistry. There are two major biochemical theories.

Hormone Imbalance One biochemical theory is that depression is due to a malfunction of the hypothalamus, a portion of the brain known to regulate mood. Because the hypothalamus affects not only mood but also many other functions that are typically disrupted in the course of a depression, such as appetite and sexual interest, some researchers (e.g., Holsboer, 1995) suggest that the hypothalamus may be the key to depressive disorders. If so, the abnormality may have to do with the control of hormone production. The hypothalamus regulates the pituitary gland, and both the hypothalamus and the pituitary control the production of hormones by the gonads and the adrenal and thyroid glands. There is substantial evidence of some irregularity in this process in depressed people. In the first place, depressed individuals often show abnormally low thyroid hormone levels (Sullivan, Hatterer, Herbert, et al., 1999). Second, people with abnormal hormone activity often show depression as a side effect. Third, CT scans show that many depressed people have enlarged pituitary and adrenal glands (Nemeroff, Krishnan, Reed, et al., 1992). Fourth, postmortem studies of the brains of depressed patients show abnormalities in the neurons of the hypothalamus (Purba, Hoogendijk, Hofman, et al., 1996). Fifth, low levels of some thyroid hormones predict recurrences of major depressive episodes (Joffe & Marriott, 2000). But perhaps the best evidence is that depression can sometimes be effectively treated by altering hormone levels. In certain cases, for example, induced changes in thyroid output have aided in recovery from depression; in others, administering thyroid hormones has sped up depressed patients' response to antidepressant medications (Altshuler, Bauer, Frye, et al., 2001).

Hormone imbalances appear to be particularly characteristic of endogenous and psychotic depressions. Indeed, such imbalances can be used to help differentiate between endogenous and reactive cases, and between psychotic and nonpsychotic cases, via a technique called the **dexamethasone suppression test (DST).** Dexamethasone is a drug that in normal people suppresses the secretion of the hormone cortisol for at least 24 hours. However, endogenously and psychotically depressed patients, who seem to secrete abnormally high levels of cortisol, manage to resist the drug's effect as long as they are in the depressive episode (Nelson & Davis, 1997; Posener, DeBattista, Williams, et al., 2000). This is the basis for the DST. Depressed patients are give dexamethasone, and then their blood is tested at regular intervals for cortisol. The nonsuppressors—those whose cortisol levels return to high levels within 24 hours despite the drug—are classed as endogenous or psychotic. Since the DST was developed, researchers have discovered other interesting things about nonsuppressors. They tend not to respond to psychotherapy (or placebos); they tend to show nonsuppression in later depressive episodes as well; continuing to show nonsuppression after treatment predicts relapse (Zobel, Yassouridis, Frieboes, et al., 1999). All these facts support the notion that DST nonsuppression is a marker of a more endogenous and psychotic depression (Posener, DeBattista, Williams, et al., 2000; Thase, Dube, Bowle, et al., 1996). Nonsuppression also seems to be tied to social and childhood history. Among humans, there is evidence that childhood stress, including childhood sexual abuse, is associated with excessive cortisol levels in adulthood (Weiss, Longhurst, & Mazure, 1999). Among baboons, DST nonsuppressors are likely to be isolated, socially subordinate individuals. It is possible that the high stress associated with low social rank causes the nonsuppression (Sapolsky, Alberts, & Altmann, 1997). On the other hand, nonsuppression may be linked to behaviors that create a social disadvantage.

An important finding in the research on hormone imbalances is that such imbalances occur both in major depression and in depressive episodes of bipolar disorder. Genetic research, as we noted, suggests that major depression and bipolar disorder are two distinct syndromes, with different causes. For this reason, it seems unlikely that the hormonal abnormalities common to both syndromes constitute a *primary* cause. (A good possibility is that they are caused by the neurotransmitter imbalances that we will discuss next [Lambert, Johansson, Agren, et al.,

