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Personality Disorders The understanding of personality and its disorders distinguishes psychiatry fundamentally from all other branches of medicine. A person is a self-aware human being, as C. Robert Cloninger said, not “a machine-like object that lacks self-awareness.” Personality refers to all of the characteristics that adapt in unique ways to everchanging internal and external environments. Personality disorders are common and chronic. They occur in 10 to 20 percent of the general population, and their duration is expressed in decades. Approximately 50 percent of all psychiatric patients have a personality disorder, which is frequently comorbid with other clinical syndromes. Personality disorder is also a predisposing factor for other psychiatric disorders (e.g., substance use, suicide, affective disorders, impulse-control disorders, eating disorders, and anxiety disorders) in which it interferes with treatment outcomes of many clinical syndromes and increases personal incapacitation, morbidity, and mortality of these patients. Persons with personality disorders are far more likely to refuse psychiatric help and to deny their problems than persons with anxiety disorders, depressive disorders, or obsessive-compulsive disorder. In general, personality disorder symptoms are ego syntonic (i.e., acceptable to the ego, as opposed to ego dystonic) and alloplastic (i.e., adapt by trying to alter the external environment rather than themselves). Persons with personality disorders do not feel anxiety about their maladaptive behavior. Because they do not routinely acknowledge pain from what others perceive as their symptoms, they often seem disinterested in treatment and impervious to recovery. CLASSIFICATION The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) defines a general personality disorder as an enduring pattern of behavior and inner experiences that deviates significantly from the individual’s cultural standards; is rigidly pervasive; has an onset in adolescence or early adulthood; is stable through time; leads to unhappiness and impairment; and manifests in at least two of the following four areas: cognition, affectivity, interpersonal function, or impulse control. When personality traits are rigid and maladaptive and produce functional impairment or subjective distress, a personality disorder may be diagnosed. Personality disorder subtypes classified in DSM-5 are schizotypal, schizoid, and paranoid (Cluster A); narcissistic, borderline, antisocial, and histrionic (Cluster B); and obsessivecompulsive, dependent, and avoidant (Cluster C). The three clusters are based on descriptive similarities. Cluster A includes three personality disorders with odd, aloof features (paranoid, schizoid, and schizotypal). Cluster B includes four personality

disorders with dramatic, impulsive, and erratic features (borderline, antisocial, narcissistic, and histrionic). Cluster C includes three personality disorders sharing anxious and fearful features (avoidant, dependent, and obsessive-compulsive). Individuals frequently exhibit traits that are not

limited to a single personality disorder. When a patient meets the criteria for more than one personality disorder, clinicians should diagnose each. ETIOLOGY Genetic Factors The best evidence that genetic factors contribute to personality disorders comes from investigations of more than 15,000 pairs of twins in the United States. The concordance for personality disorders among monozygotic twins was several times that among dizygotic twins. Moreover, according to one study, monozygotic twins reared apart are about as similar as monozygotic twins reared together. Similarities include multiple measures of personality and temperament, occupational and leisure-time interests, and social attitudes. Cluster A personality disorders are more common in the biological relatives of patients with schizophrenia than in control groups. More relatives with schizotypal personality disorder occur in the family histories of persons with schizophrenia than in control groups. Less correlation exists between paranoid or schizoid personality disorder and schizophrenia. Cluster B personality disorders apparently have a genetic base. Antisocial personality disorder is associated with alcohol use disorders. Depression is common in the family backgrounds of patients with borderline personality disorder. These patients have more relatives with mood disorders than do control groups, and persons with borderline personality disorder often have a mood disorder as well. A strong association is found between histrionic personality disorder and somatization disorder (Briquet’s syndrome); patients with each disorder show an overlap of symptoms. Cluster C personality disorders may also have a genetic base. Patients with avoidant personality disorder often have high anxiety levels. Obsessive-compulsive traits are more common in monozygotic twins than in dizygotic twins, and patients with obsessive-compulsive personality disorder show some signs associated with depression— for example, shortened rapid eye movement (REM) latency period and abnormal dexamethasone-suppression test (DST) results. Biological Factors Hormones. Persons who exhibit impulsive traits also often show high levels of testosterone, 17-estradiol, and estrone. In nonhuman primates, androgens increase the likelihood of aggression and sexual behavior, but the role of testosterone in human aggression is unclear. DST results are abnormal in some patients with borderline personality disorder who also have depressive symptoms.

Platelet Monoamine Oxidase. Low platelet monoamine oxidase (MAO) levels have been associated with activity and sociability in monkeys. College students with low platelet MAO levels report spending more time in social activities than students with high platelet MAO levels. Low platelet MAO levels have also been noted in some patients with schizotypal disorders. Smooth Pursuit Eye Movements. Smooth pursuit eye movements are saccadic (i.e., jumpy) in persons who are introverted, who have low self-esteem and tend to withdraw, and who have schizotypal personality disorder. These findings have no clinical application, but they do indicate the role of inheritance. Neurotransmitters. Endorphins have effects similar to those of exogenous morphine, such as analgesia and the suppression of arousal. High endogenous endorphin levels may be associated with persons who are phlegmatic. Studies of personality traits and the dopaminergic and serotonergic systems indicate an arousalactivating function for these neurotransmitters. Levels of 5-hydroxyindoleacetic acid (5HIAA), a metabolite of serotonin, are low in persons who attempt suicide and in patients who are impulsive and aggressive. Raising serotonin levels with serotonergic agents such as fluoxetine (Prozac) can produce dramatic changes in some character traits of personality. In many persons, serotonin reduces depression, impulsiveness, and rumination and can produce a sense of general well-being. Increased dopamine concentrations in the central nervous system produced by certain psychostimulants (e.g., amphetamines) can induce euphoria. The effects of neurotransmitters on personality traits have generated much interest and

controversy about whether personality traits are inborn or acquired. Electrophysiology. Changes in electrical conductance on the electroencephalogram (EEG) occur in some patients with personality disorders, most commonly antisocial and borderline types; these changes appear as slow-wave activity on EEGs. Psychoanalytic Factors Sigmund Freud suggested that personality traits are related to a fixation at one psychosexual stage of development. For example, those with an oral character are passive and dependent because they are fixated at the oral stage, when the dependence on others for food is prominent. Those with an anal character are stubborn, parsimonious, and highly conscientious because of struggles over toilet training during the anal period. Wilhelm Reich subsequently coined the term character armor to describe persons' characteristic defensive styles for protecting themselves from internal impulses and from interpersonal anxiety in significant relationships. Reich's theory has had a broad influence on contemporary concepts of personality and personality disorders. For

