



Suicide is always a serious risk, but it is often difficult for the therapist to judge whether a frantic phone call at 2:00 A.M. is a call for help or a manipulative gesture designed to test how special the patient is to the therapist and to what lengths the therapist will go to meet the patient's needs at the moment. As in the case of Mary (see the clinical case at the beginning of this chapter), hospitalization is often necessary to protect against the threat of suicide. Seeing such clients is so stressful that it is common for a therapist to regularly consult with another therapist for advice and for support in dealing with their own emotions as they cope with the extraordinary challenges of helping these clients.

A number of drugs have been tried in the treatment of people with borderline personality disorder. There is some evidence that fluvoxamine decreases some of the aggressiveness and depression often found in these clients (Rinne et al., 2002) and that lithium can reduce some of their irritability, anger, and suicidality (Links et al., 1990). Similarly, antiseizure medications, which have been used to treat mood changes in bipolar disorder, appear helpful in the treatment of borderline personality disorder (Hollander et al., 2001). Newer antipsychotic medications, such as olanzapine, seem to reduce the symptoms of borderline personality disorder when offered alone (Bogenschutz & Nurnberg, 2004) or as supplements to psychotherapy (Soler et al., 2005). Because such clients often abuse drugs and engage in suicidal behavior, extreme caution must be used in drug therapy (Waldenger & Frank, 1989).

Object Relations Psychotherapy Otto Kernberg (1985) developed a modified psychodynamic object relations treatment, sometimes called transference-focused therapy, in which the overall goal is to strengthen the patient's weak ego so that he or she stops splitting—seeing everything according to a simple good–bad dichotomy (see p. 364). The therapist points out how the patient is allowing his or her emotions and behavior to be regulated by such defenses as splitting. Kernberg's approach is more directive than that of most analysts. In addition to interpreting defensive behavior, he recommends giving clients concrete suggestions for behaving more adaptively and hospitalizing clients whose behavior becomes dangerous.

Dialectical Behavior Therapy Marsha Linehan (1987) introduced an approach that she called **dialectical behavior therapy** (DBT), combining client-centered empathy and acceptance with cognitive behavioral problem-solving, emotion regulation techniques, and social skills training. The concept of dialectics comes from the work of German philosopher Georg Wilhelm Friedrich Hegel (1770–1831). It refers to a constant tension between any phenomenon (any idea, event, etc., called the *thesis*) and its opposite (the *antithesis*), which is resolved by the creation of a new phenomenon (the *synthesis*). In DBT, the term *dialectical* is used in two main ways:

- In one sense, it refers to the seemingly opposite strategies that the therapist must use when treating people with borderline personality disorder—accepting them as they are and yet helping them change. (For a closer look at the dialectic between acceptance and change, see Focus on Discovery 12.2.)
- In the other sense, it refers to the patient's realization that splitting the world into good and bad is not necessary; instead, one can achieve a synthesis of these apparent opposites. For example, instead of seeing a friend as either all bad (thesis) or all good (antithesis), the friend can be seen as having both kinds of qualities (synthesis).

Hence, the therapist and the client in DBT are both encouraged to adopt a dialectical view of the world.

The cognitive behavioral aspect of DBT, conducted both individually and in groups, involves four stages. In the first stage, dangerously impulsive behaviors are addressed, with the goal of promoting greater control. In the second stage, the focus is on learning to modulate the extreme emotionality. This phase might involve coaching to help a person learn to tolerate emotional distress. Stage three focuses on improving relationships and self-esteem. Stage four is designed to promote connectedness and happiness. Throughout, clients learn more effective and socially acceptable ways of handling their day-to-day problems. Basically, DBT involves cognitive behavioral therapy combined with interventions to provide validation and acceptance to the client.

FOCUS ON DISCOVERY 12.2

Acceptance in Dialectical Behavior Therapy

Marsha Linehan (1987) argues that a therapist treating clients with borderline personality disorder has to adopt a posture that might seem inconsistent to the Western mind. The therapist must work for change while at the same time accepting the real possibility that no changes are going to occur. Linehan's notions of acceptance are drawn from Zen philosophy and from Rogerian approaches to psychotherapy.

Linehan's reasoning is that people with borderline personality disorder are so sensitive to rejection and criticism that even gentle encouragement to behave or think differently can be misinterpreted as a serious rebuke, leading to extreme emotional reactions. When this happens, the therapist, who may have been revered a moment earlier, is suddenly vilified. Thus, while observing limits—"I would be very sad if you killed yourself, so I hope very much that you won't"—the therapist must convey to the patient that he or she is fully accepted. This is hard to do if the patient is threatening suicide, showing uncontrolled anger, or railing against imagined rebukes from the therapist.

Completely accepting the patient does not mean approving of everything the patient does;



Marsha Linehan created dialectical behavior therapy, which combines cognitive behavioral therapy with acceptance. (Courtesy of Marsha M. Linehan.)

rather, it means that the therapist must accept the situation for what it is. And this acceptance, argues Linehan, must be real: the therapist must truly accept clients as they are; acceptance should not be in the service of change, an indirect way of encouraging clients to behave differently. "Acceptance can transform but if you accept in order to transform, it is not acceptance. It is like loving. Love seeks no reward but when given freely comes back a hundredfold. He who loses his life finds it. He who accepts, changes" (Linehan, personal communication, November 16, 1992). Full acceptance does not, in Linehan's view, preclude change. Indeed, she proposes the opposite—that it is the refusal to accept that precludes change.

Linehan's approach also emphasizes that clients, too, must accept who they are and what they have been through. Clients are asked to accept that their childhood is now unchangeable, that their behaviors might have caused relationships to end, and that they feel emotions more intensely than others do. This approach, it is hoped, will provide a basis for understanding the self.

Schema-Schema-Focused Cognitive Therapy for BPD Schema-focused cognitive therapy enriches traditional cognitive therapy with a broader focus on how early childhood antecedents and parenting shape current cognitive patterns. In schema-focused therapy, the therapist and the patient work to identify the maladaptive assumptions (schema) that a client holds about relationships from his or her early experiences. It is assumed that the person also has a schema for healthy relationships, and the goal of therapy is to increase the use of this healthy schema, rather than automatic behaviors reflecting the problematic relationship schema. Similar to object relations therapy, the therapist is working to change internalized representations of relationships drawn from early difficult experiences. Similar to cognitive therapy, though, the therapist might place more emphasis on how these patterns are being expressed in current life and might use more homework assignments to try to change these patterns.

Studies of the Efficacy of Psychotherapy for BPD Linehan and colleagues (1991) were the first to publish the results of a randomized controlled study of a psychological treatment for borderline personality disorder. Clients were randomly assigned either to DBT or to treatment as usual, meaning any therapy available in the community (Seattle, Washington). After one year of treatment and again six and 12 months later, clients in the two groups were compared on a variety of measures (Linehan, Heard, & Armstrong, 1993). The findings immediately after treatment revealed that DBT was superior to treatment as usual—clients showed less intentional self-injurious behavior, including fewer suicide attempts; dropped out of treatment less; and spent fewer days in the hospital. There were, however, no differences in self-reported depression and feelings of hopelessness between the two treatment groups. At the



follow-ups, the superiority of DBT was maintained. Additionally, DBT clients had better work records, reported less anger, and were judged as better adjusted than the comparison therapy clients. But most clients were still feeling quite miserable at the one-year follow-up, underscoring the extreme difficulty of treating such clients. A second randomized controlled trial found that DBT provided more relief from depressive and other symptoms than did treatment as usual (Koons et al., 2001). A similarly designed study of women with borderline personality disorder who were also drug dependent found less substance abuse after DBT than after treatment as usual (Linehan et al., 1999).

Beyond DBT, studies suggest that Kernberg's object relations psychodynamic therapy (Trull, Stepp, & Durrett, 2003) and adaptations of this approach (Bateman & Fonagy, 2004) help relieve symptoms of borderline personality disorder. It is worth noting that a long-term study suggested that, unlike object relations therapy, classical psychoanalysis was not helpful for BPD (Stone, 1987).

Most of the psychotherapy studies have compared the specific treatments for BPD to treatment as usual. How do DBT, object relations therapy, or schema-focused therapy compare to each other? One study is available comparing DBT, object relations therapy, and a control condition consisting of supportive therapy (Clarkin et al., 2007). All three approaches helped reduce depression and anxiety. Generally, DBT and object relations therapy did not achieve significant gains compared to supportive therapy on many of the outcome measures. Key group differences emerged in one important area: Clients who received either DBT or object relations therapy demonstrated reduced suicidality, whereas clients in supportive therapy did not. Object relations therapy also showed significant effects in reducing anger, assaultiveness, and irritability, whereas DBT did not. On most measures, then, object relations therapy and DBT performed similarly, although object relations therapy appeared to be slightly more helpful in reducing anger-related symptoms.

In a separate study, clients with BPD were randomly assigned to receive three years of either schema-focused therapy or object relations therapy (Giesen-Bloo et al., 2006). Clients receiving either treatment showed significant gains in their quality of life. But schema-focused therapy helped clients achieve more gains by the end of treatment than did object relations therapy in specific borderline symptoms, such as relationship problems, impulsivity, dissociative and paranoid ideas, and abandonment fears.

At this early stage, then, three treatments each show an ability to help reduce symptoms of BPD. One study suggests that object relations therapy has an advantage compared to DBT in treating anger, and another study shows that schema-focused therapy has an advantage compared to object relations therapy.

Treatment of Psychopathy

Experts of varying theoretical persuasions have asserted for years that it is pointless to try to alter the callous and remorseless nature of people with psychopathy (e.g., Cleckley, 1941/1976). These pessimistic views have been challenged in a comprehensive meta-analysis of 42 studies of the psychological treatment of psychopathy (Salekin, 2002). These studies had many methodological problems, but 17 of them, involving 88 people with psychopathy, found that psychoanalytic psychotherapy was very helpful in domains such as improving interpersonal relationships, increasing the capacity for feeling remorse and empathy, reducing the amount of lying, being released from probation, and holding down a job. Similar positive therapeutic effects were found in five studies employing cognitive behavioral techniques with 246 people with psychopathy. Therapy was more beneficial for younger clients. To be at all effective, treatment had to be quite intensive: four times a week for at least a year—a very heavy dose of psychosocial treatment whatever one's theoretical orientation.

These are remarkably positive findings given the widely held belief that psychopathy is basically untreatable. And yet, as optimistic as one researcher is about current and future treatment efforts for psychopaths, he cautions at the end of his article that “. . . research needs to make some attempt to determine whether clients are ‘faking good’ in treatment studies or whether the changes are genuine” (Salekin, 2002, p. 107).

Summary

- Coded on Axis II in DSM-IV-TR, personality disorders are defined as enduring patterns of behavior and inner experience that disrupt functioning. Personality disorders are grouped into three clusters in DSM-IV-TR: odd/eccentric, dramatic/erratic, and anxious/fearful.

- Personality disorders are usually comorbid with Axis I disorders such as depression and anxiety disorders, and they tend to predict poorer outcomes for these disorders.

- The high comorbidity of personality disorders with each other, and the fact that personality disorders are seen as the extremes of continuously distributed personality traits, have led to proposals to develop a dimensional rather than a categorical approach to personality diagnoses.

Odd/Eccentric Cluster

- Specific diagnoses in the odd/eccentric cluster include paranoid, schizoid, and schizotypal.

- The major symptom of paranoid personality disorder is suspiciousness and mistrust; of schizoid personality disorder, interpersonal detachment; and of schizotypal personality disorder, unusual thought and behavior.

- Genetic research supports the idea that schizotypal personality disorder is related to schizophrenia.

Dramatic/Erratic Cluster

- The dramatic/erratic cluster includes borderline, histrionic, narcissistic, and antisocial personality disorders.

- The major symptom of borderline personality disorder is unstable, highly changeable emotion and behavior; of histrionic personality disorder, exaggerated emotional displays; and of narcissistic personality disorder, highly inflated self-esteem. Antisocial personality disorder and psychopathy overlap a great deal but are not equivalent. The diagnosis of antisocial personality focuses on behavior, whereas that of psychopathy emphasizes emotional deficits.

- There is evidence that much of the vulnerability to borderline personality disorder is inherited, and there are also findings regarding deficits in frontal lobe functioning and regarding greater amygdala activation.

- Psychosocial theories of the etiology of borderline, histrionic, and narcissistic disorders focus on early parent–child relationships. It is clear that people with borderline personality disorder report extremely high rates of child abuse and parental separation compared to the general population.

- The object relations theorist Kernberg and the self-psychologist Kohut have detailed proposals concerning borderline and narcissistic personality

disorders, focusing on the child developing an insecure ego because of inconsistent love and attention from the parents. Linehan's cognitive behavioral theory of borderline personality disorder proposes an interaction between emotional dysregulation and an invalidating family environment.

- When designs involving repeated measurements or multiple informants are used to bolster the reliability of pathology measures, antisocial personality disorder and psychopathy appear to be highly heritable.

- Psychopathy and antisocial behavior also appear to be related to family environment and poverty.

- Psychopathy is related to lack of response to punishment, poor empathy, and elevated impulsivity.

Anxious/Fearful Cluster

- The anxious/fearful cluster includes avoidant, dependent, and obsessive-compulsive personality disorders.

- The major symptom of avoidant personality disorder is fear of rejection or criticism; of dependent personality disorder, excessive reliance on others; and of obsessive-compulsive personality disorder, a perfectionistic, detail-oriented style.

- Avoidant personality disorder is modestly heritable, but estimates of heritability vary for dependent and obsessive-compulsive personality disorders.

- Social theories of etiology for the anxious/fearful cluster focus on parenting. Avoidant personality disorder might result from the transmission of fear from parent to child via modeling. Dependent personality might be caused by disruptions of the parent–child relationship (e.g., through separation or loss) that lead the person to fear losing other relationships in adulthood. Dependency as a personality trait is only modestly heritable.

Treatment of Personality Disorders

- Although psychodynamic, behavioral and cognitive, and pharmacological treatments are all used for personality disorders, less research has been conducted for these disorders compared to Axis I disorders.

- Several medications appear to be helpful for quelling specific symptoms.
- Early research on day treatment programs is promising.

- Some promising evidence is emerging for the utility of dialectical behavior therapy, object relations therapy, and schema-focused therapy for borderline personality disorder. Other research suggests that even psychopathy, formerly considered virtually untreatable, might respond to intensive psychological treatment.

Answers to Check Your Knowledge Questions

12.1 1. T; 2. F; 3. T; 4. F; 5. F

12.2 1. b; 2. a, b; 3. d

12.3 1. T; 2. F; 3. T; 4. F

12.4 1. narcissistic; 2. avoidant; 3. obsessive-compulsive; 4. schizoid; 5. antisocial

Key Terms

antisocial personality disorder
avoidant personality disorder
borderline personality disorder
dependent personality disorder

dialectical behavior therapy
five-factor model
histrionic personality disorder
narcissistic personality disorder

obsessive-compulsive
personality disorder
paranoid personality disorder
personality disorders

psychopathy
schizoid personality disorder
schizotypal personality disorder

13

Sexual and Gender Identity Disorders

LEARNING GOALS

1. Be able to describe norms and gender differences in sexuality.
2. Be able to define the phases of the sexual response cycle.
3. Be able to explain the symptoms, causes, and treatments for sexual dysfunctions, gender identity disorder, and paraphilias.
4. Be able to discuss the epidemiology and predictors of rape and sexual coercion, as well as treatment programs for sexual offenders.

SEXUALITY IS ONE OF the most personal areas of a person's life. Each of us is a sexual being with preferences and fantasies that may surprise or even shock us from time to time. Usually these are part of normal sexual functioning. But when our fantasies or desires begin to affect us or others in unwanted or harmful ways, they begin to qualify as abnormal. In this chapter we consider the range of human sexual thoughts, feelings, and actions that are listed in DSM-IV-TR as sexual and gender identity disorders (see Table 13.1).

For perspective, we begin by briefly describing norms and healthy sexual behavior. Then we divide our study of sexual disorders and problems into three major sections: **sexual dysfunctions**, disruptions in sexual functioning found in many people who are in otherwise good psychological health; **gender identity disorder**, a diagnosis used to describe people who believe they are of the opposite sex and are troubled by this belief; and the **paraphilias**, in which people are attracted to unusual sexual activities or objects. We close this chapter with a discussion of rape. Although rape is not a diagnosis in DSM-IV-TR, we examine this issue because it is a harmful form of sexual behavior.

Sexual Norms and Behavior

Definitions of what is normal or desirable in human sexual behavior vary with time and place. Consider contemporary Western worldviews that *inhibition* of sexual expression causes problems. Contrast this with nineteenth- and early-twentieth-century views that *excess* was the culprit; in particular, excessive masturbation in childhood was widely believed to lead to sexual problems in adulthood. Von Krafft-Ebing (1902) postulated that early masturbation damaged the sexual organs and exhausted a finite reservoir of sexual energy, resulting in diminished ability to function sexually in adulthood. Even in adulthood, excessive sexual activity was thought to underlie problems such as erectile failure. The general Victorian view was that sexual appetite was dangerous and therefore had to be restrained. For example, to discourage handling of the genitals by children, metal mittens were promoted; and to distract adults from too much sex, outdoor exercise and a bland diet were recommended. In fact, Kellogg's Corn Flakes and graham crackers were developed as foods that would lessen sexual interest. They didn't.

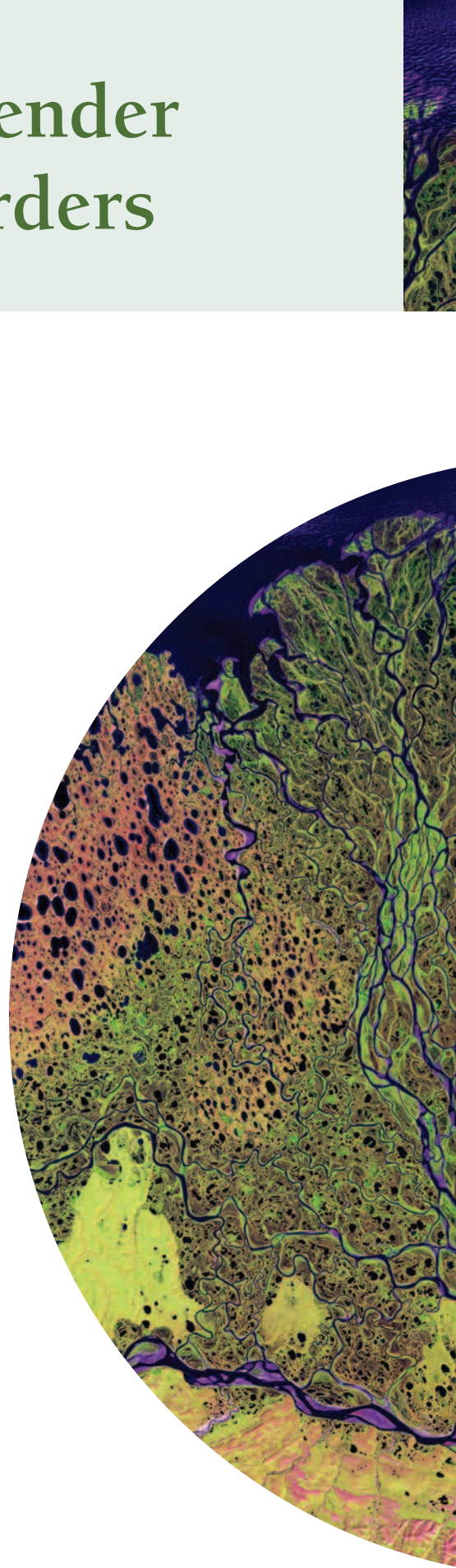




Table 13.1 Sexual and Gender Identity Disorders

Sexual dysfunctions
Sexual desire disorders
Hypoactive sexual desire disorder
Sexual aversion disorder
Sexual arousal disorders
Female sexual arousal disorder
Male erectile disorder
Orgasmic disorders
Female orgasmic disorder
Male orgasmic disorder
Premature ejaculation
Sexual pain disorders
Dyspareunia
Vaginismus
Gender identity disorder
Paraphilias
Fetishism
Transvestic fetishism
Pedophilia
Exhibitionism
Voyeurism
Frotteurism
Sexual masochism
Sexual sadism
Paraphilias not otherwise specified (e.g., coprophilia, necrophilia)

Source: From DSM-IV-TR (APH, 2000).

Other changes over time have influenced people's attitudes and experiences of sexuality. For example, technology is changing sexual experiences, as the number of people accessing sexual content on the Internet increases dramatically. Even as the accessibility of sexual content increases so dramatically, the specter of AIDS and other sexually transmitted diseases changes the risks associated with sexual behavior. Other changes in sexual norms are occurring as well. As the population of the United States ages, a newfound emphasis on the right to a good sex life until the day of death has emerged, perhaps most visibly expressed in the barrage of television commercials for medications to improve erectile function among older men (Tiefer, 2003). Clearly, we must keep varying cultural norms in mind as we study human sexual behavior.

At the current point in time in our culture, what are the norms? Several major surveys have been conducted to assess typical levels of sexual activity. In one study that included a representative sample of almost 3,000 adults, Laumann and colleagues (1994) asked participants to describe their involvement in different sexual activities (see Table 13.2). Some of the findings were surprising. Although researchers had thought for some time that as many as 10 percent of people had engaged in sex with a same-sex partner, Laumann's study, which involved a more representative sample of participants, revealed much lower rates. In his study, approximately 5.1 percent of men and 3.3 percent of women reported that they had had sex with a same-sex partner during their adult lives. On the other hand, about 30 percent of people reported that they would find a same-sex partner to be appealing. See Focus on Discovery 13.1 for a look at the complicated path taken by health professionals in response to changing attitudes toward sexual orientation.

Gender and Sexuality

Few topics raise as much political debate or personal turmoil as gender differences in sexuality. Across a wide range of indices, men report more engagement in sexual thought and behavior than do women. Of course, these are averages, there are going to be exceptions, and most of these differences are small (Andersen, Cyranowski & Aarested, 2000). But compared to women, men report thinking about sex, masturbating, and desiring sex more often, as well as desiring more sexual partners and having more partners (Baumeister, Catanese, & Vohs, 2001).

Table 13.2 Participation in Selected Sexual Behaviors in the Past Year

Behavior	Male (%)	Female (%)
Give oral sex		
Never	30	35.2
Occasionally	49.4	53.0
Always	20.7	11.8
Receive oral sex		
Never	30.5	33.2
Occasionally	50.4	52.2
Always	19.0	14.6
Number of sex partners		
0	9.9	13.6
1	66.7	74.7
2–4	18.3	10.0
5+	5.1	1.7
Frequency of sexual intercourse		
For unmarried participants		
None	22.1	30.6
< 3x/month	38.9	36.6
At least 1x/week	38.9	32.8
For married participants		
None	1.3	2.6
< 3x/month	31.4	33.9
At least 1x/week	67.3	63.5

Source: Laumann et al. (1994).

FOCUS ON DISCOVERY 13.1

Learning from History

Until 1973, homosexuality was listed in the DSM as one of the sexual disorders. In 1973 the Nomenclature Committee of the American Psychiatric Association, under pressure from professional and activist groups, recommended the elimination of the category “homosexuality” and the substitution of “sexual orientation disturbance.” This new diagnosis was to be applied to gay men and women who are “disturbed by, in conflict with, or wish to change their sexual orientation.” The change was approved, but not without vehement protests from several renowned psychiatrists who remained convinced that homosexuality reflects a fixation at an early stage of psychosexual development and is therefore inherently abnormal. Today, these protests would be considered misguided, prejudiced, and antiscientific.

In the 1980 publication of the DSM-III, the Nomenclature Committee waffled by adding a new category called *ego-dystonic homosexuality*, which referred to a person who is homosexually aroused, is persistently distressed

by this arousal, and wishes to become heterosexual. In doing so, the crafters of DSM-III took an inconsistent position: a gay man or lesbian is abnormal if he or she has been persuaded by a prejudiced society that his or her sexual orientation is disordered. At the same time, according to DSM-III, homosexuality was not in itself abnormal!

In the years after publication of DSM-III, mental health professionals made very little use of the diagnosis of ego-dystonic homosexuality. When the American Psychiatric Association published DSM-III-R in 1987, the category of ego-dystonic homosexuality was dropped. Instead, the catchall category of “sexual disorder not otherwise specified,” which refers to “persistent and marked distress about one’s sexual orientation” (p. 296), has been included in DSM-IV and DSM-IV-TR. It is noteworthy that the new category does not specify a sexual orientation but, rather, can be applied when a person is distressed over a heterosexual or homosexual orientation.

Beyond these differences in sex drive, Peplau (2003) has described several other ways in which the genders tend to differ in sexuality. Women tend to be more ashamed of any flaws in their appearance than do men, and this shame can interfere with sexual satisfaction (Sanchez & Kiefer, 2007). For women, sexuality appears more closely tied to relationship status and social norms than for men (Baumeister, 2000). For example, women tend to engage less in sexual activities like masturbation when they are not in a relationship; men don’t experience the same shift when a relationship ends. Some argue that the DSM pays too little attention to the relational components of human sexuality in describing sexual dysfunction, especially for women. Some propose that there should be a more women-centered definition that includes “discontent or dissatisfaction with any emotional, physical, or relational aspect of sexual experience” (Tiefer, Hall, & Tavris, 2002, pp. 228–229). Although there are many parallels in how men and women think about sex, men are more likely to think about their sexuality in terms of power than are women (Andersen, Cyranowski, & Espindle, 1999). Men develop more sexual dysfunctions as they age, such as erectile dysfunctions; in contrast, sexually active older women do not report more sexual problems than younger women do (Laumann et al., 2005).

Debate continues about the reasons for these gender differences. Are they based on cultural prohibitions regarding women’s sexuality? Are they based on biological differences? Are they tied to women’s greater investment in parenting? It is hard to design research to tease apart cultural and biological influences on sexuality. Intriguingly, though, at least some research suggests that some gender differences seem to be remarkably consistent across cultures. In one study of more than 16,000 people (albeit mostly college students), men in 52 different countries reported that they wanted more partners over the course of a lifetime than did women (Schmitt et al., 2003). These findings suggest that biology may shape men’s desire for many lifetime partners more than culture does. We know less about the basis for other gender differences in sexuality. There must be some reason for these differences, though. As Baumeister (2000) points out, in a perfect world, wouldn’t men and women be well matched on their sexual preferences?



Norms about sexuality have fluctuated a great deal over time. In the early twentieth century, corn flakes were promoted as part of a bland diet to reduce sexual desire. (Corbis Images.)

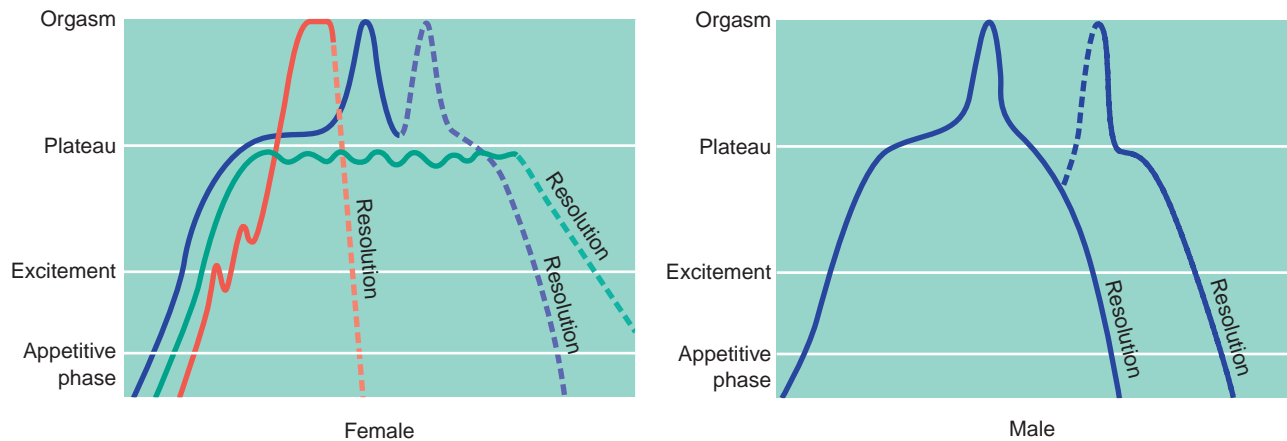


Figure 13.1 The sexual response cycle differs for women and men. Some women report no orgasms (as shown in the green line in the left-hand figure), others report one (as shown in the orange line in the left-hand figure), and some report multiple orgasms (as shown in the blue line). A single orgasm is the typical pattern for men, but a second orgasm may be possible after a refractory period.

Despite debate about gender differences in sexuality, we will see throughout this chapter that gender shapes sexual disorders in a number of ways. Women are much more likely to report symptoms of sexual dysfunction than are men, but men are much more likely to meet diagnostic criteria for paraphilias. A better understanding of gender differences in sexuality is needed to understand why there are such major gender differences in sexual diagnoses.

The Sexual Response Cycle

Many researchers have focused on understanding the **sexual response cycle**. The Kinsey group made breakthroughs in the 1940s by interviewing people about their sexuality (Kinsey, Pomeroy, & Martin, 1948). Masters and Johnson created another revolution in research on human sexuality 50 years ago when they began to gather direct observations and physiological measurements of people masturbating and having sexual intercourse. Most contemporary conceptualizations distill proposals by Masters and Johnson (1966) and Kaplan (1974). Figure 13.1 shows the four phases in the human sexual response cycle typically identified for both men and women.



As portrayed in the movie *Kinsey*, Alfred Kinsey shocked people when he began to interview people to understand more about norms in sexual behavior. (Courtesy Kinsey Institute for Research in Sex, Gender, and Reproduction.)

- 1. Desire phase.** A concept introduced by Kaplan (1974), this stage refers to sexual interest or desire, often associated with sexually arousing fantasies.
- 2. Excitement phase.** During this phase, men and women experience pleasure and increased blood flow to the genitalia (see Figure 13.2 for the sexual anatomy of men and women). Women also experience increased blood flow to the breasts. In men, this flow of blood into tissues produces an erection of the penis. In women, blood flow creates enlargement of the breasts and changes in the vagina, such as increased lubrication. Interestingly, the amount of blood flow to the vagina has little correlation with women's subjective level of desire (Basson et al., 2005).
- 3. Orgasm phase.** In this phase, sexual pleasure peaks in ways that have fascinated poets and the rest of us ordinary people for thousands of years. In men, ejaculation feels inevitable and indeed almost always occurs (in rare instances, men have an orgasm without ejaculating, and vice versa). In women, the outer walls of the vagina contract. In both sexes there is general muscle tension.
- 4. Resolution phase.** This last stage refers to the relaxation and sense of well-being that usually follow an orgasm. In men there is an associated refractory period during which further erection and arousal are not possible. The duration of the refractory period varies across men and even in the same man across occasions. Women are often able to respond again with sexual excitement almost immediately, a capability that permits multiple orgasms.

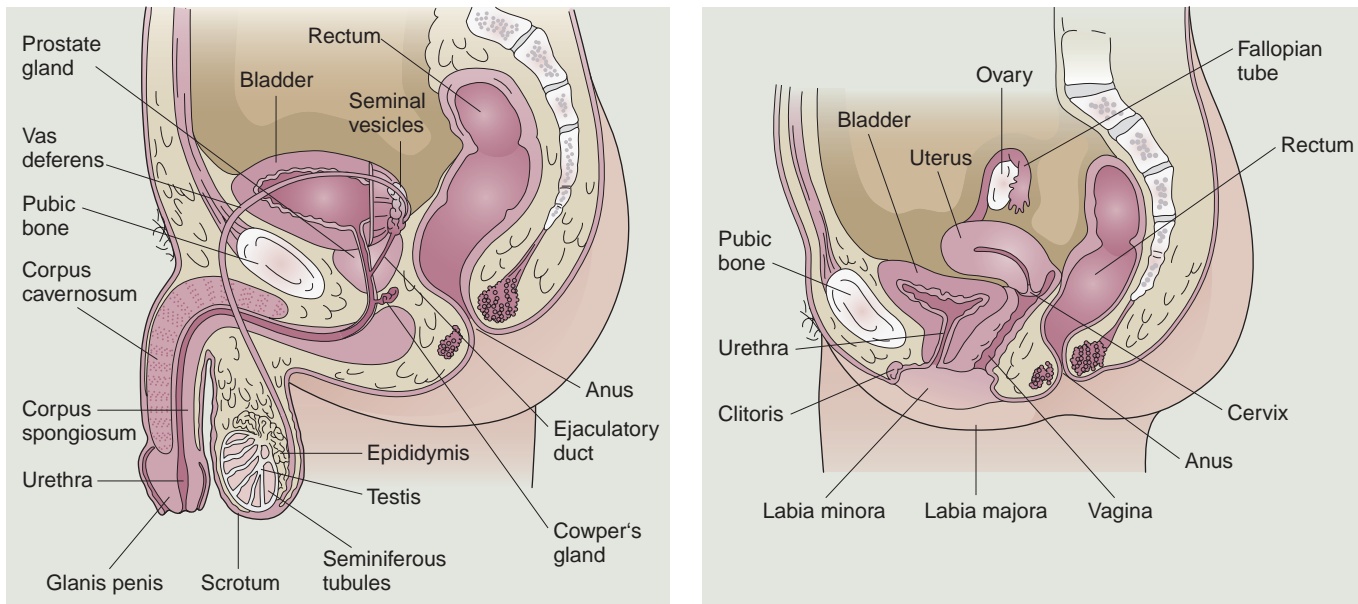


Figure 13.2 The male and female sexual anatomy.

Check Your Knowledge 13.1 (Answers are at the end of the chapter.)

Answer the questions.

- Which of the following is **not** documented:
 - Men report more sex drive than women do.
 - Women's sexuality is more closely tied to relationship status than is men's sexuality.
 - Men describe their sexuality as more related to power than women do.
 - Men are able to have more orgasms within a given sexual experience than are women.
- Which of the following is **not** a phase of the human sexual response cycle?
 - desire
 - ejaculation
 - excitement
 - resolution
- Gender differences in the desired number of lifetime partners:
 - appear similar across cultures
 - are only observed in Western cultures

Sexual Dysfunctions

Sexuality usually occurs in the context of an intimate personal relationship. At its best, it provides a forum for closeness and connection. For better or for worse, most of us base part of our self-concept on our sexuality. Do we please the people we love, do we gratify ourselves, or, more simply, are we able to enjoy the fulfillment and relaxation that can come from a pleasurable sexual experience? When sexual problems emerge, they can wreak havoc on our self-esteem and relationships. A marriage is likely to suffer as sexual dysfunctions become so severe that the intense satisfaction and tenderness of sexual activity is lost.

We turn now to sexual problems that interfere with sexual enjoyment for many people at some time during their life. We begin by describing the different types of sexual dysfunctions described in DSM-IV-TR. Then we discuss etiologies and treatments for these problems.

Clinical Descriptions of Sexual Dysfunctions

As Table 13.1 shows, DSM-IV-TR divides **sexual dysfunctions** into four categories: sexual desire disorders, sexual arousal disorders, orgasmic disorders, and sexual pain disorders. The dysfunction should be persistent and recurrent, a clinical judgment acknowledged in the DSM to entail some subjectivity. The dysfunction also should cause marked distress or interpersonal

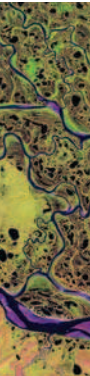


Table 13.3 Self-Reported Rates of Experiencing Various Sexual Problems For 2 Out of the Past 12 Months by Region among 20,000 Sexually Active Adults Ages 40 to 80

	Lacked Interest in Sex	Inability to Reach Orgasm	Orgasm Reached Too Quickly	Pain During Sex	Sex Not Pleasurable	Trouble Lubricating	Trouble Maintaining or Achieving an Erection
Women							
Northern Europe	25.6	17.7	7.7	9.0	17.1	18.4	NA
Southern Europe	29.6	24.2	11.5	11.9	22.1	16.1	NA
Non-European West	32.9	25.2	10.5	14.0	21.5	27.1	NA
Central/South America	28.1	22.4	18.3	16.6	19.5	22.5	NA
Middle East	43.4	23.0	10.0	21.0	31.0	23.0	NA
East Asia	34.8	32.3	17.6	31.6	29.7	37.9	NA
Southeast Asia	43.3	41.2	26.3	29.2	35.9	34.2	NA
Men							
Northern Europe	12.5	9.1	20.7	2.9	7.7	NA	13.3
Southern Europe	13.0	12.2	21.5	4.4	9.1	NA	12.9
Non-European West	17.6	14.5	27.4	3.6	12.1	NA	20.6
Central/South America	12.6	13.6	28.3	4.7	9.0	NA	13.7
Middle East	21.6	13.2	12.4	10.2	14.3	NA	14.1
East Asia	19.6	17.2	29.1	5.8	12.2	NA	27.1
Southeast Asia	28.0	21.1	30.5	12.0	17.4	NA	28.1

Source: After Laumann et al. (2005).

Note: Non-European West includes Australia, Canada, New Zealand, South Africa, and the United States.



The pioneering work of the sex therapists William H. Masters and Virginia Johnson helped launch a candid and scientific appraisal of human sexuality. (Ira Wyman/Corbis Sygma.)

problems. A diagnosis of sexual dysfunction is not made if the problem is believed to be due entirely to a medical illness (such as advanced diabetes, which can cause erectile problems in men) or if it is due to another Axis I disorder (such as major depression).

One might not expect people to report problems as personal as sexual dysfunction in community surveys. But many people do report these symptoms—the prevalence of occasional symptoms of sexual dysfunctions is actually quite high. Table 13.3 presents data from a survey of more than 20,000 men and women who were asked whether they had experienced various symptoms of sexual dysfunction for at least two of the past 12 months (Laumann et al., 2005). More women (43 percent) than men (31 percent) report symptoms of sexual dysfunction (Laumann, Paik, & Rosen, 1999).

Although a lot of people endorsed symptoms, clinical diagnoses are not made unless a person experiences distress or impairment from symptoms; distress or impairment were not assessed in the Laumann survey. In a study of over 1,000 women who were engaged in heterosexual relationships, Bancroft, Loftus, and Long (2003) found a very similar rate of women who reported symptoms of sexual dysfunction (44.3 percent). But when they asked women whether they were distressed by these symptoms, one-quarter of the women experiencing dysfunction reported distress (11 percent). To be sure, 11 percent is still a relatively high prevalence rate, but note that most women experiencing a symptom did not meet criteria for a clinical diagnosis. Unfortunately, we have almost no data on how many people have experienced sexual dysfunctions at a diagnosable level (APA, 2000).

Although the diagnostic system for sexual dysfunction reflects the stages in the sexual cycle (see Figure 13.3), the problems often don't break out so cleanly in real life. Many people with problems in one phase of a sexual cycle will report problems in another phase (Segraves & Segraves, 1991). Some of this may just be a vicious spiral. For example, women with low desire often have troubles with arousal and orgasms. Men who develop premature ejaculation may begin to worry about sex and then experience problems with sexual desire or sexual arousal

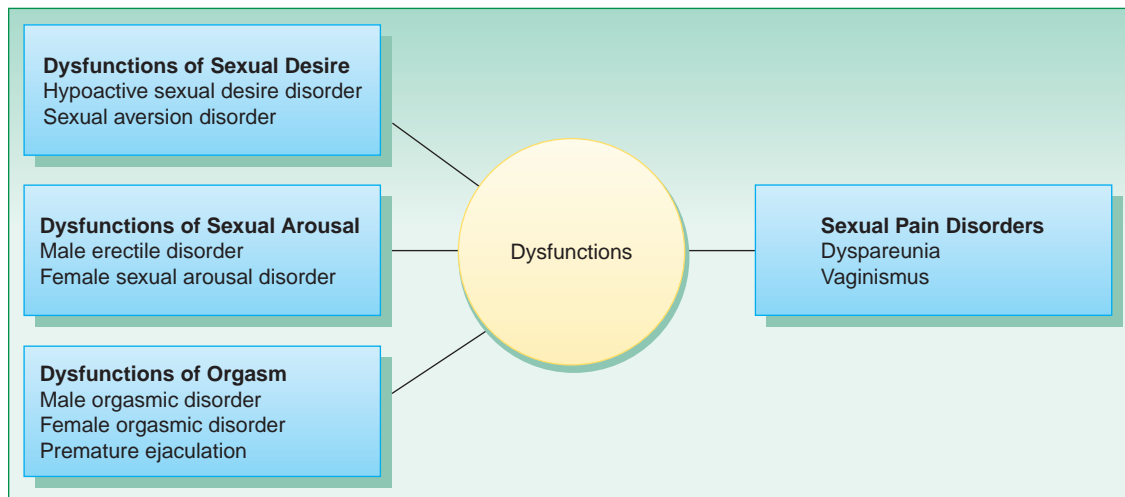


Figure 13.3 The sexual dysfunctions by phase of the sexual response cycle.

(Rowland, Cooper, & Slob, 1996). Beyond the consequences for the individual, sexual problems in one person may lead to sexual problems in the partner. Nonetheless, in the following section, we review the specific sexual dysfunction disorders defined by DSM-IV-TR.

Sexual Desire Disorders DSM-IV-TR distinguishes two kinds of sexual desire disorders. **Hypoactive sexual desire disorder** refers to deficient or absent sexual fantasies and urges; **sexual aversion disorder** represents a more extreme disorder, in which the person actively avoids nearly all genital contact with another person. Among people seeking treatment for sexual dysfunctions, more than half complain of low desire. Diagnoses of hypoactive sexual desire increased in samples of men and women seeking treatment from the 1970s to the 1990s (Beck, 1995). As Table 13.3 shows, women are more likely than men to report at least occasional concerns about their level of sexual desire.

Of all the DSM-IV-TR diagnoses, the sexual desire disorders, often colloquially referred to as low sex drive (as illustrated in the clinical case of Robert), seem the most subjective and influenced by cultural norms. How often should a person want sex? And with what intensity? Often, partners are the ones who encourage a person to see a clinician. The hypoactive desire category appeared for the first time in DSM-III in 1980 under the title of “inhibited sexual desire”

● **DSM-IV-TR Criteria for Hypoactive Sexual Desire Disorder**

- Persistently deficient or absent sexual fantasies and desires, as judged by the clinician
- Causes marked distress or interpersonal problems
- Not due to a medical illness, another Axis I disorder (except another sexual dysfunction), or the effects of a drug

Clinical Case: Robert

Robert was a highly intelligent 25-year-old graduate student in physics at a leading East Coast university who sought treatment for what he called “sexual diffidence.” He was engaged to a young woman, and he said he loved his fiancée very much and felt compatible with her in every conceivable way except in bed. There, try as he might, and with apparent understanding from his fiancée, he found himself uninterested in responding to or initiating sexual contact. Both parties had attributed these problems to the academic pressures he had faced for the past two years, but a discussion with the therapist revealed that Robert had had little interest in sex—either with men or with women—for as far back as he could remember, even when work pressures decreased. He asserted that he found his fiancée very attractive and appealing, but as with other women he had known, his feelings were not passionate.

He had masturbated very rarely in adolescence and did not begin dating until late in college, though he had had many female acquaintances. His general approach to life, including sex, was analytical and intellectual, and he described his problems in a very dispassionate and detached way to the therapist. He freely admitted that he would not have contacted a therapist at all were it not for the quietly stated wishes of his fiancée, who worried that his lack of interest in sex would interfere with their future marital relationship.

After a few individual sessions the therapist asked the young man to invite his fiancée to a therapy session, which the client readily agreed to do. During a conjoint session the couple appeared to be very much in love and looking forward to a life together, though the woman expressed concern about her fiancé’s lack of sexual interest.

● DSM-IV-TR Criteria for Sexual Aversion Disorder

- Persistent avoidance of almost all sexual contact
- Causes marked distress or interpersonal problems
- Not due to another Axis I disorder (except another sexual dysfunction)

● DSM-IV-TR Criteria for Female Sexual Arousal Disorder

- Persistent inability to attain or maintain sexual excitement (lubrication and swelling of the genitalia) adequate for completion of sexual activity
- Causes marked distress or interpersonal problems
- Not due to a medical illness, another Axis I disorder (except another sexual dysfunction), or the effects of a drug

● DSM-IV-TR Criteria for Male Erectile Disorder

- Persistent inability to attain or maintain an erection adequate for completion of sexual activity
- Causes marked distress or interpersonal problems
- Not due to a medical illness, another Axis I disorder (except another sexual dysfunction), or the effects of a drug

and may owe its existence to the high expectations some people have about being sexual. Data attest to the significance of subjective and cultural factors in defining low sex drive; for example, hypoactive sexual desire disorder was reported more often by American men than by British (Hawton et al., 1986) or German men (Arentewicz & Schmidt, 1983) despite similar levels of sexual activity across these cultures. Cultural norms seem to influence perceptions of how much sex a person “should” want.

People with hypoactive sexual desire often meet criteria for other sexual dysfunctions, such as orgasmic disorder. Nonetheless, some people experience low sexual desire without other sexual dysfunctions. For example, women with low sexual desire show normal levels of sexual arousal to sexual stimuli in laboratory studies—most would not meet criteria for sexual arousal disorder (Kaplan, 1997).

Sexual Arousal Disorders Some people experience sexual desire but have difficulty attaining or maintaining sexual arousal, the next stage of the sexual response cycle. The two subcategories of arousal disorders are **female sexual arousal disorder** and **male erectile disorder**. The former used to be called *frigidity* and the latter, *impotence*. These older names have been dropped because of their perjorative connotations.

The diagnosis of arousal disorder is made for a woman when there is consistently inadequate vaginal lubrication for comfortable completion of intercourse and for a man when there is persistent failure to attain or maintain an erection through completion of the sexual activity. As shown in Table 13.3, occasional symptoms of erectile disorder are the most common sexual concern among men, with rates ranging from 13 to 28 percent, depending on the country (Laumann et al., 2005). Male erectile disorder increases greatly with age, with as many as 15 percent of men in their seventies reporting erectile disorder (Feldman et al., 1994) and as many as 70 percent reporting occasional erectile dysfunction (Kim & Lipshultz, 1997). The availability of new drugs for erectile dysfunction may change the rates at which we recognize these disorders. It is important to rule out biological explanations for these symptoms for both men and women. For example, laboratory tests of hormone levels are a routine part of assessment for postmenopausal women (Bartlik & Goldberg, 2000).

Orgasmic Disorders The DSM-IV-TR describes one kind of orgasmic disorder in women and two in men. **Female orgasmic disorder** refers to the persistent absence of orgasm after sexual excitement. Women have different thresholds for orgasm. Although some have orgasms quickly and without much clitoral stimulation, others seem to need intense and prolonged stimulation during sexual contact. Given this, it is not surprising that about one-third of women report that they do not consistently experience orgasms with their partners (Laumann et al., 2005). Female orgasmic disorder is not diagnosed unless the absence of orgasms is persistent and troubling. Beyond the distress some women feel about this issue, partners may come to believe they are unskilled or insensitive lovers, or that their partner no longer cares for them (both of which could be true). Worries about protecting a partner’s feelings probably account for the fact that up to 60 percent of women report faking an orgasm on occasion (McConaghy, 1993).

Women’s problems reaching orgasm are distinct from problems with sexual arousal. Many women achieve arousal during sexual activity but then do not reach orgasm. Indeed, laboratory

Clinical Case: Paul and Petula

Paul and Petula seek treatment at a sex therapy clinic. They are a young, middle-class couple who have been living together for 6 months and are engaged to be married. Petula reports that Paul “hasn’t been able to keep his erection after he enters me” for the past two months. Paul experiences initial sexual arousal but loses his erection almost immediately after he enters Petula. Although they enjoyed sexual intercourse

in the beginning of their relationship, the erectile problems started after they moved in together. During the interview, the psychiatrist learns that they have considerable conflict over time spent together and commitment, and at times Petula has been violent toward Paul. Neither person is depressed, and no medical problems appear to be involved. (Drawn from Spitzer et al., 1994.)



research has shown that arousal levels while viewing erotic stimuli do not distinguish women with orgasmic disorder from those without orgasmic disorder (Meston & Gorzalka, 1996).