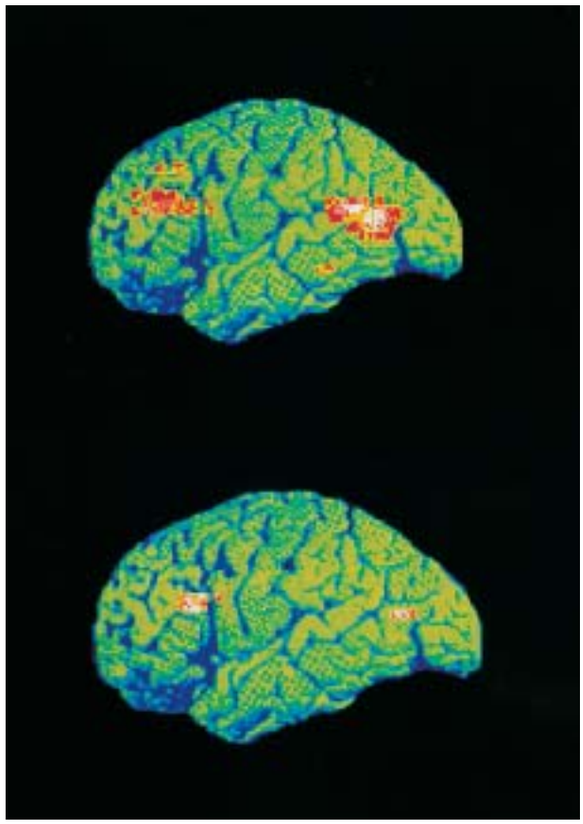
2000].) Neither does the stubborn cortisol production of the DST nonsuppressors seem to be a primary cause of depression, for DST nonsuppression is also seen in many other disorders, including schizophrenia, obsessive-compulsive disorder, eating disorders, and alcoholism (Thase, Frank, & Kupfer, 1985). At the same time, the fact that hormones can sometimes relieve depression suggests that in certain, perhaps atypical, cases, hormone imbalance may play a causal role.

Neurotransmitter Imbalance The second important theory of biochemical research has to do with the neurotransmitters norepinephrine and serotonin. According to the **catecholamine hypothesis,*** increased levels of norepinephrine produce mania, while decreased levels produce depression (Schildkraut, 1965; Delgado & Moreno, 2000). The only way to test this hypothesis directly would be to analyze brain-tissue samples of manic and depressed patients to determine whether their norepinephrine levels are, in fact, abnormally high and low, respectively. Because this cannot be done without damage to the brain, we have to rely on indirect evidence. That evidence consists of findings that drugs and other treatments that relieve depression or produce mania increase the level of norepinephrine in the brain, while drugs that produce depression or alleviate mania reduce the level of norepinephrine in the brain (Berman, Narasimhan, Miller, et al., 1999; Delgado & Moreno, 2000).

This research is spurred by the hope that the action of the drugs will tell us something about the process by which mood disorders develop in the first place. As we saw in Chapter 6, when an impulse travels down a neuron and reaches its end, this neuron, the presynaptic neuron, releases the neurotransmitter into the synapse that lies between it and the next, or postsynaptic neuron. The neurotransmitter bonds with the receptors of the postsynaptic neuron, thereby transmitting the impulse. Some of the neurotransmitter is taken back up into the presynaptic neuron—a process called reuptake. (Review Figure 6.3, page 138.)

The tricyclics, a class of drugs widely used for depression, generally work by blocking the reuptake of norepinephrine (and serotonin) by the presynaptic neuron. Superficially, this suggests that depression may be due to too-rapid reuptake or to inadequate secretion. However, the picture is probably more complicated than that. First of all, recent research indicates that if depressed people have a problem with norepinephrine function, it has to do not with the presynaptic receptors, which appear to operate normally, but with the postsynaptic receptors, which appear to be undersensitive to norepinephrine (Berman, Narasimhan, Miller, et al., 1999; Lambert, Johansson, Agren, et al., 2000). Interestingly, in bipolar patients the opposite may be true. Recent findings from a PET study suggest that bipolar patients show abnormalities in their presynaptic catecholamine receptors (Zubieta, Haguelet, Ohi, et al., 2000). Second, some newer, and effective, tricyclics do not work by blocking reuptake; they increase norepinephrine levels by more subtle means. The fact that tricyclics generally take 2 weeks to start relieving symptoms suggests that their success has to do not with immediate effects, such as blocking reuptake, but with long-term effects—specifically, the enhancement of proteins that affect the atrophy or growth of the neurons (Duman, Heninger, & Nestler, 1997).

As the research suggests, neither does the system have to do with norepinephrine alone. Serotonin is



These PET scans compare the brain of a depressed person (top) with the brain of a person whose depression has been treated (bottom). Regions shown in red and yellow depict areas of low brain activity in the depressed individual. The healthy brain treated for depression shows that metabolic activity and blood flow has resumed in the affected areas.

*This theory is so-called because norepinephrine belongs to a group of structurally similar molecules called the *catecholamines*.

probably involved as well. It has been shown, for example, that L-tryptophan, an amino acid that increases serotonin levels, is an effective treatment for *both* mania and depression. Furthermore, when recovered depressed patients—and recovered SAD patients—are put through a procedure that depletes their tryptophan levels, their depressive symptoms return (Bremner, Innis, Salomon, et al., 1997; Delgado & Moreno, 2000). Another connected finding is that children who have major depression, together with children whose parents have the disorder, show abnormalities in their response to drugs that enhance serotonin (Birmaher, Kaufman, Brent, et al., 1997). Finally, PET scans and postmortem studies show that the brains of depressed patients have a reduced responsiveness to serotonin and fewer serotonin receptors (Mann, Huang, Underwood, et al., 2000; Yatham, Liddle, Shiah, et al., 2000). Thus, serotonin is probably involved, together with norepinephrine, in the mood disorders.