example, each human being's unique stamp of personality is considered largely determined by his or her characteristic defense mechanisms. Each personality disorder has a cluster of defenses that help psychodynamic clinicians recognize the type of character pathology present. Persons with paranoid personality disorder, for instance, use projection, whereas schizoid personality disorder is associated with withdrawal. When defenses work effectively, persons with personality disorders master feelings of anxiety, depression, anger, shame, guilt, and other affects. Their behavior is ego syntonic; that is, it creates no distress for them even though it may adversely affect others. They may also be reluctant to engage in a treatment process; because their defenses are important in controlling unpleasant affects, they are not interested in surrendering them. In addition to characteristic defenses in personality disorders, another central feature is internal object relations. During development, particular patterns of the self in relation to others are internalized. Through introjection, children internalize a parent or another significant person as an internal presence that continues to feel like an object rather than a self. Through identification, children internalize parents and others in such a way that the traits of the external object are incorporated into the self and the child "owns" the traits. These internal self-representations and object representations are crucial in developing the personality and, through externalization and projective identification, are played out in interpersonal scenarios in which others are coerced into playing a role in the person's internal life. Hence, persons with personality disorders are also identified by particular patterns of interpersonal relatedness that stem from these internal object relations patterns. Defense Mechanisms. To help those with personality disorders, psychiatrists must appreciate patients' underlying defenses, the unconscious mental processes that the ego uses to resolve conflicts among the four lodestars of the inner life: instinct (wish or need), reality, important persons, and conscience. When defenses are most effective, especially in those with personality disorders, they can abolish anxiety and depression at the conscious level. Thus, abandoning a defense increases conscious awareness of anxiety and depression—a major reason that those with personality disorders are reluctant to alter their behavior. Although patients with personality disorders may be characterized by their most dominant or rigid mechanism, each patient uses several defenses. Therefore, the management of defense mechanisms used by patients with personality disorders is discussed here as a general topic and not as an aspect of the specific disorders. Many formulations presented here in the language of psychoanalytic psychiatry can be translated into principles consistent with cognitive and behavioral approaches. FANTASY. Many persons who are often labeled schizoid—those who are eccentric, lonely, or frightened—seek solace and satisfaction within themselves by creating imaginary lives, especially imaginary friends. In their extensive

dependence on fantasy, these persons often seem to be strikingly aloof. Therapists must understand that the

unsociableness of these patients rests on a fear of intimacy. Rather than criticizing them or feeling rebuffed by their rejection, therapists should maintain a quiet, reassuring, and considerate interest without insisting on reciprocal responses. Recognition of patients' fear of closeness and respect for their eccentric ways are both therapeutic and useful. DISSOCIATION. Dissociation or denial is a Pollyanna-like replacement of unpleasant affects with pleasant ones. Persons who frequently dissociate are often seen as dramatizing and emotionally shallow; they may be labeled histrionic personalities. They behave like anxious adolescents who, to erase anxiety, carelessly expose themselves to exciting dangers. Accepting such patients as exuberant and seductive is to overlook their anxiety, but confronting them with their vulnerabilities and defects makes them still more defensive. Because these patients seek appreciation of their courage and attractiveness, therapists should not behave with inordinate reserve. While remaining calm and firm, clinicians should realize that these patients are often inadvertent liars, but they benefit from ventilating their own anxieties and may in the process "remember" what they "forgot." Often therapists deal best with dissociation and denial by using displacement. Thus, clinicians may talk with patients about an issue of denial in an unthreatening circumstance. Empathizing with the denied affect without directly confronting patients with the facts may allow them to raise the original topic themselves. ISOLATION. Isolation is characteristic of controlled, orderly persons who are often labeled obsessive-compulsive personalities. Unlike those with histrionic personality, persons with obsessive-compulsive personality remember the truth in fine detail but without affect. In a crisis, patients may show intensified self-restraint, overly formal social behavior, and obstinacy. Patients' quests for control may annoy clinicians or make them anxious. Often, such patients respond well to precise, systematic, and rational explanations and value efficiency, cleanliness, and punctuality as much as they do clinicians' effective responsiveness. Whenever possible, therapists should allow such patients to control their own care and should not engage in a battle of wills. PROJECTION. In projection, patients attribute their own unacknowledged feelings to others. Patients' excessive faultfinding and sensitivity to criticism may appear to therapists as prejudiced, hypervigilant injustice collecting but should not be met by defensiveness and argument. Instead, clinicians should frankly acknowledge even minor mistakes on their part and should discuss the possibility of future difficulties. Strict honesty; concern for patients' rights; and maintaining the same formal, concerned distance as used with patients who use fantasy defenses are all helpful. Confrontation guarantees a lasting enemy and early termination of the interview. Therapists need not agree with patients' injustice collecting, but they should ask whether both can agree to disagree. The technique of counterprojection is especially helpful. Clinicians acknowledge and give paranoid patients full credit for their feelings and perceptions; they neither dispute patients' complaints nor reinforce them but agree that the world described by patients is

conceivable. Interviewers can then talk about real motives and feelings, misattributed to someone else, and begin to cement an alliance with patients. SPLITTING. In splitting, persons toward whom patients' feelings are, or have been, ambivalent are divided into good and bad. For example, in an inpatient setting, a patient may idealize some staff members and uniformly disparage others. This defense behavior can be highly disruptive on a hospital ward and can ultimately provoke the staff to turn against the patient. When staff members anticipate the process, discuss it at staff meetings, and gently confront the patient with the fact that no one is all good or all bad, the

phenomenon of splitting can be dealt with effectively. PASSIVE AGGRESSION. Persons with passive-aggressive defense turn their anger against themselves. In psychoanalytic terms, this phenomenon is called masochism and includes failure, procrastination, silly or provocative behavior, self-demeaning clowning, and frankly self-destructive acts. The hostility in such behavior is never entirely concealed. Indeed, in a mechanism such as wrist cutting, others feel as much anger as if they themselves had been assaulted and view the patient as a sadist, not a masochist. Therapists can best deal with passive aggression by helping patients to ventilate their anger. ACTING OUT. In acting out, patients directly express unconscious wishes or conflicts through action to avoid being conscious of either the accompanying idea or the affect. Tantrums, apparently motiveless assaults, child abuse, and pleasureless promiscuity are common examples. Because the behavior occurs outside reflective awareness, acting out often appears to observers to be unaccompanied by guilt, but when acting out is impossible, the conflict behind the defense may be accessible. The clinician faced with acting out, either aggressive or sexual, in an interview situation must recognize that the patient has lost control, that anything the interviewer says will probably be misheard, and that getting the patient's attention is of paramount importance. Depending on the circumstances, a clinician's response may be, "How can I help you if you keep screaming?" Or, if the patient's loss of control seems to be escalating, say, "If you continue screaming, I'll leave." An interviewer who feels genuinely frightened of the patient can simply leave and, if necessary, ask for help from ward attendants or the police. PROJECTIVE IDENTIFICATION. The defense mechanism of projective identification appears mainly in borderline personality disorder and consists of three steps. First, an aspect of the self is projected onto someone else. The projector then tries to coerce the other person into identifying with what has been projected. Finally, the recipient of the projection and the projector feel a sense of oneness or union. PARANOID PERSONALITY DISORDER Persons with paranoid personality disorder are characterized by long-standing suspiciousness and mistrust of persons in general. They refuse responsibility for their

own feelings and assign responsibility to others. They are often hostile, irritable, and angry. Bigots, injustice collectors, pathologically jealous spouses, and litigious cranks often have paranoid personality disorder. Epidemiology Data suggest that the prevalence of paranoid personality disorder is 2 to 4 percent of the general population. Those with the disorder rarely seek treatment themselves; when referred to treatment by a spouse or an employer, they can often pull themselves together and appear undistressed. Relatives of patients with schizophrenia show a higher incidence of paranoid personality disorder than control participants. Some evidence suggests a more specific familial relationship with delusional disorder, persecutory type. The disorder is more commonly diagnosed in men than in women in clinical samples. The prevalence among persons who are homosexual is no higher than usual, as was once thought, but it is believed to be higher among minority groups, immigrants, and persons who are deaf than it is in the general population. Diagnosis On psychiatric examination, patients with paranoid personality disorder may be formal in manner and act baffled about having to seek psychiatric help. Muscular tension, an inability to relax, and a need to scan the environment for clues may be evident, and the patient's manner is often humorless and serious. Although some premises of their arguments may be false, their speech is goal directed and logical. Their thought content shows evidence of projection, prejudice, and occasional ideas of reference. The DSM-5 diagnostic criteria are listed in Table 22-1. Table 22-1 DSM-5 Diagnostic Criteria for Paranoid Personality Disorder