DSM-IV-TR includes two orgasmic disorders of men: **male orgasmic disorder**, defined by persistent difficulty in ejaculating, and **premature ejaculation**, defined by ejaculation that occurs too quickly. Sometimes premature ejaculation occurs even before the penis enters the vagina, but more often it occurs within the first minute or two of insertion into the vagina (Strassberg et al., 1987). Although researchers do not know how many men meet formal diagnostic criteria, 10 to 20 percent of men reported that they had trouble reaching orgasm and 20 to 30 percent of men reported premature ejaculation for at least a couple months in the past year in the Laumann survey (Laumann et al., 2005). Premature ejaculation can provoke considerable anxiety.

Sexual Pain Disorders Two pain disorders associated with sex are listed in the DSM: dyspareunia and vaginismus. **Dyspareunia** is diagnosed when there is persistent or recurrent pain during sexual intercourse. Dyspareunia can be diagnosed in men and women. Some people report that the pain starts at entry, whereas others report pain only after penetration (Meana et al., 1997). In women, the most common form of dyspareunia is vulvar vestibulitis syndrome, or pain concentrated at the entrance to the vagina. A first step in making this diagnosis is ensuring that the pain is not caused by a medical problem, such as an infection (McCormick, 1999), or, in women, to a lack of vaginal lubrication due to low desire or postmenopausal changes. Women with dyspareunia show normal sexual arousal to films of oral sex, but, not surprisingly, their arousal declines when they watch a depiction of intercourse (Wouda et al., 1998).

Vaginismus is marked by involuntary spasms of the outer third of the vagina to a degree that makes intercourse impossible. It can also occur in response to penetration by a finger or tampon as well as during gynecological examinations. Despite not being able to have intercourse, women with vaginismus have normal sexual arousal and can have orgasms from manual or oral stimulation that does not involve penetration.

Prevalence rates for occasional symptoms of dyspareunia among women have been estimated to range from 10 to 30 percent (Laumann et al., 2005), but dyspareunia in men is rare. Estimates for vaginismus range from 12 to 17 percent of women seeking sex therapy (Rosen & Leiblum, 1995), and it is a very common complaint seen by gynecologists (Leiblum, 1997).

Etiology of Sexual Dysfunctions

Because sexuality can be so difficult to study, case studies have dominated the literature on the causes of sexual dysfunctions. Psychoanalytic case studies focus on underlying repressed conflicts as an explanation for sexual dysfunctions. For example, the theme of repressed aggression competing with the gratification of sexual needs pervades psychoanalytic writings. Thus, a man who ejaculates so quickly that he frustrates his female partner could be expressing repressed hostility toward women, who remind him unconsciously of his mother. A woman with vaginismus could be expressing her hostility toward men, perhaps as a result of her husband's overbearing manner. Empirical evidence has failed to support these suppositions.

In 1970, Masters and Johnson (1970) published their widely acclaimed book *Human Sexual Inadequacy*, which included a theory of why sexual dysfunctions develop based on case studies from their practice. Masters and Johnson used a two-tier model of current and historical causes to conceptualize the etiology of human sexual inadequacy (see Figure 13.4). The current causes can be distilled down to two: fears about performance and the adoption of a spectator role. Fears about performance involve concerns with how one is "performing" during sex. **Spectator role** refers to being an observer rather than a participant in a sexual experience. Both involve a focus on sexual performance that impedes the natural sexual responses. These current reasons for sexual dysfunctions were hypothesized to have one or more historical antecedents, such as sociocultural influences, biological causes, sexual traumas, or homosexual inclinations. Masters and Johnson's work set the tone for researchers to begin systematically studying risk factors for sexual dysfunction in much the same way case studies in other areas set the stage for empirical research. It is important to note, however, that many people who have one or more of the pathogenic factors discussed by Masters and Johnson do not develop sexual dysfunctions.

DSM-IV-TR Criteria for Female Orgasmic Disorder and Male Orgasmic Disorder

- Persistent delay in or absence of orgasm after a normal period of sexual arousal
- Not explained by age, sexual experience, or adequacy of sexual stimulation
- Causes marked distress or interpersonal problems
- Not due to a medical illness, another Axis I disorder (except another sexual dysfunction), or the effects of a drug

DSM-IV-TR Criteria for Premature Ejaculation

- Persistent tendency to ejaculate after minimal stimulation and before the man wishes it
- Not explained by the man's age, novelty of the situation or the partner, or recent frequency of sexual contacts
- Causes marked distress or interpersonal problems
- Not due to the effects of a drug

DSM-IV-TR Criteria for Dyspareunia

- Recurrent genital pain associated with sexual intercourse
- Causes marked distress or interpersonal problems
- Not due to vaginismus, lack of vaginal lubrication, another Axis I disorder (except another sexual dysfunction), medical illness, or the effects of a drug

DSM-IV-TR Criteria for Vaginismus

- Recurrent spasm of the outer third of the vagina interferes with intercourse
- Causes marked distress or interpersonal problems
- Not due to another Axis I disorder or to the physiological effects of a medical illness

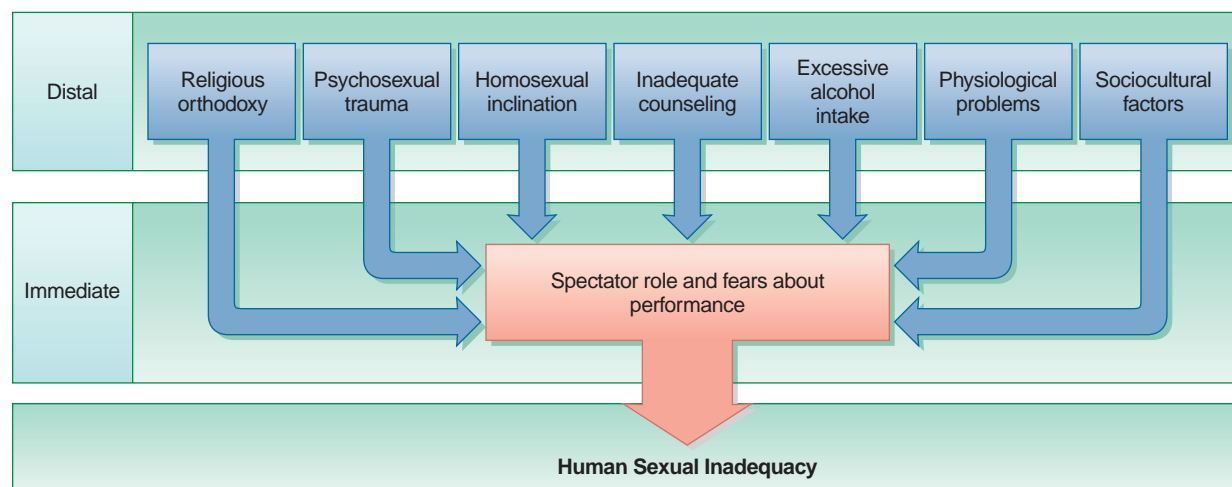


Figure 13.4 Distal and immediate causes of human sexual inadequacies, according to Masters and Johnson.

We turn now to research on the causes of sexual dysfunctions. Figure 13.5 summarizes factors related to sexual dysfunctions. One thing is clear—sexual functioning is complex and multifaceted.

Biological Factors Biological causes of sexual dysfunctions can include diseases of the vascular (blood vessel) system such as atherosclerosis; diseases that affect the nervous system such as diabetes, multiple sclerosis, and spinal cord injury; low levels of testosterone or estrogen; heavy alcohol use before sex; chronic alcohol dependence; and heavy cigarette smoking (Bach, Wincze, & Barlow, 2001). Certain medications, such as antihypertensive drugs and especially SSRI antidepressant drugs like Prozac and Zoloft, have effects on sexual function, including delayed orgasm, decreased libido, and diminished lubrication (Segraves, 2003).

Some laboratory-based evidence exists that men with premature ejaculation are more sexually responsive to tactile stimulation than men who don't have this problem (Rowland et al., 1996). Perhaps, then, their penises are very sensitive, causing them to ejaculate more quickly.

	Successful sexual functioning	Poor sexual functioning
Psychological factors	Good emotional health Attraction toward partner Positive attitude toward partner Positive sex attitude	Depression or anxiety disorders Focus on performance Routine Poor self-esteem Uncomfortable environment for sex Rigid, narrow attitude toward sex Negative thoughts about sex
Physical factors	Good physical health Regular appropriate exercise Good nutrition	Smoking Heavy drinking Cardiovascular problems Diabetes Neurological diseases Low physiological arousal SSRI medications Antihypertensive medication Other drugs
Social and sexual history factors	Positive sexual experiences in past Good relationship with partner Sexual knowledge and skills	Rape or sexual abuse Relationship problems, such as anger or poor communication Long periods of abstinence History of hurried sex

Figure 13.5 Predictors of sexual functioning. Adapted from *Enhancing Sexuality: A Problem-Solving Approach* (1997), Graywind Publications.



Psychosocial Factors Some sexual dysfunctions can be traced to rape, childhood sexual abuse, or other degrading encounters. Sexual contact with an adult during childhood is associated with high rates of arousal disorder in women and twice the rate of premature ejaculation and low sexual desire in men (Laumann et al., 1999). See Focus on Discovery 13.3, later in this chapter, for more discussion of childhood sexual abuse and its repercussions. Beyond the role of traumatic experiences, it is important to consider the benefits of previous positive experiences—many people with sexual problems lack knowledge and skill because they have not had opportunities to learn about their sexuality (LoPiccolo & Hogan, 1979).

Broader relationship problems can intrude into the sexual situation and thereby inhibit whatever arousal and pleasure might otherwise be found (Bach et al., 2001). For people who tend to be anxious about their relationships, sexual problems may exacerbate underlying worries about relationship security (Birnbaum et al., 2006). As one might expect, people who are angry with their partners are less likely to want sex. Anger seems to be more detrimental to desire among men than among women (Beck & Bozman, 1995). Even in couples who are satisfied in other realms of the relationship, poor communication can contribute to sexual dysfunction. For any number of reasons, including embarrassment, worry about the partner's feelings, or fear, one lover may not tell the other about preferences even if a partner is engaging in unstimulating or even aversive behaviors. After all, open discussions of sex by partners, among friends, in the media, and even in professional training programs are relatively recent phenomena.

Specific sexual experiences may shape premature ejaculation. Men with premature ejaculation have longer periods of abstinence from climactic sex than do men who are not premature ejaculators (Spiess, Geer, & O'Donohue, 1984). It has also been proposed that men may acquire the tendency to ejaculate quickly as a result of having hurried sex because of not being in a private place and fearing detection (Metz et al., 1997).

Several mental disorders are associated with increased risk of sexual dysfunctions. People who are depressed are more than twice as likely as nondepressed people (62 percent to 26 percent) to have a sexual dysfunction (Angst, 1998). People with a panic disorder, who are often fearful of physical sensations like rapid heart rate and sweating, are also at risk for sexual dysfunction (Sbrocco et al., 1997). Anxiety and depression are particularly comorbid with dyspareunia (Meana et al., 1998) and erectile disorder (Araujo et al., 1998).

Beyond evidence that depression and anxiety are detrimental, several studies suggest that low general physiological arousal can interfere with specific sexual arousal. Meston and Gorzalka (1995) looked at the role of arousal by assigning women to exercise or no-exercise conditions, and then asked women to watch erotic films. Consistent with the positive role of higher arousal, exercise facilitated sexual arousal. No wonder, then, that exhausted couples, turning to sex after a full day of work, parenting, socializing, and other roles, can encounter problems with sexuality. Too much stress and exhaustion clearly impede sexual functioning (Morokoff & Gilliland, 1993).

Negative cognitions, such as worries about pregnancy or AIDS, negative attitudes about sex, or concerns about the partner, interfere with sexual functioning (e.g., Reissing, Binik, & Khalife, 1999). But as Masters and Johnson first suggested, cognitions concerning sexual performance are particularly important. Consider the idea that variability in sexual performance is common; a stressful day, a distracting context, a relationship concern, or any number of other issues may diminish sexual responsiveness. The key issue may be how people think about their diminished physical response when it happens. One theory is that people who blame themselves for decreased sexual performance will be more likely to develop recurrent problems.

In a test of the role of self-blame and erectile dysfunction, Weisberg and colleagues (2001) asked 52 male participants to watch erotic videos. During the videos, their sexual arousal (penile circumference) was measured using a **penile plethysmograph** (see Figure 13.6). Regardless of their actual arousal, the men were given false feedback that the size of their erection was smaller than that typically measured among aroused men. Men were randomly assigned to receive two different explanations for this false feedback. In the first, they were told that the films did not seem to be working for most men (external explanation). In the second, they were told that the pattern of their responses on questionnaires about sexuality might help explain the low arousal (internal explanation). After receiving this feedback, the men were asked to watch one more

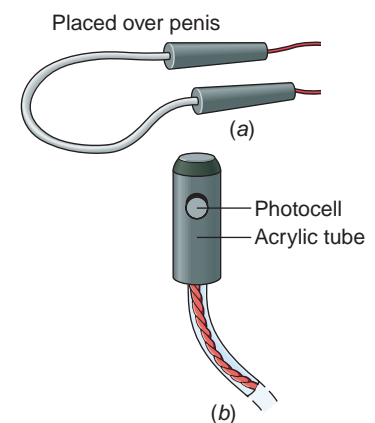


Figure 13.6 Behavioral researchers use two genital devices for measuring sexual arousal. Both are sensitive indicators of blood flow into the genitalia, a key physiological process in sexual arousal. (a) For men, the penile plethysmograph measures changes in the circumference of the penis by means of a strain gauge, consisting of a very thin rubber tube filled with mercury. As the penis enlarges with blood, the tube stretches, changing its electrical resistance. (b) For women, sexual arousal can be measured by a vaginal plethysmograph. Shaped like a tampon, this apparatus can be inserted into the vagina to measure increases in blood flow.

film. The men who were given an internal explanation reported less arousal and also showed less physiological evidence of arousal during the next film than those given an external explanation. These results, then, support the idea that people who blame themselves when their body doesn't perform will diminish their subsequent arousal. Needless to say, men in this study were carefully debriefed after the experiment!

Masters and Johnson found that many of their sexually dysfunctional patients had learned negative views of sexuality from their social and cultural surroundings. For example, some religions and cultures may discourage sexuality for the sake of pleasure, particularly outside marriage. Other cultures may disapprove of sexual initiative or behavior among women, other than for the sake of procreation. When people learn such negative views about sexuality, it can affect how they behave sexually. One female patient suffering from hypoactive sexual desire, for example, had been taught as she was growing up not to look at herself naked in the mirror and that intercourse was reserved for marriage and then only to be endured for purposes of having children.

Quick Summary

Sexuality is profoundly shaped by culture and experience, so it is important to be aware of subjective biases in thinking about diagnoses. Gender also shapes sexuality: men report more frequent sexual thoughts and behaviors than do women. For men and women, four phases of the sexual response cycle have been recognized: desire, excitement, orgasm, and resolution.

In DSM-IV-TR, the sexual dysfunction disorders are divided into the following:

- The sexual desire disorders (hypoactive sexual desire disorder and sexual aversion disorder)
- The sexual arousal disorders (female sexual arousal disorder and male erectile disorder)
- The orgasmic disorders (female orgasmic disorder, male orgasmic disorder, and premature ejaculation)
- The sexual pain disorders (dyspareunia and vaginismus).

Although there are no good estimates of how many people meet full diagnostic criteria for sexual dysfunction disorders, in one major survey, 43 percent of women and 31 percent of men reported at least some symptoms of sexual dysfunction. People who experience one sexual dysfunction disorder often experience a comorbid sexual dysfunction disorder; for example, a man who is experiencing premature ejaculation may develop hypoactive sexual desire disorder. Before diagnosing sexual dysfunction, it is important to rule out medical explanations for a symptom. The key etiological variables involved in sexual dysfunctions appear to be previous sexual abuse, relationship problems, lack of sexual knowledge, mental disorders like depression or anxiety or alcohol abuse, low arousal and exhaustion, and negative cognitions and attitudes about sexuality. For premature ejaculation, one possible cause is an overly sensitive penis.

Treatments of Sexual Dysfunctions

The pioneering work of Masters and Johnson (1970) in the treatment of sexual dysfunctions is described in Focus on Discovery 13.2. Over the past decades, therapists and researchers have elaborated on Masters and Johnson's work and created new procedures. We will describe several of the procedures that extend the Masters and Johnson work. A therapist may choose only one technique for a given case, but the multifaceted nature of sexual dysfunctions often requires the use of a combination of techniques. These approaches are generally suitable for treating sexual dysfunctions in homosexual as well as heterosexual clients.

Anxiety Reduction Well before the publication of the Masters and Johnson therapy program, behavior therapists appreciated that their sexually dysfunctional clients needed gradual and systematic exposure to anxiety-provoking aspects of the sexual situation. Wolpe's systematic desensitization and in vivo desensitization (desensitization by real-life encounters) have been employed with some success (Wolpe, 1958), especially when combined with skills training. For example, a woman with vaginismus might first receive psychoeducation about her body, be trained in relaxation, and then practice inserting her fingers or dilators into her vagina, starting with small insertions and working up to larger ones (Leiblum, 1997). Such programs have been shown to be effective for most women with vaginismus (Jeng et al., 2006).



In vivo desensitization would appear to be the principal technique of the Masters and Johnson program, although additional components probably contribute to its overall effectiveness. Interestingly, simple psychoeducation programs about sexuality also do a great deal to reduce anxiety, and accordingly, several studies have now shown minimal or no benefit of systematic desensitization compared to psychoeducation for male erectile disorder, female arousal disorder, and female orgasmic disorder (Emmelkamp, 2004).

FOCUS ON DISCOVERY 13.2

Masters and Johnson's Therapy for Sexual Dysfunctions

In the 1970 book *Human Sexual Inadequacy*, Masters and Johnson reported on the successful results of one of the first sex therapy programs, which they had carried out with almost 800 sexually dysfunctional people. Each couple had traveled to St. Louis and spent two weeks attending intensive therapy during the day and completing sexual homework in a motel at night.

Many therapists continue to use the Masters and Johnson techniques, although success rates have tended to be lower than those originally reported (Segraves & Althof, 1998). Some believe that the lower success rates may be attributed more to the couples seeking treatment than to the therapy itself; as sex therapy has become more popular, the treatment-seeking couples have poorer marital relationships than did those who sought treatment in the early years of sex therapy.

In the Masters and Johnson work, couples were always seen by one male therapist and one female therapist. For several days, couples completed an assessment of social history, sexual history, sexual values, and medical concerns. During the assessment and first couple of days of treatment, sexual intercourse was forbidden. Sometimes the couple discussed sex for the first time at the clinic. Therapists adopted a calm and open manner to help couples feel comfortable discussing sex.

On the third day, the therapists began to offer interpretations about the sources of problems. If a person had negative attitudes toward sex, this would be addressed. But the basic emphasis was on relationship problems, not on individual difficulties of either partner. A premise of the therapy was that "there is no such thing as an uninvolved partner in any marriage in which there is some form of sexual inadequacy" (1970, p. 2). Whatever the problem, the couple was encouraged to see it as their mutual responsibility. At the same time, the clients were introduced to the idea of the spectator role. They were told, for example, that a male with erectile problems—and often his partner as well—usually worries about how well he is doing and that this pattern of observing the state of the erection, although totally understandable, blocks his natural responses and interferes with sexual enjoyment.

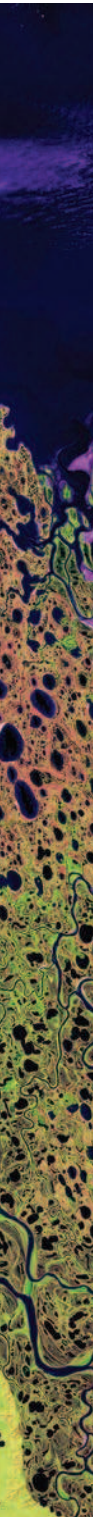
At the end of the third day, the couple was asked to engage in **sensate focus**. The couple was instructed to choose a time when both partners felt a sense of warmth and compatibility. During sensate focus exercises, the couple was instructed not to have intercourse. Indeed, initially they were instructed not to touch each other's genitalia. Rather they were to undress and give each other pleasure by touching each other's bodies. The co-therapists appointed one marital partner to do the first pleasuring; the partner who was "getting" was simply to be allowed to enjoy being touched. The one being touched was not required to feel a sexual response and was responsible for immediately telling the partner if something became uncomfortable. Then the roles were to be switched. The sensate-focus assignment usually promoted contact, constituting a first step toward reestablishing sexual intimacy.

Most of the time, partners began to realize that their physical encounters could be intimate and pleasurable without necessarily being a prelude to sexual intercourse. On the next evening, the partner being pleasured was instructed to give specific direction by guiding his or her partner's hand to regulate pressure and rate of stroking. Touching of genitals and breasts was now allowed, but still no intercourse. After two days of sensate focus, treatment began to be tailored to specific problems. To illustrate the process, we will outline the therapy for female orgasmic disorder.

After the sensate-focus exercises increased comfort, the woman was encouraged to focus on maximizing her own sexual stimulation without trying to have an orgasm. Her sexual excitement usually increased as a result. The therapists gave her partner explicit instructions about generally effective means of manually stroking the female genital area, although the female partner was encouraged to make decisions and express her wishes to her partner in the moment. At this stage it was emphasized that having orgasms was not the focus.

After the woman began to enjoy being pleasured by manual stimulation, she was told to place herself on top of the man, gently insert the penis, and simply attend in to her feelings. When she felt inclined, she could begin slowly to move her pelvis. She was encouraged to regard the penis as something for her to play with, something that could provide her with pleasure. The male could begin to thrust slowly. At all times, however, the woman was to decide what should happen next. When the couple was able to maintain this exploration for minutes at a time, without the man thrusting forcefully toward orgasm, a major change had usually taken place in their sexual interactions: for perhaps the first time, the woman was allowed to think sexually about her own pleasure. In their subsequent encounters, most couples began to have mutually satisfying intercourse.

A caveat about sensate focus is in order. As LoPiccolo (1992) pointed out, more and more people are aware that not getting an erection from sensate focus is at the same time expected and not expected! That is, although the instruction from the therapist is not to engage in sex, even a moderately knowledgeable man knows that at some point he is supposed to get an erection from this situation. Thus, rather than reducing performance anxiety and the spectator role, some men may experience a phenomenon called *metaperformance anxiety* during sensate focus, taking the form of self-statements such as, "Okay, I don't have any pressure to get an erection and have intercourse. Right. So now 10 minutes have passed, there's no pressure to perform, but I don't have an erection yet. When am I going to get an erection? And if I do, will I be able to maintain it long enough to insert it?" Sensate-focus treatment and other aspects of Masters and Johnson's sex therapy have elements of a paradoxical approach to treatment, which is based on the idea that telling people not to do something will reduce their anxiety about doing something.



For the treatment of premature ejaculation, anxiety-reduction techniques sometimes have a different focus. Anxiety about ejaculating too soon may be a natural result of an overemphasis on intercourse as a sole focus of sexual behavior. Sex therapists advise couples to expand their repertoire of activities to include techniques not requiring an engorged penis, such as oral or manual manipulation, so that gratification of the partner is possible after the man has climaxed. When the exclusive focus on penile insertion is removed, a couple's anxieties about sex usually diminish enough to permit greater ejaculatory control.

Directed Masturbation Directed masturbation was devised by LoPiccolo and Lobitz (1972) to enhance women's comfort with and enjoyment of their sexuality. The first step is for the woman to carefully examine her nude body, including her genitals, and to identify various areas with the aid of diagrams. Next, she is instructed to touch her genitals and to find areas that produce pleasure. Then she increases the intensity of masturbation using erotic fantasies. If orgasm is not achieved, she is to use a vibrator in her masturbation. Finally, her partner enters the picture, first watching her masturbate, then doing for her what she has been doing for herself, and finally having intercourse in a position that allows him to stimulate the woman's genitals manually or with a vibrator. Directed masturbation appears to significantly improve the effectiveness of the treatment of orgasmic disorder (O'Donohue, Dopke, & Swingen, 1997); it is also helpful in the treatment of sexual desire disorder (Renshaw, 2001). Directed masturbation with partner involvement has been found to be effective for 90 percent of women with a lifelong inability to experience orgasm (Riley & Riley, 1978).

Procedures to Change Attitudes and Thoughts In *sensory-awareness procedures*, clients are encouraged to tune in to the pleasant sensations that accompany even incipient sexual arousal. The *sensate-focus* exercises described in Focus on Discovery 13.2, for example, are a way of helping the person be more aware of and comfortable with sexual feelings. Rational-emotive behavior therapy tries to challenge self-demanding, perfectionistic thoughts that often cause problems for people with sexual dysfunctions. A therapist might try to reduce the pressure a man with erectile dysfunction feels by challenging his belief that intercourse is the only true form of sexual activity. Kaplan (1997) recommends several procedures to try to increase the attractiveness of sex. She has clients engage in erotic fantasies and gives them courtship and dating assignments, such as getting away for a weekend.

Skills and Communication Training To improve sexual skill and communication, therapists assign written materials and show clients explicit videotapes and films demonstrating sexual techniques (McMullen & Rosen, 1979). Encouraging partners to communicate their likes and dislikes to each other has been shown to be helpful for a range of sexual dysfunctions (Rosen, Leiblum, & Spector, 1994). Taken together, skills and communication training also exposes partners to potentially anxiety-provoking material, such as expressing sexual preferences, which allows for a desensitizing effect. Telling a partner one's preferences in sex is often made more difficult by tensions that go beyond the sexual relationship, which leads us to the next strategy.

Couples Therapy Masters and Johnson considered sexual dysfunctions as problems that could be treated directly, rather than as symptoms of other psychological or interpersonal difficulties. Many of the couples they treated had marriages that, in spite of sexual problems, were marked by caring and closeness. But as society changed and people became more comfortable seeking help, sex therapists began to see people whose relationships were seriously impaired. In current treatment settings, sexual dysfunctions are often embedded in a distressed relationship, and troubled couples usually need special training in nonsexual communication skills (Rosen, 2000). Sex therapists now often work from a systems perspective; that is, the therapist appreciates that a sexual problem is embedded in a complex network of relationship factors (Wylie, 1997). Some therapists focus on nonsexual issues, such as difficulties with in-laws or with child rearing—either in addition to or instead of a Masters and Johnson type of sex therapy. For women with sexual dysfunctions in the context of relationship distress, behavioral couples therapy has been found to improve many aspects of sexual functioning (Zimmer, 1987).



Medications and Physical Treatments Sometimes medical treatments are used to correct an underlying physical condition. The current trend toward viewing sexual dysfunctions as medical problems may divert the attention of therapists and patients from the inherently interpersonal nature of sexual problems, giving rise to a quick-fix mentality that is probably ill advised (Rosen & Leiblum, 1995). Exclusively medical approaches have been particularly criticized as inappropriate for women, given the strong links between sexuality and relationship satisfaction (Tiefer, 2001). Despite these caveats, medication treatments for sexual dysfunction have become increasingly popular. Antidepressant drugs have been found to be helpful when depression appears to contribute to diminished sex drive. Antianxiety medications also can be used as an adjunct to anxiety-reduction techniques. A complicating factor, though, is that some of these psychoactive drugs themselves interfere with sexual responsiveness. Sometimes a second medication may be used to counteract the sexual side effects of the first; for example, bupropion (Wellbutrin) has been shown to help address the libido problems caused by SSRI medications (Segraves, 2003).



Premature Ejaculation For the treatment of premature ejaculation, the squeeze technique is often used, in which a partner is trained to squeeze the penis in the area where the head and shaft meet to rapidly reduce arousal. This technique is practiced without insertion, and then during insertion, the penis is withdrawn and the squeeze is repeated as needed. Success rates initially tend to be high (60 to 90 percent), but there is some relapse over time (Polonsky, 2000). Antidepressant drugs have also been found to be helpful in the treatment of premature ejaculation (Bettocchi et al., 2008).

Erectile Dysfunction The most common medical interventions for erectile dysfunction include sildenafil (Viagra) and related medications [e.g., tadalafil (Cialis) and vardenafil (Levitra)]. Viagra was approved by the FDA in March 1998 and in its first 3 months was prescribed over 3 million times. Viagra relaxes smooth muscles and thereby allows blood to flow into the penis during sexual stimulation, creating an erection. It is taken one hour before sex, and its effects last about four hours. Viagra does not cause an erection in the absence of sexual stimulation, so the psychological dimension of erectile dysfunction must be attended to if this drug is to be effective (Rosen, 2000). Although promising, research reports indicate that between 16 and 44 percent of men do not derive much benefit from the drug (Bach et al., 2001). Viagra also produces side effects such as headaches and indigestion. Moreover, it may be dangerous for men with cardiovascular disease, and this is a concern since many of the older men who use Viagra are at risk for hypertension and coronary artery disease. Several trials of Viagra and related medicines have been conducted with women, but so far, the results are not promising, with the exception of Viagra for postmenopausal women who retain desire but have low arousal (Berman et al., 2003).



In the movie *Something's Gotta Give*, Jack Nicholson portrays a man whose use of Viagra complicates his cardiovascular treatment. (The Kobal Collection, Ltd.)

Quick Summary

Psychological treatments for sexual dysfunction include techniques to reduce anxiety, to increase knowledge and awareness of the body, to reduce negative thoughts about sexuality, to improve couples' communication, and to reduce performance anxiety. Medical treat-

ments are increasingly popular, despite some criticism. Medications such as Viagra and Cialis are commonly used to treat erectile dysfunction. Antidepressant drugs can be helpful in the treatment of premature ejaculation.



Gender Identity Disorder

DSM-IV-TR Criteria for Gender Identity Disorder

Strong and persistent identification with the opposite sex

In children, presence of four or more of the following:

- Repeatedly stated desire to be or insistence that she or he is the other sex
- Preference for wearing opposite sex clothes
- Preference for cross-sex roles in play or persistent fantasies of being of the opposite sex
- Preference for stereotypical play of the opposite sex
- Preference for playmates of the opposite sex

In adolescents and adults, such symptoms as:

- Desire to be the opposite sex
- Passing as a member of the opposite sex
- Desire to be treated as a member of the opposite sex
- Conviction that his or her emotions are typical of the opposite sex

Not concurrent with a physical intersex condition

Causes marked distress or impairment in functioning

“Are you a man or a woman?” For virtually all people, the answer to such a question is obvious. And others would agree unequivocally with the answer. The sense of self as male or female, or **gender identity**, is so deeply ingrained from earliest childhood that the vast majority of people are absolutely certain of their gender. In contrast to gender identity, **sexual orientation** is the preference for the sex of a partner. Sexual orientation and gender identity are distinct. For example, a man may be attracted to men—a matter of sexual orientation—without believing he is a woman—a matter of gender identity. Here, we discuss gender identity disorder (formerly known as transsexualism).

Clinical Description of Gender Identity Disorder

People with **gender identity disorder (GID)** feel deep within themselves, usually from early childhood, that they are of the opposite sex. They are not persuaded by the presence of normal genitals, nor by others' perceptions of their gender. A man can look at himself in a mirror, see the body of a biological man, and yet experience that body as belonging to a woman. He may want to surgically alter his body to bring it in line with his gender identity. The diagnosis of GID is only applicable when the desire to be a member of the opposite sex causes significant distress or impairment. Persons who are comfortable perceiving themselves as a member of the opposite sex should not be diagnosed. In keeping with the distinctions between gender identity and sexual orientation, it is important to note that a person with GID may be attracted to people from the same or the opposite sex (Carroll, 2000).

The prevalence rates for GID are small: one in about 12,000 for men and one in 30,000 in women (Meyer et al., 2001). The higher prevalence in men may reflect societal acceptance of women who choose to adopt a male role.

GID is one of the most debated categories in the DSM-IV-TR. Few would argue that there are people with the intense belief that they are a member of the opposite sex. But should this be labeled as a disorder? Despite its controversial status, GID is still in the DSM-IV; it remains to be seen whether future versions of the DSM will be more sensitive to the changing scientific and political opinions on this issue. Even for those who believe this should be classified as a disorder, there are controversies about the causes and treatment (Bailey, 2003). For example, some have argued that inclusion of this phenomenon as a diagnosis pathologizes a natural diversity. A lead spokesperson for this perspective is Joan Roughgarden (2004), a Stanford professor of biology. Roughgarden points to the tremendous diversity of gender roles in the animal kingdom. She describes countless examples of species in which biologically male animals will adopt behavior, courtship rituals, and mating strategies that parallel those seen by female animals. Roughgarden suggests that it does not make sense to conceptualize such universal behavior as a disorder and that scientists should focus more on the adaptive consequences of gender-role diversity.

According to the DSM-IV-TR, GID can be diagnosed among children. GID in a child can be labeled in children as young as 2 to 4 years old (Green & Blanchard, 1995). GID is diagnosed on the basis of cross-gender behaviors, such as dressing in opposite-sex clothes, preferring opposite-sex playmates, and engaging in play that would usually be considered more typical of the opposite sex (e.g., a boy's playing with Barbie dolls), along with a persistently stated desire to be a member of the opposite sex.

The diagnosis of GID is more prevalent in children than in adults (Zucker & Bradley, 1995), perhaps because parents are often upset by their children adopting different gender roles. Based on clinic referral rates, it appears to be about six times more frequent in boys than girls (Zucker, Bradley, & Sanikhani, 1997). Most children with GID grow up to be comfortable with their biological sex in adulthood without professional intervention (Drummond et al., 2008; Zucker & Bradley, 1995). The vast majority of little boys engage in some traditional feminine play, and little girls in some traditional masculine play, with no identity conflicts whatsoever (Green, 1976). Aside from brief periods of play, about 1 percent of 4- or 5-year-old boys report wishing they were a girl at times, and about 5 percent of 4- or 5-year-old girls report wishing they were a boy (Bradley & Zucker, 1997). Cross-gender behaviors are so common that it should not be surprising that the vast majority of children with these behaviors do not grow up to be adults with GID. Because cross-gender behavior during childhood is common and because childhood GID diagnoses do not predict adulthood diagnoses, some argue that GID in childhood should be dropped from the DSM.



Etiology of Gender Identity Disorder

Genetic, neurobiological, and psychosocial causes of GID have been proposed. In part because this condition is so rare, there are few studies of the causes.

Genetic Factors Some data suggest that gender identity may be at least partially genetic. Several twin studies suggest that some symptoms of gender identity during childhood are at least moderately heritable (Bailey, Dunne, & Martin, 2000; van Beijsterveldt, Hudziak, & Boomsma, 2006). These studies have looked at people with cross-gender behaviors, though, rather than those who met full diagnostic criteria for GID.

Neurobiological Factors Levels of sex hormones in adulthood and during the pregnancy have both been hypothesized as causal factors in GID. People with and without GID do not consistently differ in hormone levels during adulthood (Bosinski et al., 1997). Rather, most current research focuses on the role of hormones during gestation. Research with humans and primates shows that offspring of mothers who have taken sex hormones during pregnancy often behave like members of the opposite sex and have anatomical abnormalities. For example, a series of studies suggest that girls with high levels of androgen exposure in utero tend to display more masculine-typed behaviors and attitudes than girls without high levels of androgen exposure (Berenbaum, 1999). Young boys whose mothers ingested female hormones when pregnant were found to be less athletic and to engage less in rough-and-tumble play than their male peers (Yalom, Green, & Fisk, 1973). Despite the evidence that in utero hormone exposure can shape cross-gender behaviors, these children do not declare themselves to be of the opposite gender (Berenbaum, 1999). Hence, prenatal sex hormones only seem to explain some aspects of gender identity, rather than providing a full explanation.

The case of Joan/John and others like it demonstrate a strong biological underpinning for gender identity; despite not having a penis and being treated as a girl throughout childhood, John never developed a female gender identity (Colapinto, 1997). One study suggests similar conclusions. Reiner and Gearhart (2004) followed up 14 genetic males who for medical reasons had been surgically changed to females as young infants and then raised as girls. Of the 14, 8 had fully adopted a male identity by age 16, and all showed interests and activities that were typical of males. Even with the attempts to raise these children as girls, biology seemed to have influenced identity to a strong extent.

Social and Psychological Factors Masculinity and femininity are culturally shaped and defined, and heavily laden with value judgments and stereotyping. Our society is still sadly intolerant of boys who engage in activities more typical of girls. Girls can play games and dress in

Clinical Case: Joan/John

As there is so little research on the prospective predictors of GID, many people have looked to other literature to understand how gender identity develops. In 1965, Linda Thiessen gave birth to twin boys. During a surgery to correct a problem with the foreskin, the penis of John, one of the twins, was destroyed. With advice from John Money, a well-known sex researcher at Johns Hopkins University, the Thiessens decided to castrate John, construct female genitals, and raise him as a girl named Joan.

Several years later, Money began to discuss the case with other health professionals, describing it as a total success and using it to buttress his theory that gender identity is determined by the environment. But the facts suggest instead that there is a strong biological influence on gender identity.

Despite having been instructed to encourage feminine behavior in Joan, her parents reported that Joan behaved in a very boyish way. At age 2, she ripped off her first dress; during her preschool years, her play activities were clearly masculine. At age 11, Joan steadfastly held out against surgery to construct a more feminine vagina than the rudimentary one that had been created during the original surgery. By age 14, Joan had decided to stop living as a girl. Given Joan's behavior and distress, Joan's physicians finally recommended that she be told the whole story. She immediately decided to reverse the earlier treatments and changed her name back to John. She took male hormones, had her breasts removed, and had an artificial penis constructed. At age 21 John had another operation to improve his artificial penis, and at age 25 he married a woman.



Although dressing up is common in childhood, most people with GID trace their gender identity distress to childhood and report dressing in cross-gender clothes. (Francene Keery/Stock, Boston.)



Harisu was born a male, but after sex reassignment surgery at age 23 she became an extremely successful model and pop star in South Korea. (Sean Gallup/GettyImages, Inc.)

a manner more typical of boys and still conform to acceptable standards of behavior for girls (Williams, Goodman, & Green, 1985).

If gender-role behavior is environmentally shaped, some have suggested that GID could be shaped by environmental contingencies as well. One model of GID focuses on reinforcement of cross-gender behavior (Green, 1987). Most children engage in cross-gender behaviors at some point in time. Some parents and relatives may reinforce such behavior. Parents of children who show signs of GID often reveal that they did not discourage cross-dressing behavior in their children. This holds true especially for feminine boys—family members may have seen the behavior as cute. According to the reinforcement theory, such reactions on the part of the family to a child could contribute to the acquired gender identity (Zucker et al., 1993). As pointed out by Bailey (2003), though, family members and peers are often mercilessly cruel about cross-gender behavior—if environmental contingencies were powerful, one might expect these interpersonal punishments to dispel cross-gender behavior.

Treatments of Gender Identity Disorder

The most common treatment for GID is to change the body to suit the person's gender identity. A few case studies are available of behavioral treatment designed to change the psychology to match the person's body.

Changing the Body People seeking hormones to change their sexual features are generally required to first undergo months of living as the desired gender or take part in psychotherapy to address feelings about gender roles (Harry Benjamin International Gender Dysphoria Association, 2001). A range of physical procedures are used to change the person's body. For example, a man may have electrolysis to remove facial hair, surgery to reduce the size of the chin and Adam's apple, and training to raise the pitch of the voice. Female hormones promote breast growth and soften the skin of men (Schaefer, Wheeler, & Futterweit, 1997). Some men also have plastic surgery to attain a more feminine facial appearance, larger breasts, or more curvaceous hips. Some take the additional step of having sex-reassignment surgery. It is typically recommended that cosmetic and hormonal changes be in place and that the person live as a member of the opposite sex for at least one year before surgery is performed.

In **sex-reassignment surgery**, the existing genitalia are altered to be more similar to those of the opposite sex. The first sex-reassignment operation took place in Europe in 1930, but the surgery that attracted worldwide attention was performed on an ex-soldier, Christine (originally George) Jorgensen, in Copenhagen, Denmark, in 1952.

For male-to-female reassignment surgery, most of the penis is removed, but some of the tissue and nerves are used to form an artificial vagina, labia, and clitoris. Heterosexual intercourse is possible after reassignment surgery for men, with sensitivity of nerves to stimulation preserved.

The female-to-male reassignment process is more difficult in some ways and less difficult in others. On the one hand, the surgically constructed penis is small and not capable of normal erection; artificial supports are therefore needed for sexual intercourse. An operation extends the urethra into the newly constructed penis to allow the person the social comfort of being able to use public urinals. On the other hand, less cosmetic follow-up is needed than for male-to-female reassignment because the male hormones prescribed to women seeking sexual reassignment drastically alter fat distribution and stimulate the growth of facial and body hair. The relatively greater ease of the cosmetic female-to-male change may be due in part to society's lesser focus on the physical attributes of men. A small, soft-spoken man with a relatively high-pitched voice may be more acceptable to society than a 6-foot-tall deep-voiced woman. Nevertheless, sex-reassignment surgery is chosen by many more men than women.

How beneficial is sex-reassignment surgery? Over the years, controversy has existed over its benefits, and the quality of the research is low (Carroll, 2000). A review by Green and Fleming (1990) of reasonably controlled outcome studies published between 1979 and 1989 with at least a one-year follow-up drew favorable conclusions. Of 130 female-to-male surgeries, about 97 percent could be judged satisfactory; of 220 male-to-female surgeries, 87 percent were satisfactory. Preoperative factors that seemed to predict favorable postsurgery adjustment were (1) reason-



Author and historian James Morris (in a 1960 picture), after sex-reassignment surgery, became Jan Morris (in a 1974 photograph). (Left: Corbis Images; right: Robin Laurence/New York Times Picture.)

able emotional stability, (2) successful adaptation in the new role for at least one year before the surgery, (3) adequate understanding of the actual limitations and consequences of the surgery, and (4) psychotherapy in the context of an established gender identity program. The authors caution, however, that satisfactory ratings meant only that the patients reported that they did not regret having had the surgery. One report from the University of Pennsylvania indicated that sexual responsiveness and sexual satisfaction increase dramatically after both male-to-female and female-to-male reassignments, with overall high satisfaction with the results of the surgery (Lief & Hubschman, 1993). In one follow-up study of people who had undergone sex-reassignment surgery, just over half reported satisfaction with their partnerships, as compared to one-third who were satisfied before the surgery (De Cuypere et al., 2005). Finally, one long-term study found that young men who had undergone sex reassignment were no longer gender-dysphoric, had no regrets about the procedures, and were otherwise functioning better than men who had been denied the hormonal treatment and surgery (Smith, van Goozen, & Cohen-Kettenis, 2001).

Behavioral Treatment to Alter Gender Identity A few case reports exist of behavioral treatment designed to alter sex-role behaviors. These treatments have included helping men to shape specific behaviors, such as mannerisms and interpersonal behavior, to be more masculine (Barlow, Reynolds, & Agras, 1973). In three cases, these treatments were successful in helping patients change sex-role behavior, and changes were sustained (Barlow, Abel, & Blanchard, 1979). This work demonstrates that some sex-role behaviors may be amenable to change. But as the researchers pointed out, even the limited success of this program might not be generalizable. Their clients might have been different from others with GID because they wanted treatment to change their gender identity. Most people with GID are not interested in such treatment. For them, physically altering their bodies is the goal.

Check Your Knowledge 13.2

True or false?

1. A person who experiences a brief problem with sexual arousal, orgasm, or desire is likely to meet criteria for a sexual dysfunction.
2. The best treatment for premature ejaculation is Viagra.
3. Sex therapists may recommend that a woman with lack of orgasms practice masturbation without her partner present.
4. People with one sexual dysfunction tend to have other comorbid sexual dysfunctions.
5. Diagnostic criteria for GID include distress over sexual attraction to people of the same sex.

Quick Summary

GID is diagnosed when a person experiences long-term and intense discomfort with his or her gender identity. People with this disorder feel like they are trapped in the wrong body. Prevalence rates are low: about one in 30,000 men and one in 100,000 women meet formal diagnostic criteria. There is major debate about whether diagnosing this experience pathologizes naturally occurring diversity. There is also debate about the appropriateness of using this diagnosis during childhood. Because GID is so rare, researchers do not know much about the etiology. There is evidence that some cross-gender behavior is moderately heritable, but genetic studies do not focus on diagnosable levels of gender identity symptoms.

Some evidence suggests a role for exposure to atypically high levels of hormones in utero. Behavioral theory focuses on possible reinforcement of cross-gender roles, but this theory does a poor job of taking into account the extreme punishment often provoked by cross-gender behavior.

Treatments for GID involve surgical and hormonal procedures that change the person's sexual anatomy to match the internal identity. Behavioral treatment has been used for a small number of cases to change cross-gender behavior, but even when individuals change the way they act, they may retain an internal sense of identity as the other gender.

The Paraphilias

In DSM-IV-TR the **paraphilias** are a group of disorders defined by sexual attraction to unusual objects or sexual activities. In other words, there is a deviation (*para*) in what the person is attracted to (*philia*). The fantasies, urges, or behaviors last at least 6 months. Attractions to parts of the body, such as feet, are not diagnosed. Indeed, surveys have shown that many people occasionally fantasize about some of the activities we will be describing. For example, 50 percent of men report voyeuristic fantasies of peeping at unsuspecting naked women (Hanson & Harris, 1997). In a large group of people who volunteered for a study of sexuality and health, 7.7 percent of people reported that they had been aroused by spying on others having sex, and 3.1 percent of people reported that they had exposed their genitalia to a stranger at least once during their lifetime (Långström & Seto, 2006). Diagnoses of paraphilias, though, are meant to capture sexual urges that are more problematic and long-lasting than the occasional fantasy or sexual experimentation. Paraphilias are not diagnosed unless the fantasies or behaviors are recurrent and cause marked distress or impairment.

Accurate prevalence statistics are not available for the paraphilias. When responding to a community survey, many people with paraphilias may not reveal their proclivities. As some persons with paraphilias seek nonconsenting partners or otherwise violate people's rights in offensive ways (as we will see in exhibitionism and pedophilia), these disorders can have legal consequences. But statistics on arrests are likely to be underestimates because many crimes go unreported and some paraphilias (e.g., voyeurism) involve an unsuspecting victim. The data do indicate, though, that most people with paraphilias are male and heterosexual; even with masochism and pedophilia, which occur in noticeable numbers of women, men vastly outnumber women.

Clinical Case: William

William is a twenty-eight-year-old computer programmer who sought treatment after being arrested for voyeurism. William grew up as the second of four children in a conservative, religious family living in a rural area. He began to masturbate at age fifteen, and he did so while watching his sister urinate in their outhouse. Despite feeling very guilty, he continued to masturbate several times a week while having voyeuristic fantasies. A couple of times, he had masturbated while watching strangers undress.

As an adult, William was a timid, shy, and lonely man. He lived alone, and six months before the arrest, he had been rejected in a long-term relationship. In response, he withdrew from other social relationships and began drinking more alco-

hol. As his self-esteem deteriorated, his voyeuristic fantasies became more and more urgent.

One summer night, William had been feeling lonely and depressed, and he had been drinking heavily at a lounge with a topless dancer. After leaving the bar, he had been driving through a suburban neighborhood when he noticed someone in an upstairs window. Without thinking much, he had parked, erected a ladder he found near the house, and climbed up to the window to peep. The residents called the police when they heard him, and William was arrested. He was very shocked at the arrest, but knew that his behavior was destructive and he was motivated to change. [Rosen & Rosen (1981), pp. 452–453, Reprinted by permission of McGraw-Hill Book Company].

Table 13.4 Paraphilias Included in DSM-IV-TR

Paraphilia	Object of Sexual Attraction
Fetishism	An inanimate object
Transvestic fetishism	Cross-dressing
Pedophilia	Children
Voyeurism	Watching unsuspecting others undress or have sex
Exhibitionism	Exposing one's genitals to an unwilling stranger
Frotteurism	Sexual touching of an unsuspecting person
Sexual sadism	Inflicting pain
Sexual masochism	Receiving pain

DSM-IV-TR differentiates the paraphilias based on the source of arousal, for example, providing one diagnostic category for people whose sexual attractions are focused on inanimate objects and another diagnostic category for people whose attractions are focused on children (see Table 13.4). Here, we provide a clinical description of the paraphilias included in DSM-IV-TR. As we describe the symptoms, we describe the epidemiology of these disorders. Many people with paraphilias meet criteria for other paraphilias and for other DSM-IV-TR diagnoses, and we will discuss the most frequent comorbid conditions as we review epidemiology. Then we will discuss models of the etiology and treatment of these disorders.