Serotonin has been implicated in suicide as well. As we saw in the discussion of adoption studies, the biological relatives of adoptees with mood disorders appear to be 15 times more likely to commit suicide than the biological relatives of control adoptees. This argues very strongly for an inheritable risk for suicide, even apart from depression. It has been proposed that a decreased flow of serotonin from the brain stem to the frontal cortex may be associated with suicide, independent of depression—indeed, with impulsive, aggressive behavior as well. In support of this hypothesis, tests of the cerebrospinal fluid of suicide attempters, particularly those who have chosen violent methods, have found evidence of abnormally low serotonin activity (Mann, McBride, Brown, et al., 1992). In addition, postmortem analyses of suicides have found subnormal amounts of serotonin and impaired serotonin receptors in the brain stem and frontal cortex (Arango & Underwood, 1997; Meyer, Kapur, Houle, et al., 1999). Should this hypothesis gain further support, it is possible that in the future we will have special drug therapies for people who attempt suicide.

A newer biochemical theory of depression is that depressive episodes, especially those triggered by stress, are caused by the atrophy, or death, of certain neurons in the hippocampus (Chapter 6), a region of the brain involved in emotion, learning, and memory as well as in the regulation of sleep, appetite, and cortisol function. According to this hypothesis, antidepressant drugs reverse this atrophy by increasing the expression of a gene, the so-called *brain-derived neurotrophic factor,* that promotes neuron growth (Duman, Heninger, & Nestler, 1997).

A Summary of Biochemical Findings It seems indisputable that norepinephrine, serotonin, and hormone abnormalities are all involved in the mood disorders, and the most compelling current theories differ only in the emphasis they give to each of these three factors. What is most likely is that mood disorders are due to a complex interaction of genetic, neurophysiological, biochemical, developmental, cognitive, and situational variables (Kendler, Kessler, Neale, et al., 1993; Ackenheil, 2001).

Whatever the neuroscience perspective ultimately contributes to uncovering the cause of mood disorders, it has already contributed heavily to their treatment—a matter to which we now turn.

Antidepressant Medication The most common therapy for depressed patients, whether or not they are receiving other kinds of therapy, is drugs. The three major classes of **antidepressant medication**—the **MAO inhibitors,** the **tricyclics,** and the **selective serotonin reuptake inhibitors (SSRIs)**—have already been described in Chapter 7, in relation to the anxiety disorders, and the most commonly used drugs within those classes were listed in Table 6.1 on page 139. All three classes seem to work by improving functioning of the neurotransmitters that we have just discussed, the MAO inhibitors by interfering with an enzyme (MAO) that degrades norepinephrine and serotonin, the tricyclics by blocking the reuptake of norepinephrine and serotonin, the SSRIs by blocking the reuptake of serotonin alone.

The prescription of these drugs is a matter of balancing symptom relief against side effects. As we saw in Chapter 7, the MAO inhibitors have the most troubling side effects, but for certain types of depression—especially "atypical depression," characterized by excessive sleeping and/or eating—they tend to work better than other antidepressants (McGrath, Stewart, Janal, et al., 2000). The tricyclics can also have unpleasant side effects. Another disadvantage with the tricyclics is that they do not begin to take effect for about 2 weeks—which, for a severely depressed person, is a long time to wait (Nierenberg, Farabaugh, Alpert, et al., 2000). Finally, it is relatively easy to overdose on tricyclics, and this makes them dangerous to prescribe for suicidal patients. Still, the tricyclics have proved successful with 50 to 60 percent of depressed outpatients. Interestingly, though, men respond to the tricyclics better than women (Kornstein, Schatzberg, Thase, et al., 2000). Although it is estimated that 30 percent of these patients would have improved in that time period anyway, the response rate was still better than with placebos (Quitkin, Rabkin, Gerald, et al., 2000).