Clinical Features The hallmarks of paranoid personality disorder are excessive suspiciousness and distrust of others expressed as a pervasive tendency to interpret actions of others as deliberately demeaning, malevolent, threatening, exploiting, or deceiving. This tendency begins by early adulthood and appears in a variety of contexts. Almost invariably, those with the disorder expect to be exploited or harmed by others in some way. They frequently dispute, without any justification, friends' or associates' loyalty or trustworthiness. Such persons are often pathologically jealous and, for no reason, question the fidelity of their spouses or sexual partners. Persons with this disorder externalize their own emotions and use the defense of projection; they attribute to others the impulses and thoughts that they cannot accept in themselves. Ideas of reference and logically defended illusions are common. Persons with paranoid personality disorder are affectively restricted and appear to be unemotional. They pride themselves on being rational and objective, but such is not the case. They lack warmth and are impressed with, and pay close attention to, power and rank. They express disdain for those they see as weak, sickly, impaired, or in some way defective. In social situations, persons with paranoid personality disorder may appear business-like and efficient, but they often generate fear or conflict in others. Differential Diagnosis Paranoid personality disorder can usually be differentiated from delusional disorder by the absence of fixed delusions. Unlike persons with paranoid schizophrenia, those with

personality disorders have no hallucinations or formal thought disorder. Paranoid personality disorder can be distinguished from borderline personality disorder because patients who are paranoid are rarely capable of overly involved, tumultuous relationships with others. Patients with paranoia lack the long history of antisocial behavior of persons with antisocial character. Persons with schizoid personality disorder are withdrawn and aloof and do not have paranoid ideation. Course and Prognosis No adequate, systematic long-term studies of paranoid personality disorder have been conducted. In some, paranoid personality disorder is lifelong; in others, it is a harbinger of schizophrenia. In still others, paranoid traits give way to reaction formation, appropriate concern with morality, and altruistic concerns as they mature or as stress diminishes. In general, however, those with paranoid personality disorder have lifelong problems working and living with others. Occupational and marital problems are common. Treatment Psychotherapy. Psychotherapy is the treatment of choice for those with paranoid personality disorder. Therapists should be straightforward in all their dealings with these patients. If a therapist is accused of inconsistency or a fault, such as lateness for an appointment, honesty and an apology are preferable to a defensive explanation. Therapists must remember that trust and toleration of intimacy are troubled areas for patients with this disorder. Individual psychotherapy thus requires a professional and not overly warm style from therapists. Clinicians' overzealous use of interpretation— especially interpretation about deep feelings of dependence, sexual concerns, and wishes for intimacy—increases patients' mistrust significantly. Patients who are paranoid usually do not do well in group psychotherapy, although it can be useful for improving social skills and diminishing suspiciousness through role playing. Many cannot tolerate the intrusiveness of behavior therapy, also used for social skills training. At times, patients with paranoid personality disorder behave so threateningly that therapists must control or set limits on their actions. Delusional accusations must be dealt with realistically but gently and without humiliating patients. Patients who are paranoid are profoundly frightened when they feel that those trying to help them are weak and helpless; therefore, therapists should never offer to take control unless they are willing and able to do so. Pharmacotherapy. Pharmacotherapy is useful in dealing with agitation and anxiety. In most cases, an antianxiety agent such as diazepam (Valium) suffices. It may be necessary, however, to use an

antipsychotic such as haloperidol (Haldol) in small dosages and for brief periods to manage severe agitation or quasi-delusional thinking. The antipsychotic drug pimozide (Orap) has successfully reduced paranoid ideation in

some patients. SCHIZOID PERSONALITY DISORDER Schizoid personality disorder is characterized by a lifelong pattern of social withdrawal. Persons with schizoid personality disorder are often seen by others as eccentric, isolated, or lonely. Their discomfort with human interaction; their introversion; and their bland, constricted affect are noteworthy. Epidemiology The prevalence of schizoid personality disorder is not clearly established, but the disorder may affect 5 percent of the general population. The sex ratio of the disorder is unknown; some studies report a 2-to-1 male-to-female ratio. Persons with the disorder tend to gravitate toward solitary jobs that involve little or no contact with others. Many prefer night work to day work so that they need not deal with many persons. Diagnosis On an initial psychiatric examination, patients with schizoid personality disorder may appear ill at ease. They rarely tolerate eye contact, and interviewers may surmise that such patients are eager for the interview to end. Their affect may be constricted, aloof, or inappropriately serious, but underneath the aloofness, sensitive clinicians can recognize fear. These patients find it difficult to be lighthearted: Their efforts at humor may seem adolescent and off the mark. Their speech is goal directed, but they are likely to give short answers to questions and to avoid spontaneous conversation. They may occasionally use unusual figures of speech, such as an odd metaphor, and may be fascinated with inanimate objects or metaphysical constructs. Their mental content may reveal an unwarranted sense of intimacy with persons they do not know well or whom they have not seen for a long time. Their sensorium is intact, their memory functions well, and their proverb interpretations are abstract. The DSM-5 diagnostic criteria are listed in Table 22-2. Table 22-2 DSM-5 Diagnostic Criteria for Schizoid Personality Disorder

Clinical Features Persons with schizoid personality disorder seem to be cold and aloof; they display a remote reserve and show no involvement with everyday events and the concerns of others. They appear quiet, distant, seclusive, and unsociable. They may pursue their own lives with remarkably little need or longing for emotional ties, and they are the last to be aware of changes in popular fashion. The life histories of such persons reflect solitary interests and success at noncompetitive, lonely jobs that others find difficult to tolerate. Their sexual lives may exist exclusively in fantasy, and they may postpone mature sexuality indefinitely. Men may not marry because they are unable to achieve intimacy; women may passively agree to marry an aggressive man who wants the marriage. Persons with schizoid personality disorder usually reveal a lifelong inability to express anger directly. They can invest enormous affective energy in nonhuman interests, such as mathematics and astronomy, and they may be very attached to animals. Dietary and health fads, philosophical movements, and social improvement schemes, especially those that require no personal involvement, often engross them. Although persons with schizoid personality disorder appear self-absorbed and lost in daydreams, they have a normal capacity to recognize reality. Because aggressive acts are rarely included in their repertoire of usual responses, most threats, real or imagined, are dealt with by fantasized omnipotence or resignation. They are often seen as aloof, yet such persons can sometimes conceive, develop, and give to the world genuinely original, creative ideas. Differential Diagnosis

Schizoid personality disorder is distinguished from schizophrenia, delusional disorder, and affective disorder with psychotic features based on periods with positive psychotic symptoms, such as

delusions and hallucinations in the latter. Although patients with paranoid personality disorder share many traits with those with schizoid personality disorder, the former exhibit more social engagement, a history of aggressive verbal behavior, and a greater tendency to project their feelings onto others. If just as emotionally constricted, patients with obsessive-compulsive and avoidant personality disorders experience loneliness as dysphoric, possess a richer history of past object relations, and do not engage as much in autistic reverie. Theoretically, the chief distinction between a patient with schizotypal personality disorder and one with schizoid personality disorder is that the patient who is schizotypal is more similar to a patient with schizophrenia in oddities of perception, thought, behavior, and communication. Patients with avoidant personality disorder are isolated but strongly wish to participate in activities, a characteristic absent in those with schizoid personality disorder. Schizoid personality disorder is distinguished from autistic disorder and Asperger's syndrome by more severely impaired social interactions and stereotypical behaviors and interests than in those two disorders. Course and Prognosis The onset of schizoid personality disorder usually occurs in early childhood or adolescence. As with all personality disorders, schizoid personality disorder is long lasting but not necessarily lifelong. The proportion of patients who incur schizophrenia is unknown. Treatment Psychotherapy. The treatment of patients with schizoid personality disorder is similar to that of those with paranoid personality disorder. Patients who are schizoid tend toward introspection; however, these tendencies are consistent with psychotherapists' expectations, and such patients may become devoted, if distant, patients. As trust develops, patients who are schizoid may, with great trepidation, reveal a plethora of fantasies, imaginary friends, and fears of unbearable dependence— even of merging with the therapist. In group therapy settings, patients with schizoid personality disorder may be silent for long periods; nonetheless, they do become involved. The patients should be protected against aggressive attack by group members for their proclivity to be silent. With time, the group members become important to patients who are schizoid and may provide the only social contact in their otherwise isolated existence. Pharmacotherapy. Pharmacotherapy with small dosages of antipsychotics, antidepressants, and psychostimulants has benefitted some patients. Serotonergic agents may make patients less sensitive to rejection. Benzodiazepines may help diminish