Fetishism

Fetishism involves a reliance on an inanimate object for sexual arousal. The person with fetishism, almost always a man, has recurrent and intense sexual urges toward nonliving objects, called fetishes (e.g., women's shoes), and the presence of the fetish is strongly preferred or even necessary for sexual arousal.

Clothing (especially underwear), rubber products (like raincoats), and articles related to feet (stockings, women's shoes) are common fetishes. Some carry on their fetishism by themselves in secret by fondling, kissing, smelling, sucking, placing in their rectum, or merely gazing at the adored object as they masturbate. Others need their partner to don the fetish as a stimulant for intercourse. Some become interested in acquiring a collection of the desired objects, and they may even commit burglary week after week to add to their hoard.

The person with fetishism feels a compulsive attraction toward the object; the attraction is experienced as involuntary and irresistible. It is the degree of the erotic focus—the exclusive and very special status the object occupies as a sexual stimulant—that distinguishes fetishisms from the ordinary attraction that, for example, high heels may hold for heterosexual men in Western cultures. The person with a boot fetish must see or touch a boot to become aroused, and the arousal is overwhelmingly strong when a boot is present.

The disorder usually begins by adolescence, although the fetish may have acquired special significance even earlier, during childhood. People with fetishism often have other paraphilias, such as pedophilia, sadism, and masochism (Mason, 1997).

Transvestic Fetishism

Transvestic fetishism, or *transvestism*, refers to recurrent and intense sexual arousal from cross-dressing. The extent of transvestism varies from wearing women's underwear under conventional clothing to full cross-dressing. Some female impersonators in nightclubs cater to the delight that many people take in observing skilled cross-dressing. Unless the cross-dressing associated with sexual arousal, however, these impersonators do not meet criteria for transvestic fetishism. Transvestism also should not be confused with the cross-dressing associated with gender identity disorder. People with transvestic fetishism cross-dress for sexual arousal, unlike those with gender identity disorder.

DSM-IV-TR Criteria for Fetishism

- For at least 6 months, recurrent and intense sexually arousing fantasies, urges, or behaviors involving the use of nonliving objects
- Causes marked distress or impairment in functioning
- The sexually arousing objects are not limited to articles of female clothing used in cross-dressing or to devices designed to provide tactile genital stimulation, such as a vibrator



Many people experiment with fetishes. Fetishism is not diagnosed unless the attraction to fetishes causes marked distress or impairment. (Cindy Charles/PhotoEdit.)

FOCUS ON DISCOVERY 13.3

The Effects of Pedophilia: Outcomes After Childhood Sexual Abuse

In one major community survey, 13.5 percent of women and 2.5 percent of men reported experiencing some form of **childhood sexual abuse (CSA)** (Molnar et al., 2001). How does this all-too-common experience affect mental health during childhood and beyond? What can be done to protect children and to help children heal from CSA?

Effects on the Child

About half of children who are exposed to CSA will develop symptoms, such as depression, low self-esteem, conduct disorder, and anxiety disorders like posttraumatic stress disorder (PTSD). On the other hand, almost half of children who are exposed to CSA do not appear to experience immediate symptoms (Kuehnle, 1998). We have seen in previous chapters that a history of CSA is found among adults experiencing many different mental disorders—notably, dissociative identity disorder, eating disorders, borderline personality disorder, major depressive disorder, sexual dysfunctions, and substance abuse (Litrownik & Castillo-Cañez, 2000).

What factors contribute to how CSA affects a child? The odds that CSA will produce negative reactions will be increased when a perpetrator threatens a child, the child blames him- or herself, or the family is unsupportive (Kuehnle, 1998). Negative outcomes are more pronounced when the CSA involves sexual intercourse (Nelson et al., 2002). Levels of adulthood depression and anxiety symptoms also appear to be higher when the CSA started at an earlier age (Kaplow & Widom, 2007).

The research linking CSA to mental disorders has been mired in methodological issues. For example, sampling biases appear important, in that studies of college students with a history of CSA typically find small effects of CSA (Rind, Tromovitch, & Bauserman, 1998), but studies of clients in treatment may overestimate the role of abuse. Understanding the effects of CSA require studies of community samples that do not have these sampling biases.

A broader issue, though, is that families in which abuse happens are often experiencing a broad array of problems, such as substance dependence in one or both parents, which may be entangled with other genetic and environmental risks for psychopathology. Because of this, it is hard to isolate whether CSA is genuinely the factor that heightens the risk for a clinical disorder. Twin studies provide a way to disentangle these effects, particularly when one twin but not the other has been abused, because the twin who was not abused shares genetic, and at least some environmental, risk factors. In one study of almost 2,000 twin pairs, people with a history of CSA had substantially increased risk of depression, suicide, conduct disorder, alcohol dependence, social anxiety, rape during adulthood, and divorce compared to nonabused twins (Nelson et al., 2002).

The Issue of Betrayal

A child abuser is usually not a stranger. He may be a father, an uncle, a brother, a teacher, a coach, a neighbor, or even a cleric. The abuser is often an adult whom the child knows and trusts. When the abuser is someone close to the child, the child is likely to be torn by allegiance to the abuser on the one hand and, on the other hand, by fear, revulsion, and the knowledge that what is happening is wrong. The betrayal of this trust makes the crime more abhorrent than it would be if no prior relationship existed between abuser and child. Betrayal is also experienced by adults and children who are sexually abused by clergy or other people related to religious organizations.

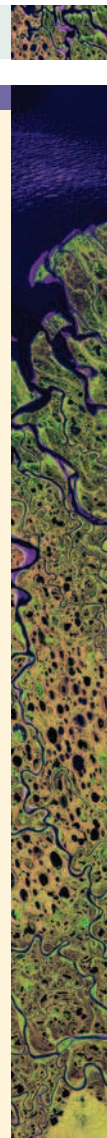
During 2002–2003, more than 1,000 people filed claims accusing Catholic clergy of molesting them as children many years earlier (Sheler, 2003). As with childhood incest, molestation or sexual harassment by a religious authority figure violates trust and respect. The victim, whatever his or her age, cannot give meaningful consent. The power differential is just too great. Self-blame is likely to be strong in the victim because the

Clinical Case: Ruben

Ruben is a single, 32-year-old male photographer who sought treatment for his “abnormal sex drive.” He reported that he was particularly concerned that he was more attracted to women’s underwear than to the women themselves. Ruben reported that he remembered being excited by pictures of women in their underwear at age 7. He first reached orgasm at age 13 by masturbating while imagining women in their “panties.” He began to steal underwear from his sister to use while masturbating. As he grew older, he would take opportunities to sneak into other women’s rooms and steal their

underwear. He began to have intercourse at age 18, and his preferred partner was a prostitute that he asked to wear underwear with the crotch removed while they had sex. He found that he preferred masturbating into stolen underwear more than sexual intercourse. He avoided dating “nice women,” as he feared they would not understand his sexual behavior, and he also avoided friends who might encourage him to date such women. He had begun to experience significant depression over the ways in which his sexual behavior was limiting his social life. [Adapted from Spitzer et al. (1994).]

Transvestic fetishism usually begins with partial cross-dressing in childhood or adolescence. Always men, most cross-dress episodically rather than regularly. They tend to be otherwise masculine in appearance and demeanor. Many are married and lead otherwise conventional lives. Cross-dressing usually takes place in secret. Married men who engage in this behavior may feel guilt or shame about their behavior, and they sometimes hide their urges from their wives for years. The urge to cross-dress may become more frequent over time. Transvestism is often comorbid with other paraphilias, notably masochism (Zucker & Blanchard, 1997).



offender is part of the person's religion. If the priest or minister or rabbi is doing this, how can it be wrong?

Prevention

CSA prevention efforts have focused on elementary schools. Common elements include teaching children to recognize inappropriate adult behavior, resist inducements, leave the situation quickly, and report the incident to an appropriate adult (Wolfe, 1990). Children are taught to say no in a firm, assertive way when an adult talks to or touches them in a manner that makes them feel uncomfortable. Instructors may use comic books, films, and descriptions of risky situations to teach about sexual abuse and how children can protect themselves.

Evaluations of school programs suggest that they do increase awareness of sexual abuse. Researchers do not know whether children are able to translate what they have learned into overt behavior that reduces the problem (Wolfe, 1990).

Dealing with the Problem

When they suspect that something is awry, parents must raise the issue with their children; unfortunately, many adults are uncomfortable doing so. Physicians also need to be sensitized to signs of sexual abuse. Both sexual and nonsexual abuse are reportable offenses; professionals who suspect abuse are required by law to report their suspicions to the police or child protective agencies. When states first passed legislation requiring health care professionals and teachers to report suspected child abuse, confirmed cases skyrocketed. For a child, reporting sexual abuse can be extremely difficult. We tend to forget how helpless and dependent the child feels, and it is difficult to imagine how frightening it would be to tell one's parents that one had been fondled by a brother or grandfather.

Most cases of sexual abuse do not leave any physical evidence, such as torn vaginal tissue. Furthermore, there is no behavioral pattern, such as anxiety, depression, or increased sexual activity that unequivocally indicates that abuse has occurred (Kuehnle, 1998). Therefore, the child's own report is the primary source of information about whether CSA has occurred. The prob-

lem is that leading questions can produce some false reports. Great skill is required in questioning a child about possible sexual abuse to avoid biasing the youngster one way or the other. Some jurisdictions use innovative procedures to reduce the stress on the child while protecting the rights of the accused adult, for example, videotaped testimony, closed-courtroom trials, closed-circuit televised testimony, and special coaching sessions to explain what to expect in the courtroom (Wolfe, 1990). Having the child play with anatomically correct dolls can be useful in getting at the truth, but it should be only one part of an assessment, because many nonabused children portray such dolls having sexual intercourse (Jampole & Weber, 1987).

Parents go through their own crisis when they become aware that someone has been molesting their child. Shame, guilt, fear, and anger abound. In the case of incest, the victim's mother may be in a particularly difficult situation, sometimes torn between her partner and her child, sometimes facing financial uncertainty should the partner leave the home or be arrested. Sadly, a parent who is unable to face such threats may allow incest to continue. It is impossible to know what percentage of incest cases are not reported to the police, but it is safe to say that most are unreported, particularly if the offender is a family member (Finkelhor, 1983).

Many children need treatment (Litrownik & Castillo-Cañez, 2000). As with adult survivors of rape, posttraumatic stress disorder (PTSD) can be a consequence. Many interventions are similar to those used for PTSD in adults; the emphasis is on exposure to memories of the trauma through discussion in a safe and supportive therapeutic atmosphere (Johnson, 1987). It is also important for children to learn that healthy human sexuality is not about power and fear (McCarthy, 1986). Inhibitions about bodily contact can be addressed in group therapy settings via structured, nonsexual hand-holding and back rubs (Wolfe, 1990). As with rape, it is important to change the person's attribution of responsibility from "I was bad" to "He/she was bad." Intervention varies with the person's age—a 14-year-old does not need dolls to recount what was done, and a 3-year-old is not an appropriate candidate for group therapy. As yet there has been no controlled research on these various interventions, but uncontrolled studies are encouraging (E. M. Arnold et al., 2003).

Pedophilia and Incest

According to the DSM, **pedophilia** (*pedos*, Greek for "child") is diagnosed when adults derive sexual gratification through sexual contact with prepubertal children. DSM-IV-TR requires that the offender be at least 16 years old and at least 5 years older than the child. Despite these diagnostic criteria, some people with pedophilia also victimize adolescents (Marshall, 1997).

As in most paraphilias, a strong subjective attraction impels the behavior. Sometimes a man with pedophilia is content to stroke the child's hair, but he may also manipulate the child's genitalia, encourage the child to manipulate his, and, less often, attempt penile insertion. The molestations may be repeated over a period of weeks, months, or years if they are not discovered by other adults or if the child does not protest. Some people with pedophilia intentionally frighten the child by, for example, killing a pet and threatening further harm if the youngster tells his or her parents.

People with pedophilia generally molest children that they know, such as neighbors or friends of the family (Gebhard et al., 1965). Sadly, incidents abound involving scoutmasters, camp counselors, and clergy. People with pedophilia have increasingly used the Internet to acquire child pornography and to contact potential victims (Durkin, 1997). Most pedophilia does not involve violence other than the sexual act, although when it does, it is often a focus of lurid stories in the media. A minority of people with pedophilia, who might also meet diagnostic criteria for sexual sadism, inflict serious bodily harm on the object of their passion. Because overt physical force is seldom used in pedophilia, the child molester often denies that he is actually forcing himself on his victim. Despite their distorted beliefs, it must be acknowledged that child sexual abuse

● DSM-IV-TR Criteria for Transvestic Fetishism

- For at least 6 months, recurrent and intense sexually arousing fantasies, urges, or behaviors involving cross-dressing in a heterosexual male
- Causes marked distress or impairment in functioning
- Can be associated with some discomfort with gender identity

DSM-IV-TR Criteria for Pedophilia

- For at least 6 months, recurrent and intense, sexually arousing fantasies, urges, or behaviors involving sexual contact with a prepubescent child
- Person has acted on these urges, or the urges and fantasies cause marked distress or interpersonal problems
- Person is at least 16 years old and 5 years older than the child

inherently involves a betrayal of trust and other serious negative consequences (see Focus on Discovery 13.3 for a discussion of these consequences).

In one meta-analysis of 61 follow-up studies of 28,972 sexual offenders, sexual arousal in response to pictures of young children as measured by penile plethysmograph was one of the strongest predictors of repeated sexual offenses (Hanson & Bussiere, 1998). A study of 11 men with pedophilia found that they were attracted to pictures of children that were not designed to be provocative. These men became aroused viewing widely available materials, such as television ads and clothing catalogs picturing young children in underwear. In other words, men with pedophilia were sexually stimulated from sources that most did not find stimulating (Howitt, 1995).

Nonetheless, arousal in response to pictures of children is not a perfect predictor of pedophilia. Many men who are conventional in their sexual interests and behavior can be sexually aroused by erotic pictures of children. In a study using both self-report and penile plethysmographic measures, one-quarter of men drawn from a community sample showed or reported arousal when viewing sexually provocative pictures of children (Hall, Hirschman, & Oliver, 1995). Although this finding might seem disturbing, it highlights the importance of the distinction made by the DSM and by health professionals between fantasy and behavior. Pedophilia is diagnosed when adults either act on sexual urges toward children or are distressed by the urges.

Incest is listed in DSM-IV-TR as a subtype of pedophilia. Incest refers to sexual relations between close relatives for whom marriage is forbidden. It is most common between brother and sister. The next most common form, which is considered more pathological, is between father and daughter.

The taboo against incest is virtually universal in human societies (Ford & Beach, 1951), with a notable exception of Egyptian pharaohs, who could marry their sisters or other females of their immediate families. In Egypt it was believed that the royal blood should not be contaminated by that of outsiders. The incest taboo makes sense according to present-day scientific knowledge. The offspring from a father–daughter or a brother–sister union have a greater probability of inheriting a pair of recessive genes, one from each parent. For the most part, recessive genes have negative biological effects, such as serious birth defects. The incest taboo, then, has adaptive evolutionary significance.

There is evidence that families in which incest occurs are unusually patriarchal, especially with respect to the subservient position of women relative to men (Alexander & Lupfer, 1987). Parents in these families also tend to be more neglectful and emotionally distant from their children (Madonna, Van Scoyk, & Jones, 1991).

Typically, men who commit incest abuse their postpubertal daughters, whereas men with nonincestual pedophilia are usually interested in prepubertal children. Consistent with this difference in the age of victims, men who molest children within their families show greater penile arousal (as measured by penile plethysmography) to adult heterosexual cues than do men who molest children who are unrelated to them (Marshall, Barbaree, & Christophe, 1986).

What are the demographic characteristics of people who engage in pedophilia and incest? People with pedophilia can be straight or gay, though most are heterosexual. Up to half of all child molestations, including those that take place within the family, are committed by adolescent males (Morenz & Becker, 1995). Consistent with this statistic, about half of adult offenders began their illegal behavior in their early teens. Academic problems are common, as are other criminal behaviors (Becker & Hunter, 1997). Most older heterosexual men with pedophilia are or have been married.

Psychologically, men with pedophilia demonstrate elevated impulsivity and psychopathy compared to the general population (Ridenour et al., 1997). These men often meet criteria for comorbid conduct disorder and substance abuse, and molestations are more likely to occur when the person with pedophilia is intoxicated. Somewhat more surprisingly, depression and anxiety disorders are also common (Galli et al., 1999). Evidence also suggests that men with pedophilia have sexual fantasies about children when their mood is negative, perhaps as a way to cope with their dysphoria; however,



having the pedophilic fantasy appears to increase negative affect. Perhaps this downward spiral leads at some point to the person's acting on the impulse to molest a child (Looman, 1995).

Voyeurism

Now and then a man may happen to see a nude woman by chance without her knowledge. If his sex life is primarily conventional, he would not generally meet criteria for voyeurism. Similarly, voyeuristic fantasies are quite common in men but do not by themselves warrant a diagnosis (Hanson & Harris, 1997). **Voyeurism** involves an intense and recurrent desire to obtain sexual gratification by watching unsuspecting others in a state of undress or having sexual relations. For some men, voyeurism is their only sexual activity; for others, it is preferred but not absolutely essential for sexual arousal (Kaplan & Kreuger, 1997). As in the case of William earlier in this chapter, the looking, often called peeping, helps the person become sexually aroused and is sometimes essential for arousal. People with voyeurism achieve orgasm by masturbation, either while watching or later while remembering the peeping. Sometimes the person with voyeurism fantasizes about having sexual contact with the observed person, but it remains a fantasy; he or she seldom contacts the observed.

A true voyeur, almost always a man, does not find it particularly exciting to watch a woman who is undressing for his special benefit. The element of risk seems important, for the voyeur is excited by the anticipation of how the woman would react if she knew he was watching. As with all categories of illegal behavior, prevalence is difficult to assess since most illegal activities are not reported to the police. Indeed, people with voyeurism are most often charged with loitering rather than with peeping itself (Kaplan & Kreuger, 1997).

Voyeurism typically begins in adolescence. People who meet diagnostic criteria for voyeurism often have other paraphilias, but they do not tend to have elevated rates of other mental disorders.

Exhibitionism

Exhibitionism is a recurrent, intense desire to obtain sexual gratification by exposing one's genitals to an unwilling stranger, sometimes a child. It typically begins in adolescence. As with voyeurism, there is seldom an attempt to have actual contact with the stranger. Some exhibitionists, however, do get arrested for other crimes involving contact with a victim (Sugarman et al., 1994). Many exhibitionists masturbate during the exposure. In most cases there is a desire to shock or embarrass the observer.

The urge to expose seems overwhelming and virtually uncontrollable to the exhibitionist and is apparently triggered by anxiety and restlessness as well as by sexual arousal. One exhibitionist persisted in his practices even after suffering a spinal cord injury that left him without sensation or movement from the waist down (DeFazio & Cunningham, 1987). Because of the compulsive nature of the urge, the exposures may be repeated often and even in the same place and at the same time of day. At the time of the act, the social and legal consequences are far from their mind (Stevenson & Jones, 1972). In the desperation and tension of the moment, they may experience headaches and palpitations and have a sense of unreality (also called derealization). After exposing themselves, exhibitionists tend to flee and feel remorseful. Other paraphilias are very common in exhibitionists, notably voyeurism and frotteurism (see next section) (Freund, 1990).

Frotteurism

Frotteurism involves the sexually oriented touching of an unsuspecting person. The frotteur may rub his penis against a woman's thighs or buttocks or fondle her breasts or genitals. These attacks typically occur in places, such as a crowded bus or sidewalk, that provide

● DSM-IV-TR Criteria for Voyeurism

- For at least 6 months, recurrent and intense sexually arousing fantasies, urges, or behaviors involving the observation of unsuspecting others who are naked or engaged in sexual activity
- Person has acted on these urges, or the urges and fantasies cause marked distress or interpersonal problems

● DSM-IV-TR Criteria for Exhibitionism

- For at least 6 months, recurrent, intense, and sexually arousing fantasies, urges, or behaviors involving showing one's genitals to an unsuspecting stranger
- Person has acted on these urges, or the urges and fantasies cause marked distress or interpersonal problems

● DSM-IV-TR Criteria for Frotteurism

- For at least 6 months, recurrent and intense and sexually arousing fantasies, urges, or behaviors involving touching and rubbing up against a nonconsenting person
- Person has acted on these urges, or the urges and fantasies cause marked distress or interpersonal problems

● DSM-IV-TR Criteria for Sexual Sadism

- For at least 6 months, recurrent intense and sexually arousing fantasies, urges, or behaviors involving acts in which the partner is humiliated or suffers physically
- Causes marked distress or impairment in functioning or the person has acted on these urges with a nonconsenting other

● DSM-IV-TR Criteria for Sexual Masochism

- For at least 6 months, recurrent, intense, and sexually arousing fantasies, urges, or behaviors involving the act of being humiliated or beaten
- Causes marked distress or impairment in functioning

an easy means of escape. Frotteurism has not been studied very extensively. It appears to begin in adolescence and typically occurs along with other paraphilias (Kreuger & Kaplan, 2000).

Sexual Sadism and Sexual Masochism

Sexual sadism is defined by an intense and recurrent desire to obtain or increase sexual gratification by inflicting pain or psychological suffering (such as humiliation) on another. **Sexual masochism** is defined by an intense and recurrent desire to obtain or increase sexual gratification through being subjected to pain or humiliation. Some sadists achieve orgasm by inflicting pain, and some masochists achieve orgasm by being subjected to pain. For others, though, the sadistic and masochistic practices, such as spanking, are just one aspect of sexual activity.

Sadistic and masochistic behavior have become more accepted over time: 5 to 10 percent of the population has tried some form of sadomasochistic activity, such as blindfolding one's partner (Baumeister & Butler, 1997). Some clubs now cater to members seeking sadomasochistic partnerships. Most people who engage in sadomasochistic behaviors are relatively comfortable with their sexual practices (Spengler, 1977). Sadism and masochism are only diagnosed if the urges or behaviors cause distress or impairment. Most sadists establish relationships with masochists to derive mutual sexual gratification. Although many people are able to take both dominant and submissive roles, masochists outnumber sadists.

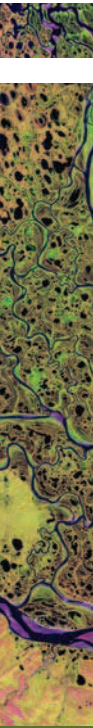
The manifestations of sexual masochism are varied. Examples include restraint (physical bondage), blindfolding, spanking, whipping, electric shocks, cutting, humiliation (e.g., being urinated or defecated on, being forced to wear a collar and bark like a dog, or being put on display naked), and taking the role of slave and submitting to orders and commands. The term *infantilism* refers to a desire to be treated like a helpless infant and clothed in diapers. One particularly dangerous form of masochism, called hypoxiphilia, can result in death or brain damage; it involves sexual arousal by oxygen deprivation, which can be achieved using a noose, a plastic bag, chest compression, or a chemical that produces a temporary decrease in brain oxygenation by peripheral vasodilation (American Psychiatric Association, 1994).

Sadism and masochism seem to begin by early adulthood. Both these disorders are found in straight and gay relationships. Surveys have found that 20 to 30 percent of the members of sadomasochistic clubs are female (Moser & Levitt, 1987), and it has been assumed that a similar gender ratio might be true of diagnosable sadism and masochism. Most sadists and masochists lead otherwise conventional lives, and there is some evidence that they are above average in income and educational status (Moser & Levitt, 1987). Alcohol abuse is common among sadists (Allnut et al., 1996).

Etiology of the Paraphilias

Of the many theories about the etiology of the paraphilias, the principal ones come from biological, psychodynamic, and behavioral perspectives. Because many people do not want to talk about their paraphilias, researchers have few opportunities to understand the causes of paraphilias.

Neurobiological Factors Because the overwhelming majority of people with paraphilias are men, there has been speculation that androgens, or male hormones, play a role. Androgens regulate sexual desire, and sexual desire appears to be atypically high among people with paraphilias (Kafka, 1997). Findings of hormonal correlates of paraphilias are inconclusive, however. As to differences in the brain, a dysfunction in the temporal lobe may be relevant to a minority of cases of sadism and exhibitionism (Mason, 1997). If biology turns out to be important, it most likely will be but one factor in a complex network of causes that includes experience as a major player (Meyer, 1995).



Check Your Knowledge 13.3

Choose the diagnostic category that best fits each vignette. If not diagnosable, state so.

1. Joe is only able to obtain sexual arousal by rubbing his body against strangers. He has worked out a set of rituals to engage in this behavior; he knows which bus routes and times will be most crowded, chooses a bus that tends to have many women, and times his attacks so that he can leave the bus at a stop along with many other people.
2. Sam and Terry enjoy a good sexual relationship. They have mutually satisfying sex at least weekly. Occasionally, Terry likes to be tied down before sex, but she is able to enjoy sex without bondage as well. Most of their sex life involves no hint of pain or bondage.
3. Victor secretly enjoys wearing his wife's underwear. When she is away, he dresses up, watches himself in the mirror, and masturbates. He finds this activity to be the most exciting sexual activity he has ever engaged in, and despite an incredible sense of embarrassment and shame, he feels he has no control over these urges. He fears that his wife would divorce him if she knew about his cross-dressing.
4. Matt only feels aroused when he is able to cause pain to someone before engaging in sex. Most of the time, he indulges in these activities at a sado-masochism club. He has not been able to sustain a relationship with any of the women he has met in clubs. He is deeply distressed by his inability to enjoy other forms of sexuality.
5. Ever since he was a small child, Dennis has felt like he was a girl. As a child, he would sneak into his mother's closet and dress up in her clothes. As he grew older, his belief that he was trapped in a boy's body became stronger. At age 20, he began taking female hormones, shaving his legs, dressing as a woman, and calling himself Deanna. He is very distressed about his gender identity as a woman.
6. Barry is a 40-year-old single man who has never had a sustained dating relationship or sexual partner. Several times a week, Barry parks his car at the beach, masturbates, and then finds a way to lure a woman to his car, usually by asking for directions. He is unable to have an orgasm unless the woman notices his erection. He has been arrested three times for this behavior.

Psychodynamic Perspectives Psychodynamic theorists view paraphilias as a defense, guarding the ego from dealing with repressed fears and memories. The person with a paraphilia is seen as someone who is fearful of conventional heterosexual relationships, even when the relationships do not involve sex, because they are fixated at a pregenital stage of psychosexual development. Development is inadequate for social and sexual adult relationships (Lanyon, 1986). For example, fetishes, voyeurism, and pedophilia are seen as manifestations of intense castration anxiety that makes heterosexual sex with adult women too threatening. Castration anxiety leads the exhibitionist to reassure himself of his masculinity by showing his manhood (his genitals) to others (usually girls and women); it results in the sadist dominating others. Although many of the psychodynamic ideas have been influential, and some of these ideas have been picked up and reformulated by cognitive theorists, there is little research available regarding the psychodynamic theory of paraphilias.

Psychological Factors Most psychological theories of the paraphilias involve a set of risk factors, including conditioning experiences, relationship histories, and cognition. Some behavioral theorists view the cause of paraphilias as classical conditioning that by chance has linked sexual arousal with unusual or inappropriate stimuli (Kinsey et al., 1948). For example, a young man may masturbate to images of women dressed in black leather boots. According to this theory, repetitions of these experiences make boots sexually arousing. Similar proposals have been made for transvestism, pedophilia, voyeurism, and exhibitionism. Although there is some minor support (e.g., Rachman, 1966), research has not supported most components of the orgasm conditioning hypothesis (O'Donohue & Plaud, 1994). As described later, however, some innovative therapeutic strategies have been developed based on these ideas.

From an operant conditioning perspective, many paraphilias are considered an outcome of inadequate social skills or reinforcement of unconventionality by parents or relatives. Evidence does indicate that men with pedophilia often have poor social skills (Dreznick, 2003). Paraphilias such as exhibitionism may thus be activities that substitute for more conventional relationships and sexual activity. On the other hand, the fact that many pedophiles and exhibitionists have conventional social- and sexual relationships indicates that the issue is more complex than a simple absence of nondeviant sexual outlets (Maletsky, 2000).



The childhood histories of people with paraphilias reveal that often they were exposed to physical abuse, sexual abuse, and poor parent–child relationships (Mason, 1997). These early experiences may contribute to the poor social skills and lack of intimate relationships often seen among those with paraphilias (Marshall, Serran, & Cortoni, 2000). But the widely accepted belief that sexual abuse in childhood predisposes people to paraphilic behavior (Worling, 1995) needs to be qualified by research showing that fewer than a third of adult sex offenders were sexually abused when they were below the age of 18 (Maletzky, 1993). It is also important to note that only a small percentage of sexually abused children develop pedophilia as adults. Distorted parent–child relationships may also create hostility, negative attitudes, and lack of empathy toward women, which may increase the chances of victimizing a woman.

Alcohol and negative affect often are the immediate triggers of incidents of pedophilia, voyeurism, and exhibitionism. This is consistent with evidence that alcohol decreases inhibition. Deviant sexual activity, like alcohol use, may be a means of escaping from negative affect (Baumeister & Butler, 1997).

Cognitive distortions also play a role in the paraphilias. For example, a voyeur may believe that a woman who left her blinds up while undressing wanted someone to look at her (Kaplan & Kreuger, 1997). A person with pedophilia may believe that children want to have sex with adults (Marshall, 1997). Table 13.5 contains examples of the kinds of unwarranted beliefs that may be associated with pedophilia and exhibitionism. Rape, a topic dealt with later in this chapter, is also included in the table.

Treatments for the Paraphilias

Because many of the behaviors involved in paraphilias are illegal, many people diagnosed with them are imprisoned and court-ordered into treatment. Outcomes for incarcerated juvenile and adult sex offenders are highly variable (Becker & Hunter, 1997; Maletzky, 2002). Data on treatment are hard to interpret for several reasons. First, most researchers avoid using control groups who receive no treatment—many researchers consider it unethical to withhold treatment when the consequences of sexual offenses are so severe. Second, it is difficult to compare findings because studies vary greatly. Some programs select the most problematic prisoners for treatment,

Table 13.5 Examples of Cognitive Distortions and Justifications in Sexual Paraphilias

Category	Pedophilia	Exhibitionism	Rape
Misattributing blame	"She started it by being too cuddly."	"She kept looking at me like she was expecting it."	"She was saying no, but her body said yes."
Denying sexual intent	"I was just teaching her about sex . . . better from her father than from someone else."	"The way she was dressed, she was asking for it."	"I was always drinking when I did it."
Debasing the victim	"I was just looking for a place to pee."	"I was just looking for a place to pee."	"I was just trying to teach her a lesson; she deserved it."
Minimizing consequences	"My pants just slipped down."	"She was just a slut anyway."	"The way she came on to me at the party, she deserved it."
Deflecting censure	"She has always been friendly to me, even afterward."	"I never touched her, so I couldn't have hurt her."	"She'd had sex with hundreds of guys before. It was no big deal."
Justifying the cause	"She was messed up even before it happened."	"It's not like I raped anyone."	"I only did it once."
	"This happened years ago. Why can't everyone forget about it?"	"If I knew how to get dates, I wouldn't have to expose."	"If my girlfriend gave me what I want, I wouldn't be forced to rape."

Source: Maletzky (2002).



whereas others treat those with the most promising prognoses, for example, first offenders. Some treatments have follow-up sessions after release, whereas others do not. Third, many studies do not evaluate whether treatment successes are sustained over time, even though recidivism increases as the years go by, especially when two years have passed since termination of treatment (Maletzky, 2002).

Sex offenders often lack motivation to change their illegal behavior. They may deny their problem, minimize the seriousness of their problem, believe that their victims will not be credible witnesses, and feel confident that they can control their behavior without professional assistance. Some blame the victim—even a child—for being overly seductive. For these reasons, such people are often judged to be inappropriate for treatment programs (Dougher, 1988); when they do become involved, they often drop out (Knopp, 1984). To enhance motivation for treatment, a therapist can do the following (Miller & Rollnick, 1991):

1. Empathize with the offender's reluctance to admit that he is an offender and to seek treatment, thereby reducing defensiveness and hostility
2. Point out that treatment might help him control his behavior better
3. Emphasize the negative consequences of refusing treatment (e.g., transfer to a less attractive incarceration setting if the person is already in custody) and of offending again (e.g., stiffer legal penalties)
4. Explain that there will be a psychophysiological assessment of the patient's sexual arousal, implying that this can reveal the patient's sexual proclivities without his admitting to them (Garland & Dougher, 1991)

With the foregoing as background, we now describe cognitive behavioral and biological treatments for the paraphilias. Then we consider legal efforts to protect the public from sex offenders.

Cognitive Behavioral Treatment In the earliest years of behavioral treatment, paraphilias were narrowly viewed as attractions to inappropriate objects and activities. Looking to behavioral psychology for ways to reduce these attractions, researchers fixed on aversion therapy. Thus, a person with boot fetishism would be given a shock (on the hands or feet) or an emetic (a drug that produces nausea) when looking at a boot, a person with transvestism when cross-dressing, a person with pedophilia when gazing at a photograph of a nude child, and so on. A variation of aversion therapy based on imagery is covert sensitization, whereby the person imagines situations he finds inappropriately arousing and also imagines feeling sick or ashamed for feeling and acting this way. Versions of covert sensitization have been developed that pair the aversive imagery with a foul odor (Maletzky, 2000). Studies of covert sensitization have shown that it reduces deviant arousal, but little evidence is available that these techniques alone actually change the behavior (Maletzky, 2000).

Another aversion therapy technique is satiation, in which the man masturbates for a long time, typically after ejaculating, while fantasizing out loud about his deviant activity. The idea is that masturbation will continue for so long as to become aversive. Although aversion therapy may not completely eliminate the attraction, in some cases it provides the patient with a greater measure of control over the overt behavior (McConaghy, 1994).

Another technique entails imagining a typical deviant activity but changing its ending, as described in the following vignette.

As you drive home one night you notice an attractive woman driver on your right in a van. She can see right into your car. You slow down and drive parallel with her as you begin to get aroused. You want to rub your penis and take it out to show her. However, the urge this time is weaker and you drive past her quickly without exposing. You feel good about yourself for being able to exert control. (Maletzky, 1997, p. 57)

Cognitive procedures are often used to counter the distorted thinking of people with paraphilias. Table 13.5 contains examples of cognitive distortions that would be targets for modification. For example, an exhibitionist might claim that the girls he exposes himself to are too young to be harmed by it. The therapist would counter this distortion by pointing out that the younger the victim, the worse the harm will be (Maletzky, 1997).

In general, cognitive and behavioral approaches have become more sophisticated and broader in scope since the 1960s, when the paraphilias were addressed almost exclusively through aversive conditioning and cognitive interventions. Current approaches combine these traditional approaches with techniques such as social skills training and sexual impulse control training (Maletzky, 2002). Training in empathy toward others is another increasingly common cognitive technique; teaching the sex offender to consider how his or her behavior would affect someone else may lessen the tendency to engage in such activities. Relapse prevention, modeled after the work on substance abuse described in Chapter 10, is also an important component of many broader treatment programs. A therapist who uses relapse prevention techniques would help a person identify situations and emotions that might trigger symptomatic behavior.

Comprehensive programs that include aversion therapy combined with other types of psychological interventions, such as social skills training, have some beneficial effects on pedophilia, transvestism, exhibitionism, and fetishism (Maletzky, 2002). Overall, both institution-based and outpatient programs that follow a cognitive behavioral model with sex offenders reduce recidivism more than what would be expected were no treatment at all attempted (Maletzky, 2002). These outcomes are much better for people with pedophilia than for rapists. Although sex offenders evoke disgust and fear from many people, efforts to treat such people, even if only minimally effective, are not only cost-effective but stand the chance of protecting others after the person is released from prison (Prentky & Burgess, 1990).

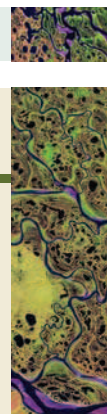
Biological Treatment A variety of biological interventions have been tried on sex offenders. Castration, or removal of the testes, was used a great deal in western Europe two generations ago, with some apparent effectiveness in reducing the incidence of paraphilic behavior (e.g., Langeluddeke, 1963). Surgical castration is not a common treatment today due to major ethical concerns.

On the other hand, several medications have been used to treat paraphilias, particularly among sex offenders. Typically, these medications are used as a supplement to psychological treatment. Among men, sexual drive and functioning are regulated by androgens (testosterone and dihydrotestosterone). Hence, hormonal agents that reduce androgens have been used to treat paraphilias, including medroxyprogesterone acetate (MPA, trade name Depo-Provera), cyproterone acetate (CPA, Cyprostat), and luteinizing hormone–releasing hormone agents (LHRH). Beyond drugs that influence hormones, SSRI antidepressants have been shown to reduce sexual arousal, as well as orgasmic and ejaculatory capacity. Across treatment trials, researchers tend to measure sexual fantasies to deviant objects, sexual behaviors, and legal offenses. In some studies, sexual arousal to deviant objects is measured using the plethysmograph. A range of clinical trials have found that SSRIs, MPA, and CPA are effective in reducing arousal (Hill et al., 2003). SSRIs have also been found to be helpful as an addition to psychological treatment (Hill et al., 2003).

Despite the promising findings, many ethical issues are raised about the indefinite use of hormonal agents. Long-term use of hormonal agents is associated with a number of negative side effects, including infertility, liver problems, osteoporosis, and diabetes (Gunn, 1993). Informed consent concerning these risks must be obtained, and many patients will not agree to use these drugs long-term (Hill et al., 2003).

Efforts to Protect the Public: Megan's Law The rates of recidivism after prison release have led to public pressure to forbid sexual offenders from returning to the locales where they were arrested. A further trend is exemplified in laws that allow police to publicize the whereabouts of registered sex offenders if they are considered to be a potential danger. These laws also permit citizens to use a national network of computerized police records to determine whether sex offenders are living in their neighborhoods (Ingram, 1996; Kempster, 1996).

Referred to by some as Megan's law, this statute and others like it across the United States arose from public outrage at the brutal murder of a second grader in New Jersey who was kidnapped while walking home from school. The person convicted of this crime was a twice-convicted child molester. Sadly, some neighborhoods have responded with vigilantism when residents become aware of sex offenders in their neighborhoods (Younglove & Vitello, 2003). It should come as no surprise that civil liberties groups are challenging these laws.



Check Your Knowledge 13.4

Answer the questions.

1. Which of the following has not been related to paraphilias?

- a. childhood abuse
- b. cognitive distortions
- c. permissive parenting
- d. negative affect

2. Currently the most commonly used biological treatments to reduce sexual desire and paraphilic behaviors are

- a. surgical castration
- b. hormonal agents and antidepressants
- c. antianxiety medications
- d. none of the above

Quick Summary

Paraphilias are defined by a sexual attraction to an unusual sexual object or activity that lasts at least 6 months and causes significant distress or impairment. The DSM-IV-TR diagnostic criteria for paraphilias are distinguished based on the object of sexual attraction, as shown in Table 13.4.

Researchers do not know the prevalence of these disorders, nor is much research available on the causes of paraphilias. Neurobiological factors that might be involved include excess levels of male hormones or, for some, dysfunction in the temporal lobes. Psychodynamic theory emphasizes conflicts between urges for sexual gratification and castration anxiety. Psychological theories focus on conditioning to inappropriate sexual objects, histories of physical and sexual abuse, poor parenting, social skill deficits hostility toward women, and cognitive distortions.

Treatment approaches must begin with a focus on engaging the client, which is often difficult to do. Cognitive behavioral approaches include various versions of aversion therapy, including covert sensitization and satiation. Cognitive techniques are used to challenge distorted beliefs about the consequences of sexual behaviors. Cognitive behavioral therapists also use techniques to improve social skills, to help people control impulses, to increase empathy for potential victims, and to identify potential high-risk situations for the return of symptoms. The most common medication treatments involve antidepressants or medications that reduce male hormone levels such as Depo-Provera. Laws have been passed that allow the public to access information about where sexual offenders live, but civil liberties groups are opposed to some aspects of these laws.

Rape

In legal terms, rape falls into two categories—forced and statutory. **Forced rape** is sexual intercourse with an unwilling partner. **Statutory rape** refers to sexual intercourse with a minor, someone under the age of consent (typically age 18). Because it is assumed that a person younger than the age of consent should not be held responsible for sexual activity with an older person, a charge of statutory rape can be made even if the minor reports consenting to sex willingly. Thus statutory rape need not involve force, only sex with a minor. We focus on forced rape in this section.

Twenty to 25 percent of American women will be raped during their lifetimes (Crowell & Burgess, 1996). Most women who are raped will experience symptoms of anxiety in the weeks after an attack (Rothbaum & Foa, 1993), and at least a third will develop PTSD (Breslau et al., 1999). More detail on PTSD and its treatment is provided in Chapter 5.

Rape is an important issue on college campuses. Table 13.6 shows findings from one study that asked college-age men and women the extent to which they had perpetrated or experienced physical coercion after a refusal of sexual contact. As shown, a discouraging 30 percent of female college students report that they have experienced the use of physical force, threats, or harm after they refused sexual contact with a person, with 8.7 percent reporting that they had experienced actual physical harm. In one survey of a representative sample of 4,446 women enrolled in college (Fisher, Cullen, & Turner, 2000), researchers provided carefully worded

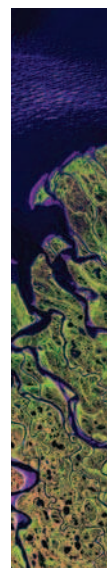


Table 13.6 Behaviors That College Students Report after a Partner Refuses Sexual Contact

Tactic	Men Experiencing the Tactic, N=275 (%)	Women Experiencing the Tactic, N=381 (%)	Men Perpetrating the Tactic, N=275 (%)	Women Perpetrating the Tactic, N=381 (%)
Emotional manipulation and deception				
Repeatedly asking	36.9	65.8	29.2	13.9
Telling lies	21.5	42.4	16.2	3.1
Using authority of older age	8.7	13.4	0.7	0.3
Questioning target's sexuality	7.6	9.2	2.6	1.6
Threatening to break up	4.4	9.5	2.6	0.3
Using authority of position	3.3	5.3	1.1	0.5
Threatening self-harm	5.5	3.7	1.5	0.5
Threatening blackmail	3.6	2.4	1.5	0.8
One or more of the above	43.6	71.4	32.4	15.2
Exploitation of intoxication				
Taking advantage of a drunken target	29.5	42.1	12.9	5.0
Purposefully getting a target drunk	10.9	25.0	5.9	1.1
One or more of the above	30.5	43.8	13.1	5.2
Physical force or threats				
Blocking target's retreat	19.3	21.1	2.9	1.1
Using physical restraint	9.1	22.4	4.0	2.1
Using physical harm	6.2	8.7	1.1	0.5
Threatening physical harm	1.1	6.3	0.7	0.5
Tying up a target	3.6	0.8	1.1	1.1
Threatening with a weapon	1.1	1.8	0.7	0.3
One or more of the above	24.7	30.4	5.1	2.6

Note: Some percentages are based on less than the total N because of missing data.

Source: From Struckman-Johnson (1988).

questions about rape. The authors coded forcible vaginal, oral, or anal insertion of the penis, fingers, tongue, or objects as rape. About 3 percent of women reported that they had experienced an attempted or completed rape in the 7 months before the study. Rape occurs far too often.

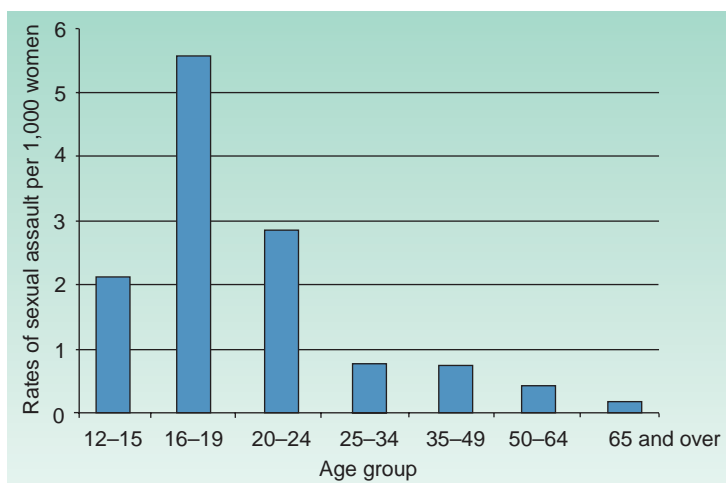


Figure 13.7 Annual rates of sexual assault victimization among women by age group. From National Center for Justice (2003).

The Crime

The specifics of rape cases vary widely. Up to 70 percent of rapes are associated with intoxication (Crowell & Burgess, 1996). In a very small percentage of cases, rapists murder their victims. Although men can be victims of sexual assault, our discussion focuses on women, because more than 90 percent of rapes are committed by men against women (Crowell & Burgess, 1996). Younger women and girls are much more likely to be victims of rape than are older women (see Figure 13.7).

About 70 percent of rapes are committed by someone known to the woman (National Center for Justice, 2003). Many believe rape should not be classified as a sexual crime, lest this terminology mask the violent nature of the act and create an atmosphere in which the sexual motives of the victim are questioned. In considering links between violence and rape, it is important to consider rape during wartime. The Crusaders raped their way across Europe on their holy pilgrimages in the eleventh through the thirteenth centuries; the



Germans raped as they rampaged through Belgium in World War I; U.S. forces raped women and girls as they searched and destroyed during the Vietnam War; Iraqi soldiers raped and brutalized women as they occupied Kuwait; U.S. soldiers humiliated Iraqi prisoners through various torture tactics, including rape. In 2008, the United Nations Security Council classified rape as a war crime. Hopefully, this ruling will make it less likely that rape will be tacitly condoned during war.

The Rapist: Understanding the Etiology of Rape

Is the rapist primarily someone who seeks the thrill of dominating and humiliating a woman through intimidation and often brutal assault? Is he an ordinarily unassertive man with a fragile ego who, feeling inadequate after disappointment and rejection in work or love, takes out his frustrations on an unwilling stranger? What types of characteristics distinguish rapists?

There is no DSM diagnosis to capture a tendency to rape, but there are several traits that appear elevated among rapists. Many rapists have unusually high hostility toward women (Malamuth, 1998). Other studies have found that rapists tend to respond with more sexual arousal than non-sexual offenders to images of coercive sexual activity (Lalumiere & Quinsey, 1994). Sexually aggressive men tend to show antisocial and impulsive personality traits (Crowell & Burgess, 1996).

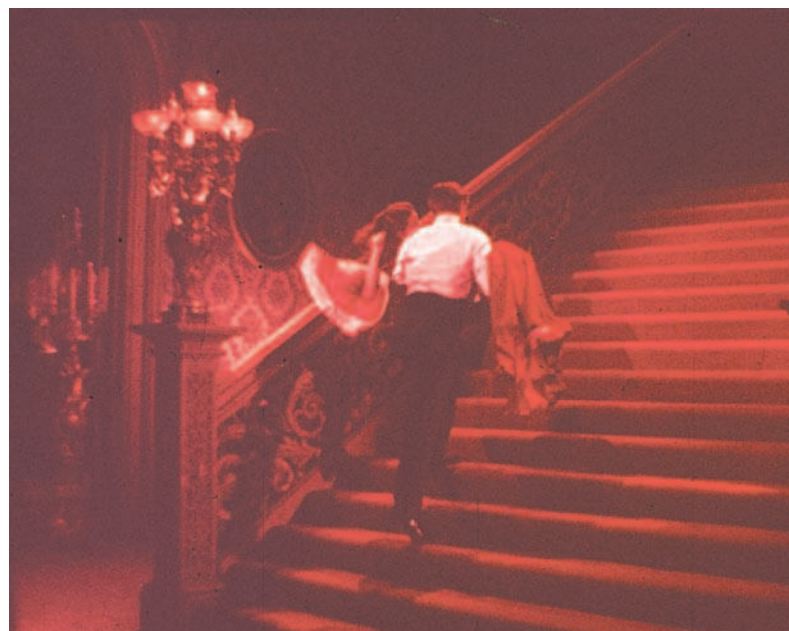
Beyond violent tendencies, rapists may have specific sexual difficulties. In one major community survey, men who had assaulted women sexually were 3.5 times more likely to report erectile dysfunction than those who had not (Laumann et al., 1999). Rapists also appear to have a high sex drive; across a range of samples, sex drive (as measured by frequency of sexual outlets) was correlated with sexual coercion (Kafka, 1997). Some rapists seem to have problems distinguishing friendliness from seductiveness and in accurately reading cues from a woman indicating that she wants intimacies to cease (Malamuth & Brown, 1994).