In the past decade, however, most of the excitement in drug treatment for depression has been over the SSRIs, which have gradually displaced most other

antidepressants. The SSRI that has received the most attention is Prozac (fluoxetine). Introduced in 1987, by 1993 it had been prescribed for more than 10 million people in the United States (Barondes, 1994), and it continued to lead all other antidepressants in U.S. sales in 2000 (Schatzberg, 2000). As with other SSRIs, Prozac can take 2 weeks to work (Nierenberg, Farabaugh, Alpert, et al., 2000) and have side effects, primarily headache, upset stomach, and sexual dysfunction (Rosen, Lane, Menza, et al., 1999). Furthermore, in a small number of cases, it seems to produce anxiety and insomnia. Also, there have been reports that Prozac increases the risk of suicide; however, a recent study of 643 depressed patients treated with Prozac did not support this claim (Leon, Keller, Warshaw, et al., 1999). Finally, determining the correct dose is a delicate procedure. Prozac's half-life, the amount of time it stays in the system, is very long: 7 days (Agency for Health Care Policy and Research, 1993). Therefore, patients who take the drug daily are gradually increasing its level in the bloodstream, a process that can lead to overdose. Unfortunately, the symptoms of Prozac overdose resemble the symptoms of depression, so there is a danger, when the signs of overdose appear, that the patient will increase the dose, thinking that what is needed is simply more of the drug (Cain, 1992).

Because of these complications, Prozac has probably peaked in popularity. Physicians are now switching to SSRIs with short half-lives, particularly Paxil (paroxetine) and Zoloft (sertraline). It seems that Paxil and Zoloft not only reduce the risk of overdose but are less likely to produce anxiety and insomnia. They also work better for women than men (Kornstein, Schatzberg, Thase, et al., 2000). However, there is still controversy over how well the SSRIs work at all. Some researchers have analyzed large data sets from clinical trials of SSRIs and have suggested that they may not be much more effective than placebos (Kirsch & Saperstein, 1998; Kirsch, Moore, Scoboria, et al., 2002). Other authors have criticized these analyses and argued that the SSRIs have superior efficacy over placebos (Klein, 1998; Hollon, DeRubeis, Shelton, et al., 2002; Thase, 2002). The SSRIs approved for use in the United States are at least as effective as the tricyclics in combating depression. Moreover, continued use of either tricyclics or SSRIs reduces risk for recurrence of depression (Kupfer & Frank, 2001). In general, the major advantage of the SSRIs over other antidepressants is that they act more quickly and have somewhat fewer side effects.

Two newer antidepressants are Effexor (venlafaxine) and Serzone (nefazodone). Effexor is like a tricyclic, but without the unpleasant side effects. (Its side effects are closer to those of the SSRIs.) Although it has been under investigation for only a short time, it may turn out to be the drug of choice for severe depressions; it has already been shown to outperform SSRIs in two studies with hospitalized patients (Thase & Kupfer, 1996). Serzone has a unique biochemical structure, but it effectively increases available norepinephrine and serotonin, just like the tricyclics. It, too, has the same side-effect profile as the SSRIs, with one important exception: no sexual dysfunction. Preliminary research suggests that Serzone may be just as effective as the other antidepressants (Thase & Kupfer, 1996).

A substantial minority of patients do not respond to the first antidepressant given to them. Ordinarily, they are then switched to another. It appears that, on average, 40 percent of patients not responding to a tricyclic respond to an SSRI, and vice versa. In cases in which both tricyclics and SSRIs have failed, an MAO inhibitor or Wellbutrin (bupropion), another new antidepressant, may work. For many years, the use of Wellbutrin was delayed because, in a small number of cases, it caused seizures. However, careful regulation of dosage can minimize this risk, and Wellbutrin has few other side effects and seems to work quite well (Thase & Kupfer, 1996).

All these antidepressants are effective not only with major depressive episodes but also with chronic major depression (episodes lasting more than 2 years), dysthymia, and "double depression," in which major depression is superimposed on dysthymia (Hellerstein, Kocsis, Chapman, et al., 2000; Thase, Fava, Halbreich, et al., 1996). They are also helpful for people with chronic low-grade depression. Such people, however, are the ones least likely to be given antidepressants, because psychiatrists and family doctors tend to assume that these long-lasting depressions are best treated by psychotherapy. (Alternatively, such patients, if they show any anxiety—which they usually do—are given antianxiety drugs, for physicians seem to pay more attention to anxiety symptoms than to depression.) Nevertheless, many victims of chronic depression can get immediate relief from antidepressants. Ideally, most of them should probably have psychotherapy as well, in the hope of preventing relapse and to deal with the problems created in their lives by the depression (see the box on page 281).

Antimanic Medication While there are many competing drugs in the antidepressant market, the field of **antimanic medication** is dominated by one medication, **lithium.** Lithium is administered as lithium carbonate, a natural mineral salt (Schou, 1997). This simple salt is capable of ending swiftly and effectively about 70 percent of all manic episodes. In

Focus On... Drug Therapy Versus Psychotherapy

The recent successes of psychopharmacology have created a sometimes bitter controversy within the field of psychological treatment. Certain advocates of drug therapy speak as if drugs were on their way to making behavioral and insight therapies obsolete. In the words of psychiatrist Paul Wender, one day "every disease is going to be [seen as] a chemical or an electrical disease" (quoted in Gelman, 1990, p. 42). Indeed, some experts believe that personality itself may come to be seen as a biological phenomenon. As Peter Kramer (1993) puts it, "When one pill at breakfast makes you a new person, . . . it is difficult to resist the suggestion, the visceral certainty, that who people are is largely biologically determined" (p. 18).