interpersonal anxiety. SCHIZOTYPAL PERSONALITY DISORDER Persons with schizotypal personality disorder are strikingly odd or strange, even to laypersons. Magical thinking, peculiar notions, ideas of reference, illusions, and derealization are part of a schizotypal person's everyday world. Epidemiology Schizotypal personality disorder occurs in about 3 percent of the population. The sex ratio is unknown; however, it is frequently diagnosed in females with fragile X syndrome. DSM-5 suggests the disorder may be slightly more common in males. A greater association of cases exists among the biological relatives of patients with schizophrenia than among control participants and a higher incidence among monozygotic twins than among dizygotic twins (33 percent vs. 4 percent in one study). Etiology Adoption, family, and twin studies demonstrate an increased prevalence of schizotypal features in the families of schizophrenic patients, especially when schizotypal features were not associated with comorbid affective symptoms. Diagnosis Schizotypal personality disorder is diagnosed on the basis of the patients' peculiarities of thinking, behavior, and appearance. Taking a history may be difficult because of the patients' unusual way of communicating. The DSM-5 diagnostic criteria for schizotypal personality disorder are given in Table 22-3. Table 22-3 DSM-5 Diagnostic Criteria for Schizotypal Personality Disorder

Clinical Features Patients with schizotypal personality disorder exhibit disturbed thinking and communicating. Although frank thought disorder is absent, their speech may be distinctive or peculiar, may have meaning only to them, and often needs interpretation. As with patients with schizophrenia, those with schizotypal personality disorder may not know their own feelings and yet are exquisitely sensitive to, and aware of, the feelings of others, especially negative affects such as anger. These patients may be superstitious or claim powers of clairvoyance and may believe that they have other special powers of thought and insight. Their inner world may be filled with vivid imaginary relationships and child-like fears and fantasies. They may admit to perceptual illusions or macropsia and confess that other persons seem wooden and all the same. Because persons with schizotypal personality disorder have poor interpersonal relationships and may act inappropriately, they are isolated and have few, if any, friends. Patients may show features of borderline personality disorder, and indeed, both diagnoses can be made. Under stress, patients with schizotypal personality disorder may decompensate and have psychotic symptoms, but these are usually brief. Patients with severe cases of the disorder may exhibit anhedonia and severe depression. Differential Diagnosis

Theoretically, persons with schizotypal personality disorder can be distinguished from those with schizoid and avoidant personality disorders by the presence of oddities in their behavior, thinking, perception, and communication and perhaps by a clear family history of schizophrenia. Patients with schizotypal personality disorder can be distinguished from those with schizophrenia by their absence of psychosis. If psychotic symptoms do appear, they are brief and fragmentary. Some patients meet the criteria for both schizotypal personality disorder and borderline personality disorder. Patients with paranoid personality disorder are characterized by suspiciousness but lack the odd behavior of patients with schizotypal personality disorder. Course and Prognosis According to current clinical thinking, the schizotype is the premorbid personality of the patient with schizophrenia. Some, however, maintain a stable schizotypal personality throughout their lives and marry and work, despite their oddities. A long-term study by Thomas McGlashan reported that 10 percent of those with schizotypal personality disorder eventually committed suicide. Treatment Psychotherapy. The principles of treatment of schizotypal personality disorder do not differ from those of schizoid personality disorder, but clinicians must deal sensitively with the former. These patients have peculiar patterns of thinking, and some are involved in cults, strange religious practices, and the occult. Therapists must not ridicule such activities or be judgmental about these beliefs or activities. Pharmacotherapy. Antipsychotic medication may be useful in dealing with ideas of reference, illusions, and other symptoms of the disorder and can be used in conjunction with psychotherapy. Antidepressants are useful when a depressive component of the personality is present. ANTISOCIAL PERSONALITY DISORDER Antisocial personality disorder is an inability to conform to the social norms that ordinarily govern many aspects of a person’s adolescent and adult behavior. Although characterized by continual antisocial or criminal acts, the disorder is not synonymous with criminality. Epidemiology The 12-month prevalence rates of antisocial personality disorder are between 0.2 and 3 percent according to DSM-5. It is more common in poor urban areas and among mobile residents of these areas. The highest prevalence of antisocial personality disorder is found among the most severe samples of men with alcohol use disorder (over 70

percent) and in prison populations, where the prevalence may be as high as 75 percent. It is much more common in males than in females. Boys with the disorder come from larger families than girls with the disorder. The onset of the disorder is before the age of 15 years. Girls usually have

symptoms before puberty and boys even earlier. A familial pattern is present; the disorder is five times more common among first-degree relatives of men with the disorder than among control participants. Diagnosis Patients with antisocial personality disorder can fool even the most experienced clinicians. In an interview, patients can appear composed and credible, but beneath the veneer (or, to use Hervey Cleckley's term, the mask of sanity) lurks tension, hostility, irritability, and rage. A stress interview, in which patients are vigorously confronted with inconsistencies in their histories, may be necessary to reveal the pathology. A diagnostic workup should include a thorough neurological examination. Because patients often show abnormal EEG results and soft neurological signs suggesting minimal brain damage in childhood, these findings can be used to confirm the clinical impression. The DSM-5 diagnostic criteria are listed in Table 22-4. Table 22-4 DSM-5 Diagnostic Criteria for Antisocial Personality Disorder Clinical Features Patients with antisocial personality disorder can often seem to be normal and even charming and ingratiating. Their histories, however, reveal many areas of disordered life functioning. Lying, truancy, running away from home, thefts, fights, substance

abuse, and illegal activities are typical experiences that patients report as beginning in childhood. These patients often impress opposite-sex clinicians with the colorful, seductive aspects of their personalities, but same-sex clinicians may regard them as manipulative and demanding. Patients with antisocial personality disorder exhibit no anxiety or depression, a lack that may seem grossly incongruous with their situations, although suicide threats and somatic preoccupations may be common. Their own explanations of their antisocial behavior make it seem mindless, but their mental content reveals the complete absence of delusions and other signs of irrational thinking. In fact, they frequently have a heightened sense of reality testing and often impress observers as having good verbal intelligence. Persons with antisocial personality disorder are highly representative of so-called con men. They are extremely manipulative and can frequently talk others into participating in schemes for easy ways to make money or to achieve fame or notoriety. These schemes may eventually lead the unwary to financial ruin or social embarrassment or both. Those with this disorder do not tell the truth and cannot be trusted to carry out any task or adhere to any conventional standard of morality. Promiscuity, spousal abuse, child abuse, and drunk driving are common events in their lives. A notable finding is a lack of remorse for these actions; that is, they appear to lack a conscience. Differential Diagnosis Antisocial personality disorder can be distinguished from illegal behavior in that antisocial personality disorder involves many areas of a person's life. When illegal behavior is only for gain and is not accompanied by the rigid, maladaptive, and persistent personality traits characteristic of a personality disorder, it is classified as criminal behavior not associated with a personality disorder according to DSM-5. Dorothy Lewis found that many of these persons have a neurological or mental disorder that has been either overlooked or undiagnosed. More difficult is the differentiation of antisocial personality disorder from substance abuse. When both substance abuse and antisocial behavior begin in childhood and continue into adult life, both disorders should be diagnosed. When, however, the antisocial behavior is clearly secondary to premorbid alcohol abuse or other substance abuse, the diagnosis of antisocial personality disorder is not warranted. In diagnosing antisocial personality disorder, clinicians must adjust for the distorting effects of socioeconomic status, cultural background, and sex. Furthermore, the diagnosis of antisocial personality disorder is not warranted when intellectual disability, schizophrenia, or mania can explain the symptoms. Course and Prognosis When an antisocial personality disorder develops, it runs an unremitting course, with the height of antisocial behavior usually occurring in late adolescence. The prognosis varies. Some reports indicate that