Although there has been a long history of belief that rapists have poor social skills, a meta-analysis of studies on this topic suggests that any social skills deficits are minor and that they tend to be documented only among convicted rapists, not among those who escape legal charges (Dreznick, 2003). A more specific interpersonal skill, though, may be deficient.

From a sociological perspective, the more a society accepts interpersonal violence as a way to handle conflict and solve problems, the higher the frequency of rape (Sanday, 1981). It seems worth noting that in a controlled experiment, male college students who stated that they regarded rape as unacceptable were aroused by video portrayals of rape if the woman was depicted as having an orgasm during the assault (Malamuth & Check, 1983). Since the time this study was conducted, eight experiments have been conducted in which men are asked to watch videos that contain either sexual activities with violence or sexual activities without violence. A meta-analysis of these studies suggested that after watching videos that contained violence, men were significantly more likely to report that violence toward women was acceptable (Allen, D' Alessio, & Brezgel, 1995). This research suggests that rape may be encouraged by pornography that depicts women enjoying violent sexual relations.

Psychological Treatment for Rapists

Treatment programs for incarcerated rapists are typically multidimensional. These programs often include cognitive techniques aimed at rapists' distorted beliefs and inappropriate attitudes toward women (such as the belief that women want to be raped—see Table 13.5), along with attempts to increase empathy with their victims, to promote anger management, to improve self-esteem, and to reduce substance abuse. These methods are often implemented in confrontational group therapy sessions that attempt to goad the rapist into taking



This famous scene from *Gone with the Wind* illustrates one of the myths about rape—that despite initial resistance, women like to be “taken.” (Everett Collection, Inc.)



Rape victims of the war in Bosnia. Rape often occurs during war, but only recently has sexual assault been considered a war crime. (Andrew Kaiser-G.A.F.F./Sipa Press.)

responsibility for his aggressive behavior. As with the paraphilias, this therapy is sometimes supplemented with the use of biological treatments, like Depo-Provera, which reduce sex drive by lowering levels of male sex hormones.

Treatment studies are limited in that they often measure legal charges rather than the rate of deviant sexual behavior, thus underestimating relapse rates. Another issue is that studies have not typically included adequate control groups. Despite these problems, meta-analyses have led to the conclusion that cognitive therapy and biological interventions may lower recidivism somewhat (Hanson & Bussiere, 1998). One study is notable for the inclusion of a control group in comparison to cognitive behavioral treatment (Marques et al., 1994). That study found that among 59 rapists, 9 percent of men in the treatment group committed an offense during the 5-year follow-up period, compared to 28 percent in the no-treatment group.

Reforming the Legal System

Estimates are that less than half of rapes are reported (National Center for Victims of Violent Crime, 2004). Interviews with half a million women indicated three reasons for reluctance to report rape:

1. Considering the rape a private matter
2. Fearing reprisals from the rapist or his family or friends
3. Believing that police would be ineffective or insensitive (Wright, 1991).

Several legal reforms have been enacted to address these types of concerns. For example, all states now allow for prosecution of rapes that occur within marriages; the laws in most states consider the likely absence of witnesses for such a private act; the definition of rape typically includes forced oral and anal entry as well as vaginal penetration; and perhaps most importantly, information about the victim's previous sexual behavior and history is no longer admissible in court. Despite these changes, trials remain very stressful. Only a very small percentage of rapists are ultimately convicted of their crimes. Any familiarity of the victim with her assailant makes conviction of the man more difficult to achieve. Even though many rapists rape hundreds of times, they are only occasionally imprisoned for an offense.

Summary

Sexual Norms

- Sexual behavior and attitudes are heavily influenced by culture, and so any discussion of disorders in sexuality must be sensitive to the idea that norms are likely to change over time and place. Currently, a great deal of research is focused on gender differences in sexuality.

Sexual Dysfunctions

- The DSM categorizes four kinds of sexual dysfunctions: sexual desire disorders, sexual arousal disorders, orgasmic disorders, and sexual pain disorders. Many people experience brief sexual symptoms, but these are not diagnosable unless they are recurrent, cause either distress or impairment, and are not explained by medical conditions.

- Research on the etiology of sexual dysfunctions is difficult to conduct, as surveys may be inaccurate and laboratory measures may be difficult to gather. Researchers have identified many different variables that can contribute to sexual dysfunctions, including biological variables, previous sexual experiences, relationship issues, psychopathology, negative affect and low arousal, and negative cognitions.

- Many effective interventions for sexual dysfunctions are available, most of them cognitive behavioral. Sex therapy, aimed at reversing old habits and teaching new skills, was propelled into public consciousness by the Masters and Johnson work. Their method hinges on gradual, nonthreatening exposure to increasingly intimate sexual encounters and the sanctioning of sexuality by credible therapists. Sex therapists also aim to educate patients in sexual anatomy and physiology; reduce anxiety; teach communication skills;

and improve attitudes and thoughts about sexuality. Couples therapy is sometimes appropriate as well. Biological treatments such as Viagra may be used for the treatment of erectile dysfunction.

Gender Identity Disorder

- Gender identity disorder (GID) involves the deep and persistent conviction of the person that his or her anatomic sexual makeup and psychological sense of self as male or female are discrepant. Thus, a man with GID is physically male but considers himself a woman.

- Neurobiological models of GID emphasize genes and prenatal hormone exposure. Most research on neurobiology, though, has focused on sex-typed behavior and attitudes, rather than full-blown diagnoses, and even then, neurobiological variables account for only a certain amount of the variance. Another theory proposes that parents may have reinforced cross-gender behavior. This theory has been criticized, though, as peers are so harsh toward children who show cross-gender behaviors.

- The most common treatment for GID is sex-reassignment surgery to bring bodily features into line with gender identity. There are case reports that behavioral treatment can help a person minimize cross-gender behavior, but most persons with GID do not see this as a goal.

Paraphilias

- In the paraphilias, unusual imagery and acts are persistent and necessary for sexual gratification. The principal paraphilias are fetishism, transvestic fetishism, pedophilia, voyeurism, exhibitionism, frotteurism, sexual sadism, and sexual masochism.

- Efforts have also been made to detect hormonal anomalies in people with paraphilias, but the findings are inconclusive.

- According to the psychodynamic view, the person with a paraphilia is fearful of conventional heterosexual relationships; there is no empirical support for this idea. One behavioral view is that a fetishistic attraction to objects arises from accidental classical conditioning of sexual arousal, but this view has not received much empirical support. Another behavioral hypothesis posits deficiencies in social skills that make it difficult for the person to inter-

act normally with other adults, but again, there is limited support for this idea. Exposure to childhood sexual abuse may be a risk factor. Alcohol use may increase the odds of acting on sexual urges. Cognitive distortions appear to be involved.

- The most promising treatments for the paraphilias are cognitive behavioral. One conditioning procedure is to pair the inappropriate sexual object with painful or aversive events. Cognitive methods focus on the cognitive distortions of the person with a paraphilia. Social skills and empathy training are also common. Studies suggest that psychological treatments do reduce rates of legal offenses. SSRIs and drugs that reduce testosterone levels have both been found to reduce sex drive and deviant sexual behaviors, but because of the side effects, there are ethical issues involved in the long-term use of hormonal drugs.

Rape

- Rape, although it is not separately diagnosed in DSM-IV-TR, results in considerable psychological trauma for the victim and is far too prevalent. Some estimates suggest that 20 to 25 percent of women will be raped during their lifetime. The nature of rapes varies a great deal; some people rape strangers, but most rapes are committed by someone known to the woman. The inclusion of rape in a discussion of human sexuality is a matter of some controversy, as many theorists regard rape as an act of aggressive violence rather than of sex.

- Although there is no single profile that fits all rapists, variables that appear to distinguish rapists include hostility toward women, antisocial and impulsive personality traits, and high rates of sexual dysfunction. Social skills do not seem to be poor, except in convicted rapists. Many have emphasized that rape is likely to be more prevalent in cultural contexts that condone interpersonal violence.

- Psychological treatment programs focus on increasing empathy for victims, anger management, self-esteem, and substance abuse. Biological treatments, like those used for paraphilias, are used to decrease sex drive by lowering male hormone levels. Treatment has been shown to reduce the rate of recidivism. A major concern is that most rapes do not get reported to police, and so few rapists are convicted.

Answers to Check Your Knowledge Questions

13.1 1. d; 2. b; 3. a

13.2 1. F (explanation: unless the problem is recurrent and leads to distress or impairment, it cannot be diagnosed); 2. F; 3. T; 4. T; 5. F

13.3 1. frotteurism; 2. not a diagnosable disorder; 3. transvestic fetishism; 4. sexual sadism; 5. gender identity disorder; 6. exhibitionism

13.4 1. c; 2. b

Key Terms

childhood sexual abuse (CSA)
desire phase
dyspareunia
excitement phase
exhibitionism
female orgasmic disorder
female sexual arousal disorder
fetishism
forced rape

frotteurism
gender identity
gender identity disorder
hypoactive sexual desire disorder
incest
male erectile disorder
male orgasmic disorder
orgasm phase

paraphilias
pedophilia
penile plethysmograph
premature ejaculation
resolution phase
sensate focus
sex-reassignment surgery
sexual aversion disorder
sexual dysfunctions

sexual masochism
sexual orientation
sexual response cycle
sexual sadism
spectator role
statutory rape
transvestic fetishism
vaginismus
voyeurism

14

Disorders of Childhood

LEARNING GOALS

1. Be able to describe the issues in the classification of psychopathology in children.
2. Be able to discuss the description, etiology, and treatments for externalizing problems, including ADHD and conduct disorder, and for internalizing problems, including depression and anxiety disorders.
3. Be able to distinguish between the different learning disabilities as well as our current understanding of the causes and treatments for dyslexia.
4. Be able to describe the different systems for classifying mental retardation and the current research on causes and treatments.
5. Be able to describe the symptoms, causes, and treatments for autism and Asperger's disorder.

Clinical Case: Eric

“Eric. Eric? Eric!!” His teacher’s voice and the laughter of his classmates roused the boy from his reverie. Glancing at the book of the girl sitting next to him, he noticed that the class was pages ahead of him. He was supposed to be answering a question about the Declaration of Independence, but he had been lost in thought, wondering about what seats he and his father would have for the baseball game they’d be attending that evening. A tall, lanky 12-year-old, Eric had just begun seventh grade. His history teacher had already warned him about being late to class and not paying attention, but Eric just couldn’t seem to get from one class to the next without stopping for drinks of water or to investigate an altercation between classmates. In class, he was rarely prepared to answer when the teacher called on him, and he usually forgot to write down the homework assignment. He already had a reputation among his peers as an “airhead.”

Eric’s relief at the sound of the bell was quickly replaced by anxiety as he reached the playground for physical education. Despite his speed and physical strength, Eric was always picked last for baseball teams. His team was up to bat first, and Eric sat down to wait his turn. Absorbed in studying a pile of pebbles at his feet, he failed to notice his team’s third out and missed the change of innings. The other team had already come in from the outfield before Eric noticed that his team was out in the field—too late to avoid the irate yells of his P.E. teacher to take his place at third base. Resolved to watch for his chance to field the ball, Eric nonetheless found himself without his glove on when a sharply hit ball rocketed his way; he had taken it off to toss it in the air in the middle of the pitch.



At home, Eric's father told him he had to finish his homework before they could go to the Dodgers game. He had only one page of math problems and was determined to finish them quickly. Thirty minutes later, his father emerged from the shower to find Eric building an elaborate Lego structure on the floor of his room; the math homework was half done. In exasperation, Eric's father left for the game without him.

At bedtime, frustrated and discouraged, Eric was unable to sleep. He often lay awake for what seemed like hours, reviewing the disappointments of the day and berating himself for his failures. On this night, he ruminated about his lack of friends, the frustration of his teachers, and his parents' exhortations to pay attention and "get it together." Feeling hopeless about doing better, despite his daily resolve, Eric often found his thoughts turning to suicide. Tonight he reviewed his fantasy of wandering out into the street in front of a passing car. Although Eric had never acted on his suicidal thoughts, he frequently replayed in his mind his parents' sorrow and remorse, his classmates' irritation with him, and the concern of his teachers.

THE DISORDERS FOUND IN the DSM-IV-TR section entitled "Disorders Usually First Diagnosed in Infancy, Childhood, or Adolescence" cover a wide range of difficulties, from the attentional problems characteristic of attention-deficit/hyperactivity disorder, as in the case of Eric, to the sometimes serious intellectual deficits found in mental retardation, the sometimes callous disregard for the rights of others found in conduct disorder, the disturbances in mood found in anxiety and depression, the learning problems characteristic of learning disorders, and the language impairment and social and emotional difficulties of autistic disorder. Children typically have access to fewer social, financial, and psychological resources than do adults in dealing with such problems. Thus, whether children receive professional attention at all usually depends on the adults in their lives—parents, teachers, and school counselors. Although many childhood disorders can be treated in an outpatient setting with medication or psychotherapy, some disorders require stays in the hospital. As with adults, unfortunately, the availability of inpatient settings for children has also declined in recent years. For example, between 1990 and 2000, the average length of stay in a U.S. hospital for children declined from just over 12 days to 4.5 days (Case, et al., 2007).

Most psychological theories of childhood disorders, whether psychodynamic, behavioral, cognitive, or neurobiological, consider childhood experience and development critically important to adult mental health. Most theories also regard children as better able to change than adults and thus as particularly suitable for treatment. The number of children diagnosed with and treated for different psychological disorders has dramatically increased in recent years, but not without controversy (see Focus on Discovery 14.3). Also controversial is the tremendous increase in the number of medication prescriptions given to children. For example, antipsychotic medications for children increased fivefold between 1993 and 2002, with over one million such prescriptions given to children in 2002 (Olfson, Blanco, et al., 2006).

In this chapter we discuss several of the disorders that are most likely to arise in childhood and adolescence. We first consider disorders involving attention and socially unacceptable behavior, followed by depression and anxiety disorders. Finally, we discuss disorders in which the acquisition of cognitive, language, motor, or social skills is disturbed. These include learning disabilities as well as the most severe of developmental disorders, mental retardation and autistic disorder, which are usually chronic and often persist into adulthood.

Classification and Diagnosis of Childhood Disorders

Table 14.1 Chapters Where Disorders Are Discussed That Occur in Both Children and Adults

Substance-related disorders: Chapter 10
Schizophrenia: Chapter 11
Aftermath of child sexual abuse: Chapter 13
Somatoform disorders: Chapter 6
Dissociative disorders: Chapter 6
Eating disorders: Chapter 9
Parasomnias: Abnormal behavioral or physiological events occurring in association with sleep—for example, nightmare disorder, sleep terror disorder, and sleepwalking disorder (not covered in this text).

Before making a diagnosis of a particular disorder in children, clinicians must first consider what is typical for a particular age. The diagnosis of children who lie on the floor kicking and screaming when they don't get their way would be assessed differently at age two than at seven. The field of **developmental psychopathology** studies disorders of childhood within the context of life-span development, enabling us to identify behaviors that are considered appropriate at one stage but are disturbed at another.

Most childhood disorders, such as school phobia, are unique to children. Others, such as attention-deficit/hyperactivity disorder, have been conceptualized primarily as childhood disorders but may continue into adulthood. Still others, such as depression, may begin in childhood but are common in adulthood as well. The DSM descriptions of the disorders we cover in this chapter are provided in the DSM tables in the margins. Table 14.1 lists the chapters where we discuss other disorders that may occur in childhood but are primarily considered disorders of adulthood and so are not discussed here. Although eating disorders typically begin in adolescence, they are presented separately in Chapter 9.

The more prevalent childhood disorders are often categorized in two broad domains, externalizing disorders and internalizing disorders. **Externalizing disorders** are characterized by more outward-directed behaviors, such as aggressiveness, noncompliance, overactivity, and impulsiveness; the category includes attention-deficit/hyperactivity disorder, conduct disorder, and oppositional defiant disorder. **Internalizing disorders** are characterized by more inward-focused experiences and behaviors such as depression, social withdrawal, and anxiety; the category includes childhood anxiety and mood disorders. Children and adolescents may exhibit symptoms from both domains, as described in the case of Eric.

The behaviors that comprise externalizing and internalizing disorders are prevalent across many countries, including Switzerland (Steinhausen & Metzke, 1998), Australia (Achenbach, Hensley, et al., 1990), Puerto Rico (Achenbach, Hensley, et al., 1990), Kenya (Weisz et al., 1993), and Greece (MacDonnald et al., 1995). Externalizing behaviors are consistently found more often among boys and internalizing behaviors more often among girls, at least in adolescence, across cultures (Weisz et al., 1987). Focus on Discovery 14.1 discusses the possible role of culture in the prevalence of these problem behaviors in children.

Attention-Deficit/Hyperactivity Disorder

The term *hyperactive* is familiar to most people, especially parents and teachers. The child who is constantly in motion—tapping fingers, jiggling legs, poking others for no apparent reason, talking out of turn, and fidgeting—is often called hyperactive. Often, these children also have difficulty concentrating on the task at hand for an appropriate period of time. When such problems are severe and persistent enough, these children may meet the criteria for diagnosis of **attention-deficit/hyperactivity disorder (ADHD)**. Recognizing the impact of ADHD on children and families, the U.S. Congress created a National ADHD Awareness Day, with the first such day being on September 7, 2004.

Clinical Descriptions, Prevalence, and Prognosis of ADHD

What distinguishes the typical range of hyperactive behaviors from a diagnosable disorder? When these behaviors are extreme for a particular developmental period, persistent across different situations, and linked to significant impairments in functioning, the diagnosis of ADHD may be appropriate (NIH Consensus Statement, 1998). The ADHD diagnosis does not properly apply to children who are rambunctious, active, or slightly distractible, for in the early school years children are often so (Whalen, 1983). Using the label simply because a child is more lively and more difficult to control than a parent or teacher would like is a serious mistake. The diagnosis of ADHD should be reserved for truly severe and persistent cases.

FOCUS ON DISCOVERY 14.1

The Role of Culture in Internalizing and Externalizing Behavior Problems

The values and mores of a culture may play a role in whether a certain pattern of child behavior develops or is considered a problem. One study found that in Thailand, children with internalizing behavior problems, such as fearfulness, were the ones most likely to be seen in clinics, whereas in the United States, those with externalizing behavior problems, such as aggressiveness and hyperactivity, were more commonly seen (Weisz et al., 1987). The researchers attributed these differences to the fact that Buddhism, which disapproves of and discourages aggression, is widely practiced in Thailand. They also cautioned that their results were based on assessment measures that were normed on U.S. samples and that additional work needed to be done to ensure that the assessment measures were valid for Thai children (see Chapter 3 for more on the issue of culture and assessment).

Findings from a follow-up study suggest that the behavior problems described in the same terms may not really be exactly the same across Thai and U.S. cultures (Weisz et al., 2003). The researchers compared specific behavior problems (e.g., somatic complaints, aggressive behavior) and broad domains (internalizing, externalizing) using U.S. and Thai assessment measures. The broad domains of internalizing and externalizing behaviors were found to be the same in Thai and U.S. children, but more specific categories within those domains were not. Among boys, somatic complaints were seen consistently across cultures, but shyness was seen less consistently. Among girls, shyness was seen consistently across cultures but verbal aggressive behavior was not.

These studies point to the importance of studying psychopathology across cultures. It is dangerous to assume that the measures we develop

to assess psychopathology in the United States will work equally well across cultures. As the investigators cited above point out, our theories about the causes of psychopathology need to be able to account for cultural variation in such factors as parenting practices, beliefs and values, and the ways in which parents report on their child's behavior problems. This remains an urgent and important challenge for our field.



Thai teenagers serving as novices in a Buddhist temple. Buddhist culture may contribute to the relatively low prevalence of externalizing disorders in Thailand. (Paul Chesley/Stone/Getty Images.)

Children with ADHD seem to have particular difficulty controlling their activity in situations that call for sitting still, such as in the classroom or at mealtimes. When told to be quiet, they appear unable to stop moving or talking. Their activities and movements seem haphazard. They may quickly wear out their shoes and clothing, smash their toys, and exhaust their families and teachers.

Many children with ADHD have inordinate difficulty getting along with peers and establishing friendships (Blachman & Hinshaw, 2002; Hinshaw & Melnick, 1995), perhaps because their behavior is often aggressive and intrusive. Although these children are usually friendly and talkative, they often miss subtle social cues, such as noticing when other children are tiring of their constant jiggling. They also frequently misinterpret the wishes and intentions of their peers and make inadvertent social mistakes, such as reacting aggressively because they assume that a neutral action by a peer was meant to be aggressive. (Such cognitive misattributions are also found in some children with conduct disorder.)

A study involving observation of children playing tabletop football demonstrated that children with ADHD, particularly those who are also aggressive, have different social goals than other children. Children with ADHD who were also aggressive approached the game with sensation-seeking goals, such as making trouble, achieving domination, and showing off, whereas the other children were more likely to have the goal of playing fair (Melnick & Hinshaw, 1996). In another study, children were asked to instant-message (IM) other children in what appeared to be an online chat room (Mikami et al., 2007). Actually, children were interacting with four simulated peers on the computer, and thus all children got the same IMs from the simulated peers. The researchers coded the messages and the participants' reported experiences of the chat elicited in subsequent interviews. Children with ADHD were more likely to IM

● **DSM-IV-TR Criteria for Attention-Deficit/Hyperactivity Disorder**

- **Either A or B:**
 - A.** Six or more manifestations of inattention present for at least 6 months to a maladaptive degree and greater than what would be expected, given a person's developmental level, for example, careless mistakes, not listening well, not following instructions, easily distracted, forgetful in daily activities.
 - B.** Six or more manifestations of hyperactivity-impulsivity present for at least 6 months to a maladaptive degree and greater than what would be expected, given a person's developmental level, e.g., squirming in seat, running about inappropriately (in adults, restlessness), acting as if "driven by a motor," incessant talking.
- Some of the above present before age 7
- Present in two or more settings, e.g., at home, school or work
- Significant impairment in social, academic, or occupational functioning
- Not part of other disorders such as schizophrenia, an anxiety disorder, or a mood disorder

statements that were hostile and off the topic than were children without ADHD, and children's chat room experiences were related to other measures of social skills difficulties, suggesting that this common way of "interacting" with peers, even though not face-to-face, is also impaired among children with ADHD.

Children with ADHD can know what the socially correct action is in hypothetical situations but be unable to translate this knowledge into appropriate behavior in real-life social interactions (Whalen & Henker, 1985, 1991). Children with ADHD are often singled out very quickly and rejected or neglected by their peers. For example, in a study of previously unacquainted boys at a summer camp, boys with ADHD who exhibited a number of externalizing behaviors, such as overt aggression and noncompliance, were regarded quite negatively by their peers during the first day of camp, and these impressions remained unchanged throughout the 6-week camp period (Erhardt & Hinshaw, 1994; Hinshaw et al., 1997).

Because the symptoms of ADHD are varied, DSM-IV-TR includes three subcategories:

1. Predominantly inattentive type: Children whose problems are primarily those of poor attention.
2. Predominantly hyperactive-impulsive type: Children whose difficulties result primarily from hyperactive/impulsive behavior.
3. Combined type: Children who have both sets of problems.

Eric, the boy described at the beginning of the chapter, most likely would meet criteria for the predominantly inattentive type. The combined type comprises the majority of children with ADHD. These children are more likely than those with other subtypes to develop conduct problems and oppositional behavior, to be placed in special classes for children with behavior problems, and to have difficulties interacting with their peers (Faraone et al., 1998). Children with attentional problems but with otherwise developmentally appropriate activity levels appear to have more difficulties with focused attention or speed of information processing (Barkley, Grodzinsky, & DuPaul, 1992), perhaps associated with problems involving the neurotransmitter dopamine and certain areas of the brain, including the prefrontal cortex (Krause et al., 2003), topics to which we turn to below.

A difficult differential diagnosis is between ADHD and conduct disorder, which involves gross violation of social norms. An overlap of 30 to 90 percent between the two categories (Hinshaw, 1987) has caused some researchers to assert that these two types of externalizing disorders are actually one and the same. There are some differences, however. ADHD is associated more with off-task behavior in school, cognitive and achievement deficits, and a better long-term prognosis. Children with ADHD act out less in school and elsewhere and are less likely to be aggressive and to have antisocial parents. Their home life is also usually marked by less family hostility, and they are at less risk for delinquency and substance abuse in adolescence compared to children with conduct disorder (Faraone et al., 1997; Hinshaw, 1987; Jensen, Martin, & Cantwell, 1997).

When these two disorders occur in the same child, the worst features of each are manifest. Such children exhibit the most serious antisocial behavior, are most likely to be rejected by their peers, have the worst academic achievement, and have the poorest prognosis (Hinshaw & Lee, 2003). Girls with both ADHD and conduct disorder exhibit more antisocial behavior, other psychopathology, and risky sexual behavior than girls with only ADHD (Monuteaux et al., 2007).

Internalizing disorders, such as anxiety and depression, also frequently co-occur with ADHD. Recent estimates suggest that as many as 30 percent of children with ADHD may have comorbid internalizing disorders (e.g., Jensen et al., 1997; MTA Cooperative Group, 1999b). In addition, about 15 to 30 percent of children with ADHD have a learning disability in math, reading, or spelling (Barkley, DuPaul, & McMurray, 1990; Casey, Rourke, & Del Dotto, 1996), and many children with ADHD are placed in special educational programs because of their difficulty in adjusting to a typical classroom environment (Barkley et al., 1990).

Although having both ADHD and conduct disorder is associated with substance use and abuse, a prospective study found that the hyperactive symptoms of ADHD predicted subsequent substance (nicotine, alcohol, illicit drugs) use at age 14 and abuse or dependence at age 18 even after controlling for symptoms of conduct disorder, and this was equally true for boys and girls (Elkins, McGue, & Iacono, 2007).



The consensus on prevalence estimates of ADHD is that about 3 to 7 percent of school-age children worldwide currently have ADHD (APA, 2000). When similar criteria for ADHD are used across countries as diverse as the United States, Kenya, China, and Thailand, the prevalence rates are similar (Anderson, 1996); however, using the same criteria may not adequately capture cultural differences in ADHD (see Focus on Discovery 14.1).

Much evidence indicates that ADHD is more common in boys than in girls, but exact figures depend on whether the sample is taken from clinic referrals or from the general population. Boys are more likely to be referred to clinics because of a higher likelihood of aggressive and antisocial behavior. Until recently, very few carefully controlled studies of girls with ADHD were conducted. Because so little research has been done with female samples, it is important to document the characteristics, correlates, comorbid disorders, and other social and cognitive deficits in a carefully selected sample of girls with ADHD. Two groups of researchers have conducted such studies (Biederman & Faraone, 2004; Hinshaw, 2002). One research group examined a large and ethnically diverse sample of girls with and without ADHD and reported a number of key findings at the initial assessment and then again five years later (Hinshaw et al., 2002, 2006):

- Similar to findings with male samples, girls with the combined type had more disruptive behavior symptoms than girls with the inattentive type.
- Girls with the combined type were more likely to have a comorbid diagnosis of conduct disorder or oppositional defiant disorder than girls without ADHD, and this difference remained five years after initial diagnosis.
- Girls with the combined type were viewed more negatively by peers than girls with the inattentive type and girls without ADHD; girls with the inattentive type were also viewed more negatively than girls without ADHD.
- Girls with ADHD were likely to be more anxious and depressed than were girls without ADHD, and this remained true five years after initial diagnosis.
- Girls with ADHD exhibited a number of neuropsychological deficits, particularly in executive functioning (e.g., planning, solving problems), compared with girls without ADHD, replicating other findings (Castellanos et al., 2000).
- By adolescence, girls with ADHD were more likely to have symptoms of an eating disorder and substance abuse than girls without ADHD.

At one time it was thought that ADHD simply went away by adolescence. However, this belief has been challenged by numerous longitudinal studies (Barkley et al., 2002; Biederman et al., 1996; Hinshaw et al., 2006; Lee et al., 2008; Weiss & Hechtman, 1993). Although some children show reduced severity of symptoms in adolescence, 65 to 80 percent of children with ADHD still meet criteria for the disorder in adolescence (Biederman et al., 2006; Hart et al., 1995; Hinshaw et al., 2006). Table 14.2 provides a catalogue of behaviors that are found more often among adolescents with ADHD than among adolescents without it. Many children with ADHD do not appear to take a “hit” with respect to academic achievement, however—many studies indicate that achievement is within the average range for both adolescent boys (Lee et al., 2008) and girls (Hinshaw et al., 2006).

In adulthood, most people with ADHD are employed and financially independent, but some studies have found adults with ADHD are generally at a lower socioeconomic level and change jobs more frequently than is typical (Mannuzza et al., 1991; Weiss & Hechtman, 1993). The rates of ADHD in adulthood vary depending on the method of assessment (Barkley et al., 2002). Specifically, when ADHD in adulthood is assessed by self-reports of adults who had ADHD as children, only about 10 percent meet criteria for ADHD. In contrast, when ADHD is assessed by the parents of these same adults who had had ADHD as children, more than half meet criteria for ADHD. Whose assessments are correct? This question is impossible to answer. It may be the case that the adults with ADHD are less aware of their symptoms, or it could be that the parents’ reports are influenced by their memories of their children. Findings from a review of the studies that have assessed ADHD longitudinally into adulthood indicate that up to 15 percent of people continue to meet full DSM-IV-TR criteria as 25-year-old adults. Even more people—close to 60 percent—continued to meet the



Stephen Hinshaw, a renowned developmental psychopathology researcher and expert on mental illness stigma, is conducting one of the largest ongoing studies of girls with ADHD. (Courtesy Stephen Hinshaw, Ph.D.)



Aggression is not uncommon among boys with ADHD, and it contributes to their being rejected by peers. (Alamy Images.)



Table 14.2 Behaviors in Adolescents with and without ADHD		
Behavior	Percentage of Adolescents Who Show this Behavior	
	With ADHD	Without ADHD
Blurts out answers	65.0	10.6
Distracted easily	82.1	15.2
Doesn't complete tasks before moving to another	77.2	16.7
Doesn't sustain attention	79.7	16.7
Doesn't follow instructions	83.7	12.1
Doesn't listen to others well	80.5	15.2
Engages in physically dangerous activities	37.4	3.0
Fidgets	73.2	10.6
Finds it hard to play quietly	39.8	7.6
Gets out of seat often	60.2	3.0
Interrupts others	65.9	10.6
Loses things needed for tasks	62.6	12.1
Talks a lot	43.9	6.1

Source: Adapted from Barkley et al. (1990).

DSM-IV-TR criteria for ADHD in partial remission as adults (Faraone, Biederman, & Mick, 2005). Thus, ADHD symptoms appear to decline with age, but they do not entirely go away for many people with ADHD.



Michael Phelps who won 8 gold medals in swimming at the 2008 Olympics also struggled with ADHD as a child. (Heinz Klutemeier/Sports Illustrated/Getty Images, Inc.)

Etiology of ADHD

Genetic Factors Substantial evidence indicates that a genetic predisposition toward ADHD plays a role (Thapar et al., 2007). Adoption studies (e.g., Sprich et al., 2000) and numerous large-scale twin studies (e.g., Levy et al., 1997; Sherman, Iacono, & McGue, 1997) indicate a genetic component to ADHD, with heritability estimates as high as 70 to 80 percent (Tannock, 1998). Molecular genetics studies that seek to identify genes linked to ADHD are underway. Some of the more promising findings involve genes associated with the neurotransmitter dopamine. Specifically, two different dopamine genes have been implicated in ADHD: a dopamine receptor gene called DRD4 (e.g., Faraone et al., 2001) and a dopamine transporter gene called DAT1 (Krause et al., 2003; Waldman et al., 1998). The evidence in support of DRD4's association with ADHD is stronger at this point, as several different studies have consistently found a relationship between this gene and ADHD. Findings for DAT1 are more mixed, with some studies finding a link and others not finding a link with ADHD (Thapar et al., 2007). Even with these promising findings, most investigators agree that a single gene will not ultimately account for ADHD. Rather, several genes interacting with environmental factors will provide the most complete picture of the cause of ADHD. For example, recent studies have found that the DRD4 or DAT1 genes are associated with increased risk of ADHD only among those who also had particular environmental factors—namely, prenatal maternal nicotine or alcohol use (Brookes et al., 2006; Neuman et al., 2007). Additional gene–environment interaction studies are underway, and if these findings are replicated, we will have a clearer picture of how genes and environments interact in ADHD.

Neurobiological Factors Studies suggest that brain structure and function differ in children with and without ADHD, particularly in areas of the brain linked to the neurotransmitter dopamine. For example, studies of brain structure have found that dopaminergic areas of the brain, such as the caudate nucleus, globus pallidus, and frontal lobes, are smaller in children with ADHD than children without ADHD (Castellanos et al., 2002; Swanson et al., 2007). Studies of brain function have found that children with ADHD exhibit less activation in frontal areas of



the brain while performing different cognitive tasks (Casey & Durston, 2006; Nigg & Casey, 2005; Rubia et al., 1999). Moreover, children with ADHD perform poorly on neuropsychological tests that rely on the frontal lobes (such as inhibiting behavioral responses), providing further support for the theory that a basic deficit in this part of the brain may be related to the disorder (Barkley, 1997; Nigg, 2001; Nigg & Casey, 2005; Tannock, 1998).

Perinatal and Prenatal Factors Other neurobiological risk factors for ADHD include a number of perinatal and prenatal complications. Low birth weight, for example, is a quite specific predictor of the development of ADHD (e.g., Bhutta et al., 2002; Breslau et al., 1996; Whitaker et al., 1997). However, the impact of low birth weight on later symptoms of ADHD can be mitigated by greater maternal warmth (Tully et al., 2004). Other complications associated with childbirth, as well as mothers' use of substances such as tobacco (discussed below) and alcohol, are also predictive of ADHD symptoms (Tannock, 1998).

Environmental Toxins Early theories of ADHD that were quite popular in the 1970s involved the role of environmental toxins in the development of hyperactivity. One theory of hyperactivity enjoyed much attention in the popular press for many years (Feingold, 1973). Feingold proposed that additives and artificial colors in foods upset the central nervous systems of children who were hyperactive, and he prescribed a diet free of them. However, well-controlled studies of the so-called Feingold diet have found that very few children with ADHD respond positively to it (Goyette & Conners, 1977). Even though these early findings did not support Feingold's theory, researchers continue to examine how different elements of the diet, particularly additives, may influence hyperactive behavior. These later studies use more sophisticated research designs, such as placebo-controlled, double-blind studies, but the results remain modest. For example, a meta-analysis of 15 studies found a small effect size for artificial food coloring on hyperactive behavior among children with ADHD (Schnab & Trinh, 2004). A recent study found a similarly small effect of food additives and artificial food coloring on hyperactive behavior among children in the community (McCann et al. 2007). Thus, there is limited evidence that food additives impact hyperactive behavior. The popular view that refined sugar can cause ADHD has not been supported by careful research (Wolraich, Wilson, & White, 1995).

Although some evidence suggests that lead poisoning may be associated to a small degree with symptoms of hyperactivity and attentional problems (Braun et al., 2006; Thompson et al., 1989), most children with lead poisoning do not develop ADHD, and most children with ADHD do not show elevated levels of lead in the blood. However, given the unfortunate frequency with which children are exposed to low levels of lead, investigators continue to examine whether lead exposure might play a role, however small, in the etiology of ADHD (Nigg, 2006).

Nicotine—specifically, maternal smoking—is an environmental toxin that may play a role in the development of ADHD. One study found that 22 percent of mothers of children with ADHD reported smoking a pack of cigarettes per day during pregnancy, compared with 8 percent of mothers whose children did not develop ADHD (Milberger et al., 1996). This effect remained even after controlling for maternal depression and alcohol use (Chabrol et al., 1997). A twin study found that maternal smoking predicted ADHD symptoms even after controlling for genetic influences and other environmental risk factors (Thapar et al., 2003). Finally, a review of 24 studies examining the association between maternal smoking and ADHD found that exposure to tobacco in utero was associated with ADHD symptoms (Linnet et al., 2003). Several animal studies conducted since the 1980s indicate that chronic exposure to nicotine increases dopamine release in the brain and causes hyperactivity (e.g., Fung & Lau, 1989; Vaglenova et al., 2004). Furthermore, withdrawal from nicotine is associated with decreases in dopamine release in the brain and causes irritability. On the basis of these data, researchers hypothesize that maternal smoking can affect the dopaminergic system of the developing fetus, resulting in behavioral disinhibition and ADHD.

Psychological Factors in ADHD Although research results support neurological and genetic factors more than psychological factors in the etiology of ADHD, the parent-child relationship interacts with these neurobiological factors in a complex way to contribute to ADHD



Children born to mothers who smoked cigarettes during pregnancy have an increased risk for ADHD. (Richard Phelps/Photo Researchers.)

symptom expression (Hinshaw et al., 1997). Just as parents of children with ADHD may give them more commands and have negative interactions with them (Anderson, Hinshaw, & Simmel, 1994; Heller et al., 1996), so these children have been found to be less compliant and more negative in interactions with their parents (Barkley, Karlsson, & Pollard, 1985; Tallmadge & Barkley, 1983). Certainly, it must be difficult to parent a child who is impulsive, aggressive, noncompliant, and unable to follow instructions. As we will discuss shortly, stimulant medication has been shown to reduce hyperactivity and increase compliance in some children with ADHD. Significantly, when such medication is used, either alone or in combination with behavioral treatment, the parents' commands, negative behavior, and ineffective parenting also decrease (Barkley, 1990; Wells et al., 2000), suggesting that the child's behavior has at least some negative effect on the parents' behavior.

It is also important to consider a parent's own history of ADHD. As noted above, there appears to be a substantial genetic component to ADHD. Thus, it is not surprising that many parents of children with ADHD have ADHD themselves. In one study that examined couples' parenting practices with their ADHD children, fathers who had a diagnosis of ADHD were less effective parents, suggesting that parental psychopathology may make parenting all the more difficult (Arnold, O'Leary, & Edwards, 1997). Family characteristics thus may well contribute to maintaining or exacerbating the symptoms and consequences of ADHD; however, there is little evidence to suggest that families actually cause ADHD (Johnston & Marsh, 2001).

Treatment of ADHD

We now turn to treatments for ADHD. ADHD is typically treated with medication and with behavioral therapies based on operant conditioning.

Stimulant Medications Stimulant medications, such as methylphenidate, or Ritalin, have been prescribed for ADHD since the early 1960s. Other medications approved by the FDA to treat ADHD include Adderall, Concerta, and Strattera. In 2006, an estimated 2.5 million children in the United States were taking stimulant medication (National Survey on Children's Health, 2003), including almost 10 percent of all 10-year-old boys. The prescription of these medications has sometimes continued into adolescence and adulthood in light of the accumulating evidence that the symptoms of ADHD do not usually disappear with the passage of time.

The drugs used to treat ADHD reduce disruptive behavior and improve ability to concentrate. Numerous controlled studies comparing stimulants with placebos in double-blind designs have shown short-term improvements in concentration, goal-directed activity, classroom behavior, and social interactions with parents, teachers, and peers, as well as reductions in aggressiveness and impulsivity in about 75 percent of children with ADHD (Spencer et al., 1996; Swanson et al., 1995).

The best-designed randomized controlled trial of treatments for ADHD was the Multimodal Treatment of Children with ADHD (MTA) study. Conducted at six different sites for 14 months with nearly 600 children with ADHD, the study compared standard community-based care and three other treatments: (1) medication alone, (2) medication plus intensive behavioral treatment, involving both parents and teachers, and (3) intensive behavioral treatment alone. Across the 14-month period, children receiving medication alone had fewer ADHD symptoms than children receiving intensive behavioral treatment alone. The combined treatment was slightly superior to the medication alone and had the advantage of not requiring as high a dosage of Ritalin to reduce ADHD symptoms. In addition, the combined treatment yielded improved functioning in areas such as social skills more than did the medication alone. The medication alone and the combined treatment were superior to community-based care, though the behavioral treatment alone was not (MTA Cooperative Group, 1999a, 1999b).

In secondary analyses undertaken to clarify the key findings from the MTA study, researchers reported that the behavioral treatment alone was superior to community-based care at three of the six sites, but not at the other three (Swanson et al., 2001). In addition, further comparisons of the combined treatment with treatment by medication alone suggested that 20 percent more children who received the combined treatment achieved an excellent treatment response. The combined treatment was also associated with fewer behavioral problems at school, and



Ritalin is a commonly prescribed and effective drug treatment for ADHD. (Allan Tannenbaum/The Image Works.)



additional analyses suggest that this effect may be linked to a decrease in negative and ineffective parenting (Hinshaw et al., 2000). Finally, analyses that examined treatment effects by ethnicity indicated that white, African American, and Latino children benefited equally from treatment, particularly from the combined treatment (L.E. Arnold et al., 2003).

Despite the promising findings on the efficacy of stimulant medications for ADHD, other research indicates that these drugs may not improve academic achievement over the long haul (Weiss & Hechtman, 1993; Whalen & Henker, 1991). Although children in the MTA study who received stimulant medication (either alone or in the combined treatment group) still had a reduction in ADHD symptoms, the effect was substantially smaller than it was during the original study (MTA Cooperative Group, 2004). At the three-year follow-up of the MTA study, there were no longer any significant differences between the original treatment groups in terms of their ADHD symptoms (Jensen et al., 2007). In other words, the relatively superior effects of medication that were observed in the combined treatment and medication alone groups did not persist three years later, at least for some of the children (Swanson, Hinshaw et al., 2007).

Does this mean that stimulant medication is not all that effective for children with ADHD? No. The MTA study demonstrates that carefully prescribed and managed stimulant medication is effective for children with ADHD. However, the follow-up findings suggest that stimulant medication might be more effective for some children more than others.

These findings are important in light of the side effects that stimulant medication can have, such as transient loss of appetite, weight loss, stomach pain, and sleep problems. In May 2006, the Food and Drug Administration recommended but did not mandate that a “black box” warning, the strongest possible safety warning the FDA can issue for medications, about cardiovascular risks (e.g., heart attack) be added to stimulant medications. In February 2007, the FDA mandated that drug makers develop patient medication guides to describe these risks to consumers.

Psychological Treatment Other promising treatments for ADHD involve parent training and changes in classroom management (Chronis, Jones, & Raggi, 2006). These programs have demonstrated at least short-term success in improving both social and academic behavior. In these treatments, children’s behavior is monitored at home and in school, and they are reinforced for behaving appropriately—for example, for remaining in their seats and working on assignments. Point systems and daily report cards (DRCs) are typical components of these programs. Children earn points or stars for behaving in certain ways; the children can then spend their earnings for rewards. The DRC also allows parents to see how their child is doing in school. The focus of these programs is on improving academic work, completing household tasks, or learning specific social skills, rather than on reducing signs of hyperactivity, such as running around and jiggling. Accumulating evidence supports the efficacy of parent-training programs, although it is unclear whether they improve children’s behavior beyond the effects of treatment with medication (Abikoff & Hechtman, 1996; Anastopoulos et al., 1993; MTA Cooperative Group, 1999a, 1999b).

School interventions for children with ADHD include training teachers to understand the unique needs of these children and to apply operant techniques in the classroom (Welsh et al., 1997), providing peer tutoring in academic skills (DuPaul & Henningson, 1993), and having teachers provide daily reports to parents about in-school behavior, which are followed up with rewards at home (Kelley, 1990). Research has demonstrated that certain classroom structures can help children with ADHD. Ideally, teachers vary the presentation format and materials used for tasks, keep assignments brief and provide immediate feedback on whether they have been done correctly, have an enthusiastic and task-focused style, provide breaks for physical exercise, use computer-assisted drill programs, and schedule academic work during the morning hours. Such environmental changes are designed to accommodate the limitations imposed by this disorder rather than to change the disorder itself.



Point systems and star charts, which are common in classrooms, are particularly useful in the treatment of ADHD. (Lew Merrim/Photo Researchers.)

Finally, findings from the just-mentioned MTA study indicate that intensive behavioral therapies can be very helpful to children with ADHD. In that study, some of the children participated in an intensive eight-week summer program that included a number of validated behavioral treatments. At the end of the summer program, children receiving the combined treatment had very few significant improvements over children receiving the intensive behavioral treatment alone (L. E. Arnold et al., 2003; Pelham et al., 2000). This finding suggests that intensive behavioral therapy may be as effective as Ritalin combined with a less intensive behavioral therapy.

Check Your Knowledge 14.1 (Answers are at the end of the chapter.)

True or false?

1. The two broad domains of childhood psychopathology are internalizing disorders and externalizing disorders.
2. Girls with the combined type of ADHD have more severe problems than girls with the predominantly inattentive type, similar to findings with boys.
3. Dopamine has been investigated in ADHD, particularly genes for the DRD4 receptors.
4. The most effective treatment for ADHD is behavioral treatment without medication.

Conduct Disorder

Conduct disorder is another externalizing disorder. The DSM-IV-TR criteria for conduct disorder focus on behaviors that violate the basic rights of others and that violate major societal norms. Nearly all such behavior is also illegal. The symptoms of conduct disorder must be frequent and severe enough to go beyond the mischief and pranks common among children and adolescents. These behaviors include aggression and cruelty toward people or animals, damaging property, lying, and stealing. Often the behavior is marked by callousness, viciousness, and lack of remorse, making conduct disorder during childhood one of the criteria for adult antisocial personality disorder (see p. 368).

A related but less well understood externalizing disorder in the DSM-IV-TR is **oppositional defiant disorder** (ODD). There is some debate as to whether ODD is distinct from conduct disorder, a precursor to it, or an earlier and milder manifestation of it (Hinshaw & Lee, 2003; Lahey, McBurnett, & Loeber, 2000). ODD is diagnosed if a child does not meet the criteria for conduct disorder—most especially, extreme physical aggressiveness—but exhibits such behaviors as losing his or her temper, arguing with adults, repeatedly refusing to comply with requests from adults, deliberately doing things to annoy others, and being angry, spiteful, touchy, or vindictive.

Commonly comorbid with ODD are ADHD, learning disorders, and communication disorders, but ODD is different from ADHD in that the defiant behavior is not thought to arise from attentional deficits or sheer impulsiveness. One manifestation of difference is that children with ODD are more deliberate in their unruly behavior than children with ADHD. Although conduct disorder is three to four times more common among boys than among girls, research suggests that boys are only slightly more likely to have ODD, and some studies find no difference in prevalence rates for ODD between boys and girls (Loeber et al., 2000). Because of ODD's somewhat uncertain status, we will focus here on the more serious diagnosis of conduct disorder.



Conduct disorder is diagnosed among those who are aggressive, steal, lie, and vandalize property. (Ken Lax/Photo Researchers.)



Clinical Description, Prevalence, and Prognosis of Conduct Disorder

Perhaps more than any other childhood disorder, conduct disorder is defined by the impact of the child's behavior on people and surroundings. Schools, parents, peers, and the criminal justice system usually determine which externalizing behaviors constitute unacceptable conduct.

Many children with conduct disorder display other problems, such as substance abuse and internalizing disorders. The Pittsburgh Youth Study, a longitudinal investigation of conduct disorder in boys, found a strong association between substance use and delinquent acts (van Kammen, Loeber, & Stouthamer-Loeber, 1991). For example, among seventh graders who reported having tried marijuana, more than 30 percent had attacked someone with a weapon and 43 percent admitted breaking and entering; fewer than 5 percent of children who reported no substance use had committed these acts. Some research suggests that conduct disorder precedes substance use problems (Nock et al., 2006), but other findings suggest that conduct disorder and substance use occur concomitantly, with the two conditions exacerbating each other (Loeber et al., 2000). Further, some evidence indicates that comorbid conduct disorder and substance use portend a more severe outcome for boys than for girls (Whitmore et al., 1997).