To many psychotherapists—people who have spent their careers treating psychological disturbance as part of the deepest problems of living—such statements seem naïve and presumptuous. An editorial in the *Journal of the American Psychoanalytic Association* called attention to the dangers of "the recent and forceful biologization of everything from cigar smoking to love (a deficiency of phenylalanine treatable by chocolate in the absence of the loved person)" (Shapiro, 1989). Some experts also fear that psychotherapists may be becoming like internists, "managing" depression, for example, the way internists manage hypertension, by prescribing drugs and monitoring their effects, while the root cause of the depression goes unexplored. As noted earlier, to suppress symptoms is not necessarily the wisest course. By definition, symptoms are symptoms *of* something.

On the side of the drug-therapy advocates, it must be said that the root cause of some depressions may, in fact, be biochemical—that biochemical imbalance is what the symptoms are signaling and what the drugs are correcting. Furthermore, as we have seen, in some cases they correct it very efficiently. Drug treatment for certain disorders is now so widely regarded as effective that *not* to prescribe drugs for these disorders can be viewed as malpractice. (In a celebrated case, a doctor suffering from bipolar disorder sued a Maryland hospital for treating his illness with psychotherapy rather than drugs. The case was settled out of court.)

Does drug therapy, in fact, work better than psychotherapy? Most of the research on this question has to do with depression. One large-scale review of outcome studies concluded that both biological and psychological therapies are effective treatments for depression, though the most effective treatment is a combination of the two (Kupfer & Frank, 2001; Thase, Greenhouse, Frank, et al., 1997). The Agency for Health Care Policy and Research (1993) conducted a review of the literature on the treatment of depression and came to four conclusions. First, about half of depressed outpatients show marked improvement from medication. Second, the most appropriate patients for medication are those who have the most severe symptoms, plus recurrent episodes and family histories of depression. Third, psychotherapy—particularly cognitive, behavioral, and interpersonal—is effective for mild to moderate depression. Fourth, combined treatment should be considered for more severe depressions and for those who have not improved with psychotherapy or drug therapy alone.

While these recommendations have been criticized for overstating the effectiveness of medication, in a sense they are nothing new, for they repeat a long-held principle: that the treatment of choice depends on severity. Ever since the introduction of the phenothiazines in the 1950s, it has been widely believed that, in general, the most severely disturbed patients needed drugs, while the less severely disturbed needed psychotherapy. It should be added, however, that this principle is now being challenged. Recent researchers (e.g., DeRubeis, Gelfand, Tang, et al., 1999) have found that the most severe depressions are as likely to yield to cognitive therapy as to drug therapy. As for the idea that the least severe depressions are those that require psychotherapy, much of the controversy surrounding Prozac has to do with Prozac's challenge to that point. Sensitivity to criticism, low self-esteem, fear of rejection: These mild, nagging problems, which have for so long been thought the province of psychotherapy, not drugs, are exactly what Prozac seems to relieve—a fact that is causing "a rethinking of fundamental assumptions in psychiatry" (Barondes, 1994, p. 1102).

One preliminary finding is that drug therapy, when it is discontinued, is more likely than psychotherapy to be followed by relapse (Kupfer & Frank, 2001). In a study of medication versus cognitive therapy for depression, it was found that the two worked equally well during the acute phase of the depression but that, once the treatment ended, the patients in the medication group were more likely to have subsequent depression (Hollon, Shelton, & Loosen, 1991). This result, however, was not replicated by a later, large-scale study, which found roughly equal relapse rates for all treatment conditions (Shea, Elkin, Imber, et al., 1992).

It may be that the wave of the future is combined treatment (Kupfer & Frank, 2001). Even if there is a clear biochemical abnormality, and one that can be corrected biochemically, the patient is still left with the damage that has been done to his or her life by the disorder. People who have been depressed on and off for years often have wrecked marriages, strained family relations, and few friends. While the drug may help to relieve the symptoms of the disorder, psychotherapy may be needed to repair the results of the disorder.

Furthermore, a psychological disorder is never just biochemical. All behavior is multidetermined. Drug therapy and psychotherapy are two different ways of approaching mental events. With gradual adjustments, the two therapies may be able to work together. While the defenders of psychotherapy often feel called upon to protect psychology against the incursions of biology, Freud, who was certainly a defender of psychotherapy, repeatedly predicted that this treatment would ultimately be served by biological research. "Let the biologists go as far as they can," he said, "and let us go as far as we can—one day the two will meet" (quoted in Gelman, 1990, p. 42).