symptoms decrease as persons grow older. Many patients have somatization disorder and multiple physical complaints. Depressive

disorders, alcohol use disorders, and other substance abuse are common. Treatment Psychotherapy. If patients with antisocial personality disorder are immobilized (e.g., placed in hospitals), they often become amenable to psychotherapy. When patients feel that they are among peers, their lack of motivation for change disappears. Perhaps for this reason, self-help groups have been more useful than jails in alleviating the disorder. Before treatment can begin, firm limits are essential. Therapists must find ways of dealing with patients' self-destructive behavior. And to overcome patients' fear of intimacy, therapists must frustrate patients' desire to run from honest human encounters. In doing so, therapists face the challenge of separating control from punishment and of separating help and confrontation from social isolation and retribution. Pharmacotherapy. Pharmacotherapy is used to deal with incapacitating symptoms such as anxiety, rage, and depression, but because patients are often substance abusers, drugs must be used judiciously. If a patient shows evidence of attention-deficit/hyperactivity disorder, psychostimulants such as methylphenidate (Ritalin) may be useful. Attempts have been made to alter catecholamine metabolism with drugs and to control impulsive behavior with antiepileptic drugs, for example, carbamazepine (Tegretol) or valproate (Depakote), especially if abnormal waveforms are noted on an EEG. β-Adrenergic receptor antagonists have been used to reduce aggression. BORDERLINE PERSONALITY DISORDER Patients with borderline personality disorder stand on the border between neurosis and psychosis, and they are characterized by extraordinarily unstable affect, mood, behavior, object relations, and self-image. The disorder has also been called ambulatory schizophrenia, as-if personality (a term coined by Helene Deutsch), pseudoneurotic schizophrenia (described by Paul Hoch and Phillip Politan), and psychotic character disorder (described by John Frosch). The 10th revision of the International Classification of Diseases 10 (ICD-10) uses the term emotionally unstable personality disorder. Epidemiology No definitive prevalence studies are available, but borderline personality disorder is thought to be present in about 1 to 2 percent of the population and is twice as common in women as in men. An increased prevalence of major depressive disorder, alcohol use disorders, and substance abuse is found in first-degree relatives of persons with borderline personality disorder.

Diagnosis According to DSM-5, the diagnosis of borderline personality disorder can made by early adulthood when patients show at least five of the criteria listed in Table 22-5. Biological studies may aid in the diagnosis; some patients with borderline personality disorder show shortened REM latency and sleep continuity disturbances, abnormal DST results, and abnormal thyrotropin-releasing hormone test results. Those changes, however, are also seen in some patients with depressive disorders. Table 22-5 DSM-5 Diagnostic Criteria for Borderline Personality Disorder Clinical Features Persons with borderline personality disorder almost always appear to be in a state of crisis. Mood swings are common. Patients can be argumentative at one moment, depressed the next, and later complain of having no feelings. Patients can have shortlived psychotic episodes (so-called micropsychotic episodes) rather than full-blown psychotic breaks, and the psychotic symptoms of these patients are almost always circumscribed, fleeting, or doubtful. The behavior of patients with borderline personality disorder is highly unpredictable, and their achievements are rarely at the level of their abilities. The painful nature of their lives is reflected in repetitive self-destructive acts. Such patients may slash their wrists and perform other self-mutilations to elicit help from others, to express anger, or to numb themselves to overwhelming affect.

Because they feel both dependent and hostile, persons with this disorder have tumultuous interpersonal relationships. They can be dependent on those with whom they are close and, when frustrated, can express enormous anger toward their intimate friends. Patients with borderline personality disorder cannot tolerate being alone, and they prefer a frantic search for companionship, no matter how unsatisfactory, to their own company. To assuage loneliness, if only for brief periods, they accept a stranger as a friend or behave promiscuously. They often complain about chronic feelings of emptiness and boredom and the lack of a consistent sense of identity (identity diffusion); when pressed, they often complain about how depressed they usually feel, despite the flurry of other affects. Otto Kernberg described the defense mechanism of projective identification that occurs in patients with borderline personality disorder. In this primitive defense mechanism, intolerable aspects of the self are projected onto another; the other person is induced to play the projected role, and the two persons act in unison. Therapists must be aware of this process so they can act neutrally toward such patients. Most therapists agree that these patients show ordinary reasoning abilities on structured tests, such as the Wechsler Adult Intelligence Scale, and show deviant processes only on unstructured projective tests, such as the Rorschach test. Functionally, patients with borderline personality disorder distort their relationships by considering each person to be either all good or all bad. They see persons as either nurturing attachment figures or as hateful, sadistic figures who deprive them of security needs and threaten them with abandonment whenever they feel dependent. As a result of this splitting, the good person is idealized and the bad person devalued. Shifts of allegiance from one person or group to another are frequent. Some clinicians use the concepts of panphobia, pananxiety, panambivalence, and chaotic sexuality to delineate these patients' characteristics. Differential Diagnosis The disorder is differentiated from schizophrenia on the basis that the patient with borderline personality lacks prolonged psychotic episodes, thought disorder, and other classic schizophrenic signs. Patients with schizotypal personality disorder show marked peculiarities of thinking, strange ideation, and recurrent ideas of reference. Those with paranoid personality disorder are marked by extreme suspiciousness. Patients with borderline personality disorder generally have chronic feelings of emptiness and shortlived psychotic episodes; they act impulsively and demand extraordinary relationships; they may mutilate themselves and make manipulative suicide attempts. Course and Prognosis Borderline personality disorder is fairly stable; patients change little over time. Longitudinal studies show no progression toward schizophrenia, but patients have a high incidence of major depressive disorder episodes. The diagnosis is usually made before the age of 40 years, when patients are attempting to make occupational, marital,

and other choices and are unable to deal with the normal stages of the life cycle. Treatment Psychotherapy. Psychotherapy for patients with borderline personality disorder is an area of intensive investigation and has been the treatment of choice. For best results, pharmacotherapy has been added to the treatment regimen. Psychotherapy is difficult for the patient and therapist alike. Patients regress easily, act out their impulses, and show labile or fixed negative or positive transferences, which are difficult to analyze. Projective identification may also cause countertransference problems when therapists are unaware that patients are unconsciously trying to coerce them to act out a particular behavior. The splitting defense mechanism causes patients to alternately love and hate therapists and others in the environment. A reality-oriented approach is more effective than in-depth interpretations of the unconscious. Therapists have used behavior therapy to control patients' impulses and angry outbursts and to reduce their sensitivity to criticism and rejection. Social skills training, especially with videotape playback, helps enable