Anxiety and depression are common among children with conduct disorder, with comorbidity estimates varying from 15 to 45 percent (Loeber & Keenan, 1994; Loeber et al., 2000). Evidence suggests that conduct disorder precedes depression and most anxiety disorders, with the exceptions of specific and social phobias, which appear to precede conduct disorder (Nock et al., 2006). Girls with conduct disorder may be at higher risk for developing comorbid disorders, including anxiety, depression, substance abuse, and ADHD, than are boys with conduct disorder (Loeber & Keenan, 1994).

Recent estimates suggest that conduct disorder is fairly common, with a prevalence rate of 9.5 percent (Nock et al., 2006). A review of epidemiological studies suggests the prevalence rates range from 4 to 16 percent for boys and 1.2 to 9 percent for girls (Loeber et al., 2000). As shown in Figure 14.1, both the incidence and the prevalence of serious lawbreaking peak sharply at around age 17 and drop precipitously in young adulthood (Moffitt, 1993). Not all the criminal acts represented in Figure 14.1 are marked by the viciousness and callousness that are often a part of conduct disorder, but the figure illustrates the problem of antisocial behavior in children and adolescents.

Moffitt (1993) has theorized that two different courses of conduct problems should be distinguished. Some people seem to show a life-course-persistent pattern of antisocial behavior, beginning to show conduct problems by age three and continuing to commit serious transgressions into adulthood. Others are adolescence-limited—they have typical childhoods, engage in high levels of antisocial behavior during adolescence, and have typical, nonproblematic adulthoods. Moffitt proposed that the adolescence-limited form of antisocial behavior is the result of a maturity gap between the adolescent's physical maturation and his or her opportunity to assume adult responsibilities and obtain the rewards usually accorded such behavior. The life-course-persistent type is 10 to 15 times more common among boys than girls, suggesting it is almost exclusively a type affecting boys (Moffitt, 2006).

Cumulative evidence supports this distinction (Moffitt, 2007). For example, children with the life-course-persistent form of conduct disorder do indeed show an early onset of antisocial behavior that persists through adolescence, and these children have a number of other problems, such as academic underachievement, neuropsychological deficits, and comorbid ADHD (Moffitt & Caspi, 2001). Other evidence supports the notion that children with the life-course-persistent type have more severe neuropsychological deficits and family psychopathology, and these findings have been replicated across cultures (Hinshaw & Lee, 2003).

The original sample from which Moffitt and colleagues made the life-course-persistent and adolescent-limited distinction has now been followed into early adulthood (age 26). Those who were classified as life-course-persistent continue to have the most severe problems, including psychopathology, lower levels of education, partner and child abuse, and violent behavior. However, those classified as adolescent-limited, who were expected to “grow out” of their aggressive and antisocial behavior, have apparently not done so. The participants, now in their

DSM-IV-TR Criteria for Conduct Disorder

- Repetitive and persistent behavior pattern that violates the basic rights of others or conventional social norms as manifested by the presence of three or more of the following in the previous 12 months and at least one of them in the previous six months:
 - A.** Aggression to people and animals, e.g., bullying, initiating physical fights, physically cruel to people or animals, forcing someone into sexual activity
 - B.** Destruction of property, e.g., fire-setting, vandalism
 - C.** Deceitfulness or theft, e.g., breaking into another's house or car, conning, shoplifting
 - D.** Serious violation of rules, e.g., staying out at night before age 13 in defiance of parental rules, truancy before age 13
- Significant impairment in social, academic, or occupational functioning
- If person older than 18, criteria not met for antisocial personality disorder

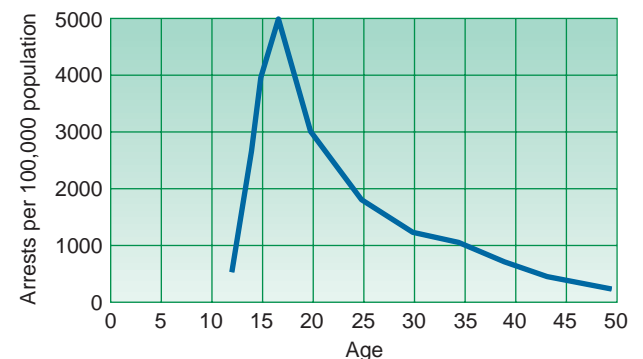


Figure 14.1 Arrest rates across ages for the crimes of homicide, forcible rape, robbery, aggravated assault, and auto theft. From “Criminal Career Research: Its Value for Criminology,” by A. Blumstein, J. Cohen, and D. P. Farrington, 1988. *Criminology*, 26, p. 11. Copyright © 1988 by the American Society of Criminology. Adapted by permission.



Children with the life-course-persistent type of conduct disorder continue to have trouble with the law into their mid-twenties. (The Image Works.)

mid-twenties, continue to have troubles with substance abuse and dependence, impulsivity, crime, and overall mental health (Moffitt et al., 2002). Additional follow-ups of this sample will help us learn whether or not these maladaptive patterns get better toward the later twenties or early thirties.

The prognosis for children diagnosed as having conduct disorder is mixed. Conduct disorder in childhood does not inevitably lead to antisocial behavior in adulthood, though it certainly is a predisposing factor. For example, a longitudinal study indicated that although about half of boys with conduct disorder did not fully meet the criteria for the diagnosis at a later assessment (1 to 4 years later), almost all of them continued to demonstrate some conduct problems (Lahey et al., 1995).

Etiology of Conduct Disorder

It seems clear that multiple factors are involved in the etiology of conduct disorder, including genetic, neurobiological, psychological, and social factors that interact in a

complex manner (Figure 14.2). A review concluded that the evidence favors an etiology that includes heritable temperamental characteristics that interact with other neurobiological difficulties (e.g., neuropsychological deficits) as well as with a whole host of environmental factors (e.g., parenting, school performance, peer influences) (Hinshaw & Lee, 2003).

Genetic Factors The evidence for genetic influences in conduct disorder is mixed, although heritability likely plays a part. For example, a study of over 3,000 twin pairs indicated only modest genetic influence on childhood antisocial behavior; family–environment influences were more significant (Lyons et al., 1995). However, a study of over 2,600 twin pairs in Australia found a substantial genetic influence and almost no family–environment influence for childhood symptoms of conduct disorder (Slutske et al., 1997). The authors of the latter study point out that differences in the samples may have accounted for the different findings.

Three large-scale adoption studies, in Sweden, Denmark, and the United States, have been conducted, but two of them focused on the heritability of criminal behavior rather than conduct disorder (Simonoff, 2001). As with most traits, these studies indicate that criminal and antisocial behavior is accounted for by both genetic and environmental factors. Interestingly, despite different prevalence rates for boys and girls, the evidence favoring genetic and environmental contributions to conduct disorder and antisocial behavior does not differ between boys and girls. A meta-analysis of twin and adoption studies of antisocial behavior indicated that 40 to 50 percent of antisocial behavior was heritable (Rhee & Waldman, 2002).

Distinguishing types of conduct problems may help to clarify findings on the heritability of conduct disorder. Evidence from twin studies indicates that aggressive behavior (e.g., cruelty to animals, fighting, destroying property) is clearly heritable, whereas other delinquent behavior (e.g., stealing, running away, truancy) may not be (Edelbrock et al., 1995; Rhee & Waldman, 2002). Other evidence suggests that the time when antisocial and aggressive behavior problems begin is related to heritability. For example, aggressive and antisocial behaviors that begin in childhood, as in the case of Moffitt's life-course-persistent type, are more heritable than similar behaviors that begin in adolescence (Taylor, Iacono, & McGue, 2000).

One elegant study examined the interaction between genetic and environmental factors in predicting later adult antisocial behavior (Caspi et al., 2002). It examined the MAOA gene, which is located on the X chromosome and releases an MAO enzyme,

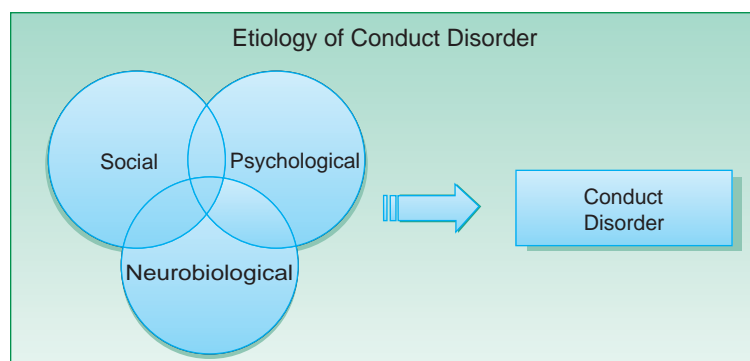


Figure 14.2 Neurobiological, psychological, and social factors all play a role in conduct disorder.



which metabolizes a number of neurotransmitters, including dopamine, serotonin, and norepinephrine. This gene varies in its activity, with some people having high MAOA activity and others having low MAOA activity. Using a large sample of over 1,000 children from Dunedin, New Zealand (the same sample that was the basis for Moffitt's characterization of the life-course-persistent and adolescent-limited types of conduct disorder), the researchers measured MAOA activity and assessed the extent to which the children had been maltreated. Being maltreated as a child was not enough to predict later conduct disorder, nor was the presence of low MAOA activity. Rather, those children who were both maltreated and had low MAOA activity were more likely to develop conduct disorder than either children who were maltreated but had high MAOA activity or children who were not maltreated but had low MAOA activity. Thus, both environment and genes mattered. A meta-analysis of several such studies confirms these findings: being maltreated was linked to later antisocial behavior only via genetics (Taylor & Kim-Cohen, 2007).

Neuropsychological Factors and the Autonomic Nervous System Neuropsychological deficits have been implicated in the childhood profiles of children with conduct disorder (Lynam & Henry, 2001; Moffitt, Lynam, & Silva, 1994). These deficits include poor verbal skills, difficulty with executive functioning (the ability to anticipate, plan, use self-control, and solve problems), and problems with memory. In addition, children who develop conduct disorder at an earlier age (i.e., life-course-persistent type) have an IQ score of one standard deviation below age-matched peers without conduct disorder, and this IQ deficit is apparently not attributable to lower socioeconomic status or school failure (Lynam, Moffitt, & Stouthamer-Loeber, 1993; Moffitt & Silva, 1988).

Other studies indicate that autonomic nervous system abnormalities are associated with antisocial behavior in adolescents. Specifically, lower levels of resting skin conductance and heart rate are found among adolescents with conduct disorder, suggesting that they have lower arousal levels than adolescents without conduct disorder (Raine, Venables, & Williams, 1990; Ortiz & Raine, 2004). Why does low arousal matter? Similar to findings on adult antisocial personality disorder (Chapter 12), these studies suggest that adolescents who exhibit antisocial behavior may not fear punishment as much as adolescents who don't exhibit such behavior. Thus, these children may be more likely to behave in antisocial ways without the fear that they will get caught. The fear of getting caught keeps most children from breaking the law.

Psychological Factors An important part of typical child development is the growth of moral awareness—the acquisition of a sense of what is right and wrong and the ability, even desire, to abide by rules and norms. Most people refrain from hurting others not only because it is illegal but also because it would make them feel guilty to do otherwise. Children with conduct disorder seem to be deficient in this moral awareness, lacking remorse for their wrongdoing (Cimbora & McIntosh, 2003).

Behavioral theories that look to both modeling and operant conditioning provide useful explanations of the development and maintenance of conduct problems. For example, children who are physically abused by parents are likely to be aggressive when they grow up (Coie & Dodge, 1998). Children may also imitate aggressive acts seen elsewhere, such as on television (Huesmann & Miller, 1994). Since aggression is often an effective, albeit unpleasant, means of achieving a goal, it is likely to be reinforced. Thus, aggressive behavior is likely to be maintained. Modeling may help explain the onset of delinquent behavior among adolescents who had not previously shown conduct problems. Perhaps these adolescents imitate the behavior of persistently antisocial peers who are seen as enjoying high-status possessions and sexual opportunities (Moffitt, 1993).

In addition, parenting characteristics such as harsh and inconsistent discipline and lack of monitoring are consistently associated with antisocial behavior in children. Perhaps children who do not experience negative consequences for early misbehavior later develop more serious conduct problems (Coie & Dodge, 1998).

A social-cognitive perspective on aggressive behavior (and, by extension, conduct disorder) comes from the work of Kenneth Dodge and associates. Dodge has constructed a social information processing theory of child behavior that focuses on how children process information about their world and how these cognitions markedly affect their behavior (Crick & Dodge, 1994). In one of his early studies (Dodge & Frame, 1982), Dodge found that the cognitive processes of aggressive children had a particular bias; these children interpreted ambiguous acts,

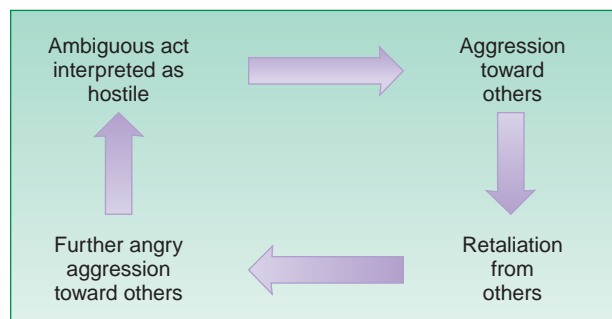


Figure 14.3 Dodge's cognitive theory of aggression. The interpretation of ambiguous acts as hostile is part of a vicious cycle that includes aggression toward and from others.

such as being bumped in line, as evidence of hostile intent. Such perceptions may lead these children to retaliate aggressively for actions that may not have been intended as provocative. This can create a vicious cycle: their peers, remembering these aggressive behaviors, may tend to be aggressive more often against them, further angering the already aggressive children (see Figure 14.3). Deficits in social information processing also predict antisocial behavior among adolescents (Crozier et al., 2008). More recently, Dodge and colleagues have linked deficits in social information processing to heart rate among adolescents who exhibit antisocial behavior. Specifically, low heart rate predicted antisocial behavior among male adolescents independent from social information processing deficits, a finding consistent with studies reviewed earlier on low arousal and conduct problems. However, the link between high heart rate and antisocial behavior was accounted for by social information processing deficits for both male and female adolescents (Crozier et al., 2008).

Peer Influences Investigations of how peers influence aggressive and antisocial behavior in children have focused on two broad areas: (1) acceptance or rejection by peers and (2) affiliation with deviant peers. Studies have shown that being rejected by peers is causally related to aggressive behavior, particularly in combination with ADHD (Hinshaw & Melnick, 1995). Other studies have shown that being rejected by peers can predict later aggressive behavior, even after controlling for prior levels of aggressive behavior (Coie & Dodge, 1998). Associating with other deviant peers also increases the likelihood of delinquent behavior (Capaldi & Patterson, 1994). One question that remains to be answered is whether children with conduct disorder choose to associate with like-minded peers, thus continuing on their path of antisocial behavior, or if simply being around deviant peers can help initiate antisocial behavior.

Sociocultural Factors Poverty and urban living are associated with higher levels of delinquency. Unemployment, poor educational facilities, disrupted family life, and a subculture that deems delinquency acceptable are all contributing factors (Lahey et al., 1999; Loeber & Farrington, 1998). The combination of early antisocial behavior in the child and socioeconomic disadvantage in the family predicts early criminal arrests (Patterson, Crosby, & Vuchinich, 1992).

A study of African American and white youths drawn from the Pittsburgh Youth Study indicates that the commonly found greater severity of delinquent acts among African Americans appears to be linked to their living in poorer neighborhoods, not to their race (Peeples & Loeber, 1994). The researchers designated neighborhoods as “underclass” or “non-underclass” based on factors such as family poverty, families with no one employed, and male joblessness. In the total sample—ignoring differences in socioeconomic status—African American youths were more likely than white youths to have committed serious delinquent acts (e.g., car theft, breaking and entering, aggravated assault). But African American youths who were not living in underclass neighborhoods did not differ from white youths in serious delinquent behavior. Social factors matter. The strongest correlates of delinquency other than neighborhood were hyperactivity and lack of parental supervision; once these factors were controlled, residence in underclass neighborhoods was significantly related to delinquent behavior, whereas ethnicity was not.

Treatment of Conduct Disorder

The treatment of conduct disorder appears to be most effective when addressing the multiple systems involved in the life of a child (family, peers, school, neighborhood).

Family Interventions Some of the most promising approaches to treating conduct disorder involve intervening with the parents and families of the child. In addition, evidence suggests intervening early, if even just briefly, can make an impact. In a recent randomized controlled trial (D.S. Shaw et al., 2006), researchers compared what is called the “family check up (FCU)” treatment to no treatment. FCU involves three meetings to get to know, assess, and provide feedback to parents regarding their children and parenting practices. In this study, FCU was offered to families with toddlers who were at high risk of developing conduct problems (based on the presence of conduct or substance abuse problems in parents or early signs of conduct behavior in the children). This



brief, three-session intervention was associated with less disruptive behavior compared to no treatment, even two years after the intervention.

Gerald Patterson and colleagues have worked for over four decades developing and testing a behavioral program called **parent management training (PMT)**, in which parents are taught to modify their responses to their children so that prosocial rather than antisocial behavior is consistently rewarded. Parents are taught to use techniques such as positive reinforcement when the child exhibits positive behaviors and time-out and loss of privileges for aggressive or antisocial behaviors.

This treatment has been modified by others, but, in general, it is the most efficacious intervention for children with conduct disorder and oppositional defiant disorder. Both parents' and teachers' reports of children's behavior and direct observation of behavior at home and at school support the program's effectiveness (Kazdin, 2005; Patterson, 1982). PMT has been shown to alter parent-child interactions, which in turn is associated with a decrease in antisocial and aggressive behavior (Dishion & Andrews, 1995; Dishion, Patterson, & Kavanagh, 1992). PMT has also been shown to improve the behavior of siblings and reduce depression in mothers involved in the program (Kazdin, 1985). PMT has been adapted for Latino families and has been shown to be effective in modifying parent and child behaviors (Martinez & Eddy, 2005).

Longer-term follow-ups suggest that the beneficial effects of PMT persist for one to three years (Brestan & Eyberg, 1998; Long et al., 1994). Parent and teacher training approaches have been incorporated into larger community-based programs such as Head Start and have been shown to reduce childhood conduct problems and increase positive parenting behaviors (Webster-Stratton, 1998; Webster-Stratton, Reid & Hammond, 2001). (See Focus on Discovery 14.2 for more on Head Start.)



Parent management training can be effective in treating conduct disorder. (David Young-Wolff/PhotoEdit.)

FOCUS ON DISCOVERY 14.2

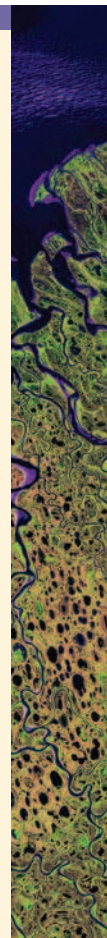
Head Start: A Successful Community-Based Prevention Program

Head Start is a federally funded program whose goal is to prepare children from low-income families to succeed in the regular school setting. The impetus for the program came during the 1960s, when national attention in the United States was directed to the problems of hunger and civil rights.

The core of the Head Start program is community-based preschool education, focusing on the early development of cognitive and social skills. Head Start contracts with professionals in the community to provide children with health and dental services, including vaccinations, hearing and vision testing, medical treatment, parent training, and nutrition information (Office of Head Start: <http://www.acf.hhs.gov/programs/ohs>). Mental health services are another important component of the Head Start program. Psychologists may identify children with psychological problems and consult with teachers and staff to help make the preschool environment sensitive to psychological issues; for example, they may share knowledge of child development, consult on an individual case, or help staff address parents' concerns. Head Start programs are designed to be sensitive to cultural and ethnic factors affecting children and their families. Social workers can serve as advocates for a child's family, linking families with needed social services and encouraging parents to get involved with their children's education.

A comparison of Head Start children with other disadvantaged children who attended either a different preschool or no preschool showed that Head Start children improved significantly more than both groups

on social-cognitive ability and motor impulsivity; the relative improvement was strongest for African American children, particularly those whose initial ability was below average. Although the Head Start program succeeded in enhancing the functioning of the neediest children, they were still behind their peers in terms of absolute cognitive levels after one year in the program (Lee, Brooks-Gunn, & Schnur, 1988). Other reports confirm the value of Head Start in helping poor children improve their intellectual functioning (e.g., Cronan et al., 1996; Perkins, 1995; Schleifer, 1995). The National Head Start Impact study, mandated by Congress in 1998, is a randomized, controlled clinical trial of Head Start that is studying close to 5,000 children in Head Start programs across the country. Data collection for the study began in 2002, and the study seeks to address how Head Start impacts school readiness and what types of children benefit the most from Head Start. Preliminary results, released in 2005, showed that 3- and 4-year-olds demonstrated gains in pre-reading skills and vocabulary, but not in math or oral comprehension after one year in the program (U.S. Department of Health and Human Services, Administration for Children and Families, 2005). These children also showed a decline in behavior problems, and parents of children in Head Start read to their children more often. Plans are to follow the children at the end of kindergarten, first grade, and third grade. More detailed analyses will allow for the examination of what particular types of interventions work best in particular locations and with particular types of children.



Multisystemic Treatment A promising treatment for serious juvenile offenders is multisystemic treatment (MST) (Borduin et al., 1995). MST involves delivering intensive and comprehensive therapy services in the community, targeting the adolescent, the family, the school, and, in some cases, the peer group (Figure 14.4). The treatment is based on the view that conduct problems are influenced by multiple factors within the family as well as between the family and other social systems.

The strategies used by MST therapists are varied, incorporating behavioral, cognitive, family-systems, and case-management techniques. The therapy's uniqueness lies in emphasizing individual and family strengths, identifying the social context for the conduct problems, using present-focused and action-oriented interventions, and using interventions that require daily or weekly efforts by family members. Treatment is provided in "ecologically valid" settings, such as the home, school, or local recreational center, to maximize the chances that improvement will carry through into the regular daily lives of children and their families. MST has been shown to be effective in a number of studies (Henggeler et al., 1998; Henggeler & Sheidow, in press; Ogden & Halliday-Boykins, 2004).

In comparison with adolescents who received an equivalent number of sessions (about 25) of traditional individual therapy in an office setting, adolescents who received MST showed fewer

behavior problems and far fewer arrests over the following four years. For example, whereas more than 70 percent of the adolescents receiving traditional therapy were arrested in the four years after treatment, only 22 percent of those completing MST were arrested. In addition, assessment of other family members indicated that parents involved in MST had fewer psychiatric symptoms, and families were more supportive and showed less conflict and hostility in videotaped interactions. In contrast, the quality of interactions in the families of the adolescents receiving traditional individual therapy deteriorated after treatment. Even the adolescents receiving MST who dropped out of treatment within four sessions were arrested significantly less than adolescents who completed the full course of traditional individual therapy.

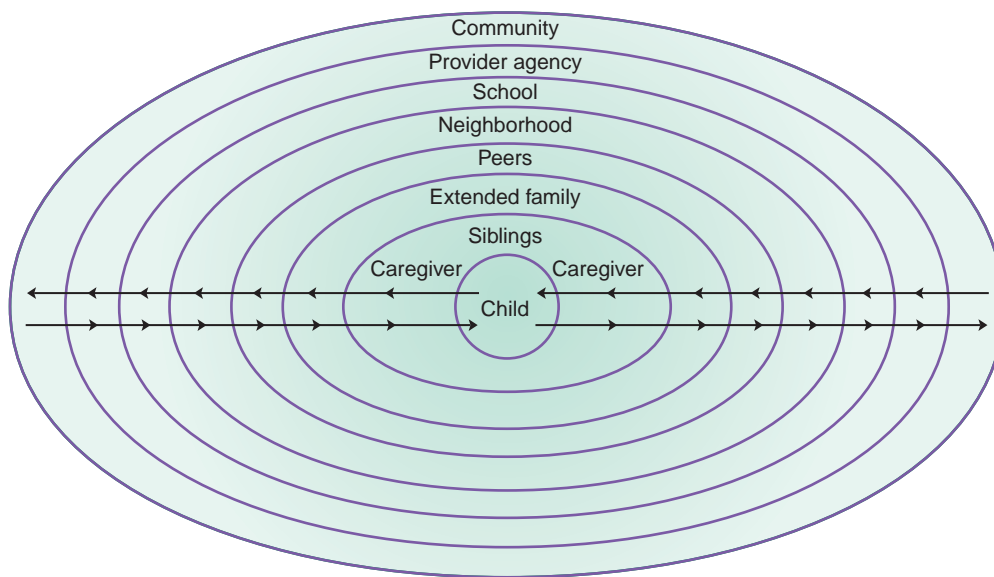
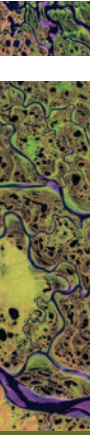


Figure 14.4 Multisystemic treatment (MST) includes consideration of many different factors when developing a child's treatment, including family, school, community, and peers.

Quick Summary

ADHD and conduct disorder are referred to as externalizing disorders. They appear across cultures, although there are also differences in the manifestation of externalizing symptoms in different cultures. Both disorders are more common in boys than girls, though research has begun to examine externalizing problems in girls. A number of factors work together to cause ADHD and conduct disorder. Genetic factors play a particularly important role in ADHD but are also implicated in conduct disorder. Neurobiological research has implicated areas of the brain and

neurotransmitters such as dopamine in ADHD; neuropsychological deficits are seen in both disorders. Other risk factors for ADHD include low birth weight and maternal smoking. Family and peer variables are also important factors to consider, especially in how they interact with genetic vulnerabilities. The most effective treatment for ADHD is a combination of medication, such as Ritalin, and behavioral therapy. For conduct disorder, family-based treatments, such as PMT, are effective, as are treatments that include multiple points for intervention, as in MST.



Check Your Knowledge 14.2

Fill in the blanks.

1. Moffitt and colleagues have provided a good deal of evidence for two types of conduct disorder. The _____ type is associated with an early age of onset and continued problems into adolescence and adulthood. The _____ type begins in the teenage years and is hypothesized to remit by adulthood, though a recent follow-up study has not supported the idea that this type remits.
2. Comorbidity is common in conduct disorder. Other problems that co-occur with conduct disorder include: _____, _____, _____, and _____.
3. A successful treatment for conduct disorder that involves the family is called _____. Another successful community-focused treatment that works with the child, parents, peers, and schools is _____.

Depression and Anxiety in Children and Adolescents

So far, we have discussed disorders that are specific to children. The internalizing disorders, which include depression and anxiety disorders, first begin in childhood but are quite common in adults as well. Much richer descriptions of these disorders are presented in Chapter 5 (anxiety disorders) and Chapter 8 (mood disorders). Here, we describe the ways in which the symptoms, etiology, and treatment of these disorders differ in children as compared to adults.

Depression and anxiety disorders commonly co-occur with ADHD and conduct disorder, as we have already noted. Furthermore, depression and anxiety disorders commonly co-occur with each other among children, as they do among adults. Although early research indicated that depression and anxiety can be distinguished in children and adolescents in much the same way as among adults—that is, children with depression show low levels of positive affect and high levels of negative affect, and children with anxiety show high levels of negative affect but do not show low levels of positive affect (Lonigan, Phillips, & Hooe, 2003)—more recent research calls this into question (Anderson & Hope, 2008). Next, we consider in more detail some of the etiological factors and treatment considerations for childhood depression and anxiety.

Depression

Clinical Descriptions and Prevalence of Depression in Childhood and Adolescence There are both similarities and differences in the symptomatology of children and adults with major depressive disorder (Garber & Flynn, 2001). Children and adolescents ages 7 to 17 and adults both tend to show the following symptoms: depressed mood, inability to experience pleasure, fatigue, concentration problems, and suicidal ideation. Children and adolescents differ from adults in showing more guilt and lower rates of early-morning wakefulness, early-morning depression, loss of appetite, and weight loss. As in adults, depression in children is recurrent. Longitudinal studies have demonstrated that both children and adolescents with major depression are likely to continue to exhibit significant depressive symptoms when assessed even four to eight years later (Garber, Kelly, & Martin, 2002; Lewinsohn et al., 2000).

In general, depression occurs in less than 1 percent of preschoolers (Kashani & Carlson, 1987; Kashani, Holcomb, & Orvaschel, 1986) and in 2 to 3 percent of school-age children (Cohen et al., 1993; Costello et al., 1988). By adolescence, rates of depression are comparable to those of adults (Angold & Rutter, 1992; Kashani et al., 1987).

The prevalence among adolescent girls (7 to 13 percent) is almost twice that among adolescent boys, just as we have seen with adult depression (see Focus on Discovery 8.1). Although adolescent girls experience depression more often than adolescent boys, there are no differences in the types of symptoms they experience (Lewinsohn et al., 2003). Interestingly, the gender difference does not occur before age 12; the full gender difference does not emerge until adolescence (Hankin et al., 1998).

Etiology of Depression in Childhood and Adolescence What causes a young person to become depressed? As with adults, evidence suggests that genetic factors play a role (Klein et al., 2001). Indeed, the results of genetic studies with adults (see Chapter 8) apply to children and adolescents also, since genetic influences are present from birth, though they may not be expressed right away.

Studies of depression in children have also focused on family and other relationships as sources of stress that might interact with a genetic diathesis. As with adults, early adversity and negative life events also play a role (Garber, 2006). One recent study found that early adversity (e.g., financial hardship, maternal depression, chronic illness as a child) predicted depression between ages 15 and 20, particularly among those adolescents who had experienced a number of negative life events by age 15 (Hazel et al., 2008).

Having a mother or father who is depressed increases the chances of being depressed as a child or adolescent; less is known about the reasons for these linkages (Garber et al., 2002; Kane & Garber, 2004; Lewinsohn et al., 2000). We know that depression in either or both spouses is often associated with marital conflict; we should expect, therefore, that depression will have negative effects on their children, and it does (Hammen, 1997). Rejection by parents is modestly associated with depression in childhood, as confirmed by a recent meta-analysis of 45 studies (McLeod, Weisz, & Wood, 2007). The effect size for parental rejection was considered small across the studies, suggesting that factors other than parental rejection play a larger role in causing depression in childhood.

Once depression begins, it clearly leads to negativity in relationships. Children with depression and their parents have been shown to interact with each other in negative ways; for example, they show less warmth and more hostility toward each other than is the case with children without depression and their parents (Chiariello & Orvaschel, 1995). Children and adolescents experiencing major depression also have poor social skills and impaired relationships with siblings and friends (Lewinsohn et al., 1994). Children with depression have fewer and less satisfying contacts with their peers, who often reject them because they are not enjoyable to be around (Kennedy, Spence, & Hensley, 1989). These negative interactions in turn may aggravate the negative self-image and sense of worth that the depressed child already has (Coyne, 1976). That is, interpersonal problems are probably not just a consequence of depression, but also probably intensify and maintain the depression.

Consistent with both Beck's theory and the hopelessness theory of depression (see Chapter 8), cognitive distortions and negative attributional styles are associated with depression in children and adolescents in ways similar to what has been found with adults (Garber et al., 2002; Lewinsohn et al., 2000). For example, cognitive research with children with depression indicates that their outlooks are more negative than are those of children without depression and resemble those of adults with depression (Prieto, Cole, & Tageson, 1992). Negative thoughts and hopelessness also predict a slower time to recovery from depression among adolescents (Rhode et al., 2006). As with interpersonal functioning, it is important to remember that depression can make children think more negatively (Cole et al., 1998). Hence, it is important to consider longitudinal research.

A key question in the study of children with depression is: when do children actually develop stable attributional styles? That is, can young children have a stable way of thinking about themselves in the midst of such profound cognitive development? Recall from Chapter 8 that attributions can vary in whether they are stable (things will always be bad), internal (it is my fault that things are bad), and global (all aspects of life are bad) negative thoughts. A recent longitudinal study examined the development of attributional style in children (Cole et al., 2008). Specifically, the researchers prospectively studied three groups of children for four years each. At year one of the study, the three groups were (1) children in second grade, (2) children in fourth grade, and (3) children in sixth grade. These three groups were followed yearly until the children were in grades 5, 7, and 9, respectively. Participants completed child and adolescent versions of an attributional style questionnaire along with measures of depression. The results of the study revealed a number of key findings. First, all children could complete the attributional style measure and do so in a manner that was reliable and consistent. However, children's attributional style changed over the course of development. Specifically, attributions



became more stable rather than internal or global as children got older. In addition, attributional style didn't appear to be a stable style until children were early adolescents. Finally and importantly, attributional style did not interact with negative life events to predict depression (i.e., it was not a cognitive diathesis) for young children. It wasn't until the children were in eighth or ninth grade that support for attributional style as a cognitive diathesis emerged. Thus, results of this study suggest that attributional style becomes style-like by early adolescence, and by the middle school years, it serves as a cognitive diathesis for depression.

Treatment of Childhood and Adolescent Depression Research on the safety and efficacy of medications for childhood and adolescent depression has lagged behind research with adults (Emslie & Mayes, 2001). The side effects experienced by some children taking antidepressants include diarrhea, nausea, sleep problems, and agitation (Barber, 2008). In general, evidence suggests that selective serotonin reuptake inhibitors (SSRIs) are superior to tricyclic antidepressants (Emslie, Mayes, & Hughes, 2000; Lynch, Glod, & Fitzgerald, 2001; Wagner & Ambrosini, 2001). Some studies have shown that antidepressant drugs are no better than placebos in children and adolescents (Geller et al., 1992; Keller et al., 2001); however, a recent major trial provided some support for the efficacy of antidepressants. That is, a randomized controlled trial comparing Prozac, cognitive behavioral therapy (CBT), and both combined for adolescents with depression called the Treatment for Adolescents with Depression Study (TADS) found that the combined treatment was the most effective through 12 weeks and that there were modest advantages of Prozac compared to cognitive behavior therapy (March et al., 2004). This pattern of results remained true after 36 weeks (TADS team, 2007). A recent meta-analysis of 27 randomized controlled trials of antidepressant medication treatment for depression and anxiety disorders in children found that the medications were most effective for anxiety disorders other than obsessive compulsive disorder (OCD) and less effective for OCD and depression (Bridge et al., 2007).

Several concerns have been raised about antidepressants, though. A first concern is the potential for side effects. More importantly, concerns with respect to suicidality have prompted a series of recent hearings about antidepressants in the United States and Britain. For example, in the study cited above (March et al., 2004), 7 out of 439 adolescents attempted suicide, of whom 6 were in the Prozac group and 1 was in the CBT group. (See Focus on Discovery 14.3 for more on this complex issue). Evidence is controversial, though, and suicide effects likely occur early in treatment. In the major meta-analysis described above, researchers looked at suicidality rates in the studies of depression (Bridge et al., 2007). The risk of suicidal ideation was 3 percent for those children taking antidepressants and 2 percent for those taking placebo. It is important to note that this analysis shows that children taking medication were at risk for suicidal ideation, not that medication caused the suicide thoughts or attempts. There were no completed suicides in any of the 27 studies reviewed.

Most psychosocial interventions are modeled after treatments developed for adults. Several innovations have been made to adapt these treatments, though. For example, interpersonal therapy has been modified for use with depressed adolescents by focusing on issues of concern to adolescents, such as peer pressure, the stress inherent in the transition from childhood to adulthood, and the conflict between dependency on parents (and parental figures, like teachers) and the drive to be independent (Moreau et al., 1992). Cognitive behavioral treatments in school settings appear to be effective and are associated with more rapid reduction of symptoms than family or supportive therapy (Curry, 2001). About 63 percent of adolescents with depression treated with CBT show significant improvement at the end of treatment (Lewinsohn & Clarke, 1999). However, another study indicated that this favorable outcome does not hold up after treatment is over (Birmaher et al., 2000). A study designed to identify what types of adolescents might benefit the most from CBT found that CBT was most beneficial for Caucasian adolescents, those adolescents with good coping skills at pretreatment, and adolescents with recurrent depression (Rhode et al., 2006). The clinical case of Sharon illustrates CBT techniques with an adolescent. If these findings hold up, it suggests that other types of interventions may be effective for ethnic minority adolescents and for those who are experiencing their first episode of depression.

Clinical Case: Sharon

When initially seen, Sharon was extremely dysphoric, experienced recurrent suicidal ideation, and displayed a number of vegetative signs of depression. . . . [After being] placed on antidepressant medication . . . she was introduced to a cognitive behavioral approach to depression. . . . She was able to understand how her mood was affected by her thoughts and behavior and was able to engage in behavioral planning to increase the occurrence of pleasurable and mastery-oriented events. Sharon manifested extremely high standards for evaluating her performance in a number of areas, and it became clear that her parents also ascribed to these standards, so that family therapy sessions were held to encourage Sharon and her parents to reevaluate their standards.

Sharon had difficulty with the notion of changing her standards and noted that when she was not depressed she actually valued her perfectionism. At that point she resisted the therapy because she perceived it as trying to change something she valued in herself. With this in mind, we began to explore and identify those situations or domains in which her perfectionism worked for her and when and how it might work against her. She became increasingly comfortable with this perspective and decided she wanted to continue to set high standards regarding her performance in mathematical course work (which was a clear area of strength), but she did not need to be so demanding of herself regarding art or physical education. [Adapted from Braswell & Kendall (1988, p. 194).]

A meta-analysis of 35 studies of psychotherapy for depression in children and adolescents found that therapy had a modest effect (Weisz, McCarty, & Valeri, 2006) and that cognitive therapy was no better than noncognitive therapy. Though therapy was effective in the short term, the long-term effects were not as robust. Thus, although psychotherapy is effective, we need to devise more effective treatments.

A good deal of work has focused on how to prevent the onset of depression in adolescents and children. A recent meta-analysis examined two types of preventive interventions for depression: selective and universal (Horowitz & Garber, 2006). Selective prevention programs target particular youth based on family risk factors (e.g., parents with depression), environmental factors (e.g., poverty), or personal factors (e.g., hopelessness). Universal programs are targeted toward large groups, typically in schools, and seek to provide education and information about depression. Results of the meta-analysis indicated that selective prevention programs were more effective than universal programs in preventing depression symptoms among adolescents.

Anxiety

Just about every child experiences fears and worries as part of the normal course of development. Common fears, most of which are outgrown, include fear of the dark and of imaginary creatures (in children under 5) and fear of being separated from parents (in children under 10). In general, as with adults, fears are reported more often for girls than for boys (Lichtenstein & Annas, 2000), though this sex difference may be due at least in part to social pressures on boys that make them reluctant to admit that they are afraid of things.

The seriousness of some childhood anxiety problems should not be underestimated. Not only do children suffer, as do adults, from the aversiveness of being anxious—simply put, anxiety doesn't feel good—but their anxiety may also work against their acquisition of skills appropriate to various stages of their development. For example, a child who is painfully shy and finds interacting with peers virtually intolerable is unlikely to learn important social skills. This deficit may persist as the child grows into adolescence and will form the foundation of still further social difficulties. Then, whether in the workplace or at college, the adolescent's worst fear—"people will dislike and reject me"—is likely to be realized as his or her awkward, even off-putting behavior toward others produces rejecting and avoiding responses.

Clinical Descriptions and Prevalence of Anxiety in Childhood and Adolescence

For fears and worries to be classified as disorders according to DSM-IV-TR criteria, children's functioning must be impaired; unlike adults, however, children need not regard their fear as excessive or unreasonable, because children sometimes are unable to make such judgments.



Based on these criteria, about 12 to 20 percent of children and adolescents would be diagnosed as having an anxiety disorder, making these among the most common disorders of childhood (Achenbach et al., 1995; Shaffer et al., 1996). Although most unrealistic childhood fears dissipate over time, it is also the case that most anxious adults can trace their anxiety back to childhood.

One childhood fear, **school phobia**, sometimes called *school refusal*, has serious academic and social consequences for the child and can be extremely disabling. Two types of school phobia have been identified. The more common type is associated with *separation anxiety*—children worry constantly that some harm will befall their parents or themselves when they are away from their parents. When at home, such children shadow one or both of their parents. Since the beginning of school is often the first circumstance that requires lengthy and frequent separations of children from their parents, separation anxiety is often a principal cause of school phobia.

A second type of school phobia is associated with a true fear of school—either a fear specifically related to school or a more general fear (social phobia). Children with this type of school phobia generally begin refusing to go to school later in life and have more severe and pervasive avoidance of school. Their fear is more likely to be related to specific aspects of the school environment, such as worries about academic failure or discomfort with peers.

Another common anxiety disorder among children and adolescents is social phobia. Most classrooms include at least one or two children who are extremely quiet and shy. Often these children will play only with family members or familiar peers, avoiding strangers both young and old. Their shyness may prevent them from acquiring skills and participating in a variety of activities enjoyed by most of their peers, for they avoid playgrounds and stay out of games played by other children. Extremely shy children may refuse to speak at all in unfamiliar social circumstances, a condition called *selective mutism*. In crowded rooms, they cling and whisper to their parents, hide behind the furniture, cower in corners, and may even have tantrums. At home, they ask their parents endless questions about situations that worry them. Withdrawn children usually have warm and satisfying relationships with family members and family friends, and they show a desire for affection and acceptance.

The point at which this kind of behavior becomes a problem severe enough to be diagnosed as social phobia varies; few reliable statistics have been compiled on the frequency of this disorder. One estimate is that 1 percent of children and adolescents have social phobia (Kashani & Orvaschel, 1990); it is more of a problem with adolescents, who have a more acute concern about the opinions of others than younger children do.

Some children exhibit intense anxiety in specific social situations. For example, when such children were asked to keep daily diaries of anxiety-producing events, they reported experiencing anxiety three times more frequently than did other children, with concerns about such activities as reading aloud before a group, writing on the board, and performing in front of others. They reported crying, avoidance, and somatic complaints such as shakiness and nausea when faced with these tasks (Beidel, 1991).

Children who are exposed to traumas such as chronic abuse, community violence, and natural disasters may experience symptoms of posttraumatic stress disorder (PTSD) similar to those experienced by traumatized adults. As with adults, these symptoms fall into three broad categories: (1) reexperiencing the traumatic event, as in nightmares, flashbacks, or intrusive thoughts; (2) avoiding trauma-related situations or information and experiencing a general numbing of responses, as in feelings of detachment or anhedonia; and (3) hyperarousal, which can include irritability, sleep problems, and hypervigilance (Davis & Siegal, 2000). Some symptoms in children differ from those in adults; for example, children may exhibit signs of agitation instead of extreme fear or hopelessness.

Obsessive compulsive disorder (OCD) is also found among children and adolescents, with prevalence estimates ranging from 1 to 4 percent (Flament et al., 1988; Heyman et al., 2003). The symptoms in childhood are similar to symptoms in adulthood: both obsessions and compulsions are involved. The most common obsessions in childhood involve dirt or contamination as well as aggression; recurrent thoughts about sex or religion become more common in adolescence (Turner, 2006). OCD in children is more common in boys than girls, but this sex difference does not remain in adolescence or adulthood.



School phobia is most commonly associated with separation anxiety disorder, an intense fear of being away from parents or other attachment figures. (David Young-Wolff/PhotoEdit.)

FOCUS ON DISCOVERY 14.3

Controversies in the Diagnosis and Treatment of Children with Psychopathology

In recent years, the number of children diagnosed with psychological disorders has risen, as has the number of children taking psychoactive medications. These increases raise several questions:

- Has there truly been an increase in the number of children with psychological disorders?*
- Have our diagnostic system and assessment measures improved enough to identify children once overlooked?*
- Are children being misdiagnosed and then treated for problems they do not have?*
- Are medications safe for children?*
- Will medication use lead to later drug use or abuse among children?*

Here we briefly discuss some of the recent controversies and current evidence in some of these areas.

Bipolar Disorder in Children

For years, professionals thought bipolar disorders were very rare or even nonexistent among children. Today, however, diagnoses of bipolar disorders in children have increased 50-fold. One of the difficult diagnostic issues facing mental health professionals is distinguishing bipolar disorders from ADHD. Agitated behavior can be a sign of both, and only through careful and thorough assessments can the distinction be made. An additional controversy is whether the diagnostic criteria for bipolar disorders in children are the same as the criteria for bipolar disorders in adults. Some argue that the criteria for children should include explosive but brief outbursts of emotion and behavioral dysregulation (e.g., Biederman et al., 2000), but these are fundamentally different from the current DSM-IV-TR criteria for bipolar I disorder (see Chapter 8). And emotion dysregulation is also present in ADHD (Carlson & Meyer, 2006; Dickstein & Liebenluft, 2006). Yet the current DSM criteria apply mainly to adults and may not do a good job of characterizing bipolar disorders, particularly bipolar I disorder, among children. Nevertheless, the American Academy of Child and Adolescent Psychiatry recommends using the adult DSM-IV criteria for diagnosing bipolar disorder in children and adolescents (McClellan et al., 2007). These guidelines also recommend that impairment be identified in two different settings (e.g., home, school), a requirement not found in the DSM-IV-TR. Studies are just now emerging to differentiate bipolar disorder in children from other forms of severe emotion dysregulation with respect to behavior and brain function (Harvey, Mullin, & Hinshaw, 2006; Leibenluft & Rich, 2008). Additional research on bipolar disorders in children, particularly longitudinal research, is clearly needed to sort through these issues.

Antidepressant Medications

In 2002, physicians wrote close to 11 million prescriptions for antidepressant medications for children and adolescents (*New York Times*, September 15, 2004). In the fall of 2004, the Federal Drug Administration (FDA) held a series of hearings on the safety of treating children and adolescents with antidepressant medications. These hearings were prompted by research reports, one of which was kept quiet within the FDA, suggesting that children and adolescents with depression who were taking antidepressant medication were more likely to become suicidal than chil-

dren who were not taking these medications. Earlier in 2004, Great Britain had prohibited the use of all antidepressants for the treatment of adolescent depression. This decision was based on a review of the research suggesting that the risk of suicide was greater for adolescents taking these medications than adolescents not taking them.

Concerns over the safety of the medications were joined by concerns that these medications were not all that effective in treating depression among children and adolescents. Findings from the TADS (Treatment of Adolescent Depression Study) study, perhaps the largest randomized controlled clinical trial of antidepressant treatment for adolescents, were reported in August 2004 (March et al., 2004). In this study, the most effective treatment was a combination of Prozac and cognitive behavioral therapy (CBT). Prozac alone was slightly better than CBT alone. However, the authors also reported that six adolescents taking Prozac attempted suicide, whereas only one receiving CBT attempted suicide. These seven were from a sample of over 400 and thus represented around 1.5 percent of the sample. The participants in the study were randomly assigned to treatment conditions, so it is less likely that the adolescents taking Prozac were more seriously ill or suicidal than the ones receiving CBT.

Antidepressants can take as long as 3–4 weeks to start working (see Chapter 8), and one analysis of adolescent suicide attempts and antidepressant use found that the risk for suicide was highest in the first 3–4 weeks of treatment. Thus, it could be the case that the medications did not have sufficient time to begin working in the adolescents who attempted suicide. It may also be true that the combined treatment in the TADS study was most effective because CBT began working earlier in the course of treatment. These sorts of issues will need to be sorted out in future studies.

At the end of the FDA hearings, the panel mandated a “black box warning” to accompany information sent to physicians on their use with adolescents. This is the strongest safety warning the FDA can issue with medications. Since then, the numbers of prescriptions for antidepressants have declined. Although suicides among youths have decreased at the same time, there are too many other variables that have changed during this time to know whether the reduction in antidepressant use explains the dropoff in suicide rates.

Stimulant Medications

Over the past two decades, the number of children taking stimulant medications such as Ritalin has risen dramatically (e.g., Angold et al., 2000). Does the use of stimulant medications lead to increases in illicit drug use among children? Two recent prospective, longitudinal studies suggest that the answer to this question is no. In one study, two groups of children with ADHD were studied for 13 years (Barkley et al., 2003). One group of children had been treated with stimulant medication for $3\frac{1}{2}$ years on average and the other group had never received stimulant medication. Consistent with a number of other studies, at follow-up in young adulthood, those who had taken stimulant medication were not more likely to have used illicit drugs than those who had not been treated with stimulant medication, with one exception—those who had taken stimulant medication were at great risk for having tried cocaine. However, after controlling for the severity of conduct disorder symptoms, the relationship between stimulant medication use and trying cocaine disappeared. This

suggests that having severe conduct disorder symptoms accounts for the link between stimulant medication and trying cocaine, not the use of stimulant medication per se.