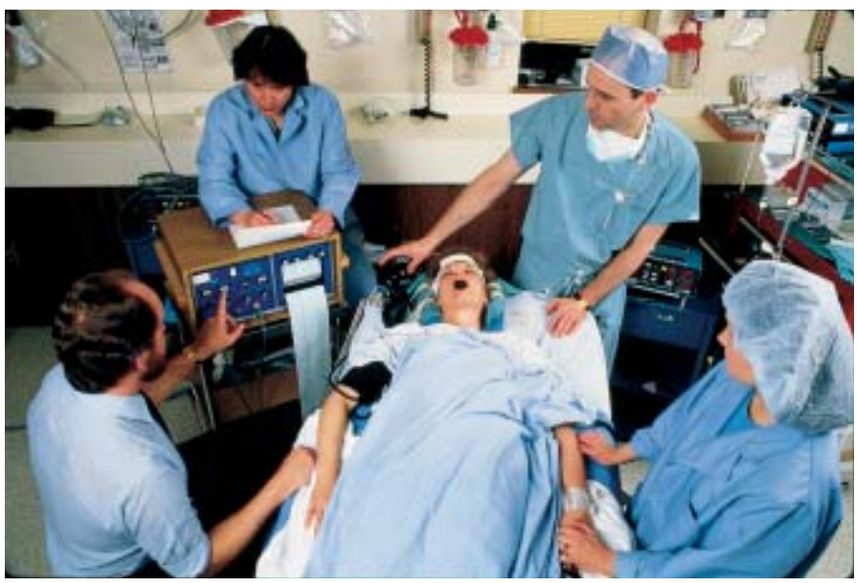
approximately 40 percent of cases, lithium also terminates depressive episodes in bipolar patients. When bipolar depressive episodes are unresponsive to lithium, physicians usually prescribe either Wellbutrin or an SSRI, because they do not make patients sleepy, and unimpaired alertness seems to speed recovery in bipolar patients.

Currently, the great virtue of lithium is preventive: When taken regularly, in a maintenance dose, it is generally effective in eliminating or at least in diminishing mood swings in bipolar disorder (Schou, 1997; Baldessarini, & Tondo, 2000). Lithium appears to work by modulating the expression of a variety of genes that change the signaling of many neurotransmitter systems in the brain (Lenox & Hahn, 2000). It is not easy, however, to determine what the maintenance dose is, because for most patients the effective dose is close to the toxic dose, which can cause convulsions, delirium, and in rare cases death. An overdose is generally preceded by clear warning signs, such as nausea, alerting the patient to discontinue the drug. Still, because of its potential dangers, patients who take lithium must have regular blood tests to monitor the level of the drug in their systems. Another problem with lithium is that, when people have taken it for more than 2 years, stopping it often results in a new depressive or manic episode and increased risk or suicide (Baldessarini, Tondo, & Viguera, 1999). Because of these risks, researchers have been trying to develop other drugs for mania. An anticonvulsant, Tegretol (carbamazepine), has been found to be effective for about a third of manic patients (Small, Klapper, Milstein, et al., 1991). And Depakote (valproate) has also been shown to be an effective mood stabilizer for bipolar patients (Sachs, Prinz, Kahn, et al., 2000).

Thus far, we have discussed only acute treatment response, the ability of these medications to relieve a current episode of mania or depression. Most psychiatrists now feel that, after an acute phase, there should be a "continuation" phase, in which the patients are maintained for 6 months to a year on the medication that helps them. Continuation therapy results in a 30 to 40 percent lower risk of relapse during the period in which the drug is continued. Usually, if a patient has responded positively to antidepressants and has remained free of depression through the continuation phase, he or she is assumed to have recovered from the episode that led to the treatment (Thase & Kupfer, 1996).

Electroconvulsive Therapy For reasons that are not completely understood, electric shock, when applied to the brain under controlled circumstances, seems to help relieve severe depression. This type of treatment, known as **electroconvulsive therapy (ECT),** involves administering to the patient a shock of approximately 70 to 130 volts, thus inducing a convulsion similar to an epileptic seizure. Typically, therapy involves about 9 or 10 such treatments, spaced over a period of several weeks, though the total may be much lower or higher.

This technique was first discovered in the 1930s (Bini, 1938). Since that time, it has become clear that,



Electroconvulsive therapy is a controversial treatment with potentially serious side effects, but it has been shown to help many severely depressed people.

like antidepressants, the shock affects the levels of norepinephrine and serotonin in the brain, but theories as to its exact mode of operation are as various and incomplete as those regarding the antidepressants (Mann & Kapur, 1994). At present, all we know is that electric shock apparently *does* work, and quite well, for many seriously depressed patients (Bailine, Rifkin, Kayne, et al., 2000; Cohen, Taieb, Flament, et al., 2000).