patients to see how their actions affect others and thereby improve their interpersonal behavior. Patients with borderline personality disorder often do well in a hospital setting in which they receive intensive psychotherapy on both an individual and a group basis. In a hospital, they can also interact with trained staff members from a variety of disciplines and can be provided with occupational, recreational, and vocational therapy. Such programs are especially helpful when the home environment is detrimental to a patient's rehabilitation because of intrafamilial conflicts or other stresses, such as parental abuse. Within the protected environment of the hospital, patients who are excessively impulsive, self-destructive, or self-mutilating can be given limits, and their actions can be observed. Under ideal circumstances, patients remain in the hospital until they show marked improvement, up to 1 year in some cases. Patients can then be discharged to special support systems, such as day hospitals, night hospitals, and halfway houses. DIALECTICAL BEHAVIOR THERAPY. A particular form of psychotherapy called dialectical behavior therapy (DBT) has been used for patients with borderline personality disorder, especially those with parasuicidal behavior, such as frequent cutting. For further discussion of DBT, see Section 29.5 in Chapter 29. MENTALIZATION-BASED TREATMENT. Another type of psychotherapy for borderline personality disorder is called mentalization-based therapy (MBT). Mentalization is a social construct that allows a person to be attentive to the mental states of oneself and of others; it comes from a person's awareness of mental processes and subjective states that arise in interpersonal interactions. MBT is based on a theory that borderline personality symptoms, such as difficulty regulating emotions and managing impulsivity, are a result of patients' reduced capacities to mentalize. Thus, it is believed that recovery of mentalization helps patients build relationship skills as they learn to better

regulate their thoughts and feelings. MBT was found to be effective for borderline personality disorder in several randomized, controlled research trials. TRANSFERENCE-FOCUSED PSYCHOTHERAPY. Transference-focused psychotherapy (TFP) is a modified form of psychodynamic psychotherapy used for the treatment of borderline personality disorder that is based on Otto Kernberg's object relations theory. The therapist relies on two major processes in working with the patient: The first is clarification, in which the transference is analyzed more directly than in traditional psychotherapy so that the patient becomes quickly aware his or her distortions about the therapist. The second is confrontation, whereby the therapist points out how these transferential distortions interfere with interpersonal relations toward others (objects). The mechanism of splitting used by borderline patients is characterized by their having a good object and a bad object and is used as a defense against anxiety. If therapy is successful, then the need for splitting diminishes, object relations are improved, and a more normal level of functioning is achieved. Studies comparing TFP, DBT, psychodynamic psychotherapy, and supportive psychotherapy show that all are useful and all show varying degrees of success. As yet, no consensus has been reached as to which, if any, of these is superior to the others. Pharmacotherapy. Pharmacotherapy is useful to deal with specific personality features that interfere with patients' overall functioning. Antipsychotics have been used to control anger, hostility, and brief psychotic episodes. Antidepressants improve the depressed mood common in patients with borderline personality disorder. The MAO inhibitors (MAOIs) have successfully modulated impulsive behavior in some patients. Benzodiazepines, particularly alprazolam (Xanax), help anxiety and depression, but some patients show a disinhibition with this class of drugs. Anticonvulsants, such as carbamazepine, may improve global functioning for some patients. Serotonergic agents such as selective serotonin reuptake inhibitors (SSRIs) have been helpful in

some cases. HISTRIONIC PERSONALITY DISORDER Persons with histrionic personality disorder are excitable and emotional and behave in a colorful, dramatic, extroverted fashion. Accompanying their flamboyant aspects, however, is often an inability to maintain deep, long-lasting attachments. Epidemiology Limited data from general population studies suggest a prevalence of histrionic personality disorder of about 1 to 3 percent. Rates of about 10 to 15 percent have been reported in inpatient and outpatient mental health settings when structured assessment is used. The disorder is diagnosed more frequently in women than in men. Some studies have found an association with somatization disorder and alcohol use disorders. Diagnosis

In interviews, patients with histrionic personality disorder are generally cooperative and eager to give a detailed history. Gestures and dramatic punctuation in their conversations are common; they may make frequent slips of the tongue, and their language is colorful. Affective display is common, but when pressed to acknowledge certain feelings (e.g., anger, sadness, and sexual wishes), they may respond with surprise, indignation, or denial. The results of the cognitive examination are usually normal, although a lack of perseverance may be shown on arithmetic or concentration tasks, and the patients' forgetfulness of affect-laden material may be astonishing. DSM-5 diagnostic criteria are listed in Table 22-6. Table 22.6 DSM-5 Diagnostic Criteria for Histrionic Personality Disorder Clinical Features Persons with histrionic personality disorder show a high degree of attention-seeking behavior. They tend to exaggerate their thoughts and feelings and make everything sound more important than it really is. They display temper tantrums, tears, and accusations when they are not the center of attention or are not receiving praise or approval. Seductive behavior is common in both sexes. Sexual fantasies about persons with whom patients are involved are common, but patients are inconsistent about verbalizing these fantasies and may be coy or flirtatious rather than sexually aggressive. In fact, histrionic patients may have a psychosexual dysfunction; women may be anorgasmic, and men may be impotent. Their need for reassurance is endless. They may act on their sexual impulses to reassure themselves that they are attractive to the other sex. Their relationships tend to be superficial, however, and they can be vain, selfabsorbed, and fickle. Their strong dependence needs make them overly trusting and

gullible. The major defenses of patients with histrionic personality disorder are repression and dissociation. Accordingly, such patients are unaware of their true feelings and cannot explain their motivations. Under stress, reality testing easily becomes impaired. Differential Diagnosis Distinguishing between histrionic personality disorder and borderline personality disorder is difficult, but in borderline personality disorder, suicide attempts, identity diffusion, and brief psychotic episodes are more likely. Although both conditions may be diagnosed in the same patient, clinicians should separate the two. Somatization disorder (Briquet's syndrome) may occur in conjunction with histrionic personality disorder. Patients with brief psychotic disorder and dissociative disorders may warrant a coexisting diagnosis of histrionic personality disorder. Course and Prognosis With age, persons with histrionic personality disorder show fewer symptoms, but because they lack the energy of earlier years, the difference in number of symptoms may be more apparent than real. Persons with this disorder are sensation seekers, and they may get into trouble with the law, abuse substances, and act promiscuously. Treatment Psychotherapy. Patients with histrionic personality disorder are often unaware of their own real feelings; clarification of their inner feelings is an important therapeutic process. Psychoanalytically oriented psychotherapy, whether group or individual, is probably the treatment of choice for histrionic personality disorder. Pharmacotherapy. Pharmacotherapy can be adjunctive when symptoms are targeted (e.g., the use

of antidepressants for depression and somatic complaints, antianxiety agents for anxiety, and antipsychotics for derealization and illusions). NARCISSISTIC PERSONALITY DISORDER Persons with narcissistic personality disorder are characterized by a heightened sense of self-importance, lack of empathy, and grandiose feelings of uniqueness. Underneath, however, their self-esteem is fragile and vulnerable to even minor criticism. Epidemiology According to DSM-5, estimates of the prevalence of narcissistic personality disorder range from less than 1 to 6 percent in community samples. Persons with the disorder may impart an unrealistic sense of omnipotence, grandiosity, beauty, and talent to their children; thus, offspring of such parents may have a higher than usual risk for