The second study followed into adulthood a group of children with reading disorders who had been treated with stimulant medications for 12 to 18 weeks and compared them to a group of children with reading disorders who had not received stimulant medication. Sixteen years after the medication treatment, the two groups did not differ in their use of illicit drugs (Mannuzza, Klein, & Moulton, 2003).

Autism: Diagnosis and Causes

The number of cases of autism has increased dramatically over the past 10 years. For example, a 14-state study conducted by the Centers for Disease Control and Prevention (CDC) reported the prevalence rate of autism-spectrum disorders (autism, Asperger's disorder) to be 1 in 150 children, up from earlier reports of about 1 in 500 (CDC, 2007). Why has there been such an increase? Are there that many more children with autism, or have mental health professionals gotten better at making a diagnosis? Autism wasn't formally recognized in the DSM until 1980. With the availability of formalized diagnostic criteria, mental health professionals are likely doing a better job now of identifying autism. In addition, the diagnostic criteria have broadened quite a bit between the publication of DSM-III in 1980 and the release of DSM-IV in 1994. More children meet the criteria for a diagnosis of autism today under the broader criteria of DSM-IV than they did under the more narrow criteria of DSM-III (Gernsbacher, Dawson, & Goldsmith, 2005). Additionally, there is greater public awareness of autism, and this may spur families to seek out mental health professionals for a formal psychological assessment. Some children with autism may have been diagnosed with mental retardation in years past; it is likely that more children are now being correctly diagnosed. Also, the delay in or

lack of language acquisition has become a widely recognized warning sign among parents and mental health professionals that autism may be a consideration. In addition, public schools are mandated by law to provide services for children with autism, and this may have helped families seek a formal diagnosis. Indeed, the number of children classified as having an autism-spectrum disorder and thus qualifying for special education services increased between 1994 and 2006 by nearly 200,000.

With the increase in autism has come an increase in parents and families advocating for their children. Parents have been particularly worried that autism may be caused by vaccines routinely given to toddlers. The MMR vaccine (for measles, mumps, and rubella) is given to children right around the age when autism signs and symptoms begin to appear. A related concern is that the product used to preserve these vaccines, a substance called thimerosal that contains mercury, may be responsible for autism.

However, there is not much evidence to link autism with either the MMR vaccine or thimerosal. Vaccines have not been stored in thimerosal for the last several years, and even those vaccines that were stored in thimerosal contained very small amounts of mercury (CDC: www.cdc.gov/ncbddd/autism/vaccines.htm). One study examined the number of autism diagnoses reported to the California Department of Developmental Services between 1995 and 2007 (Schechter & Grether, 2008). By 2001, all but the smallest trace of thimerosal had been removed from childhood vaccines. If thimerosal was causing autism, the decline in its use in vaccines might correspond to a decrease in the number of new cases of autism. However, the study found no such association. In fact, the number of new cases of autism increased. In May 2004, the Institute of Medicine published the results of its comprehensive review of its available evidence on the link between MMR and autism. This report concluded that the MMR vaccines are not responsible for autism (Institute of Medicine, 2004).



The FDA required black box warnings be put on antidepressants for use with adolescents.
(Scott Camazine/Phototake.)

Etiology of Anxiety Disorders in Childhood and Adolescence As with adults, genetics plays a role in anxiety among children, with heritability estimates ranging from 29 to 50 percent in one recent study (Lau et al., 2007). However, genes appear to do their work via the environment, with genetics playing a stronger role in separation anxiety in the context of more negative life events experience by a child (Lau et al., 2007).

Parenting practices play a small role in childhood anxiety. Specifically, parental control, more than parental rejection, is associated with childhood anxiety. However, parental control accounted for only 4 percent of the variance in childhood anxiety according to a recent meta-analysis of 47 studies (McLeod, Weisz, & Wood, 2007). Thus, 96 percent of the variance is accounted for by other factors. Other psychological factors that predict anxiety symptoms among children and adolescents include emotion-regulation problems and insecure attachment in infancy (Bosquet & Egeland, 2006).

Theories of the etiology of social phobia in children are generally similar to theories of social phobia in adults. For example, research has shown that children with anxiety disorders overestimate the danger in many situations and underestimate their ability to cope with them (Boegels & Zigterman, 2000). The anxiety created by these cognitions then interferes with social interaction, causing the child to avoid social situations and thus not to get much practice at social skills. In adolescence, peer relationships are important. Specifically, a longitudinal study found that adolescents who perceived that they were not accepted by their peers were more likely to be socially anxious (Teachman & Allen, 2007).

Theories about the causes of PTSD in children are similar to the theories for adults. There must be exposure to a trauma, either experienced or witnessed. Like adults, children who have a propensity to experience anxiety may be at more risk for developing PTSD after exposure to trauma. Specific risk factors for children may include level of family stress, coping styles of the family, and past experiences with trauma (Martini et al., 1990). Some theorists suggest that parental reactions to trauma can help to lessen children's distress; specifically, if parents appear in control and calm in the face of stress, a child's reaction may be less severe (Davis & Siegal, 2000).

Treatment of Anxiety in Childhood and Adolescence How are childhood fears overcome? Many simply dissipate with time and maturation. For the most part, treatment of such fears is similar to that employed with adults, with suitable modifications to accommodate the different abilities and circumstances of childhood. The major focus of these treatments is on exposure to the feared object. Millions of parents help children overcome fears by exposing them gradually to feared objects, often while acting simultaneously to inhibit their anxiety. If a little girl fears school, a parent takes her by the hand and walks her slowly toward the building. Offering rewards for moving closer to a feared object or situation can also be encouraging to a child who is afraid. Compared to exposure treatments for adults, treatments may be modified for children by including more modeling (seeing an adult approach the feared object) and more reinforcement.

One treatment approach that has empirical support for the treatment of anxiety in children and adolescents is cognitive behavioral therapy (Compton et al., 2004). Evidence indicates that such therapy can be helpful to many children with anxiety disorders (Kendall et al., 2004). This type of treatment typically involves working with both children and parents. Beyond exposure, the treatment includes psychoeducation, cognitive restructuring, modeling, skills training, and relapse prevention (Kendall, Aschenbrand, & Hudson, 2003; Velting, Setzer, & Albano, 2004). One of the more widely used treatments is called the Coping Cat (Kendall et al., 2003). This treatment is used with children between the ages of 7 and 13; it focuses on confronting fears, developing new ways to think about fears, exposure to feared situations, practice, and relapse prevention. Parents are also included in a couple of sessions. At least two randomized controlled clinical trials have shown this treatment to be effective (Kendall, 1994; Kendall et al., 1997). A follow-up study of children who received this treatment found that after 7 years, most children were still anxiety-free. Furthermore, the children who remained anxiety-free after 7 years were less likely to have used drugs such as alcohol or marijuana than children for whom the treatment was less effective (Kendall et al., 2004).



More recently, Kendall and colleagues conducted a randomized controlled trial comparing individual CBT, family CBT, and family psychoeducation for the treatment of childhood anxiety. Both individual and family CBT included the Coping Cat workbook, both were more effective than family psychoeducation at reducing anxiety (Kendall et al. 2008), and the effects lasted one year after treatment. The family CBT was more effective than individual CBT when both parents had an anxiety disorder. This study points to the importance of considering not only the child's anxiety but also levels of parental anxiety when deciding on a treatment for childhood anxiety.

Only a few studies have examined the efficacy of cognitive behavior therapy for OCD in children and adolescents, with only four randomized controlled clinical trials published thus far. Two recent reviews suggest that CBT is an effective treatment for children and adolescents (Freeman et al., 2007). CBT appears to be equally as effective as medication, and CBT plus medication is more effective than medication alone, but not than CBT alone (O'Kearney et al., 2008). CBT does not appear to be as effective for very young children (e.g., ages 3 or 4).

Very few studies have evaluated the efficacy of treatment of PTSD among children and adolescents. The limited available research suggests that cognitive behavioral treatments, along with family involvement, are beneficial (Yule & Canterbury, 1996).

Quick Summary

Anxiety disorders and depression in children are referred to as internalizing disorders. Depression in childhood and adolescence looks similar to depression in adulthood, although there are notable differences. In childhood, depression affects boys and girls equally, but in adolescence girls are affected twice as often as boys. Genetics and stressful life events play a role in depression in childhood. Research on cognitive factors in childhood depression supports the notion that attributional style also plays a role; however, this work must consider the developmental stage of the child. Treatment for depression among children is facing a good deal of controversy, at least where medication is concerned. A randomized controlled trial found that

a combination of medication and CBT was the most effective treatment. Concerns about the effect of medications on suicide risk need to be addressed.

Anxiety and fear are typical in childhood. When fears interfere with functioning, such as keeping a child from school, intervention is warranted. Theories about the causes of anxiety disorders in children are similar to theories about their causes in adulthood, though less research has been done with children on, for example, cognitive factors. Cognitive behavioral therapy is an effective intervention for a number of different anxiety disorders in childhood. Other problems, such as PTSD in childhood, require additional study.



Learning Disabilities

Clinical Case: Tim

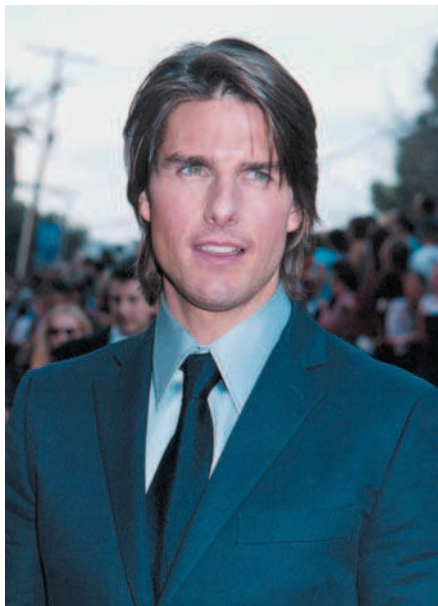
Several years ago, Tim was a student in one of our undergraduate courses who showed an unusual pattern of strengths and weaknesses. His comments in class were exemplary, but his handwriting was sometimes indecipherable and his spelling was very poor. After the instructor had noted these problems on his midterm examination, Tim came to see him and explained that he was dyslexic and that it

took him a long time to complete the weekly reading assignments and to write papers and exams. The instructor decided to give Tim extra time for written work because he was obviously of superior intelligence and highly motivated to excel. Given this chance, he earned an A in the course and when he graduated, he was admitted to a leading law school.

A **learning disability** is a condition in which a person shows a problem in a specific area of academic, language, speech, or motor skills that is not due to mental retardation or deficient educational opportunities. Children with a learning disability are usually of average or above-average intelligence but have difficulty learning some specific skill in the affected area (e.g., arithmetic or reading), and thus their progress in school is impeded.

DSM-IV-TR Criteria for Learning Disorders

- Achievement in reading, mathematics, or written expression below levels expected, given the person's age, schooling, and intelligence
- Significant interference with academic performance or activities of daily living



Tom Cruise, a highly successful actor, suffers from dyslexia. (AP/Wide World Photos.)

Clinical Descriptions

The term *learning disabilities* is not used by DSM-IV-TR but is used by most mental health professionals to group together three categories of disorders that do appear in DSM-IV-TR: learning disorders, communication disorders, and motor skills disorder. These disorders are described briefly in Table 14.3. Any of these disorders may apply to a child who fails to develop to the degree appropriate to his or her intellectual level in a specific academic, language, or motor skill area. Learning disabilities are often identified and treated within the school system rather than through mental health clinics. An older study suggested that the disorders are only slightly more common in boys (Shaywitz et al., 1990), but a recent study of four large epidemiological samples indicates that reading disorders, at least, are far more common in boys than in girls (Rutter et al., 2004).

Etiology of Learning Disabilities

Most research on learning disabilities concerns dyslexia, perhaps because it is the most prevalent of this group of disorders: it affects 5 to 10 percent of school-age children. Although studies on mathematics disorder are beginning to emerge, research has advanced more slowly in this area.

Etiology of Dyslexia Family and twin studies confirm that there is a heritable component to dyslexia (Pennington, 1995; Raskind, 2001). Furthermore, the genes that are associated with dyslexia are the same genes associated with typical reading abilities (Plomin & Kovas, 2005). These so-called “generalist genes” are thus important for understanding normal as well as abnormal reading abilities.

There is fairly good consensus among investigators that the core deficits in dyslexia include problems in language processing. Evidence from psychological, neuropsychological, and neuroimaging studies supports this contention. Research points to one or more problems in language processing that might underlie dyslexia, including perception of speech and analysis of the sounds of spoken language and their relation to printed words (Mann & Brady, 1988), difficulty recognizing rhyme and alliteration (Bradley & Bryant, 1985), problems with rapidly naming familiar objects (Scarborough, 1990; Wolf, Bally, & Morris, 1986), and delays in learning syntactic rules

Table 14.3 Learning Disorders in DSM-IV-TR

Learning Disorders include three categories:

- **Reading disorder**, better known as **dyslexia**, involves significant difficulty with word recognition, reading comprehension, and typically written spelling as well.
- **Disorder of written expression** involves an impairment in the ability to write (including spelling errors, errors in grammar and punctuation, and very poor handwriting).
- **Mathematics disorder** involves difficulty in rapidly and accurately recalling arithmetic facts, counting objects correctly and quickly, and aligning numbers in columns.

Communication Disorders include three categories:

- **Expressive language disorder** involves difficulty expressing oneself in speech, including difficulties in word finding, speaking in phrases only by age 4, below-age-level use of grammar.
- **Phonological disorder** involves correct comprehension and sufficient vocabulary use, but unclear speech and improper articulation. For example, *blue* comes out *bu*, and *rabbit* sounds like *wabbit*. With speech therapy, complete recovery occurs in almost all cases, and milder cases may recover spontaneously by age 8.
- **Stuttering** is a disturbance in verbal fluency that is characterized by one or more of the following speech patterns: frequent repetitions or prolongations of sounds, long pauses between words, substituting easy words for those that are difficult to articulate (e.g., words beginning with certain consonants), and repeating whole words (e.g., saying “go-go-go-go” instead of just a single “go”). DSM-IV-TR estimates that up to 80 percent of people with stuttering recover, most of them without professional intervention, before the age of 16.

Motor skills disorder, also referred to as *developmental coordination disorder*, involves marked impairment in the development of motor coordination that is not explainable by mental retardation or a disorder such as cerebral palsy.



(Scarborough, 1990). Many of these processes fall under what is called *phonological awareness*, which is believed to be critical to the development of reading skills (Anthony & Lonigan, 2004).

Studies using various brain-imaging techniques support the idea that children with dyslexia have a problem in phonological awareness. These studies show that areas in the left temporal, parietal, and occipital regions of the brain are important for phonological awareness, and these same regions are centrally involved in dyslexia.

For example, a study using fMRI found that, compared with children without dyslexia, children with dyslexia failed to activate the temporoparietal area during a phonological processing task (Temple et al., 2001). A larger study using fMRI found that compared to children without dyslexia, children with dyslexia showed less activation in the left temporoparietal and occipitotemporal areas while doing a number of reading relevant tasks, such as identifying letters and sounding out words (Shaywitz et al., 2002). A treatment study showed that after a year of intensive treatment for reading problems, children with dyslexia were better readers and also showed greater activation in the left temporoparietal and occipitotemporal areas while completing a reading task, compared to a group of children who received a less intensive treatment (Shaywitz et al., 2004).

Similar findings using fMRI have been found among adults with dyslexia (Horwitz, Ramsey, & Donahue, 1998; Klingberg et al., 2000). An fMRI study with adults examined three different types of readers (Shaywitz et al., 2003). The first group was called persistently poor readers (PPR)—they had trouble reading early in school (second grade) and later in school (ninth or tenth grade). The second group was called accuracy improved (AI)—they had trouble reading early in school but not later in school. The third group was called nonimpaired readers (NI)—they had no trouble with reading either early or late in school. On behavioral reading tasks completed outside the scanner, the PPR group performed more poorly than the AI and NI groups. On many tests, the AI group performed as well as the NI group, suggesting they had compensated for their early reading problems. However, the brain-imaging results told a different story. Specifically, the NI group activated the traditional areas of the brain linked to reading: the left temporal-parietal-occipital regions. However, the AI group did not show as much activation in these areas but did show activation in areas on the right side of the brain, suggesting that their compensation for early reading problems relied on areas of the brain not traditionally involved in reading. Paradoxically, the PPR group also activated the left side of the brain linked with reading. However, this group of poor readers also activated other areas of the brain associated with memory, suggesting that they were trying to rely on memorization of words to read rather than on language areas more efficiently used in reading.

It should be noted that the fMRI studies discussed above were done with children and adults in the United States who spoke English. A study examining Chinese children with dyslexia failed to find a problem with the temporoparietal area of the brain during reading tasks; instead, the left middle frontal gyrus showed less activation (Siok et al., 2004). The investigators speculate that the differences between the English and Chinese languages may account for the different brain regions involved. Reading English requires putting together letters that represent sounds. Reading Chinese, in contrast, requires putting together symbols that represent meanings. Indeed, reading Chinese requires mastery of nearly 6,000 different symbols. Thus, Chinese relies more on visual processing, while English relies more on sound processing.

Etiology of Mathematics Disorder Only one twin study has been conducted on the heritability of mathematics disorder, finding a heritability estimate of 0.38 (Alacorn et al., 1997). There is also evidence of some genetic influence on individual variations in math skills. In particular, the type of math disability that involves poor semantic memory is most likely to be heritable. A study of over 250 twin pairs conducted through the Colorado Learning Disabilities

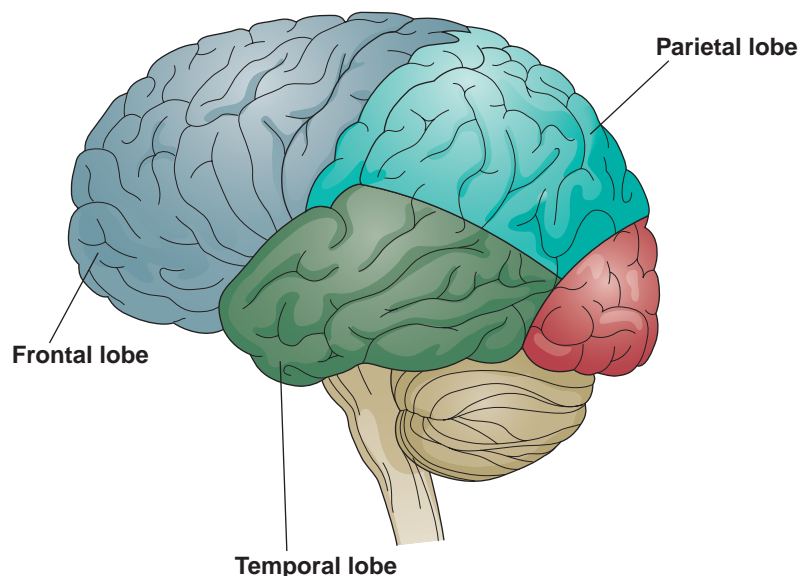


Figure 14.5 Areas of the brain implicated in dyslexia include parts of the frontal, parietal, and temporal lobes, at least in Western cultures.



Recent interventions for dyslexia have improved children's reading. (Scholastic Studio 10/Index Stock.)

Research Center suggested that common genetic factors underlie both reading and math deficits in children with both disorders (Gillis & DeFries, 1991; Plomin & Kovas, 2005). Furthermore, as with reading disorder, the evidence suggests that any genes associated with mathematics disorder are also associated with mathematics ability (Plomin & Kovas, 2005).

Treatment of Learning Disabilities

Several strategies are used to treat learning disabilities, both in school programs and in private tutoring. Traditional linguistic approaches, used primarily in cases of reading and writing difficulties, focus on instruction in listening, speaking, reading, and writing skills in a logical, sequential, and multisensory manner, such as reading out loud under close supervision. In young children, readiness skills, such as letter discrimination, phonetic analysis, and learning letter–sound correspondences, may need to be taught before explicit instruction in reading is attempted. Phonics instruction involves helping children master the task of converting sounds to words (National Institute of Child Health and Human Development, 2000). Findings from the National Reading Panel, a comprehensive review of the research on teaching children to read, indicate that phonics instruction is beneficial for children with reading difficulties. Like the clinical case of Tim described earlier, people with dyslexia can often succeed in college with the aid of instructional supports, such as podcast or webcast lectures that can be re-reviewed, tutors, and untimed tests. Colleges are required by law to provide special services to help such students, and public schools are now required to provide transitional vocational and career planning for older adolescents with learning disabilities.

One promising development in treating communication disorders (Merzenich et al., 1996; Tallal et al., 1996) is based on previous findings that children with such disorders have difficulty discriminating certain sounds. Researchers developed special computer games and audiotapes that slow speech sounds. After intensive training with these modified speech stimuli for 1 month, children with severe language disorders were able to improve their language skills to the point at which they were functioning as typically developing children do. Similar training using unmodified speech stimuli resulted in very little progress.

Based on their promising initial findings, these investigators expanded the treatment, now called Fast ForWord, and conducted a larger study including 500 children from the United States and Canada. Children received daily training for 6 to 8 weeks, and results again indicated that the intervention was effective. Children improved in speech, language, and auditory processing skills by about 1½ years of ability (Tallal et al., 1998). The researchers speculate that this training method may even help prevent dyslexia, since many reading-disordered children had difficulties understanding language as young children.

Most children with learning disabilities have probably experienced a great deal of frustration and failure, eroding their motivation and confidence. Whatever their design, treatment programs should provide opportunities for children to experience feelings of mastery and self-confidence. Rewarding small steps can be useful in increasing the child's motivation, helping the child focus attention on the learning task, and reducing behavioral problems caused by frustration.

Mental Retardation

In this section, we first examine the DSM-IV-TR perspective on **mental retardation** and then discuss the approach of the American Association on Intellectual and Developmental Disabilities, the principal professional organization devoted to research, education, and application in the field of mental retardation.

Diagnosis and Assessment of Mental Retardation

Mental Retardation in DSM-IV-TR The DSM-IV-TR diagnostic criteria for mental retardation, an Axis I disorder, include (1) significantly below average intellectual functioning, (2) deficits in adaptive behavior, and (3) an onset prior to age 18.

Intelligence Test Scores About two-thirds of the population achieves IQ (intelligent quotient) test scores between 85 and 115. Those with a score below 70 to 75, two standard deviations



below the mean of the population, meet the criterion of “significant subaverage general intellectual functioning.” About 3 percent of the population falls into this category.

Adaptive Functioning Adaptive functioning refers to mastering childhood skills such as toileting and dressing; understanding the concepts of time and money; being able to use tools, to shop, and to travel by public transportation; and becoming socially responsive. An adolescent, for example, is expected to be able to apply academic skills, reasoning, and judgment to daily living and to participate in group activities. An adult is expected to be self-supporting and to assume social responsibilities. Several tests have been constructed to assess adaptive behavior. Best known are the Adaptive Behavior Scale, or ABS (Nihira et al., 1975), and the Vineland Adaptive Behavior Scales (Sparrow, Ballo, & Cicchetti, 1984; see Table 14.4).

Table 14.4 Sample Items from the Vineland Adaptive Behavior Scales

Age (Years)	Adaptive Ability
2	Says at least 50 recognizable words. Removes front-opening coat, sweater, or shirt without assistance.
5	Tells popular story, fairy tale, lengthy joke, or plot of television program. Ties shoelaces into a bow without assistance.
8	Keeps secrets or confidences for more than 1 day. Orders own meal in a restaurant.
11	Uses the telephone for all kinds of calls without assistance. Watches television or listens to radio for information about a particular area of interest.
16	Looks after own health. Responds to hints or indirect cues in conversation.

Source: From Sparrow et al. (1984).

Age of Onset The third DSM-IV-TR criterion is that mental retardation must be manifested before age 18, to rule out classifying as mental retardation any deficits in intelligence and adaptive behavior that result from injury or illnesses occurring later in life.

Levels of Mental Retardation Table 14.5 shows the four levels of mental retardation recognized in DSM-IV-TR, each corresponding to a specific range of IQ scores. However, because IQ is not the sole basis of diagnosis, persons with a low IQ score but no deficits in adaptive behavior would not be considered to have mental retardation. In practice, the IQ criterion is usually applied only after deficits in adaptive behavior have been identified.

The Approach of the American Association on Intellectual and Developmental Disabilities The American Association on Intellectual and Developmental Disabilities (AAIDD) is an organization whose mission is to “promote progressive policies, sound research, effective practices, and universal human rights for people with intellectual disabilities” (AAIDD: www.aaidd.org). The group changed its name in 2006 (it was formerly known as the American Association of Mental Retardation) in large part to acknowledge that intellectual disability is now

● **DSM-IV-TR Criteria for Mental Retardation**

- Significantly below average intellectual functioning, IQ less than 70
- Deficits in adaptive social functioning in at least two of the following areas: communication, self-care, home living, interpersonal skills, use of community resources, ability to make own decisions, functional academic skills, leisure, work, health, and safety
- Onset before age 18

Table 14.5 DSM-IV-TR Categories of Mental Retardation

Mild mental retardation (50–55 to 70 IQ). About 85 percent of all those with IQs of less than 70 are classified as having mild mental retardation.

Moderate mental retardation (35–40 to 50–55 IQ). About 10 percent of those with IQs of less than 55 are classified as having moderate mental retardation.

Severe mental retardation (20–25 to 35–40 IQ). About 3 to 4 percent of those with IQs less than 40 are classified as having severe mental retardation.

Profound mental retardation (below 20–25 IQ). About 1 to 2 percent of people with IQs less than 25 are classified as having profound mental retardation.

Source: DSM-IV-TR (APA 2000).

Table 14.6 The AAIDD Definition of Intellectual Disability (Mental Retardation)

Mental retardation is a disability characterized by significant limitations both in intellectual functioning and in adaptive behavior as expressed in conceptual, social, and practical adaptive skills.

This disability originates before age 18.

Five Assumptions Essential to the Application of the Definition

1. Limitations in present functioning must be considered within the context of community environments typical of the individual's age, peers, and culture.
2. Valid assessment considers cultural and linguistic diversity as well as differences in communication, sensory, motor, and behavioral factors.
3. Within an individual, limitations often coexist with strengths.
4. An important purpose of describing limitations is to develop a profile of needed supports.
5. With appropriate personalized supports over a sustained a period, the life functioning of the person with mental retardation generally will improve.

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the preferred term over mental retardation (Schalock et al., 2007). AAIDD has been in existence since 1876 and has routinely published guidelines for classifying and defining mental retardation that are less focused on identifying severity of disability and more on determining what steps are necessary to facilitate higher functioning. The 10th edition of the AAIDD guidelines for defining intellectual disability was published in 2002; the guidelines are presented in Table 14.6. These guidelines are followed by professionals more than are the DSM-IV-TR criteria.

Professionals are encouraged to identify an individual's strengths and weaknesses on psychological, physical, and environmental dimensions with a view toward determining the kinds and degrees of support needed to enhance the person's functioning in different domains. The approach focuses more on what people can do than on what they cannot do and directs professional attention to how best to make positive changes in the people's lives.

The AAIDD approach encourages a more individualized assessment of a person's skills and needs than does the DSM-IV-TR. As an example of the AAIDD approach to classification,



When assessing adaptive behavior, the environment must be considered. A person living in a rural community may not need the same skills as those needed by someone living in New York City, and vice versa. (Left: Gene Peach/Liaison Agency, Inc./Getty Images; right: Joseph Rodriguez/Black Star.)



consider Roger, a 24-year-old man with an IQ of 45 who has attended a special program for people with mental retardation since he was 6. According to DSM-IV-TR, he would be considered moderately mentally retarded. Based on this diagnosis, he would not be expected to be able to live independently, get around on his own, or progress beyond second grade. The AAIDD classification system, however, would emphasize what is needed to maximize Roger's functioning. Thus, a clinician might discover that Roger can use the bus system if he takes a route familiar to him, and thus he might be able to go to a movie by himself from time to time. And although he cannot prepare complicated meals, he might be able to learn to prepare frozen entrées in a microwave oven. The assumption is that by building on what he can do, Roger will make more progress.

In the schools, an individualized educational placement (IEP) is based on the person's strengths and weaknesses and on the amount of instruction needed. Students are identified by the classroom environment they are judged to need. This approach can lessen the stigmatizing effects of having mental retardation and may also encourage a focus on what can be done to improve the student's learning.

Etiology of Mental Retardation

At this time, the primary cause of mental retardation can be identified in only 25 percent of the people affected. The causes that can be identified are typically neurobiological.

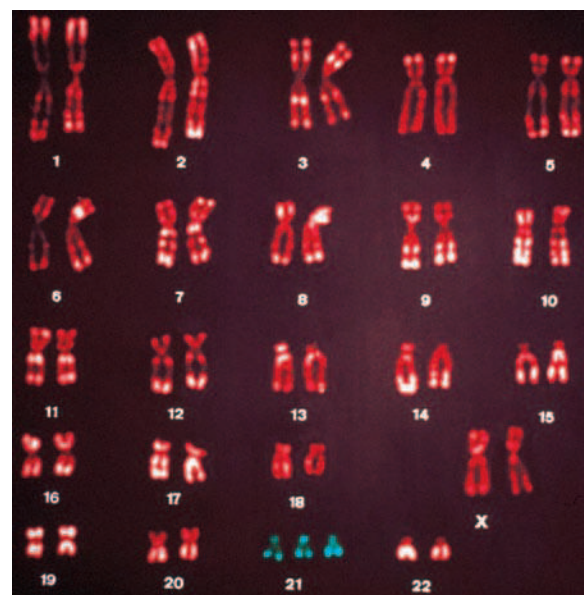
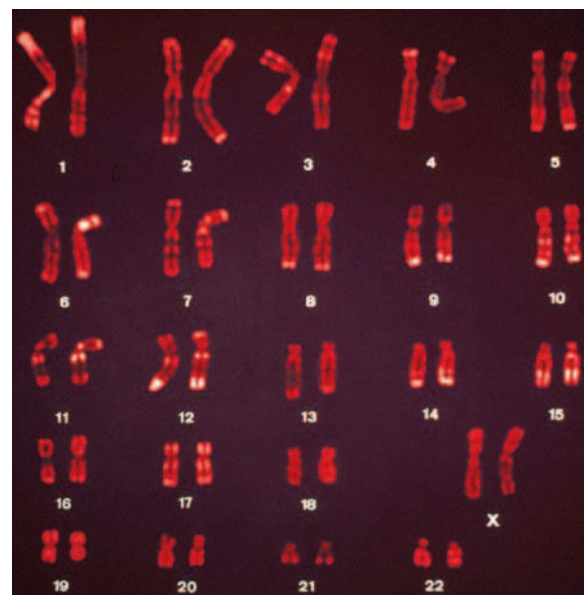
Genetic or Chromosomal Abnormalities Chromosomal abnormalities occur in just under 5 percent of all recognized pregnancies. Most of these pregnancies end in miscarriage. In all, about one-half of one percent of newborns have a chromosomal abnormality (Smith, Bierman, & Robinson, 1978). A significant proportion of these infants die soon after birth. Of the babies who survive, the majority have **Down syndrome**, or *trisomy 21*. Down syndrome is found in about 1 in 800 to 1,200 live births.

Down syndrome is named after the British physician Langdon Down, who first described its clinical signs in 1866. In 1959 the French geneticist Jerome Lejeune and colleagues identified its genetic basis. Human beings normally possess 46 chromosomes, inheriting 23 from each parent. People with Down syndrome almost always have 47 chromosomes instead of 46. During maturation of the egg, the two chromosomes of pair 21, the smallest ones, fail to separate. If the egg unites with a sperm, there will be three of chromosome 21—thus the technical term *trisomy 21*.

People with Down syndrome have mental retardation as well as some distinctive physical signs, such as short and stocky stature; oval, upward-slanting eyes; a prolongation of the fold of the upper eyelid over the inner corner of the eye; sparse, fine, straight hair; a wide and flat nasal bridge; square-shaped ears; a large, furrowed tongue, which may protrude because the mouth is small and its roof low; and short, broad hands.

About 40 percent of children with Down syndrome have heart problems; a small minority may have blockages of the upper intestinal tract; and about one in six dies during the first year. Mortality after age 40 is high.

Another chromosomal abnormality that can cause mental retardation is **fragile X syndrome**, which involves a mutation in the *fMR1* gene on the X chromosome (National Fragile X Foundation: www.fragilex.org). Physical symptoms associated with fragile X include facial features such as large, underdeveloped ears and a long, thin face. Many people with fragile X syndrome have mental retardation. Others have average IQ but show problems such as learning disabilities, difficulties on neuropsychological tests, and mood lability. About a third of children with fragile X syndrome also exhibit autism-spectrum behaviors, suggesting that the *fMR1* gene may be one of the many genes that contribute to autism (Hagerman, 2006).



(Top) The normal complement of chromosomes is 23 pairs. (Bottom) In Down syndrome, there are three copies (a trisomy) of chromosome 21. (Kunkel/Phototake.)



Child with Down syndrome. (Terry McKoy/Index Stock.)

Recessive-Gene Diseases Several hundred recessive-gene diseases have been identified, and many of them cause mental retardation. Here we discuss one recessive-gene disease, phenylketonuria.

In **phenylketonuria (PKU)**, the infant, born without obvious signs of difficulty, soon begins to suffer from a deficiency of a liver enzyme, phenylalanine hydroxylase. This enzyme is needed to convert phenylalanine, an amino acid contained in protein, to tyrosine, an amino acid that is essential for the production of certain hormones, such as epinephrine. Because of this enzyme deficiency, phenylalanine and its derivative, phenylpyruvic acid, are not broken down and instead build up in the body's fluids. This buildup eventually damages the brain because the unmetabolized amino acid interferes with the process of myelination, the sheathing of neuron axons, which is essential for neuronal function. Myelination supports the rapid transmittal of neuronal impulses. The neurons of the frontal lobes, the site of many important cognitive functions, such as decision making, are particularly affected, and mental retardation can be profound.

Although PKU is rare, with an incidence of about 1 in 14,000 live births, it is estimated that 1 person in 70 is a carrier of the recessive gene. A blood test is available for prospective parents who have reason to suspect that they might be carriers. Pregnant women who carry the recessive gene must monitor their diet closely so that the fetus will not be exposed to toxic levels of phenylalanine (Baumeister & Baumeister, 1995). State laws require testing newborns for PKU. After the newborn with PKU has consumed milk for several days, an excess amount of unconverted phenylalanine can be detected in the blood. If the test is positive, the parents are taught to provide the infant a diet low in phenylalanine.

Parents are encouraged to introduce the special diet as early as possible and to maintain it indefinitely. Studies have indicated that children whose dietary restrictions stop at age 5–7 begin to show subtle declines in functioning, particularly in IQ, reading, and spelling (Fishler et al., 1987; Legido et al., 1993). Even among children with PKU who maintain the diet, however, deficits in perceptual, memory, and attentional abilities have been observed (Banich et al., 2000; Huijbregts et al., 2002).

Infectious Diseases While in utero the fetus is at increased risk of mental retardation resulting from maternal infectious diseases such as rubella (German measles). The consequences of these diseases are most serious during the first trimester of pregnancy, when the fetus has no detectable immunological response, that is, its immune system is not developed enough to ward off infection. Cytomegalovirus, toxoplasmosis, rubella, herpes simplex, HIV, and syphilis are all maternal infections that can cause both physical deformities and mental retardation in the fetus. The mother may experience slight or no symptoms from the infection, but the effects on the developing fetus can be devastating.

Infectious diseases can also affect a child's developing brain after birth. Encephalitis and meningococcal meningitis may cause brain damage and even death if contracted in infancy or early childhood. In adulthood, these infections are usually far less serious. There are several forms of childhood meningitis, a disease in which the protective membranes of the brain are acutely inflamed and fever is very high.

Accidents In the United States, accidents are the leading cause of severe disability and death in children over one year of age. Falls near-drownings, and automobile accidents are among the most common mishaps in early childhood and may cause head injuries leading to varying degrees of mental retardation. Laws mandating that children sit in safety seats and wear seat belts in automobiles and that they wear protective helmets when bicycling play a major role in reducing the incidence of mental retardation in children.

Environmental Hazards Several environmental pollutants are implicated in mental retardation. One such pollutant is mercury, which may be ingested by eating affected fish. Another is lead, which is found in lead-based paints, smog, and the exhaust from automobiles that burn leaded gasoline. Lead poisoning can cause kidney and brain damage as well as anemia, mental retardation, seizures, and death. Lead-based paint is now prohibited in the United States, but it is still found in older homes, where children may eat pieces that flake off.



States require that newborns be tested for PKU. If excess phenylalanine is found in the blood, a special diet is recommended for the baby. (Garro/Photo Researchers, Inc.)



Treatment of Mental Retardation

Residential Treatment Since the 1960s, there have been serious and systematic attempts to educate children with mental retardation as fully as possible. Most people with mental retardation can acquire the competence needed to function effectively in the community. The trend has been to provide these people with educational and community services rather than institutionalizing them in hospitals, where they receive mainly custodial care.

Since 1975, people with mental retardation have had a legal right to appropriate treatment in the least restrictive setting. Ideally, adults with mental retardation live in small to medium-sized residences that are integrated into the community. Medical care is provided, and trained, live-in supervisors and aides help with residents' special needs around the clock. Residents are encouraged to participate in household routines to the best of their abilities. Many adults with mental retardation have jobs and are able to live independently in their own apartments. Others live semi-independently in apartments housing three to four adults; generally, a counselor provides aid in the evening.

Behavioral Treatments Early-intervention programs using behavioral techniques have been developed to improve the level of functioning of people with mental retardation. Specific behavioral objectives are defined, and children are taught skills in small, sequential steps (Reid, Wilson, & Faw, 1991).

Children with severe mental retardation usually need intensive instruction to be able to feed, toilet, and groom themselves. To teach a child a particular routine, the therapist usually begins by dividing the targeted behavior, such as eating, into smaller components: pick up spoon, scoop food from plate onto spoon, bring spoon to mouth, remove food with lips, chew, and swallow food. Operant conditioning principles are then applied to teach the child these components of eating. For example, the child may be reinforced for successive approximations to picking up the spoon until he or she is able to do so. This operant approach, sometimes called *applied behavior analysis*, is also used to reduce inappropriate and self-injurious behavior. These behaviors can often be reduced by reinforcing substitute behaviors.

Studies of these programs indicate consistent improvements in fine motor skills, acceptance by others, and self-help skills. However, the programs appear to have little effect on gross motor skills and linguistic abilities, and no long-term improvements in IQ or school performance have been demonstrated.

Cognitive Treatments Many children with mental retardation fail to use strategies in solving problems, and when they do use strategies, they often do not use them effectively. Self-instructional training teaches these children to guide their problem-solving efforts through speech.

For example, one group of researchers taught high school students with IQs below 40 to make their own buttered toast and clean up after themselves (Hughes, Hugo, & Blatt, 1996). A teacher would demonstrate and verbalize the steps involved in solving a problem, such as the toaster's being upside down or unplugged. The young people learned to talk themselves through the steps using simple verbal or signed instructions. For example, when the toaster was presented upside down, the person would be taught to first state the problem ("Won't go in"), then to state the response ("Turn it"), self-evaluate ("Fixed it"), and self-reinforce ("Good"). They were rewarded with praise and high-fives when they verbalized and solved the problem correctly. Several studies have demonstrated that even people with severe mental retardation can learn self-instructional approaches to problem solving and then generalize the strategy to new tasks, including taking lunch orders at a cafeteria and performing janitorial duties (Hughes & Agran, 1993).

Computer-Assisted Instruction Computer-assisted instruction is increasingly found in educational and treatment settings of all kinds; it may be especially well suited to the education of people with mental retardation.



Although lead-based paint is now illegal, it can still be found in older homes. Eating these paint chips can cause lead poisoning, which can cause mental retardation. (James Keyser/Time Inc. Picture Collection.)



Computer-assisted instruction is well suited for applications in the treatment of mental retardation. (Robin Nelson/PhotoEdit.)

The visual and auditory components of computers maintain the attention of distractible students; the level of the material can be geared to the individual, ensuring successful experiences; and the computer can meet the need for numerous repetitions of material without becoming bored or impatient, as a human teacher might. For example, computers have been used to help people with mental retardation learn to use an ATM (Davies, Stock, & Wehmeyer, 2003). PDAs or smart phones can be enormously helpful by serving as aids for reminders, directions, instructions, and daily tasks.

Quick Summary

Learning disorders, communication disorders, and motor skills disorders are all referred to by mental health professionals as learning disabilities. Most research has been conducted on learning disorders, particularly dyslexia. Children with dyslexia have significant difficulty with word recognition, reading comprehension, and typically written spelling as well. Research has uncovered how the brain is involved in dyslexia, particularly areas of the brain that support language, including the temporoparietal and occipitotemporal areas. However, important cultural differences have been noted, suggesting that there may not be one universal mechanism to account for dyslexia. The ways in which different languages are supported by the brain will be an important part of future research. Interventions for dyslexia involve inten-

sive work on reading and language skills. Not only are these interventions successful, but they may also promote changes in the brain that could contribute to the longer-term success of the treatment.

The DSM-IV-TR continues to include categories of mental retardation based on IQ scores (mild, moderate, severe, profound). However, most professionals agree that this approach is not particularly helpful for treatment. The approach of the AAIDD stresses the importance of identifying an individual's strengths and weaknesses. There are a number of known causes of mental retardation, including chromosomal abnormalities, brain injury, infections, and toxins. Environmental influences such as poverty and nutrition are believed to play a part in milder forms of mental retardation.

Check Your Knowledge 14.3

Answer the questions.

- Which of the following is not considered a learning disability?
 - mathematics disorder
 - dyslexia
 - mental retardation
 - expressive language disorder
- A recent study examining children with dyslexia who spoke either Chinese or English found:
 - The left middle frontal gyrus showed less activation during reading among Chinese-speaking children with dyslexia.
 - The left temporoparietal cortex showed less activation during reading among Chinese-speaking children with dyslexia.
 - The left middle frontal gyrus showed less activation during reading among English-speaking children with dyslexia.
 - The left temporoparietal cortex showed more activation during reading among English-speaking children with dyslexia.
- Which of the following has not been established as a cause for mental retardation?
 - chromosomal abnormalities such as trisomy 21
 - PKU
 - lead poisoning
 - All the above have been found to cause mental retardation.

Autistic Disorder

Imagine that you are in a special education classroom for children. You are taking a course on child disabilities, and one of the requirements is to volunteer some time in this class. One of the children in the room is standing in front of a fish tank. You notice his graceful, deft movements, his dreamy smile, and the remote look in his eyes. You start talking to him about the fish, but instead of acknowledging your comment, or even your presence, he begins rocking back and forth while continuing to smile, as if enjoying a private joke. Later, you ask the teacher about the boy, and she tells you that he has autistic disorder.



Clinical Descriptions

Autistic disorder was identified in 1943 by a psychiatrist at Johns Hopkins, Leo Kanner, who, in the course of his clinical work, noted 11 disturbed children who behaved in ways that were not common in children with mental retardation or schizophrenia. He named the syndrome *early infantile autism* because he observed that “there is from the start an extreme autistic aloneness that, whenever possible, disregards, ignores, shuts out anything that comes to the child from the outside” (Kanner, 1943).

Kanner considered autistic aloneness the most fundamental symptom. He also learned that these 11 children had been unable from the beginning of life to relate to people in the ordinary way. They were severely limited in language and had a strong, obsessive desire for everything about them to remain unchanged. Despite its early description by Kanner and others (Rimland, 1964), the disorder was not accepted into official diagnostic nomenclature until the publication of DSM-III in 1980.

Autistic disorder begins in early childhood and can be evident in the first months of life. It affects about one of every 150 children. Studies show that about four times more boys than girls have autism (Volkmar, Szatmari, & Sparrow, 1993). There has been a large increase in the number of autism diagnoses over the past 25 years—close to a 300 percent increase in California, for example (Maugh, 2002) (see Focus on Discovery 14.3 for more on this). Autism is found in all socioeconomic, ethnic, and racial groups. The diagnosis of autism is remarkably stable. In one recent study, only 1 out of 84 children diagnosed with autism at age 2 no longer met the diagnostic criteria at age 9 (Lord et al., 2006).

Asperger’s disorder is often regarded as a mild form of autism. The disorder is named after Hans Asperger, who in 1944 described the syndrome as being less severe and with fewer communication deficits than autism. Social relationships are poor and stereotyped behavior is intense and rigid, but language and intelligence are intact. It is not clear if Asperger’s disorder differs qualitatively from autistic disorder or if it differs only in severity. More research has been conducted in the last 10 years on Asperger’s disorder, perhaps due to the recognition of this condition among adults who for years wondered why they were different from others. Adults with Asperger’s disorder are now more frequently recognized and treated by mental health professionals (Gaus, 2007).

Autism and Asperger’s disorder are considered two types of **pervasive developmental disorders** (PDDs), a term first introduced in DSM-III. Two other PDDs are described in Table 14.7. When applied to autism, the term *pervasive developmental disorder* implies that autism involves a serious abnormality in the developmental process itself and thus differs from the mental disorders that originate in adulthood. Because there is not as much research on the other pervasive developmental disorders, we focus here on autism.

Autism and Mental Retardation Many children with autism score below 70 on standardized intelligence tests, which sometimes makes it difficult to distinguish between autistic disorder and mental retardation. There are important differences, however. Children with mental retardation usually score poorly on all parts of an intelligence test, but children with autism may score

Table 14.7 Additional Pervasive Developmental Disorders in DSM-IV-TR

Rett’s disorder is very rare and is found only in girls. Development is entirely normal until the first or second year of life, when the growth of the child’s head decelerates. She loses the ability to use her hands for purposeful movements, instead engaging in stereotyped movements such as hand wringing or hand washing; walks in an uncoordinated manner; learns only poorly to speak and to understand others; and is profoundly retarded. The child does not relate well to others, though this may improve later in life.

Childhood disintegrative disorder occurs in children who have had normal development in the first 2 years of life followed by significant loss of social, play, language, and motor skills. Abnormalities in social interaction and communication and the presence of stereotyped behavior are very similar to those in autism. There has been considerable debate concerning the validity of childhood disintegrative disorder and whether it is distinct from autistic disorder (Hendry, 2000).

DSM-IV-TR Criteria for Autistic Disorder

- A total of six or more items from A, B, and C below, with at least two from A and one each from B and C:
 - A.** Impairment in social interactions as manifested by at least two of the following:
 - Marked impairment in use of nonverbal behaviors such as eye contact, facial expression, body language
 - Deficit in development of peer relationships appropriate to developmental level
 - Lack of spontaneous sharing of things or activities with others
 - Lack of social or emotional reciprocity
 - B.** Impairment in communication as manifested by at least one of the following:
 - Delay in or total lack of spoken language without attempts to compensate by nonverbal gestures
 - In those who have some speech, marked impairment in ability to initiate or sustain a conversation with another
 - Repetitious or idiosyncratic language
 - Lack of developmentally appropriate play
 - C.** Repetitive or stereotyped behaviors or interests, manifested by at least one of the following:
 - Abnormal preoccupation with objects or activities
 - Rigid adherence to certain rituals
 - Stereotyped mannerisms
 - Abnormal preoccupation with parts of objects
- Delays or abnormal functioning in at least one of the following areas, beginning before age 3: social interactions, language for communication with others, or imaginative play
- Disturbance not better described as Rett’s disorder or childhood disintegrative disorder

poorly on those subtests related to language, such as tasks requiring abstract thought, symbolism, or sequential logic (Carpentieri & Morgan, 1994). They usually obtain better scores on items requiring visual-spatial skills, such as matching designs in block-design tests and putting together disassembled objects (Rutter, 1983). Sensorimotor development is the area of greatest relative strength among children with autism. These children, who may show severe and profound deficits in cognitive abilities, can be quite graceful and adept at swinging, climbing, or balancing, whereas children with mental retardation are much more delayed in areas of gross motor development, such as learning to walk. Sometimes they may have isolated skills that reflect great talent, such as the ability to multiply two four-digit numbers rapidly in their heads. They may also have exceptional long-term memory, being able to recall the exact words of a song heard years earlier.