Like other biological treatments, ECT has its complications. The most common side effect is memory dysfunction, both anterograde (the capacity to learn new material) and retrograde (the capacity to recall material learned before the treatment). Research indicates that, in the great majority of cases, anterograde memory gradually improves after treatment (Hay & Hay, 1990). As for retrograde memory, there is generally a marked loss 1 week after treatment, with nearly complete recovery within 7 months after treatment. Long-term follow-ups (3.5 years after ECT) suggest few permanent memory deficits (Cohen, Taieb, Flament, et al., 2000). In many cases, however, some subtle memory losses, particularly for events occurring within the year preceding hospitalization, persist beyond 7 months (Lisanby, Maddux, Prudic, et al., 2000). Memory loss is greater for impersonal events (world affairs) than for autobiographical (personal) events (Lisanby, Maddux, Prudic, et al., 2000). The probability of memory dysfunction is less if ECT is confined to only one hemisphere of the brain (Sackeim, Prudic, Devanand, et al., 2000), the one having less to do with language functions—as we saw in Chapter 6, this is usually the right hemisphere—and this approach has proved as effective as bilateral shock (Sackeim, Prudic, Devanand, et al., 2000). Memory loss is also lessened if ECT is applied to the frontal lobes rather than the temporal lobes, which is an equally effective approach (Bailine, Rifkin, Kayne, et al., 2000).

Another problem with ECT is that, although the treatment is painless (the patient is anesthetized before the shock is administered), many patients are very frightened of it. And, in some cases, ward personnel have made use of this fear, again for "patient management," telling patients that, if they don't cooperate, they will have to be recommended for an ECT series.

These problems have made ECT a controversial issue over the years. Defenders of ECT point out that many studies have found it highly effective—more effective, in fact, than antidepressants (Mann & Kapur, 1994; Cohen, Taieb, Flament, et al., 2000). Furthermore, unlike antidepressants, it works relatively quickly—an important advantage with suicidally depressed patients. On the other hand, ECT has vociferous critics, who consider it yet another form of psychiatric assault on mental patients. In support of this view, the voters of Berkeley, California, in 1982 passed a referendum making the administration of ECT a misdemeanor punishable by a fine of up to $500 and 6 months in jail. While the courts later reversed the ban, the fact that the voters passed it indicates the strength of opposition to this treatment.

Though the controversy over ECT is not settled, it has had its impact on practice. State legislatures have established legal safeguards against the abuse of ECT, and in general the technique is being used less frequently than it was in the 1960s and 1970s. At the same time, a 1990 report of the American Psychiatric Association concluded that ECT *was* an effective treatment for serious depressions and should be used, particularly in cases in which other treatments, such as psychotherapy and antidepressant medication, have failed.

In the past decade, an experimental treatment for depression has been developed that uses powerful magnetic fields to alter brain activity. Transcranial magnetic stimulation (TMS) involves placing an electromagnetic coil on the scalp (George, Lisanby, & Sackeim, 1999). When a high-intensity current is rapidly turned on and off in the coil, it produces a powerful, brief magnetic field that induces electrical current in neurons, causing neural depolarization—the same effect produced by ECT. Unlike ECT, however, where the skull acts as a massive resistor, magnetic fields are not deflected by intervening tissue; TMS can therefore be more focal than electrical stimulation (George, Lisanby, & Sackeim, 1999). Unlike ECT, as well, TMS is usually performed in outpatient settings without anesthesia. Patients usually notice no adverse effects other than the occasional mild headache and discomfort at the site of the stimulation (George, Lisanby, & Sackeim, 1999).

As with imaging and other studies that link depression to prefrontal dysfunction, the effects of TMS differ according to where on the prefrontal cortex it is administered. When administered over the left prefrontal region in normal volunteers, TMS causes increased sadness; over the right prefrontal cortex, its effect is increased happiness (Klein, Kreinin, Chistyakov, et al., 1999). Initial studies of patients with major depression have shown that TMS leads to reductions in depressive symptoms. Klein and colleagues found that 49 percent of patients with major depression who received TMS had a reduction of 50 percent or more on at least one of their depression scales, while only 25 percent of patients in the control group met this criterion (Klein, Kreinin, Chistyakov, et al., 1999).

TMS is a promising new area of research, though more needs to be learned about its long-term effects. Safety concerns cited by George, Lisanby, and Sackheim (1999) include headaches and short-term hearing loss; more critically, repetitive TMS has resulted in seizures in a very few cases. TMS has also been shown to disrupt cognition during the procedure itself, though these effects have not been demonstrated beyond the period of stimulation.