developing the disorder themselves. Diagnosis Table 22-7 gives the DSM-5 diagnostic criteria for narcissistic personality disorder. Table 22-7 DSM-5 Diagnostic Criteria for Narcissistic Personality Disorder Clinical Features Persons with narcissistic personality disorder have a grandiose sense of self-importance; they consider themselves special and expect special treatment. Their sense of entitlement is striking. They handle criticism poorly and may become enraged when someone dares to criticize them, or they may appear completely indifferent to criticism. Persons with this disorder want their own way and are frequently ambitious to achieve fame and fortune. Their relationships are tenuous, and they can make others furious by their refusal to obey conventional rules of behavior. Interpersonal exploitiveness is commonplace. They cannot show empathy, and they feign sympathy only to achieve their own selfish ends. Because of their fragile self-esteem, they are susceptible to depression. Interpersonal difficulties, occupational problems, rejection, and loss are among the stresses that narcissists commonly produce by their behavior—stresses they are least able to handle. Differential Diagnosis Borderline, histrionic, and antisocial personality disorders often accompany narcissistic

personality disorder, so a differential diagnosis is difficult. Patients with narcissistic personality disorder have less anxiety than those with borderline personality disorder; their lives tend to be less chaotic, and they are less likely to attempt suicide. Patients with antisocial personality disorder have a history of impulsive behavior, often associated with alcohol or other substance abuse, which frequently gets them into trouble with the law. Patients with histrionic personality disorder show features of exhibitionism and interpersonal manipulativeness that resemble those of patients with narcissistic personality disorder. Course and Prognosis Narcissistic personality disorder is chronic and difficult to treat. Patients with the disorder must constantly deal with blows to their narcissism resulting from their own behavior or from life experience. Aging is handled poorly; patients value beauty, strength, and youthful attributes, to which they cling inappropriately. They may be more vulnerable, therefore, to midlife crises than are other groups. Treatment Psychotherapy. Because patients must renounce their narcissism to make progress, the treatment of narcissistic personality disorder is difficult. Psychiatrists such as Kernberg and Heinz Kohut have advocated using psychoanalytic approaches to effect change, but much research is required to validate the diagnosis and to determine the best treatment. Some clinicians advocate group therapy for their patients so they can learn how to share with others and, under ideal circumstances, can develop an empathic response to others. Pharmacotherapy. Lithium (Eskalith) has been used with patients whose clinical picture includes mood swings. Because patients with narcissistic personality disorder tolerate rejection poorly and are susceptible to depression, antidepressants, especially serotonergic drugs, may also be of use. AVOIDANT PERSONALITY DISORDER Persons with avoidant personality disorder show extreme sensitivity to rejection and may lead socially withdrawn lives.

Although shy, they are not asocial and show a great desire for companionship, but they need unusually strong guarantees of uncritical acceptance. Such persons are commonly described as having an inferiority complex. Epidemiology The prevalence of the disorder is suggested to be about 2 to 3 percent of the general population according to DSM-5. No information is available on sex ratio or familial pattern. Infants classified as having a timid temperament may be more susceptible to

the disorder than those who score high on activity-approach scales. Diagnosis In clinical interviews, patients' most striking aspect is anxiety about talking with an interviewer. Their nervous and tense manner appears to wax and wane with their perception of whether an interviewer likes them. They seem vulnerable to the interviewer's comments and suggestions and may regard a clarification or interpretation as criticism. The DSM-5 diagnostic criteria for avoidant personality disorder are listed in Table 22-8. Table 22-8 DSM-5 Diagnostic Criteria for Avoidant Personality Disorder Clinical Features Hypersensitivity to rejection by others is the central clinical feature of avoidant personality disorder, and patients' main personality trait is timidity. These persons desire the warmth and security of human companionship but justify their avoidance of relationships by their alleged fear of rejection. When talking with someone, they express uncertainty, show a lack of self-confidence, and may speak in a self-effacing manner. Because they are hypervigilant about rejection, they are afraid to speak up in public or to make requests of others. They are apt to misinterpret other persons' comments as derogatory or ridiculing. The refusal of any request leads them to withdraw from others and to feel hurt. In the vocational sphere, patients with avoidant personality disorder often take jobs on the sidelines. They rarely attain much personal advancement or exercise much authority but seem shy and eager to please. These persons are generally unwilling to enter relationships unless they are given an unusually strong guarantee of uncritical

acceptance. Consequently, they often have no close friends or confidants. Differential Diagnosis Patients with avoidant personality disorder desire social interaction, unlike patients with schizoid personality disorder, who want to be alone. Patients with avoidant personality disorder are not as demanding, irritable, or unpredictable as those with borderline and histrionic personality disorders. Avoidant personality disorder and dependent personality disorder are similar. Patients with dependent personality disorder are presumed to have a greater fear of being abandoned or unloved than those with avoidant personality disorder, but the clinical picture may be indistinguishable. Course and Prognosis Many persons with avoidant personality disorder are able to function in a protected environment. Some marry, have children, and live their lives surrounded only by family members. If their support system fails, however, they are subject to depression, anxiety, and anger. Phobic avoidance is common, and patients with the disorder may give histories of social phobia or incur social phobia in the course of their illness. Treatment Psychotherapy. Psychotherapeutic treatment depends on solidifying an alliance with patients. As trust develops, a therapist must convey an accepting attitude toward the patient's fears, especially the fear of rejection. The therapist eventually encourages a patient to move out into the world to take what are perceived as great risks of humiliation, rejection, and failure. But therapists should be cautious when giving assignments to exercise new social skills outside therapy; failure can reinforce a patient's already poor self-esteem. Group therapy may help patients understand how their sensitivity to rejection affects them and others. Assertiveness training is a form of behavior therapy that may teach patients to express their needs openly and to enlarge their self-esteem.

Pharmacotherapy. Pharmacotherapy has been used to manage anxiety and depression when they are associated with the disorder. Some patients are helped by βadrenergic receptor antagonists, such as atenolol (Tenormin), to manage autonomic nervous system hyperactivity, which tends to be high in patients with avoidant personality disorder, especially when they approach feared situations. Serotonergic agents may help rejection sensitivity. Theoretically, dopaminergic drugs might engender novelty-seeking behavior in these patients; however, the patient must be psychologically prepared for any new experience that might result. DEPENDENT PERSONALITY DISORDER

Persons with dependent personality disorder subordinate their own needs to those of others, get others to assume responsibility for major areas of their lives, lack selfconfidence, and may experience intense discomfort when alone for more than a brief period. The disorder has been called passive-dependent personality. Freud described an oral-dependent personality dimension characterized by dependence, pessimism, fear of sexuality, self-doubt, passivity, suggestibility, and lack of perseverance; his description is similar to the DSM-5 categorization of dependent personality disorder. Epidemiology Dependent personality disorder is more common in women than in men. DSM-5 reports an estimated prevalence of 0.6 percent. One study diagnosed 2.5 percent of all personality disorders as falling into this category. It is more common in young children than in older ones. Persons with chronic physical illness in childhood may be most susceptible to the disorder. Diagnosis In interviews, patients appear compliant. They try to cooperate, welcome specific questions, and look for guidance. The DSM-5 diagnostic criteria for dependent personality disorder are listed in Table 22-9. Table 22-9 DSM-5 Diagnostic Criteria for Dependent Personality Disorder Clinical Features