People with autism who have an IQ score greater than 70 or 80 are sometimes referred to as high-functioning. The term *high-functioning* can be misleading, though (Gaus, 2007). Studies comparing these high-functioning people with a control group matched on age, IQ, and education still find differences between the groups. For example, one study found that high-functioning people with autism performed faster but less accurately on a sentence-comprehension test compared to a control group without autism but with equivalent IQ scores (Just et al., 2004). As part of this study, fMRI revealed that the patterns of brain activation also differed between the two groups. Specifically, compared to the control group, the high-functioning group showed greater activation in the areas of the brain linked to language comprehension and less activation in the areas linked to language production. In addition, the connectivity of the different areas of the brain linked with language was significantly lower among the high-functioning autism group than among the control group, suggesting that there is less coordination among the areas of the brain that support language processing among people with autism.

Social and Emotional Disturbances Children with autism can have profound problems with the social world (Dawson et al., 2004). They rarely approach others and may look through or past people or turn their backs on them. For example, one study found that children with autism rarely offered a spontaneous greeting or farewell (either verbally or through smiling, making eye contact, or gesturing) when meeting or departing from an adult (Hobson & Lee, 1998). Another study found that one-year-old children with autism attended to other people's faces far

less often at their birthday parties than did children without autism (Osterling & Dawson, 1994). Few children with autism initiate play with other children, and they are usually unresponsive to any who may approach them. Children with autism do sometimes make eye contact, but their gaze has an unusual quality. Typically, children gaze to gain someone's attention or to direct the other person's attention to an object; children with autism generally do not (Dawson et al., 2004). This is often referred to as a problem in **joint attention**. That is, interactions that require two people to pay attention to each other, whether speaking or communicating emotion non-verbally, are impaired in children with autism.

A study with adults found that people with autism pay attention to different parts of faces than do people without autism (Spezio et al., 2007). In order to figure out what type of emotion a face is displaying, perceivers typically need to look at the upper and lower face. Some emotions carry a lot of information in the eyes (e.g., anger, happiness). In the study, adults with autism focused their gaze mostly on the mouth region and almost entirely neglected the eye region. This relative neglect likely contributes to their difficulties in perceiving emotion in other people.

Consistent with the findings showing that children with autism do not pay attention to other people's faces or capture their gaze, fMRI studies have found that people with autism do not show activation in the fusiform gyrus, the area of the brain most often associated with identifying faces, when completing face perception or identity tasks (Pierce et al., 2001, 2004). Instead, other areas of the brain show activation during these tasks, suggesting perhaps a less efficient system for



Heather Kuzmich, a finalist on the television show *America's Next Top Model*, also has Asperger's disorder. (© Circe Hamilton/CameraPress/Retna.)



identifying faces. A different fMRI study examined blood flow changes in the brain during processing of emotional facial expressions. In people with autism, the areas of the brain associated with the processing of faces (temporal lobe region) and emotion (amygdala) were not activated during this task (Critchley et al., 2001).

When someone else initiates play, children with autism may be compliant and engage in the activity for a period of time. Physical play, such as tickling and wrestling, may not be enjoyable to children with autism. Observations of their spontaneous play in an unstructured setting reveal that children with autism spend much less of their time engaged in symbolic play, such as making a doll drive to the store or pretending that a block is a car, than do either children with mental retardation or typically developing children of comparable mental age (Sigman et al., 1987).

Some children with autism appear not to recognize or distinguish one person from another, but some of these children can become preoccupied with and form strong attachments to simple inanimate objects (e.g., keys, rocks, a wire-mesh basket, light switches, a large blanket) and to more complex mechanical objects (e.g., refrigerators and vacuum cleaners). If the object is something they can carry, they may walk around with it in their hands, and this may prevent them from learning to do more useful things.

Some researchers have proposed that children with autism have a deficient “theory of mind” and that this is their core deficit, leading to the kinds of social dysfunctions we have described here (Gopnik, Capps, & Meltzoff, 2000; Sigman, 1994). *Theory of mind* refers to a person’s understanding that other people have desires, beliefs, intentions, and emotions that may be different from one’s own. This ability is crucial for understanding and successfully engaging in social interactions. Theory of mind typically develops over the period between 2½ and 5 years of age. Children with autism seem not to undergo this developmental milestone and thus seem unable to understand others’ perspectives and emotional reactions. Research has also shown that people with autism (and those with Asperger’s disorder) have disturbances in areas of the brain linked to abilities needed for a theory of mind (Castelli et al., 2002).

Although high-functioning children with autism can learn to understand emotional experiences, they “answer questions about . . . emotional experiences like normal children answer difficult arithmetic questions” (Sigman, 1994, p. 151), with concentrated effort. Laboratory studies of children with high-functioning autism have found that they may recognize others’ emotions without really understanding them (Capps, Yirmiya, & Sigman, 1992; Capps et al., 1999). For example, when asked to explain why someone was angry, a child with autism responded “because he was yelling” (Capps, Losh, & Thurber, 2000).

Communication Deficits Even before they acquire language, some children with autism show deficits in communication. Babbling, a term describing the utterances of infants before they begin to use words is less frequent in infants with autism and conveys less information than it does in other infants (Ricks, 1972). By 2 years of age, most typically developing children use words to represent objects in their surroundings and construct one- and two-word sentences to express more complex thoughts, such as “Mommy go” or “Me juice.” In contrast, children with autism lag well behind in these abilities and often show other language disturbances.

One such feature associated with autism is **echolalia**, in which the child echoes, usually with remarkable fidelity, what he or she has heard another person say. The teacher may ask a child with autism, “Do you want a cookie?” The child’s response may be, “Do you want a cookie?” This is immediate echolalia. In delayed echolalia, the child may be in a room with the television on and appear to be completely uninterested. Several hours later or even the next day, the child may echo a word or phrase from the television program.



Children with autism do not often play or socially interact with other children. (Ellen B. Senisi.)

Another language abnormality common in the speech of children with autism is **pronoun reversal**, in which children refer to themselves as “he,” “she,” or “you” (or even by their own name). For example:

Parent: What are you doing, Johnny?

Child: He’s here.

Parent: Are you having a good time?

Child: He knows it.

Pronoun reversal is closely linked to echolalia—when children with autism use echolalic speech, they refer to themselves as they have heard others speak of them and misapply pronouns. Children with autism are very literal in their use of words. If a father provided positive reinforcement by putting his daughter on his shoulders when she learned to say the word *yes*, then the child might say *yes* to mean she wants to be lifted onto her father’s shoulders. Or a child may say “do not drop the cat” to mean “no,” because a parent had used these emphatic words when the child was about to drop the family feline.



People with autism frequently engage in stereotyped behavior, such as ritualistic hand movements. (Nancy Pierce/Photo Researchers.)

Repetitive and Ritualistic Acts Children with autism can become extremely upset over changes in their daily routines and surroundings. An offer of milk in a different drinking cup or a rearrangement of furniture may make them cry or precipitate a temper tantrum.

An obsessional quality may pervade the behavior of children with autism. In their play, they may continually line up toys or construct intricate patterns with household objects. As they grow older, they may become preoccupied with train schedules, subway routes, and number sequences. Children with autism are also likely to perform a more limited number of behaviors than children without autism and are less likely to explore new surroundings.

Children with autism may also display stereotypical behavior, peculiar ritualistic hand movements, and other rhythmic movements, such as endless body rocking, hand flapping, and walking on tiptoe. They may spin and twirl string, crayons, sticks, and plates, twiddle their fingers in front of their eyes, and stare at fans and other spinning things. Researchers often describe these as self-stimulatory activities. The children may become preoccupied with manipulating an object and may become very upset when interrupted.

Prognosis for Autistic Disorder What happens to children with autism when they reach adulthood? Kanner (1973) reported on the adult status of nine of the eleven children described in his original paper on autism. Two had developed epileptic seizures; one of these had died, and the other was in a state hospital. Four others had spent most of their lives in hospitals. Of the remaining three, one was still mute but was working on a farm and as an orderly in a nursing home. The other two had made satisfactory recoveries; although both still lived with their parents and had little social life, they were gainfully employed and had developed some recreational interests.

Similar outcomes have been found in more recent population-based, follow-up studies (Gillberg, 1991; Nordin & Gillberg, 1998; Von Knorring & Hagglöf, 1993). Generally, children with higher IQs who learn to speak before age six have the best outcomes, and a few of these function fairly well in adulthood. For example, a recent longitudinal study of children with autism from preschool to early adulthood found that IQs over 70 predicted more strengths and fewer weaknesses on the Vineland scales (see Table 14.4) as they grew older (McGovern & Sigman, 2005), and outcomes were better for those who had interacted and engaged more with their peers. Follow-up studies focusing on high-functioning people with autism have indicated that most do not require residential care and some are able to attend college and support themselves through employment (Yirmiya & Sigman, 1991). Still, many independently functioning adults with autism continue to show impairment in social relationships (Howlin,



Mawhood, & Rutter, 2000; Howlin, Goode, Hutton, & Rutter, 2004). Focus on Discovery 14.4 describes a woman with autism whose adult life is remarkable for its professional distinction blended with autistic social and emotional deficits.

Etiology of Autistic Disorder

The earliest theorizing about the etiology of autism was that psychological factors were responsible for its development. This narrow and faulty perspective has been replaced in recent years by theories based on evidence that genetic and neurological factors are important in the etiology of this puzzling syndrome. Despite the lack of empirical support for these psychological theories, they gained enough recognition to place a tremendous emotional burden on parents who were told that they were at fault for their child's autism.

Genetic Factors Evidence strongly suggests a genetic component for autistic disorder. For example, the risk of autism among siblings of people with the disorder is about 75 times greater than it is among siblings of people who do not have autistic disorder (McBride, Anderson, & Shapiro, 1996). Even stronger evidence for genetic transmission of autism comes from twin studies, which have found 60 to 91 percent concordance for autism between identical twins, compared with concordance rates of 0 to 20 percent between fraternal twins (Bailey et al., 1995; Le Couteur et al., 1996).

A series of studies following twins and families with a member with autism suggests that autism is linked genetically to a broader spectrum of deficits in communication and social interaction (Bailey et al., 1995; Bolton et al., 1994; Folstein & Rutter, 1977a, 1977b). For example, most of the identical twins without autism evidenced communication deficits, such as delayed development of language abilities or reading impairments, as well as severe social deficits, including no social contacts outside the family, lack of responsiveness to social cues or conventions, and little or no spontaneous affection shown toward caregivers. In contrast, fraternal twins of children with autism are almost always normal in their social and language development and live independently in adulthood (Le Couteur et al., 1996). Taken together, the evidence from family and twin studies strongly supports a genetic basis for autistic disorder.

Molecular genetics studies are beginning to pinpoint areas of the genome that may confer risk for autism. For example, a study in 2008 found that a deletion on chromosome 16 was associated with autism in three different samples (Weiss et al., 2008). The deletion represents a genetic flaw—it was not supposed to be deleted—and the researchers suggest that although it is not clear why the flaw occurs, it is nonetheless associated with an increased risk of developing autism.

Neurological Factors More and more research is linking the language, social, and emotional deficits in autism to the brain. A number of studies examining the brain in autism have been well replicated, allowing for a clearer picture of what may go wrong in the brain among people with autism. What remains to be figured out is why the brain goes awry early in development.

Studies using magnetic resonance imaging (MRI) found that, overall, the brains of adults and children with autism are larger than the brains of adults and children without autism (Courchesne, Carnes, & Davis, 2001; Piven et al., 1995, 1996). This same finding has been supported by studies using the measurement of head circumference as an indicator of brain size (Courchesne, Carper, & Akshoomoff, 2003). What makes these findings more interesting and puzzling is that most children with autism are born with brains of a relatively normal size; however, between the ages of 2 and 4, the brains of children with autism become significantly larger (Courchesne, 2004). Having a larger-than-normal brain is not necessarily a good thing, as it might indicate that neurons are not being pruned correctly. The pruning of neurons is an important part of brain maturation; older children have fewer connections between neurons than do babies. Adding further to this puzzle, brain growth in autism appears to slow abnormally in later childhood. It will be important for investigators to figure out how this pattern of brain growth is linked to the signs and symptoms of autism. It is worth noting that the areas of the brain that are “overgrown” in autism include the frontal, temporal, and cerebellar, which have been linked with language, social, and emotional functions.

FOCUS ON DISCOVERY 14.4

The Story of a Woman with High-Functioning Autism

Temple Grandin is a woman with autism. She also has a Ph.D. in animal science, runs her own business designing machinery for use with farm animals, and is on the faculty at Colorado State University. Two autobiographical books (Grandin, 1986, 1995) and a profile by neurologist Oliver Sacks (1995) provide a moving and revealing portrait of the mysteries of autism. (Because of her high level of intellectual functioning, the diagnosis of Asperger's disorder might be applicable. Controversy exists, however, as to whether this should be a separate diagnostic entity or viewed as a less severe form of autism.)

Lacking understanding of the complexities and subtleties of human social discourse, deficient in the ability to empathize with others, Grandin sums up her relationship to the nonautistic world saying, "Much of the time I feel like an anthropologist on Mars" (Sacks, 1995, p. 259).

Grandin recalls from her childhood sudden impulsive behavior and violent rages as well as hyperfocused attention, "a selectivity so intense that it could create a world of its own, a place of calm and order in the chaos and tumult" (Sacks, 1995, p. 254). She describes "sensations heightened, sometimes to an excruciating degree [and] she speaks of her ears, at the age of 2 or 3, as helpless microphones, transmitting everything, irrespective of relevance, at full, overwhelming volume" (Sacks, 1995, p. 254).

Grandin was diagnosed with autism in 1950 at age three. She had no speech at all, and doctors predicted that institutionalization would be her fate. However, with the help of a therapeutic nursery school and speech therapy and with the support of her family, she learned to speak by age six and began to make more contact with others. Still, as an adolescent observing other children interact, Grandin "sometimes wondered if they were all telepathic" (Sacks, 1995, p. 272), so mysterious did she find the ability of normal children to understand each other's needs and wishes, to empathize, to communicate.

Visiting her one day at her university, Sacks made several observations that convey the autistic flavor of this uncommon person:

She sat me down [in her office] with little ceremony, no preliminaries, no social niceties, no small talk about my trip or how I liked Colorado. She

plunged straight into talking of her work, speaking of her early interests in psychology and animal behavior; how they were connected with self-observation and a sense of her own needs as an autistic person, and how this had joined with the [highly developed] visualizing and engineering part of her mind to point her towards the special field she had made her own: the design of farms, feedlots, corrals, slaughterhouses—systems of many sorts for animal management.

She spoke well and clearly, but with a certain unstoppable impetus and fixity. A sentence, a paragraph, once started, had to be completed; nothing left implicit, hanging in the air. (Sacks, 1995, pp. 256–257)

In her own writings, Grandin points out that many people with autism are great fans of *Star Trek*, and especially the characters of Spock and Data, the former a member of the Vulcan race, purely intellectual, logical beings who eschew any consideration of the emotional side of life, and the latter an android, a highly sophisticated computer housed in a human body and, like Spock, lacking in emotion. (One of the dramatic themes involving both characters was, of course, their flirtation with the experience of human emotion, portrayed with particular poignancy by Data. This is a theme in Grandin's life as well.) As Grandin (1995) wrote at age 47:

All my life I have been an observer, and I have always felt like someone who watches from the outside. I could not participate in the social interactions of high school life.

Even today, personal relationships are something I don't really understand. I've remained celibate because doing so helps me avoid the many complicated situations that are too difficult for me to handle. [M]en who want to date often don't understand how to relate to a woman. They [and I myself] remind me of Data, the android on Star Trek. In one episode, Data's attempts at dating were a disaster. When he tried to be romantic [by effecting a change in a subroutine of his computer program], he complimented his date by using scientific terminology. Even very able adults with autism have such problems. (pp. 132–133)

Other areas of the brain are implicated in autism as well. Sixteen MRI and autopsy studies from nine independent research groups all found abnormalities in the cerebellum of children with autism (Haas et al., 1996), and more recent studies have confirmed this finding (e.g., Hardan et al., 2001). Another study found that the commonly observed tendency of children with autism to explore their surroundings less than other children do is correlated with a larger-than-normal cerebellum (Pierce & Courchesne, 2001). Neurological abnormalities in people with autism suggest that in the course of development, their brain cells fail to align properly and do not form the network of connections found in normal brains.

A pair of recent studies examined the size of the amygdalae among children and adults with autism. Given that autism is associated with social and emotional difficulties, and that the amygdalae are associated with social and emotional behavior, it stands to reason that the amygdalae might be involved in autism. One study found that the amygdalae were larger among children with autism (Munson et al., 2006), and larger amygdalae at ages 3 or 4 predicted more difficulties in social behavior and communication at age 6. This finding is consistent with studies showing overgrowth of other brain areas. However, the other study found that *small* amygdalae size in autism was correlated with difficulties in emotional face perception and less gaze in the eye region of faces during the perception task (Nacewicz et al., 2006). How can we make sense

Some of the deficiencies of people with autism make them charmingly honest and trustworthy. “Lying,” wrote Grandin, “is very anxiety-provoking because it requires rapid interpretations of subtle social cues [of which I am incapable] to determine whether the other person is really being deceived” (Grandin, 1995, p. 135).

Grandin’s professional career is impressive. She uses her remarkable powers of visualization and her empathy for farm animals to design machines such as a chute leading cows to slaughter that takes them on a circular route, protecting them from awareness of their fate until the moment of death. She has also designed and built a “squeeze machine,” a device that provides comforting hugs without the need for human contact. It has “two heavy, slanting wooden sides, perhaps four by three feet each, pleasantly upholstered with a thick, soft padding. They [are] joined by hinges to a long, narrow bottom board to create a V-shaped, body-sized trough. There [is] a complex control box at one end, with heavy-duty tubes leading off to another device, in a closet. [An] industrial compressor exerts a firm but comfortable pressure on the body, from the shoulders to the knees” (Sacks, 1995, pp. 262–263). Her explanation of the rationale behind this contraption is that as a little girl she longed to be hugged but was also very fearful of physical contact with another person. When a favorite, large-bodied aunt hugged her, she felt both overwhelmed and comforted. Terror commingled with pleasure.

She started to have daydreams—she was just five at the time—of a magic machine that could squeeze her powerfully but gently, in a huglike way, and in a way entirely commanded and controlled by her. Years later, as an adolescent, she had seen a picture of a squeeze chute designed to hold or restrain calves and realized that that was it: a little modification to make it suitable for human use, and it could be her magic machine. (Sacks, 1995, p. 263)

After watching her demonstrate the machine and trying it himself, Sacks observed:

It is not just pleasure or relaxation that Temple gets from the machine but, she maintains, a feeling for others. As she lies in her machine, she says, her thoughts often turn to her mother, her favorite aunt, her teachers. She feels their love for her, and hers for them. She feels that the machine opens a door into an otherwise closed emotional world and allows her, almost teaches her, to feel empathy for others. (Sacks, 1995, p. 264)

Sacks has great admiration for Grandin’s professional success and for the interesting and productive life she has made for herself, but when it comes to human interactions, it is clear that she does not get it. “I was struck by the enormous difference, the gulf, between Temple’s immediate, intuitive recognition of animal moods and signs and her extraordinary difficulties understanding human beings, their codes and signals, the way they conduct themselves” (Sacks, 1995, p. 269).

Accounts such as those of Grandin and Sacks can provide insight into how people adapt to their own idiosyncrasies, using the sometimes peculiar gifts they have been given and working around the deficiencies with which they have been saddled. “Autism, while it may be pathologized as a syndrome, must also be seen as a whole mode of being, a deeply different mode or identity, one that needs to be conscious (and proud) of itself,” wrote Sacks (1995, p. 277). “At a recent lecture, Temple ended by saying, ‘If I could snap my fingers and be nonautistic, I would not—because then I wouldn’t be me. Autism is part of who I am’” (Sacks, 1995, p. 291).



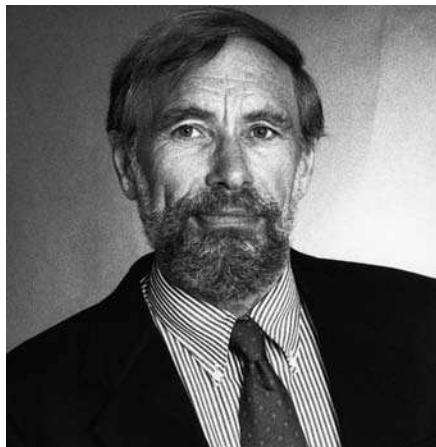
Temple Grandin, Ph.D., was diagnosed with autism in early childhood, but has had a successful academic career. (Rosalie Winard Photography.)

of the seemingly different findings? Participants in the study by Nacewicz and colleagues were older, suggesting that the brain changes continue throughout in development may be differentially related to social and emotional impairments.

Treatment of Autistic Disorder

The most promising efforts at treatment of autistic disorder are psychological. Various treatments that combine psychological treatment and drugs have been studied as well, but with few positive results. Treatments for children with autism are usually aimed at reducing their unusual behavior and improving their communication and social skills. In most cases, the earlier the intervention begins, the better the outcome. Identifying autism early is a key priority for the field. In a promising longitudinal study, children at high risk for developing autism (parent or sibling with an autism-spectrum disorder) were studied beginning at age 14 months. Even though these children did not yet have language, the researchers were able to identify deficits in joint attention and communication that allowed for an early provisional diagnosis of autism (Landa, Holman, & Garrett-Mayer, 2007).

It is important to note that even though genetic and neurological factors in the etiology of autism have much more empirical support than psychological factors, it is the psychological



Ivar Lovaas, a behavior therapist, is noted for his operant-conditioning treatment of children with autism. (Courtesy of Susan Oliver Young.)

treatments that currently show the most promise, not medications. The lesson is that a neurological defect may well be treatable psychologically.

Behavioral Treatment Ivar Lovaas, a leading clinical researcher at the University of California at Los Angeles, conducted an intensive operant conditioning based program of behavioral treatment with young (under four years old) children with autism (Lovaas, 1987). Therapy encompassed all aspects of the children's lives for more than 40 hours a week over more than two years. Parents were trained extensively so that treatment could continue during almost all the children's waking hours. Nineteen children receiving this intensive treatment were compared with 40 children who received a similar treatment for less than 10 hours per week. Both groups of children were rewarded for being less aggressive, more compliant, and more socially appropriate—for example, talking and playing with other children. The goal of the program was to mainstream the children, the assumption being that children with autism, as they improve, benefit more from being with typically developing peers than from remaining by themselves or with other seriously disturbed children.

The results of this landmark study were dramatic and encouraging. The IQs for the intensive-therapy group averaged 83 in first grade (after about two years in the intensive therapy) compared with about 55 for the other group; 12 of the 19 reached the normal range, compared with only 2 (of 40) of the others. Furthermore, 9 of the 19 in the intensive-therapy group were promoted to second grade in a regular public school, whereas only 1 of the much larger group achieved this level of functioning. A follow-up of these children four years later indicated that the intensive-treatment group maintained their gains in IQ, adaptive behavior, and grade promotions in school (McEachin, Smith, & Lovaas, 1993). Although critics have pointed out weaknesses in the study's methodology and outcome measures (Schopler, Short, & Mesibov, 1989), this ambitious program confirms the benefits of intensive therapy with the heavy involvement of both professionals and parents in dealing with the challenges of autistic disorder.

One of the weaknesses of the study was that it was not a randomized, controlled clinical trial. There has only been one randomized controlled clinical trial to examine the efficacy of intensive behavioral treatment on a broader scale. This study compared an intensive behavioral treatment (about 25 hours a week, instead of 40) to a treatment that consisted of parent training only (Smith, Groen, & Wynn, 2000). Although the behavioral treatment was more effective than parent training alone, the children in this study did not show the same gains as in the study discussed above (Lovaas, 1987), perhaps due to the fact that the treatment was implemented for fewer hours.

Other research suggests that education provided by parents is more beneficial to the child than is clinic- or hospital-based treatment. Parents are present in many different situations and thus can help children generalize the gains they make. For example, one group of researchers demonstrated that 25 to 30 hours of parent training was as effective as 200 hours of direct clinic treatment in improving the behavior of children with autism (Koegel et al., 1982). This research group has also focused on comparing different strategies for behavioral parent training, with interesting discoveries. They found that parents could be more effective when taught to focus on increasing their children's general motivation and responsiveness rather than being taught to focus on changing individually targeted problem behaviors in a sequential manner (Koegel, Bimbela, & Schreibman, 1996). For example, allowing the child to choose the teaching materials, providing natural reinforcers (e.g., play and social praise) rather than edible reinforcers, and reinforcing attempts to respond as well as correct responses all led to improved family interactions and more positive communication between parents and their children with autism. This more focused approach to treatment is called *pivotal response treatment* (PRT), a term based on the notion that intervening in a key, or pivotal, area may lead to changes in other areas. At least 10 studies have found PRT to be effective (reviewed in Koegel, Koegel, & Brookman, 2003).

Other interventions seek to improve children's problems in joint attention and communication. In a recent randomized controlled clinical trial, children ages 3 and 4 with autism were randomly assigned to a joint attention (JA) intervention, a symbolic play (SP) intervention, or a control group (Kasari, Freeman, & Paparella, 2006). All children were already part of an early-intervention program; the JA and SP interventions were additional interventions provided to the children in 30-minute daily blocks for 6 weeks. Children in the JA and SP treatments showed more improvement than children in the control group, and at 6 and 12 months after the treatment, children in the JA and SP groups had greater expressive language skills than children in the control group (Kasari et al., 2008).



Drug Treatment The most commonly used medication for treating problem behaviors in children with autism is haloperidol (trade name Haldol), an antipsychotic medication used in the treatment of schizophrenia. Some controlled studies have shown that this drug reduces social withdrawal, stereotyped motor behavior, and such maladaptive behaviors as self-mutilation and aggression (Anderson et al., 1989; McBride et al., 1996; Perry et al., 1989). Many children do not respond positively to the drug, however, and it has not shown any positive effects on other aspects of autistic disorder, such as social functioning and language impairments (Holm & Varley, 1989). Haloperidol also has serious side effects (Posey & McDougle, 2000). In a longitudinal study, over 30 percent of children with autism developed drug-related dyskinesias, or jerky muscle disturbances, although most went away after the drug was withdrawn (Campbell et al., 1997).

Evidence that children with autism may have elevated blood levels of serotonin (Anderson & Hoshino, 1987) encouraged research on medications that reduce the action of serotonin. There was an initial flurry of enthusiastic claims that the drug fenfluramine, a drug known to lower serotonin levels in rats and monkeys, was associated with dramatic improvement in the behavior and thought processes of children with autism (Ritvo et al., 1983), but later studies delivered much more modest findings (Leventhal et al., 1993; Rapin, 1997). Although fenfluramine may work with some children with autism to slightly improve their social adjustment, attention span, activity level, and stereotyped behavior, no consistent effect has been shown on cognitive measures such as IQ or language functioning.

Researchers have also studied naltrexone, an opioid receptor antagonist, and found that this drug reduces hyperactivity in children with autism and produces a moderate improvement in the initiation of social interactions (Aman & Langworthy, 2000; P. A. Williams et al., 2001; Willemsen-Swinkels, Buitelaar, & van Engeland, 1996). One controlled study suggested mild improvements in the initiation of communication as well (Kolmen et al., 1995), but others found no changes in communication or social behavior (Feldman, Kolmen, & Gonzaga, 1999; Willemsen-Swinkels et al., 1995, 1996). The drug does not appear to affect the core symptoms of autism, and some evidence suggests that at some doses it may increase self-injurious behavior (Anderson et al., 1997).

In sum, pharmacological treatment of autism is, at this point, less effective than behavioral treatments.

Check Your Knowledge 14.4

True or false?

1. All children with autism also have mental retardation.
2. Children with autism have difficulty recognizing emotions in others.
3. Medication is an effective treatment for autistic disorder.

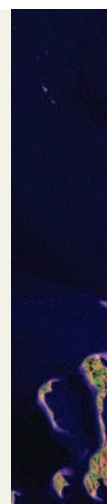
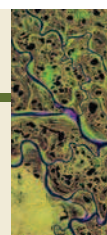
Summary

Clinical Descriptions

- Childhood disorders are often organized into two domains: externalizing disorders and internalizing disorders. Externalizing disorders are characterized by such behaviors as aggressiveness, noncompliance, overactivity, and impulsiveness; they include attention-deficit/hyperactivity disorder, conduct disorder, and oppositional defiant disorder. Internalizing disorders are characterized by such behaviors as depression, social withdrawal, and anxiety; they include childhood anxiety and mood disorders.
- Attention-deficit/hyperactivity disorder (ADHD) is a persistent pattern of inattention and/or hyperactivity and impulsivity that is more frequent and more severe than what is typically observed in children of a given age. Conduct disorder is sometimes a precursor to antisocial personality disorder

in adulthood, though many children carrying the diagnosis do not progress to that extreme. It is characterized by high and widespread levels of aggression, lying, theft, vandalism, cruelty to other people and to animals, and other acts that violate laws and social norms.

- Mood and anxiety disorders in children share similarities with the adult forms of these disorders. However, differences that reflect different stages of development are also important.
- Learning disorders are diagnosed when a child fails to develop to the degree expected for his or her intellectual level in a specific academic, language, or motor skill area. These disorders are often identified and treated within the school system rather than through mental health clinics.



- The DSM-IV-TR diagnostic criteria for mental retardation are subaverage intellectual functioning and deficits in adaptive behavior, with onset before the age of 18. Most professionals, however, focus more on the strengths of people with mental retardation than on their assignment to a particular level of severity. This shift in emphasis is associated with increased efforts to design psychological and educational interventions that make the most of individuals' abilities.

- Autistic disorder begins early in life, and the number of diagnoses has risen dramatically in recent years. The major symptoms are a failure to relate to other people; communication problems, consisting of either a failure to learn any language or speech irregularities, such as echolalia and pronoun reversal; and theory of mind problems.

Etiology

- There is strong evidence for genetic and neurobiological factors in the etiology of ADHD. Low birth weight and maternal smoking are also risk factors. Family factors interact with these genetic vulnerabilities.

- Among the apparent etiological and risk factors for conduct disorder are a genetic predisposition, inadequate learning of moral awareness, modeling and direct reinforcement of antisocial behavior, negative peer influences, and living in impoverished and crime-ridden areas.

- Etiological factors for mood and anxiety disorders in children are believed to be largely the same as in adulthood, though additional research is needed.

- There is mounting evidence that the most widely studied of the learning disorders, dyslexia, has genetic and other neurobiological components.

- The more severe forms of mental retardation have a neurological basis, such as the chromosomal trisomy that causes Down syndrome. Certain infectious diseases in the pregnant mother, such as HIV, rubella, and syphilis, as well as illnesses that affect the child directly, such as encephalitis, can stunt

cognitive and social development, as can malnutrition, severe falls, and automobile accidents that injure the brain. Environmental factors are considered the principal causes of milder mental retardation.

- Family and twin studies give compelling evidence of a genetic predisposition in autism. Abnormalities have been found in the brains of children with autism, including an overgrowth of the brain by age 2 and abnormalities in the cerebellum.

Treatment

- A combined treatment including stimulant drugs, such as Ritalin, and reinforcement for staying on task has shown effectiveness in reducing the symptoms of ADHD.

- The most promising approach to treating young people with conduct disorder involves intensive intervention in multiple systems, including the family, school, and peer systems.

- The most effective intervention for mood and anxiety disorders is cognitive behavioral therapy. Medication is effective for depression among adolescents, though its use is not without controversy.

- The most widespread interventions for dyslexia are educational.

- Many children with mental retardation who would formerly have been institutionalized are now being educated in the public schools. In addition, using applied behavioral analysis, self-instructional training, and modeling, behavior therapists have been able to successfully treat many of the behavioral problems of people with mental retardation and to improve their intellectual functioning.

- The most promising treatments for autism are psychological, involving intensive behavioral interventions and work with parents. Various drug treatments have been used but have proved less effective than behavioral interventions.

Answers to Check Your Knowledge Questions

14.1 1. T; 2. T; 3. T; 4. F

14.2 1. life-course-persistent, adolescent-limited; 2. ADHD, substance abuse, depression, anxiety; 3. parent management training, multisystemic treatment.

14.3 1. c; 2. a; 3. d

14.4 1. F; 2. T; 3. F

Key Terms

Asperger's disorder
attention-deficit/hyperactivity disorder (ADHD)
autistic disorder
childhood disintegrative disorder
communication disorders
conduct disorder
developmental psychopathology

disorder of written expression
Down syndrome (trisomy 21)
echolalia
expressive language disorder
externalizing disorders
fragile X syndrome
internalizing disorders
joint attention
learning disabilities
learning disorders

mathematics disorder
mental retardation
motor skills disorder
multisystemic treatment (MST)
oppositional defiant disorder
parent management training (PMT)
pervasive developmental disorders
phenylketonuria (PKU)

phonological disorder
pronoun reversal
reading disorder (dyslexia)
Rett's disorder
school phobia
stuttering

15

Late Life and Psychological Disorders

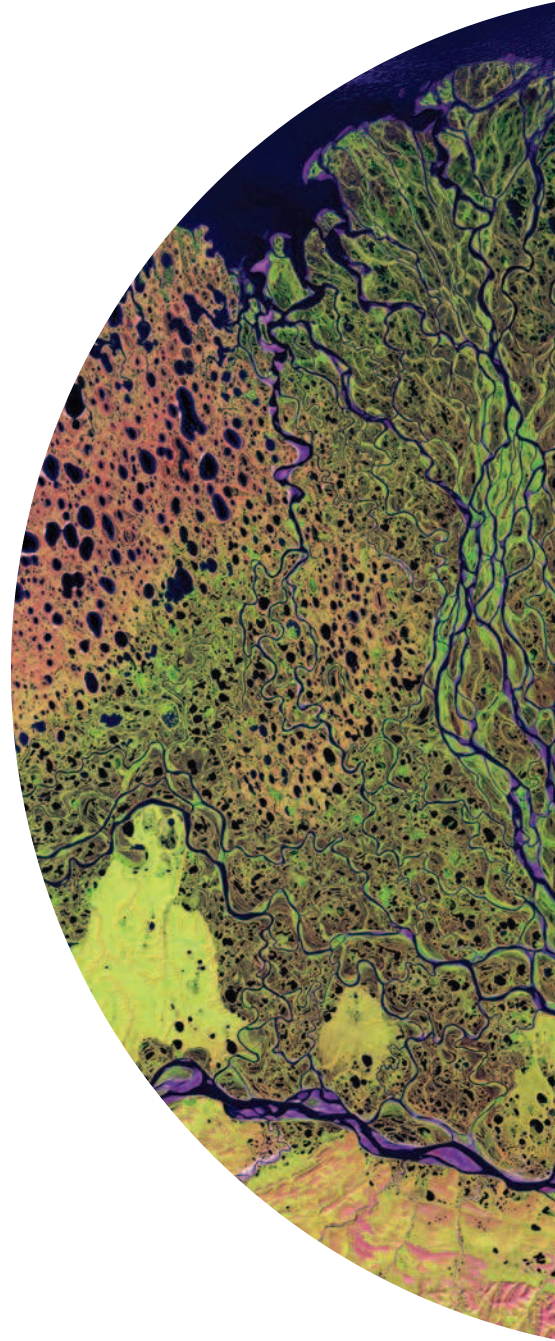
LEARNING GOALS

1. Be able to describe common misconceptions about age-related changes and to understand genuine age-related changes.
2. Be able to discuss issues involved in conducting research on aging.
3. Be able to explain the symptoms of dementia and delirium, and understand current approaches to etiology and treatment.
4. Be able to describe the prevalence, etiology, and treatment of psychological disorders in the elderly.
5. Be able to explain the issues involved with community living, assisted living, and nursing homes.

Clinical Case: Henry

Henry was a 56-year-old businessman who was hospitalized for cervical disk surgery. Because he was busy as well as anxious about the surgery, he had canceled two previous admissions. Although Henry drank heavily, his drinking had never interfered with his business performance. There were no immediate complications of the surgery. He seemed to be making a normal recovery initially. During the third postoperative night, though, Henry became quite restless and could not sleep. The next day he appeared severely fatigued. The next night his restlessness worsened, and he became fearful. Later in the night, he thought that he saw people hiding in his room, and shortly before dawn he told the nurse that he saw strange little animals running over his bed and up the curtains. By morning rounds, the patient was very frightened, lethargic, and distractible. He was incoherent when he tried to talk about the night before. "He knew who he was and where he was but did not know the date or when he had had his surgery. During that day his mental status fluctuated, but by nightfall he had become grossly disoriented and agitated. At this point, psychiatric consultation was obtained."

The consultant diagnosed Henry with delirium, probably due to several factors: withdrawal from alcohol, use of strong analgesics, and stress of the operation. The treatment consisted of a reduction in pain medications, partial illumination of the room at night, a family member present at all times, along with 50 mg of chlorpromazine (Thorazine) three times daily and 500 mg of chloral hydrate at bedtime. Treatment reversed his confusion within 2 days, and he was able to return home in a week with no symptoms (Strub & Black, 1981, pp. 89–90).



AS WE AGE, PHYSIOLOGICAL changes are inevitable, and there may be many emotional and mental changes as well. This chapter examines how issues like these influence mental health in late life. We begin by reviewing some general topics critical to the study of late life. We look next at dementia and delirium, two cognitive disorders. Then we examine a set of questions about mental illness in late life. Are older people at lower risk for mental disorders than young people? Do emotional problems develop in people who did not have them when younger? Are late-life manifestations of mental illness caused by the same factors that trigger early onsets? Which treatments successfully address mental health problems among the elderly? Finally, we discuss issues of living situations for older adults.

Aging: Issues and Methods

In contrast to the esteem in which they are held in most Asian countries, older adults are generally not treated well in the United States. The process of growing old is feared by many, even abhorred. Perhaps our lack of regard for older adults stems from our own deep-seated fear of growing old. The old person with serious infirmities is an unwelcome reminder that we all may one day walk with an unsteady gait, see less clearly, taste food less keenly, and experience more physical illness.

The social problems of aging may be especially severe for women. Even with the consciousness-raising of the past three decades, our society does not readily accept women with wrinkles and sagging bodies. Although men with gray hair at the temples and even baldness are often seen as distinguished, signs of aging in women are not valued in the United States and many other countries. The cosmetics and plastic-surgery industries make billions of dollars each year exploiting the fear inculcated in women about looking their age.¹ According to some experts, however, being female confers certain mental health benefits as people age, perhaps best evidenced by the lower rates of suicide in women compared to men (a topic we will discuss later in the chapter).

The old are usually defined as those over the age of 65, an arbitrary point set largely by social policies rather than any physiological process. To have some rough demarcation points, gerontologists usually divide people over age 65 into three groups: the young-old, those aged 65 to 74; the old-old, those aged 75 to 84; and the oldest-old, those over age 85.



People spend billions of dollars per year on cosmetics and plastic surgery to reduce signs of aging. (Courtesy of BooneOakley.)

¹We should point out, though, that increasing numbers of men are undergoing plastic surgery in an effort to look younger than their years.

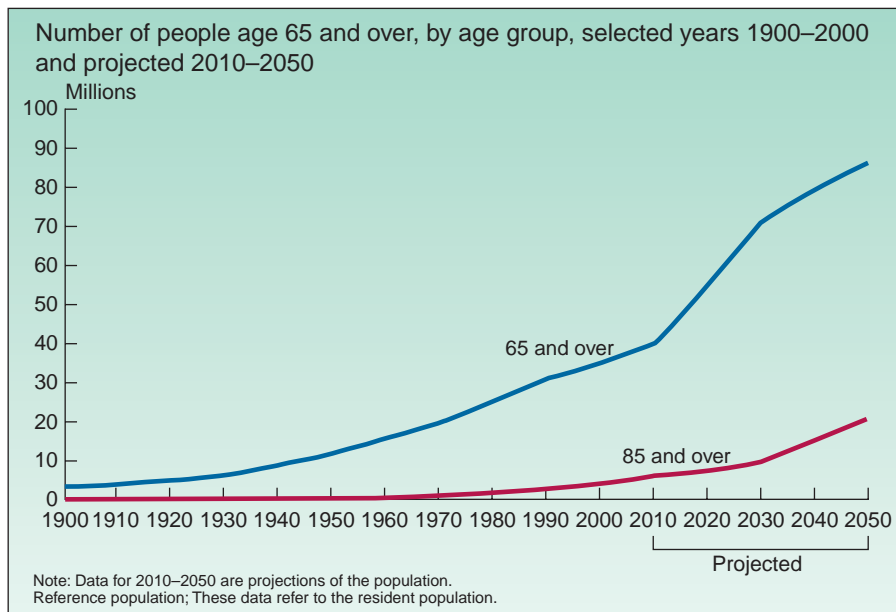


Figure 15.1 The number of old and old-old U.S. citizens is on the rise. From U.S. Census Bureau, Decennial Census and Projections.

At the time of the last census, people 65 and older comprised 12.4 percent (35 million) of the U.S. population. Figure 15.1 shows the dramatic increase in the number of older Americans over time. As of 1999, there were 70,000 Americans at least 100 years old; by 2050, that number is expected to grow more than 10-fold to over 800,000 (U.S. Bureau of the Census, 1999).

Given these statistics, it is not surprising that 69 percent of practicing psychologists conduct clinical work with older adults (Qualls et al., 2002). A major concern, though, is that fewer than 30 percent of psychologists report receiving any formal training about late-life issues (Qualls et al., 2002). APA ethical principles state that it is important for psychologists working with the elderly to examine their stereotypes about late life (APA, 2004).

Myths about Late Life

Most people in the United States have certain assumptions about old age. Common myths include the idea that we will become doddering and befuddled. We worry that we will be unhappy, cope poorly with troubles, and become focused on our poor health. We worry that we will become lonely and that our sex lives will become unsatisfying.

Each of these myths has been debunked. As we will see, severe cognitive problems do not occur for most people in late life, though a mild decline in cognitive functioning is common (Langa et al., 2008). Elderly people (age 60 and older) actually experience less negative emotion than do young people (age 18–30 years) (Lawton et al., 1992). Although some might suspect that these findings are artifacts of a reluctance of older individuals to describe negative feelings to researchers, laboratory studies indicate that the elderly are actually more skilled at regulating their emotions. For example, when older people are asked to think or talk about emotionally charged topics, they display less physiological reactivity than do younger people (Kisley, Wood, & Burroughs, 2007; Levenson, Carstensen, & Gottman, 1994). When viewing positive images, they show more robust brain activation in key emotion regions than do younger people (Mather et al., 2004). Older people are actually likely to underreport somatic symptoms, perhaps because of beliefs that aches and pains are an inevitable part of late life.



Edna Parker died in 2008 at the age of 115. The number of centenarians (people who live to be more than 100 years old) in the United States is expected to grow 10-fold by the year 2050. (©AP/Wide World Photos.)



Ageism refers to discrimination against someone because of his or her age. In one form of ageism, countermyth, we especially applaud achievements of the elderly, as in former President Bush's parachute jump. (AP/Wide World Photos.)



Contrary to stereotypes, many older people maintain an active interest in sex. Studies indicate that the frequency of sexual activity among healthy couples in their seventies remains high. (FPG International/Getty Images.)



The quality of sleep diminishes as people age. (Corbis Digital Stock.)



As illustrated by John Glenn's space flight, advancing age need not lead to a curtailment of activities. (NASA/CNP/Archive Photos.)

People in late life are no more likely to meet criteria for somatization or hypochondriasis than are the young (Regier et al., 1988; Siegler & Costa, 1985).

Another myth, that older people are lonely, has received considerable attention. The truth is that the number of social activities is unrelated to psychological well-being among older people (Carstensen, 1996). As we age, our interests shift away from seeking new social interactions to cultivating those few social relationships that really matter to us, such as those with family and close friends. This phenomenon has been called **social selectivity**.

When we have less time ahead of us, we tend to place a higher value on emotional intimacy than on exploring the world. This preference applies not just to older people but also to younger people who see themselves as having limited time, such as when they are preparing to move far away from their home (Frederickson & Carstensen, 1990) or if they have a life-threatening illness. When we can't see a future without end, we prefer to spend our limited time with our closest ties rather than with casual acquaintances, such as strangers in a recreation center for older adults. To those unfamiliar with these age-related changes, social selectivity could be misinterpreted as harmful social withdrawal.

Finally, contrary to popular belief, older people have considerable sexual interest and capacity (Deacon, Minichiello, & Plummer, 1995). Among participants who have a partner, most who are in good physical health remain sexually active (Lindau et al., 2007).

In sum, older adults have many positive life experiences, many coping mechanisms, and much wisdom on which to draw. Many stereotypes we hold about the elderly are false. Beyond questioning assumptions, it is important to recognize the diversity of older people. Not only are older people different from one another, but they are more different from one another than are people in any other age group. People tend to become less alike as they grow older. That all old people are alike is a prejudice held by many people. A moment's honest reflection may reveal that certain traits come to mind when we hear that a person is age, say, 67. But to know that a person is 67 years old is actually to know very little about him or her. Each older person brings to late life a developmental history that makes his or her reactions to common problems unique.

The Problems Experienced in Late Life

We know that mental health is tied to the physical and social problems in a person's life. As a group, no other people have more of these problems than the elderly. They have them all—physical decline and disabilities, sensory and neurological deficits, loss of loved ones, the cumulative effects of a lifetime of many unfortunate experiences, and social stresses such as ageism. (Ageism can be defined as discrimination against any person, young or old, based on chronological age, such as when a professor in his or her late sixties is considered too old to continue teaching at a university, or when it is assumed that a person older than 75 has nothing to contribute to the conversation.) As many as 80 percent of elderly people have at least one major medical condition (National Academy on an Aging Society, 1999).

One particular facet of aging deserves particular attention. As people age, the quality and depth of sleep declines, so that by age 65, 25 percent of people report insomnia (Mellinger, Balter, & Uhlenhuth, 1985). Rates of sleep apnea, a disorder in which a person stops breathing for seconds to minutes during the night, also increase with age (Prechter & Shepard, 1990). Insomnia is often caused by medication side effects (Rodin, McAvay, & Timko, 1988) or by pain from medical problems (Prinz & Raskin, 1978). Untreated and chronic sleep deficits can worsen both physical and psychological health problems and can even increase risk of mortality (Ancoli et al., 1996).

Several problems are evident in the medical treatment available during late life. One of the main difficulties is that the chronic health problems of older people seldom diminish; physicians focused on identifying cures can become frustrated when none are available (Zarit, 1980). Other problems result from the time pressure of the health care system. All too often, doctors do not check to see if the person is taking other medications or seeing other doctors. *Polypharmacy*, the prescribing of multiple drugs to a person, can result; this increases the risk of adverse drug reactions that may cause numerous side effects, toxicity, and allergic reac-



tions. Often, physicians then prescribe more medications to combat the side effects, thus continuing the vicious circle.

Further complicating the picture is the fact that most psychoactive drugs are tested on younger people; gauging the appropriate dose for the less efficient metabolism of the kidneys and liver of the older person represents a challenge for the medical practitioner—side effects and toxicity are much more common (Gallo & Lebowitz, 1999). The increased sensitivity to medication side effects is a particular problem with psychiatric medications—we will discuss some major problems in using antipsychotic medications, antidepressants, and benzodiazapines later in the chapter. One review of medical charts of more than 750,000 elderly patients found that more than one-fifth had filled a prescription for a medication deemed inappropriate for people over the age of 65 due to serious side effects (Curtis et al., 2004). Therefore, it is important that the primary care physician of elderly people keep track of all prescribed medications taken, discontinue nonessential drugs, and prescribe only the minimum dosages needed.