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Summary

- People who suffer from the major mood disorders—disorders of affect, or emotions—experience exaggerations of the same kinds of highs and lows all human beings experience. Mood disorders are episodic: The depressive or manic episode often begins suddenly, runs its course, and may or may not recur. Thinking, feeling, motivation, and physiological functioning are all affected.
- A major depressive episode is characterized by depressed mood (the helplessness-hopelessness syndrome), loss of pleasure in usual activities, disturbance of appetite and sleep, psychomotor retardation or agitation, loss of energy, feelings of worthlessness and guilt, difficulty remembering or thinking clearly, and recurrent thoughts of death or suicide.
- A major manic episode is characterized by an elated, expansive, or irritable mood combined with inflated self-esteem, sleeplessness, talkativeness, flight of ideas, distractibility, hyperactivity, and reckless behavior.
- Major depressive disorder is one of the most common mental health problems in the United States. It affects women more often than men, European Americans more than African Americans, and separated and divorced people more than married people. People with bipolar disorder experience mixed or alternating manic and depressive episodes. Many others suffer from dysthymic disorder (milder but chronic depression) or cyclothymic disorder (recurrent depressive and hypomanic episodes). Demographic, family, and individual case patterns suggest that different mood disorders may have different etiologies.
- Mood disorders differ along several dimensions, including psychotic versus nonpsychotic; endogenous (from within) versus reactive (a response to loss); and early versus late onset. Evidence of comorbidity, especially mixed anxiety-depression, is increasing.
- People suffering from depression are at high risk for suicide. Single people are more likely than married people to kill themselves. Although more women than men attempt suicide in most countries, more men succeed in killing themselves. Teenagers are at risk for suicide due to a complex set of factors, including family problems. People who threaten to commit suicide often attempt to do so; people who attempt suicide, but fail, often try again. Encouraging people to talk about suicidal thoughts often helps them overcome these wishes. Among factors that predict suicide, hopelessness—the belief that there is no other escape from psychological pain—stands out. Suicide hotlines and school-based prevention programs often do not appeal to the people who need them most.
- There are two prominent behaviorist perspectives on depression and suicide. According to one view, the extinction hypothesis, depression results from a loss of reinforcement, often exacerbated by a lack of skill in seeking interpersonal rewards. According to a second view, depressed people elicit negative responses by demanding too much reinforcement in inappropriate ways. However, which comes first, depression or aversive behavior, is debatable. Behavioral therapies focus on increasing self-reinforcement and on teaching social and other skills.

- The cognitive perspective also has two main theories of depression and suicide. One focuses on learned helplessness (the belief that one cannot control or avoid aversive events) combined with hopelessness (the feeling that negative events will continue and even increase). Hopelessness, in particular, is a predictor of suicide. A second cognitive theory traces depression and suicide to negative schemas, or images, of the self, the world, and the future. But, again, whether these feelings are a cause of depression is debatable. Cognitive therapists seek to correct negative thoughts and attributions by such methods as cognitive training and reattribution training.
- Psychodynamic theorists, beginning with Freud, trace depression to an early trauma that is reactivated by a recent loss, bringing back infantile feelings of powerlessness. Some see depressed people as "love addicts" who attempt to compensate for their low self-esteem by seeking reassurance from others. But dependency on a loved one can turn to anger and guilt. According to this view, suicidal people are attempting to destroy another person whom they have incorporated into their own psyches. Empirical studies lend some support to the association of depression with dependency and with early loss of a parent or poor parenting. Psychodynamic treatment of depression aims not only to unearth the early trauma but also to examine how the patient uses depression in dealing with others. A short-term therapy that uses this approach is interpersonal therapy.
- The sociocultural perspective attempts to explain historical changes and cross-cultural differences in the rates of depression and suicide. One view is that rapid social change, one of the defining characteristics of modern life, deprives people of necessary social supports.
- The neuroscience perspective holds that, whatever the contribution of early or current emotional and/or social stress, mood disorders are at least partly organic. Some neuroscientists study families, twins, and adopted children and their biological and adoptive parents to discover the degree to which mood disorders are inherited. There is strong evidence that vulnerability to mood disorders and suicide runs in families. Some neuroscientists look at seasonal fluctuations in mood. Some examine CT, MRI, and PET scans for abnormalities in structures or regions thought to be involved in mood regulation. And some focus on biochemistry, especially hormonal imbalances and the neurotransmitters norepinephrine and serotonin. Today the most common treatment of major depression is the use of antidepressant medication (MAO inhibitors, tricyclics, and selective serotonin reuptake inhibitors [SSRIs]). Many depressed patients receive antidepressants in addition to another kind of therapy. Lithium, a natural mineral, is the dominant medication for treating bipolar depressive and manic episodes. Electroconvulsive therapy is a controversial treatment for severe depression. It works relatively quickly, compared to antidepressants, but critics note its side effects, such as a negative effect on memory.