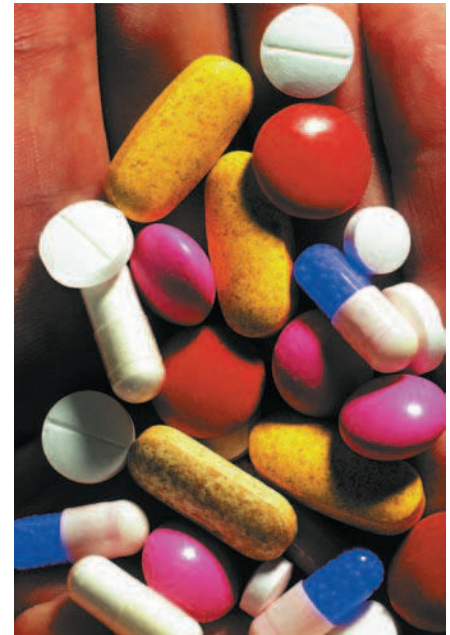
Research Methods in the Study of Aging

Research on aging requires an understanding of several special issues. Chronological age is not as simple a variable in psychological research as it might seem. Because other factors associated with age may be at work, we must be cautious when we attribute differences in age groups solely to the effects of aging. In the field of aging, as in studies of childhood development, a distinction is made among three kinds of effects (see Table 15.1):

- **Age effects** are the consequences of being a certain chronological age.
- **Cohort effects** are the consequences of growing up during a particular time period with its unique challenges and opportunities. For example, experiences like the Great Depression, a world war, or 9/11 each shape experiences and attitudes. Similarly, the expectations for marriage have changed drastically in the past century, at least in Western societies, from a focus on stability to a focus on happiness and personal fulfillment.
- **Time-of-measurement effects** are confounds that arise because events at a particular point in time can have a specific effect on a variable that is being studied (Schaie & Hertzog, 1982). For example, people tested right after Hurricane Katrina in New Orleans might demonstrate elevated levels of anxiety.

Two major research designs are used to assess developmental change: cross-sectional and longitudinal (see pp. 105–106 for more detail on these designs). In cross-sectional studies, the investigator compares different age groups at the same moment in time on the variable of interest. Suppose that in 1995 we took a poll in the United States and found that many interviewees over age 80 spoke with a European accent, whereas those in their forties and fifties did not. Could we conclude that as people grow older, they develop European accents? Hardly! Cross-sectional studies do not examine the same people over time; consequently, they do not provide clear information about how people change as they age.

In longitudinal studies, the researcher periodically retests one group of people using the same measure over a number of years or decades. For example, the Baltimore Longitudinal Study of Aging is one of the longest-running studies of aging. Beginning in the 1950s, researchers have been following 1,400 men and women to see how their lifestyles, medical conditions, and psychological health change over time. In this study, a great deal has been



Polypharmacy is all too common in late life.
(Tony Why/Phototake.)

Table 15.1 Age, Cohort, and Time-of-Measurement Effects

Age Effects	Cohort Effects	Time-of-Measurement Effects
The effects of being a certain age; e.g., being old enough to receive Social Security	The effects of having grown up during a particular time period; e.g., frugality may be increased among those who lived through the Great Depression of the 1930s	The effects of testing people at a particular time in history; e.g., people became more frank during the 1990s to surveys about their sexual behavior, as media discussion of sexuality increased



learned about mental health and aging. For example, researchers were able to combat myths that people become unhappier over time. Rather, people who were happy at age 30 tended to be happy as they moved into late life (Costa, Metter, & McCrae, 1994). In general, longitudinal designs allow us to trace individual patterns of consistency or change over time. Although longitudinal studies offer fundamental advantages, results can be biased by attrition, in which participants drop out of the study due to death, immobility, or lack of interest. When people are no longer available for follow-up because of death, this is called **selective mortality**. The tendency for less healthy individuals to die more quickly can lead to biased samples in long-term follow-up studies. Selective mortality results in a particular form of bias, in that results obtained with the remaining sample are more relevant to drawing conclusions about relatively healthy people and less relevant to drawing conclusions about unhealthy people. Beyond attrition due to death, people with the most problems are likely to drop out from a study, whereas the people who remain are usually healthier than the general population. Attrition is an important issue in studies of aging and mental health, as psychological disorders have been shown to predict disease and death (Kiecolt-Glaser & Glaser, 2002).

Cohort effects refer to the fact that people of the same chronological age may differ considerably depending on when they were born. (Top: Liaison/Getty Images, Inc.; bottom: Marc Romanelli/Getty Images.)

Quick Summary

As the number of older people in the United States burgeons, more and more mental health professionals are working with this population. Unfortunately, even mental health professionals tend to hold certain stereotypes about late life. It is important to recognize that, as they age, most people tend to become more effective at regulating emotions, to remain invested in sexuality, to downplay medical symptoms, and to focus on core relationships over superficial social acquaintances and activities. The challenges of late life do include insomnia and declining health for many people. As increasing numbers of chronic health

problems emerge, polypharmacy becomes an issue for many. Compounding the hazards of polypharmacy, people become more sensitive to medication side effects and toxicity as they age.

In research on aging, it is difficult to disentangle age effects, cohort effects, and time-of-measurement effects. Cross-sectional studies do not help distinguish age and cohort effects. Longitudinal studies provide more clarity about age and cohort effects, but the validity of findings can be challenged by attrition. One form of attrition, selective mortality, is particularly important to consider in studies of aging.

Check Your Knowledge 15.1 (Answers are at the end of the chapter.)

True or false?

1. Most people develop major memory problems in late life.
2. Sexual interest typically declines as people age.
3. Side effects of medications are of less concern as people age, because most people adjust to them over time.
4. Most people become unhappier as they age.



Cognitive Disorders in Late Life

Most elderly people do not have cognitive disorders. Indeed, the prevalence of cognitive impairment has declined among people over the age of 70 in the United States in the last 15 years, perhaps because of improvements in diet, medical care, and education levels over time (Langa et al., 2008). Nonetheless, cognitive disorders account for more hospital admissions and inpatient days than any other geriatric condition (Zarit & Zarit, 1998). Cognitive impairment is not a separate DSM category but is a characteristic of more than one disorder (e.g., depression, dementia, delirium). We will examine two principal types of cognitive disorders: dementia, a deterioration of cognitive abilities, and delirium, a state of mental confusion. For each, we will consider the clinical description and types as well as causal factors and treatment.

Dementia

Dementia is a general descriptive term for the deterioration of cognitive abilities to the point that social and occupational functions are impaired. Most dementias develop very slowly over a period of years; subtle cognitive and behavioral deficits can be detected well before the person shows any noticeable impairment (Small et al., 2000). Not all people with mild cognitive symptoms develop dementia, though. Among adults with mild cognitive impairment, about 10 percent per year will develop dementia; among adults without mild cognitive impairment, about 1 percent per year will develop dementia (Bischkopf, Busse, & Angermeyer, 2002).

Difficulty remembering things, especially recent events, is the most prominent symptom of dementia. People may leave tasks unfinished because they forget to return to them after an interruption. The person who had started to fill a teapot at the sink leaves the water running. As the dementia progresses, a parent is unable to remember the name of a daughter or son and later may not even recall that he or she has children or recognize them when they come to visit. Hygiene may become poor because the person forgets to bathe or dress adequately. People with dementia also get lost, even in familiar surroundings. Judgment may become faulty, and the person may have difficulty comprehending situations and making plans or decisions. People with dementia lose control of their impulses; they may use coarse language, tell inappropriate jokes, shoplift, and make sexual advances to strangers. The ability to deal with abstract ideas deteriorates, and disturbances in emotions are common, including symptoms of depression, flatness of affect, and sporadic emotional outbursts. Delusions and hallucinations can occur (APA, 2000). People with dementia are likely to show language disturbances as well, such as vague patterns of speech. Despite intact sensory functioning, they may also have trouble recognizing familiar surroundings or naming common objects. Episodes of delirium, a state of great mental confusion (discussed in detail later), may also occur.

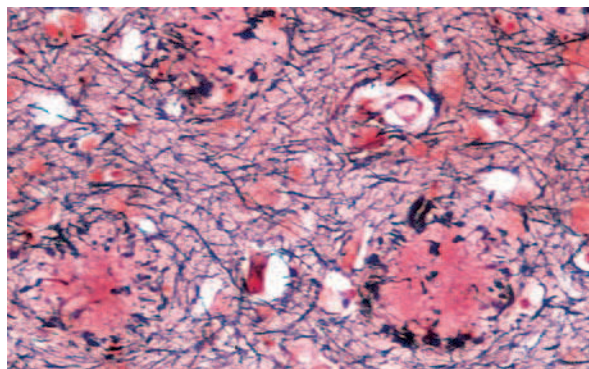
The course of dementia may be progressive, static, or remitting, depending on the cause. Many people with progressive dementia eventually become withdrawn and apathetic. In the terminal phase of the illness, the person's personality loses its sparkle and integrity. Relatives and

Clinical Case: Ellen

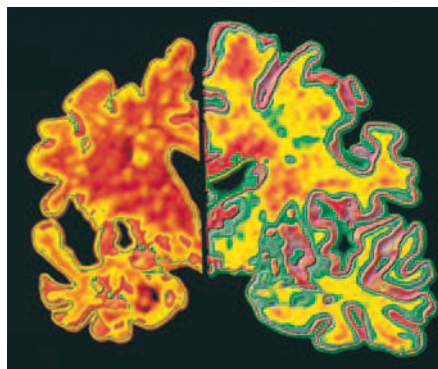
"I am so glad you came," Ellen says when I greet her. She is sitting at the dining room table sipping juice, a slender, almost frail woman. But Ellen has presence. She has the posture of a dancer: shoulders back, neck elongated, head up, and the gaunt face of a once beautiful woman, with large milky hazel eyes and high patrician cheekbones. She smiles and reaches for my hand. "It is so nice of you to visit," she says.

Ellen is gracious and polite, but the truth is, she doesn't remember me. She doesn't remember that we've visited a half dozen times before, that a few days ago we had tea

together, that just yesterday I sat on her bed for a half hour massaging her hands with rosemary mint lotion. Ellen, like the 43 others living at this residential care facility, has Alzheimer's disease. Her short-term memory is shot, and her long-term memory is quirky and dreamlike, with images that are sometimes bright and lucid, and other times so out of focus that she can hardly make them out. Her life is like a puzzle someone took apart when she wasn't looking. She can see some of the pieces, but she can no longer see how they fit together (quoted in Kessler, 2004, p. 1).



In this photograph of brain tissue from a person with Alzheimer's disease, the waxy amyloid shows up as areas of dark pink. (Martin Rotker/Phototake.)

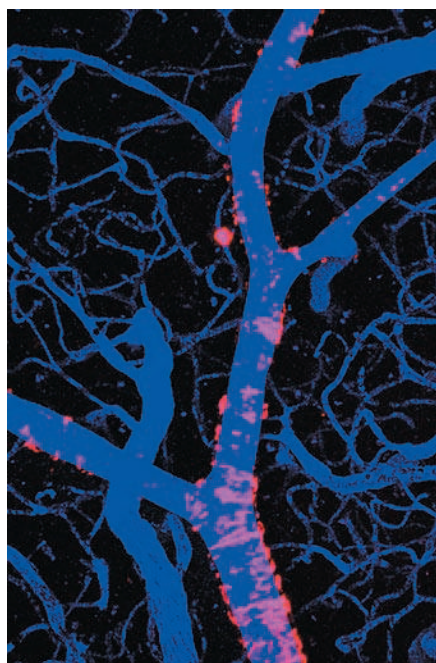


Computer-generated images of a brain of a person with Alzheimer's disease and a healthy brain. Note that the person's brain (left) has shrunk considerably owing to the loss of nerve cells. (Alfred Pasieka/Photo Researchers, Inc.)

friends say that the person is just not himself or herself anymore. Social involvement with others keeps narrowing. Finally, the person is oblivious to his or her surroundings.

Worldwide prevalence estimates of dementia in 2000 were over 25 million, which represents about 0.4 percent of the world population (Wimo et al., 2003). The prevalence of dementia increases with advancing age. Across international studies, the prevalence of dementia is 1 to 2 percent in people aged 60 to 69, 3 to 6 percent in those aged 70 to 79, more than 10 percent in those aged 80 to 84, and more than 20 percent in those 85 or older (Ferri et al., 2005).

There are many different types of dementia. Here we discuss four: Alzheimer's disease, the most well-researched form; frontotemporal dementia, defined by the areas of the brain that are most affected; vascular dementia, caused by cerebrovascular disease; and dementia with Lewy bodies, defined by the presence of Lewy bodies (abnormal deposits on neurons in the brain). After discussing these four, we briefly describe other causes of dementia. By far, the most common form of dementia is Alzheimer's disease. That is, as many as 80 percent of dementias are diagnosed as Alzheimer's disease (Terry, 2006).



Plaques as shown using Pittsburgh Compound-B PET imaging. (Courtesy Dr. Claudia Prada/Dr. Brian Bacskai/Massachusetts General Hospital/Prada et al., *J. Neurosci.* 27(8):1973-80, 2007.)

Alzheimer's Disease In **Alzheimer's disease**, initially described by the German neurologist Alois Alzheimer in 1906, the brain tissue irreversibly deteriorates, and death usually occurs within 12 years after the onset of symptoms. Over 50,000 Americans die each year from this disease, and in 2000, it was the seventh leading cause of death among men and women over the age of 65 (NCHS, 2004). The illness may begin with absentmindedness, irritability, and difficulties in concentration and in memory for new material. These shortcomings may be overlooked for several years but eventually interfere with daily living. As the disease develops, problems with language skills and word finding intensify. Visual-spatial abilities decline, which can be expressed in **disorientation** (confusion with respect to time, place, or identity) and trouble copying figures. People with the disorder are typically unaware of their cognitive problems initially, and they may blame others for lost objects, even to the point of developing delusions of being persecuted. Memory continues to deteriorate, and the person becomes increasingly disoriented and agitated. Depression is common, occurring in up to 30 percent of people with Alzheimer's disease (Strauss & Ogrocki, 1996).

People with Alzheimer's disease have more **plaques** (small, round beta-amyloid protein deposits that are outside the neurons) and **neurofibrillary tangles** (twisted protein filaments composed largely of the protein, tau, in the cell bodies of neurons) than would be expected for the person's age. The plaques are most densely present in the frontal cortex of people with Alzheimer's disease (Klunk et al., 2004). Tangles are most densely present in the hippocampus, an area that is important for memory. Over time, as the disease progresses, plaques and tangles spread through more of the brain.

There have been terrific developments in brain-imaging techniques for measuring plaques and tangles in recent years. Plaques can be measured using a specialized type of PET scan, using Pittsburgh Compound-B (PiB) (Klunk et al., 2004). Plaques and tangles can be measured using [F-18]FDDNP PET scans (Small et al., 2006).



These plaques and tangles appear related to a host of brain changes. At early stages, there seems to be a loss of synapses for acetylcholinergic (ACh) and glutamatergic neurons (Selkoe, 2002). Over time, neurons also begin to die. As neurons die, the cerebral cortex, the entorhinal cortex, and the hippocampus shrink, and later the frontal, temporal, and parietal lobes shrink. As this happens, the ventricles become enlarged. The cerebellum, spinal cord, and motor and sensory areas of the cortex are less affected, which is why people with Alzheimer's do not appear to have anything physically wrong with them until late in the disease process. For some time people with Alzheimer's are able to walk around normally, and their overlearned habits, such as making small talk, remain intact, so that in short encounters strangers may not notice anything amiss. About 25 percent of people with Alzheimer's disease eventually develop brain deterioration that leads to motor deficits.

In the largest twin study of Alzheimer's disease, a heritability estimate of 79 percent was reported. That is, about 79 percent of the variance in onset of Alzheimer's disease appears related to genes, and about 21 percent of the variance appears related to environmental factors (Gatz et al., 2006).

Among early-onset (before age 60) cases, which account for fewer than 5 percent of all cases of Alzheimer's disease, the pattern of inheritance suggests the operation of a single, dominant gene. Because people with Down's syndrome often develop Alzheimer's disease if they survive until middle age, interest focused initially on chromosome 21, which is aberrant in Down syndrome (see p. 447). A gene controlling the formation of beta-amyloid protein (which forms plaques) was identified on the long arm of chromosome 21, and studies have demonstrated that this gene causes the development of about 5 percent of cases of early-onset Alzheimer's disease. Dominant genes causing a small percentage of early-onset cases of Alzheimer's disease have also been found on chromosomes 1 and 14.

Most late-onset cases of Alzheimer's disease exhibit a particular form of a gene on chromosome 19, called the apolipoprotein E 4 or APOE-4 allele. Having one E 4 allele increases the risk of Alzheimer's disease to 30 percent, and having two alleles brings the risk to above 90 percent (Cummings & Cole, 2002). People with two of the E 4 alleles show abnormal glucose metabolism in the cortex even before the onset of any symptoms, but this has not been shown among people of color (Reiman et al., 1996). The gene appears related to the production of beta-amyloid proteins. Variants of several other genes also increase risk for Alzheimer's disease, including mutations of APP, PSEN1, PSEN2, and a polymorphism in UBQLN1.

Beyond genes, as mentioned before, twin studies suggest that the environment is likely to play a role in Alzheimer's. Engagement in intellectual activities has received a great deal of attention, with some proposing a "use it or lose it" model of Alzheimer's.

Strong cognitive ability before disease onset may offer some protection from Alzheimer's. This possibility was demonstrated in a study of nuns. In the weeks before the nuns took their religious vows, they had written autobiographies. Years later, after the nuns died, researchers were able to code these autobiographies for their linguistic ability, general knowledge, vocabulary skills, and other cognitive abilities. Excerpts from two of these autobiographies illustrate the range of linguistic ability among the nuns:

- *Low linguistic ability: I was born in Eau Claire, Wis. on May 24, 1913 and was baptized in St. James church.*
- *High linguistic ability: The happiest day of my life so far was my First Communion Day which was in June nineteen hundred and twenty when I was but eight years of age, and four years later I was confirmed by Bishop D. D. (Snowden et al., 1996, p. 530).*

Low linguistic ability was found in 90 percent of those who developed Alzheimer's disease many years later and in only 13 percent of those who didn't (Snowden et al., 1996).

Increasingly, researchers have focused on whether engagement in a broader range of cognitive activities can be protective. For example, regular reading of the newspaper is related to lower risk (Wilson et al., 2002). One meta-analysis of 29,000 persons drawn from 22 representative community samples suggested that frequent cognitive activity (for example, reading and puzzle solving) is related to a 46 percent decrease in risk of Alzheimer's disease compared to infrequent

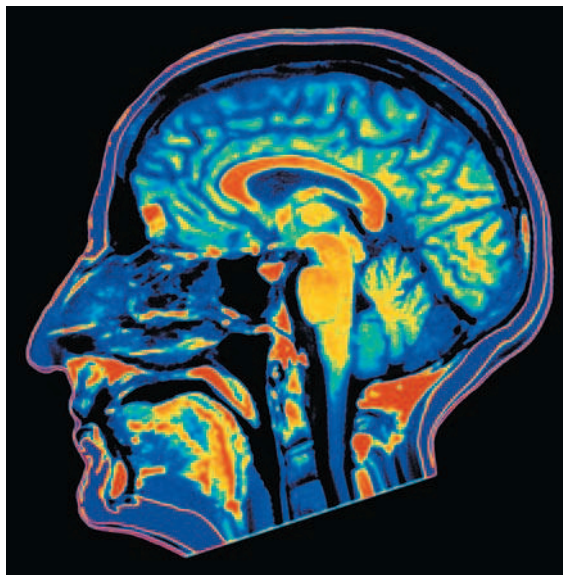
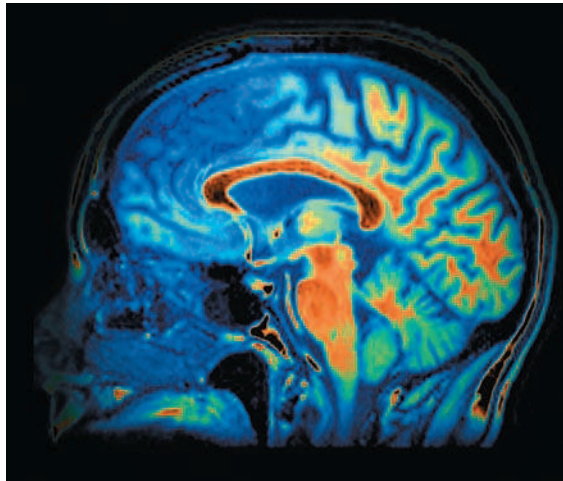


The frequency of Alzheimer's disease increases with advanced age. (Will & Deni McIntyre/Science Source/Photo Researchers, Inc.)

● DSM-IV-TR Criteria for Dementia

Of the Alzheimers type:

- Multiple cognitive deficits manifested by both A and B:
 - A.** Memory impairment
 - B.** One or more of the following: aphasia (language disturbance), apraxia (impairment in doing something even though motor components intact), agnosia (failure to identify objects despite sensory perception), and disturbance in executive functioning (i.e., planning, organizing, sequencing, and abstracting)
- Significant impairment and decline in social or occupational functioning
- Gradual onset and continuing cognitive decline
- Above cognitive deficits not due to substance use, other psychological disorders, delirium, or other medical conditions that cause progressive decline or dementia.



The image on the top is an MRI scan of a person with frontal temporal dementia (FTD). The image on the bottom is an MRI scan of a healthy person. The scan of the person on the top shows the atrophy, or loss of brain volume, in the frontal region. FTD is also characterized by atrophy in the temporal regions. (Top: Zephyr/Photo Researchers, Inc.; bottom: Scott Camazine/Photo Researchers, Inc.)

cognitive activity (Valenzuela & Sachdev, 2006). Among people with similar levels of plaques and tangles in their brain, those with higher levels of cognitive activity show fewer cognitive symptoms. That is, cognitive activity seems to protect against the expression of underlying neurobiological disease (Wilson et al., 2007).

Researchers are focused on early identification of people at high risk for Alzheimer's, spurred by the hope that early intervention might prevent the development of the disease. Recent research focuses on differentiating people who do and do not progress from mild cognitive impairment to Alzheimer's disease. Promising results have been obtained using neuropsychological tests; assays of tau, amyloid, and other proteins in the blood (Ray et al., 2007); and brain imaging (den Heijer et al., 2006; Sunderland et al., 2006). To date, however, it remains difficult to know who will develop Alzheimer's disorder in the context of these early signs of cognitive decline.

Frontotemporal Dementia As suggested by the name, **frontotemporal dementia (FTD)** is defined by a loss of neurons in frontal and temporal regions of the brain. FTD typically begins in the mid to late fifties, although many investigators believe that subtle changes in behavior, personality, and emotion can begin much earlier (e.g., Geschwind et al., 2001). The social and emotional changes in FTD are major and take a heavy toll on the loved ones of the affected person. Unlike Alzheimer's disease, memory is not severely impaired in FTD. Instead, executive functions, which include things such as planning, problem solving, and goal-directed behavior, are more impaired in FTD compared to Alzheimer's (Kramer et al., 2003). For example, the successful and savvy businessman may begin to make terrible investments (Levenson & Miller, 2007). Ability to recognize and regulate emotion is also impaired in FTD (Levenson & Miller, 2007). FTD often progresses rapidly. In one study, the average time from diagnosis to death was less than 5 years (Levenson & Miller, 2007).

The neuronal deterioration of FTD occurs predominantly in the amygdala, anterior temporal lobes, prefrontal cortex, and other regions involving serotonergic neurons (Miller et al., 1997). Pick's disease, one cause of frontotemporal dementia, is characterized by the presence of Pick bodies, spherical inclusions within neurons. FTD has a strong genetic component, although there may be multiple genetic pathways involved (Cruts et al., 2006).

Vascular Dementia Vascular dementia is diagnosed when the cognitive symptoms of dementia are a consequence of cerebrovascular disease. Most commonly, the person had a series of strokes in which a clot formed, impairing circulation and causing cell death. Genetic factors appear to be of no importance (Bergem, Engedal, & Kringlen, 1997). Rather risk for vascular dementia involves the same risk factors described for cardiovascular disease in general—for example, a high level of “bad” (LDL) cholesterol, cigarette smoking, and elevated blood pressure (Moroney et al., 1999). Because strokes and cardiovascular disease can strike different regions of the brain, the symptoms of vascular dementias can vary a good deal. Vascular dementias are more common among African Americans than Caucasians (e.g., Froehlich, Bogardus, & Inouye, 2001). The onset of symptoms can be more rapid in vascular dementia than in other forms of dementia. Vascular dementia can co-occur with Alzheimer's disorder.

Dementia with Lewy Bodies **Dementia with Lewy bodies (DLB)** can be divided into two subtypes, depending on whether it occurs in the context of Parkinson's disease or not. About 80 percent of people with Parkinson's disease will develop DLB, but some people without Parkinson's will develop DLB as well.

The symptoms associated with this type of dementia are often hard to distinguish from the symptoms of Parkinson's (such as the shuffling gait) and Alzheimer's disease (such as loss of memory). DLB is more likely than Alzheimer's disease to include prominent visual hallucinations and fluctuating cognitive symptoms (APA, 2004). People with DLB are often extremely sensitive to the physical side effects of antipsychotic medications. Another dis-



tinct symptom of DLB is that people often experience intense dreams accompanied by levels of movement and vocalizing that may make them seem as though they are “acting out their dreams” (McKeith et al., 2005). Imaging research suggests unusual patterns of dopamine activity in the basal ganglia, a region of the brain that is involved in Parkinson’s disease, among people with DLB (McKeith et al., 2005).

Dementias Caused by Disease and Injury A number of other medical concerns can produce dementia. Encephalitis, a generic term for any inflammation of brain tissue, is caused by viruses that enter the brain. Meningitis, an inflammation of the membranes covering the outer brain, is usually caused by a bacterial infection. Both encephalitis and meningitis can cause dementia. The organism that produces the venereal disease syphilis (*Treponema pallidum*) can invade the brain and cause dementia. HIV, head traumas, brain tumors, nutritional deficiencies (especially of B-complex vitamins), kidney or liver failure, and endocrine gland problems such as hyperthyroidism can result in dementia. Exposure to toxins (such as lead or mercury) and chronic substance use are both additional causes.

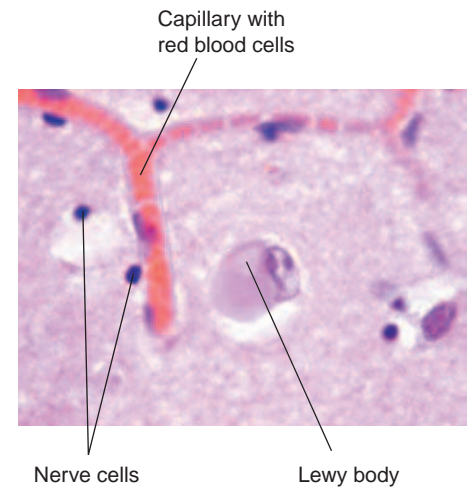
Treatment of Dementia Despite numerous investigations, no treatment has been found that can reverse dementia. Some drugs, as described below, may provide modest protection against decline in cognitive functions. For treatment providers and family members, the desire for cures is intense, and sadly, the literature is replete with examples of failed efforts. For example, attempts to help people with Alzheimer’s reminisce about key memories or treatments designed to provide additional sensory stimulation have shown effects that are miniscule at best (APA, 2007; Kasl-Godley & Gatz, 2000). Similarly, early-heralded gains with Vitamin E, statins, and nonsteroidal anti-inflammatory drugs have failed to find support in more careful research (Shumaker, Legault, & Coker, 2006).

Medications Because Alzheimer’s disease involves the death of brain cells that secrete acetylcholine, various medications are used to increase the levels of this neurotransmitter. Acetylcholinesterase inhibitors (drugs that interfere with the breakdown of acetylcholine), such as donepezil (Aricept) and rivastigmine (Exelon), are the standard treatment for Alzheimer’s disease (Cummings, 2000). Meta-analyses of dozens of controlled trials indicate that this class of drugs is associated with slightly less decline in memory than is observed on placebo (Birks, 2006). In addition to acetylcholinesterase inhibitors, namenda (Memantine), a drug that affects glutamate receptors believed to be involved in memory, has shown small effects in placebo-controlled trials (Winblad & Portis, 1999).

A major effort is underway to find medications to prevent the onset of Alzheimer’s disease. Recall that beta-amyloid plaques appear tied to the development of Alzheimer’s disease. Based on this, one line of this research is focusing on processes involved in the creation of amyloid from its precursor protein (Rosenberg, 2005).

Beyond the memory loss, Alzheimer’s disease can produce many other psychological symptoms. For example, as many as 30 percent of people with Alzheimer’s disease will evidence depression, and so antidepressants are often used to address these symptoms (Lyketsos et al., 2000). Agitation, aggression, and paranoid symptoms are common concerns as the disease progresses. In a study of 421 people with Alzheimer’s, atypical antipsychotic medications were found to provide small gains compared to placebo in relieving paranoia, aggression, and anger (Sultzer et al., 2008). Unfortunately, antipsychotic medications increase the risk of death among elderly people with dementia (FDA, 2005; Gill et al., 2007). Despite this, antipsychotic medications are all too commonly prescribed for people with dementia when behavioral interventions could be effective without the same risks.

Compared to Alzheimer’s disease, much less is known about treatments for the other forms of dementia. No medications have been shown to have robust effects on the symptoms of FTD, although SSRIs have been prescribed with modest success (Pasquier et al., 2003). Namenda (Memantine) and some cholinesterase inhibitors have been shown to lead to a slightly slower cognitive decline in vascular dementia (Malouf & Birks, 2004). Cholinesterase inhibitors also have been shown to slow declines in dementia with Lewy bodies (Maidment, Fox, & Boustani,



Dementia with Lewy bodies is defined by the presence of abnormal deposits called Lewy bodies. In this form of dementia, the Lewy bodies are found throughout the brain. (Courtesy of James Lowe, University of Nottingham, Nottingham, United Kingdom)



Former president Ronald Reagan died from Alzheimer’s disease. His daughter wrote the following about his disease: “. . . the past is like the rudder of a ship. It keeps you moving through the present, steers you into the future. Without it, without memory, you are unmoored, a wind-tossed boat with no anchor. You learn this by watching someone you love drift away” (Davis, 2002). (Reuter/Steve Grayson/Archive Photos.)



Providing memory aids is one way of combating memory loss.
(RubberBall/SuperStock, Inc.)

2006). Unfortunately, many people discontinue these drugs due to aversive side effects such as nausea (Maidment et al., 2006).

Psychological Treatments Supportive psychotherapy can help families and patients deal with the effects of the disease. Generally, the therapist allows opportunities for the person with dementia and the family to discuss the illness. The therapist also provides accurate information about the illness, helps family members care for the person in the home, and encourages a realistic rather than a catastrophic attitude in dealing with the many specific challenges that this cognitive disorder presents (Knight, 1996). In contrast to what we have seen in dealing with virtually all other psychological problems, it may not be desirable to get people with Alzheimer's to admit to their problems, for their denial may be the most effective coping mechanism available (Zarit, 1980). See Focus on Discovery 15.1 for more detail on treatments offered to support caregivers.

Naturalistic (nontreatment) and treatment studies suggest that exercise may ward off memory problems. For example, in one study of people over the age of 65, exercising three times per week was related to less risk of developing Alzheimer's disease over a 6-year period (Larson et al., 2006). Intervention researchers are building on these findings. In a meta-analysis of 12 studies including 423 people assigned to exercise and 397 control participants, exercise programs have shown cognitive benefits for those with mild to moderate cognitive deficits (Heyn, Abreu, & Ottenbacher, 2004). Exercise programs have

also been shown to improve cognitive functioning among those already diagnosed with Alzheimer's disease (Cott et al., 2002).

Behavioral approaches have been used to reduce disruptive behavior and depression in people with Alzheimer's. For example, self-care skills can be improved, verbal outbursts diminished, and depressed mood lifted with the application of appropriate reinforcement contingencies (Kasl-Godley & Gatz, 2000). Music may help reduce agitation and disruptive behavior while it is being played (Livingston et al., 2005). Given how sensitive older people can be to medications, these behavioral interventions can be quite important.

Check Your Knowledge 15.2

Answer the questions.

1. A plaque is:
 - a. a small round beta-amyloid protein deposit
 - b. a protein filament composed of the protein tau
 - c. a buildup of the myelin sheath surrounding neurons in the hippocampus
 - d. a small white spot on a brain scan
2. A neurofibrillary tangle is:
 - a. a small, round beta-amyloid protein deposit
 - b. a protein filament composed of the protein tau
 - c. a buildup of the myelin sheath surrounding neurons in the hippocampus
 - d. a small white spot on a brain scan
3. Which neurotransmitter is most involved in Alzheimer's disease?
 - a. dopamine
 - b. serotonin
 - c. GABA
 - d. acetylcholine
4. Which genes are most involved in Alzheimer's disease?
 - a. the E 4 allele
 - b. the C 5 allele
 - c. the E 6 allele
 - d. all of the above
5. FTD involves profound changes in:
 - a. memory
 - b. social and emotional behavior
 - c. language
 - d. attention

FOCUS ON DISCOVERY 15.1

Support for Caregivers

For every person with a severely disabling dementia living in an institution, there are at least two living in the community, usually supported by a family (especially wives and daughters). Caregiving for dementia requires much more time than caregiving for most other disorders (Ory et al., 1999) and has been shown to be extremely stressful across a number of cultures (Torti et al., 2004). Caregivers are at risk for clinical depression and anxiety (Dura, Stukenberg, & Kiecolt-Glaser, 1991), physical illness (Vitaliano, Zhang, & Scanlan, 2003), and decreased immune functioning (Kiecolt-Glaser et al., 1991) compared to noncaregivers. Further, for some caregivers, depression and loneliness persist long after their ill spouse has died (Robinson-Whelan et al., 2001).

Despite the obvious toll of caretaking, some caregivers seem to adjust to these stresses without developing symptoms. A key question, then, is what predicts resiliency? Caregivers are less likely to develop depression and anxiety when the patient's problem behaviors are less severe, when social support is available, and when financial resources are adequate to handle medical expenses. African American caregivers typically report less stress and depression in their roles as caregivers than Caucasian Americans do (Connell & Gibson, 1997). Certain cognitive attitudes might be protective as well (e.g., Gatz, Bengtson, & Blam, 1990). For example, it may be less stressful for a caregiver to adopt an accepting attitude toward the patient's behavior—"There's nothing I can do to change the situation, so let me just resign myself to it and make the necessary adjustments"—rather than take a more active approach—"How can I get mom to remember to put her coat on before leaving the house?" In a study by Knight, Lutzky, and Olshevski (1992), efforts to help distressed caregivers solve problems and accept responsibility actually increased their stress as measured by cardiovascular reactivity. Knight and colleagues speculate that problem-solving training may reinforce the view that the caregiver is responsible for the patient's problem behaviors.

Families can be helped, however, to cope better with the daily stress of having a family member with Alzheimer's. For example, because people with Alzheimer's have great difficulty placing new information into memory, they can engage in a reasonable conversation but forget a few minutes later what has been discussed. A caregiver may become impatient unless he or she understands that this impairment is to be expected because of the brain damage. Family members can learn communication strategies to adapt to the memory loss. For example, families can ask questions that embed the answer. For example, it is much easier to respond to "Was the

person you just spoke to on the phone Harry or Tom?" than to "Who just called?"

It is also useful for caregivers to understand that patients do not always recognize their limitations and may try to engage in activities beyond their abilities, sometimes dangerously so. Caregivers must set limits regarding dangerous activities. For example, caregivers often need to tell a relative with Alzheimer's disease that driving is off-limits (and then remove car keys, as they can assume that the relative will forget the new rule).

Caregivers need opportunities to vent their feelings of guilt and resentment. Many of their frustrations cannot and should not be shared with the person with dementia, and so having sources of support outside the home can be a big help. Some caregivers may need permission and support to take time off (Olshevski, Katz, & Knight, 1999). Because the family caregivers are so powerfully affected, it is recommended that they be given respite from their task. The person may be hospitalized for a week, a health care worker may take over to give the family an opportunity for a holiday, or the person may be enrolled at an adult day-care center.

Programs that teach coping strategies for the caregivers (e.g., increasing pleasant activities, exercise or social support) as well as individual behavioral therapy have been shown to relieve caregiver burden (Selwood et al., 2007). Programs lasting at least six weeks (Selwood et al., 2007) or offering multiple components (e.g., psychoeducation about dementia, case-management services, and cognitive behavioral strategies) more consistently reduce caregiver's distress (Acton & Kang, 2001). A study of 1,222 caregivers found that multicomponent programs were particularly helpful for female caregivers and for those with less education (Gitlin et al., 2003). Caregiver support programs have been found to be effective in improving the immune function of caregivers (Garand et al., 2002), decreasing medical costs of the person with dementia, and slowing the timing of institutionalization (Teri et al., 2003).

New research is examining the best ways to integrate caregiver programs into the medical system. Researchers have shown that these programs can be offered effectively in HMO settings, improving the ease of access (Toseland et al., 2004). One study found that providing social work consultation to caregivers improved the quality of medical treatment provided to people with Alzheimer's disease (Vickrey et al., 2006). Unfortunately, these caregiver support programs remain inaccessible for many people; only half of physicians provide caregivers with such programs (Rosen et al., 2002).



Caring for a relative with Alzheimer's disease is a source of severe stress. (David Young-Wolff/PhotoEdit.)

● DSM-IV-TR Criteria for Delirium

- Disturbance of consciousness (reduced awareness of the environment and attentional difficulties)
- A change in cognition, such as language disturbance, memory deficit, or perceptual disturbance not better accounted for by a dementia
- Rapid onset (usually within hours or days), and fluctuation during the course of a day
- Evidence that symptoms are caused by a medical condition, substance use, or medication side effects

Delirium

The term **delirium** is derived from the Latin words *de*, meaning “out of,” and *lira*, meaning “track.” The term implies being off track or deviating from the usual state (Wells & Duncan, 1980). As illustrated in the clinical case of Henry at the beginning of this chapter, delirium is typically described as a clouded state of consciousness. The two most common symptoms are extreme trouble focusing attention and profound disturbances in the sleep/wake cycle (Meagher, 2007). Patients, sometimes rather suddenly, have so much trouble focusing attention that they cannot maintain a coherent stream of thought. The sleep/wake cycle becomes disturbed, making patients drowsy during the day yet awake and agitated at night. Vivid dreams and nightmares are common. People with delirium may be impossible to engage in conversation because of their wandering attention and fragmented thinking. In severe delirium, speech is rambling and incoherent. Bewildered and confused, some people with delirium may become so disoriented that they are unclear about what day it is, where they are, and even who they are. Memory impairment, especially for recent events, is common.

In the course of a 24-hour period, people with delirium have lucid intervals and become alert and coherent. They are usually worse during sleepless nights and in the dark. These daily fluctuations help distinguish delirium from other syndromes, especially Alzheimer’s disease.

Perceptual disturbances are frequent in delirium. People mistake the unfamiliar for the familiar; for example, they may state that they are at home instead of in a hospital. Although visual hallucinations are common, they are not always present. Delusions—beliefs contrary to reality—have been noted in about 25 percent of older adults with delirium (Camus et al., 2000). These delusions tend to be poorly worked out, fleeting, and changeable.

Swings in activity and mood accompany these disordered thoughts and perceptions. People with delirium can be erratic, ripping their clothes one moment and sitting lethargically the next. People with delirium may also shift rapidly from one emotion to another—depression, anxiety, fright, anger, euphoria, and irritability. Fever, flushed face, dilated pupils, tremors, rapid heart-beat, elevated blood pressure, and incontinence of urine and feces are common. If delirium worsens, the person may become stuporous and lethargic (Webster & Holroyd, 2000).

As noted in the diagnostic criteria, delirium is caused by medical conditions. Several causes of delirium in older adults have been identified: drug intoxications and drug-withdrawal reactions, metabolic and nutritional imbalances (as in uncontrolled diabetes, thyroid dysfunction, kidney or liver failure, congestive heart failure, or malnutrition), infections or fevers (like pneumonia or urinary tract infections), neurological disorders (like head trauma or seizures), and the stress of major surgery, most commonly hip surgery (Knight, 1996; Zarit & Zarit, 1998). As in the case of Henry at the start of this chapter, however, delirium usually has more than one cause.

People of any age are subject to delirium, but it is more common among children and older adults. Among older adults, it is particularly common in nursing homes and hospitals. For example, one study found that 6 to 12 percent of nursing home residents developed delirium in the course of one year (Katz, Parmelee, & Brubaker, 1991), and rates much higher than this have been found in elderly hospital patients (Meagher, 2001). For example, in one study, 46 percent of patients with hip fractures experienced delirium (Marcantonio et al., 2001).

Why are older adults so vulnerable to delirium? Many explanations have been offered: the physical declines of late life, the increased susceptibility to chronic diseases, the many medications prescribed for older people, and the greater sensitivity to drugs. One other factor, brain damage, increases the risk of delirium. Older people with dementia appear to be the most susceptible to delirium. A retrospective review of 100 hospital admissions of people of all ages who had a diagnosis of delirium revealed that 44 percent of them had delirium superimposed on another brain condition (Purdie, Honigman, & Rosen, 1981).

Unfortunately, delirium is often misdiagnosed (Knight, 1996). For example, among 77 hospitalized older adults who had clear symptoms of delirium, about 60 percent had no notation of delirium in the hospital chart (Lauril et al., 2004). Physicians are particularly unlikely to detect delirium when lethargy is present (Cole, 2004).

Delirium is often misdiagnosed when a person has dementia. Table 15.2 compares the features of dementia and delirium. Knight (1996) offers a useful suggestion for distinguishing delirium from dementia:



Medication misuse, whether deliberate or inadvertent, can be a serious problem among older people and can cause delirium. (Eric Kamp/Phototake.)



The clinical “feel” of talking with a person with delirium is rather like talking to someone who is acutely intoxicated or in an acute psychotic episode. Whereas the demented patient may not remember the name of the place where she or he is, the delirious patient may believe it is a different sort of place altogether, perhaps mistaking a psychiatric ward for a used car lot. (pp. 96–97)

Detecting and treating delirium is of fundamental importance. Untreated, the mortality rate for delirium is high; more than one-third of people with the condition die within a year, either from exhaustion or from the medical condition causing the delirium (McCusker, Cole, & Abrahamowicz, 2002). Beyond the risk of death, elderly adults who develop delirium in the hospital are at an increased risk for further cognitive decline (Jackson et al., 2004).

Table 15.2 Comparative Features of Dementia and Delirium

Dementia	Delirium
Gradual deterioration of abilities	Rapid onset
Deficits in memory for recent events	Trouble concentrating and staying with a train of thought
Not explained by another medical condition	Secondary to another medical condition
Usually progressive and nonreversible	Fluctuations over the course of a day
Treatment offers only minimal benefit	Usually reversible by treating underlying condition, but potentially fatal if cause—e.g., malnutrition—not treated
Prevalence increases with age	Prevalence is high in the very young as well as the old

Treatment of Delirium Complete recovery from delirium is possible if the underlying cause is treated promptly and effectively. The older adult who has a cognitive impairment must be examined thoroughly for all possible reversible causes of the disorder, such as drug intoxication, infections, fever, and malnutrition, and then treated accordingly. Beyond treating the underlying medical conditions, the most common treatment is atypical antipsychotic medications (Lonerger, Britton, & Luxenberg, 2007). It usually takes one to four weeks for the condition to clear; it takes longer in older people than in younger people.

Because of the high rates of delirium in hospitalized older adults, one study examined the efficacy of primary prevention strategies—in other words, the aim was to prevent delirium from starting. The researchers randomly assigned 852 hospitalized patients who were 70 years of age or older to receive either standard medical care only or standard medical care along with an intervention designed to prevent delirium. This intervention addressed risk factors for delirium such as sleep deprivation, immobility, dehydration, visual and hearing impairment, and cognitive impairment. The patients who received the intervention were significantly less likely to develop delirium, and for those who did develop delirium, the symptoms cleared more quickly (Inouye et al., 1999).

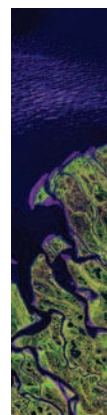
The high risk of delirium among people with dementia raises another set of prevention issues. The family of a person with dementia should learn the symptoms of delirium and know about its reversible nature, so that they do not interpret the onset of delirium as a new stage of a progressive dementia. With proper diagnosis and treatment, the person can usually return to the earlier state.

Quick Summary

Dementia is a broad term to capture cognitive decline, most commonly a decline in memory for recent events. As cognitive deficits become more widespread and profound, social and occupational functioning becomes more and more disturbed. Dementia affects approximately 1 to 2 percent of people in their sixties but more than 20 percent of people over the age of 80. There are many types

of dementia, including Alzheimer's, frontotemporal, vascular, dementia with Lewy bodies, and dementia from other medical causes.

Alzheimer's disease is characterized by plaques and tangles in the brain. It has been related to the APOE-4 allele. The expression of genetic vulnerability, though, is influenced by environmental and



psychological events, such as depression, and baseline cognitive ability and activity. The FDA has approved acetylcholinesterase inhibitors and Memantine for the treatment of Alzheimer's disease, but these medications offer modest effects. Psychoeducation may be helpful for some people during the early stages of Alzheimer's but is not helpful as the dementia symptoms become more profound. Exercise appears to improve cognitive functioning for people with mild cognitive impairment as well as those with Alzheimer's disease. Caregivers of people with Alzheimer's are at high risk for depression and anxiety. Multimodal interventions that address a range of caregiver issues, including even periods of respite from caretaking, offer some protection against psychological symptoms.

Frontotemporal dementia (FTD) is characterized by neuronal deterioration in the amygdala, frontal, and temporal lobes. Pick's disease is one form of FTD. The primary symptoms of FTD include marked changes in social and emotional behavior.

Vascular dementia affects subcortical areas of the brain and often occurs after a stroke. Genetic factors do not play a direct role in vascular dementia.

Dementia with Lewy bodies is characterized by visual hallucinations, fluctuations in cognitive functioning, supersensitivity to side effects of antipsychotic medications, and intense dreams during which the person moves and talks. It is believed that DLB is related to dysfunction in basal ganglia neurons.

Delirium is a cognitive disorder characterized by clouded consciousness, disorientation, and inability to follow conversation. Mood and symptoms tend to vary throughout the day. Delirium is most likely to affect children and older adults; among the elderly, it is particularly common in hospitals and nursing homes. By definition, delirium is secondary to an underlying medical condition. If the underlying medical condition is treated, full recovery from delirium can be expected. Delirium is often not detected, though, and the risk of further cognitive decline and even death is quite high when symptoms are not addressed.

Check Your Knowledge 15.3

Answer the questions.

1. Dementia is commonly characterized by:

- a. anxiety
- b. memory loss
- c. frank disorganization
- d. sad mood

2. Delirium is characterized by:

- a. anxiety
- b. memory loss
- c. frank disorganization
- d. sad mood

3. Mary, a 70-year-old woman, was hospitalized for hip surgery. Although there were no immediate complications of the surgery, her son became concerned when he visited her that night because she was not making any sense. She thanked him for checking her into the Ritz Carlton and laughed giddily when he told her that she was in the hospital. Half an hour later, she began sobbing. Although she seemed fine the next morning, symptoms of acute confusion reemerged by lunchtime. Which diagnosis is most likely for Mary?

- a. Alzheimer's disease
- b. frontotemporal dementia
- c. mania
- d. delirium

Psychological Disorders in Late Life

Above, we described the cognitive disorders, which become more common as people age. Here, though, we turn to issues in understanding how aging relates to the other psychological disorders, such as depressive disorders, anxiety disorders, and substance abuse. We first look at the prevalence of mental disorders in late life. Then we consider questions about whether there are unique aspects of etiology and treatment when these disorders occur among older adults compared to younger adults.

The DSM criteria for older adults are the same as those for younger adults. This is because the symptoms of mental disorders are assumed to be the same in adulthood and late life, even though little research tests this assumption (Gatz, Kasl-Godley, & Karel, 1996).

Prevalence: How Common Are Psychological Disorders in Late Life?

How likely are older people to have mental disorders? Current estimates indicate that persons over age 65 have the lowest overall prevalence of mental disorders of all age groups (see Table 15.3). Note that the rates of schizophrenia and bipolar disorder in late life are particularly low. [These rates are so low that we will not focus on schizophrenia and bipolar disorder in this chap-