Dependent personality disorder is characterized by a pervasive pattern of dependent and submissive behavior. Persons with the disorder cannot make decisions without an excessive amount of advice and reassurance from others. They avoid positions of responsibility and become anxious if asked to assume a leadership role. They prefer to be submissive. When on their own, they find it difficult to persevere at tasks but may find it easy to perform these tasks for someone else. Because persons with the disorder do not like to be alone, they seek out others on whom they can depend; their relationships, thus, are distorted by their need to be attached to another person. In folie à deux (shared psychotic disorder), one member of the pair usually has dependent personality disorder; the submissive partner takes on the delusional system of the more aggressive, assertive partner on whom he or she depends. Pessimism, self-doubt, passivity, and fears of expressing sexual and aggressive feelings all typify the behavior of persons with dependent personality disorder. An abusive, unfaithful, or alcoholic spouse may be tolerated for long periods to avoid disturbing the sense of attachment. Differential Diagnosis The traits of dependence are found in many psychiatric disorders, so the differential diagnosis is difficult. Dependence is a prominent factor in patients with histrionic and borderline personality disorders, but those with dependent personality disorder usually have a long-term relationship with one person rather than a series of persons on whom they are dependent, and they do not tend to be overtly manipulative. Patients with schizoid and schizotypal personality disorders may be indistinguishable from those with avoidant personality disorder. Dependent behavior can also occur in patients with agoraphobia, but these patients tend to have a high level of overt anxiety or even panic. Course and Prognosis Little is known about the course of dependent personality disorder. Occupational functioning tends to be impaired because persons with the disorder cannot act

independently and without close supervision. Social relationships are limited to those on whom they can depend, and many suffer physical or mental abuse because they cannot assert themselves. They risk major depressive disorder if they lose the person on whom they depend, but with treatment, the prognosis is favorable. Treatment Psychotherapy. The treatment of dependent personality disorder is often successful. Insight-oriented therapies enable patients to understand the antecedents of their behavior, and with the support of a therapist, patients can become more independent, assertive, and self-reliant. Behavioral therapy, assertiveness training, family therapy, and group therapy have all been used, with successful outcomes in many cases.

A pitfall may arise in treatment when a therapist encourages a patient to change the dynamics of a pathological relationship (e.g., supports a physically abused wife in seeking help from the police). At this point, patients may become anxious and unable to cooperate in therapy; they may feel torn between complying with the therapist and losing a pathological external relationship. Therapists must show great respect for these patients' feelings of attachment, no matter how pathological these feelings may seem. Pharmacotherapy. Pharmacotherapy has been used to deal with specific symptoms, such as anxiety and depression, which are common associated features of dependent personality disorder. Patients who experience panic attacks or who have high levels of separation anxiety may be helped by imipramine (Tofranil). Benzodiazepines and serotonergic agents have also been useful. If a patient's depression or withdrawal symptoms respond to psychostimulants, they may be used. OBSESSIVE-COMPULSIVE PERSONALITY DISORDER Obsessive-compulsive personality disorder is characterized by emotional constriction, orderliness, perseverance, stubbornness, and indecisiveness. The essential feature of the disorder is a pervasive pattern of perfectionism and inflexibility. Epidemiology DSM-5 reports an estimated prevalence ranging from 2 to 8 percent. It is more common in men than in women and is diagnosed most often in oldest siblings. The disorder also occurs more frequently in first-degree biological relatives of persons with the disorder than in the general population. Patients often have backgrounds characterized by harsh discipline. Freud hypothesized that the disorder is associated with difficulties in the anal stage of psychosexual development, generally around the age of 2 years, but various studies have failed to validate this theory. Diagnosis In interviews, patients with obsessive-compulsive personality disorder may have a stiff, formal, and rigid demeanor. Their affect is not blunted or flat but can be described as constricted. They lack spontaneity, and their mood is usually serious. Such patients may be anxious about not being in control of the interview. Their answers to questions are unusually detailed. The defense mechanisms they use are rationalization, isolation, intellectualization, reaction formation, and undoing. The DSM-5 diagnostic criteria for obsessive-compulsive personality disorder are listed in Table 22-10. Table 22-10 DSM-5 Diagnostic Criteria for Obsessive-Compulsive Personality Disorder

Clinical Features Persons with obsessive-compulsive personality disorder are preoccupied with rules, regulations, orderliness, neatness, details, and the achievement of perfection. These traits account for the general constriction of the entire personality. They insist that rules be followed rigidly and cannot tolerate what they consider infractions. Accordingly, they lack flexibility and are intolerant. They are capable of prolonged work, provided it is routinized and does not require changes to which they cannot adapt. Persons with obsessive-compulsive personality disorder have limited interpersonal skills. They are formal and serious and often lack a sense of humor. They alienate persons, are unable to compromise, and insist that others submit to their needs. They are eager to please those whom they see as more powerful than they are, however, and they carry out

these persons' wishes in an authoritarian manner. Because they fear making mistakes, they are indecisive and ruminate about making decisions. Although a stable marriage and occupational adequacy are common, persons with obsessivecompulsive personality disorder have few friends. Anything that threatens to upset their perceived stability or the routine of their lives can precipitate much anxiety otherwise bound up in the rituals that they impose on their lives and try to impose on others. Differential Diagnosis When recurrent obsessions or compulsions are present, obsessive-compulsive disorder should be noted. Perhaps the most difficult distinction is between outpatients with some obsessive-compulsive traits and those with obsessive-compulsive personality disorder. The diagnosis of personality disorder is reserved for those with significant impairments

in their occupational or social effectiveness. In some cases, delusional disorder coexists with personality disorders and should be noted. Course and Prognosis The course of obsessive-compulsive personality disorder is variable and unpredictable. From time to time, persons may develop obsessions or compulsions in the course of their disorder. Some adolescents with obsessive-compulsive personality disorder evolve into warm, open, and loving adults; in others, the disorder can be either the harbinger of schizophrenia or—decades later and exacerbated by the aging process—major depressive disorder. Persons with obsessive-compulsive personality disorder may flourish in positions demanding methodical, deductive, or detailed work, but they are vulnerable to unexpected changes, and their personal lives may remain barren. Depressive disorders, especially those of late onset, are common. Treatment Psychotherapy. Unlike patients with the other personality disorders, those with obsessive-compulsive personality disorder are often aware of their suffering, and they seek treatment on their own. Overtrained and oversocialized, these patients value free association and no-directive therapy highly. Treatment, however, is often long and complex, and countertransference problems are common. Group therapy and behavior therapy occasionally offer certain advantages. In both contexts, it is easy to interrupt the patients in the midst of their maladaptive interactions or explanations. Preventing the completion of their habitual behavior raises patients' anxiety and leaves them susceptible to learning new coping strategies. Patients can also receive direct rewards for change in group therapy, something less often possible in individual psychotherapies. Pharmacotherapy. Clonazepam (Klonopin), a benzodiazepine with anticonvulsant use, has reduced symptoms in patients with severe obsessive-compulsive disorder. Whether it is of use in the personality disorder is unknown. Clomipramine (Anafranil) and such serotonergic agents as fluoxetine, usually at dosages of 60 to 80 mg a day, may be useful if obsessive-compulsive signs and symptoms break through. Nefazodone (Serzone) may benefit some patients. OTHER SPECIFIED PERSONALITY DISORDER In DSM-5, the category other specified personality disorder is reserved for disorders that do not fit into any of the personality disorder categories described above. Passiveaggressive personality and depressive personality are examples. A narrow spectrum of behavior or a particular trait—such as oppositionalism, sadism, or masochism—can also be classified in this category. A patient with features of more than one personality

disorder but without the complete criteria of any one disorder can be assigned this classification. Passive-Aggressive Personality Although no longer an official diagnosis, persons with this personality type are not uncommon. Persons with passive-aggressive personality are characterized by covert obstructionism, procrastination, stubbornness, and inefficiency. Such behavior is a manifestation of passively expressed underlying aggression. Epidemiology. No data are available about epidemiology. Sex ratio, familial patterns, and prevalence have not been adequately studied.

Clinical Features. Patients with passive-aggressive personality characteristically procrastinate, resist demands for adequate performance, find excuses for delays, and find fault with those on whom they depend, yet they refuse to extricate themselves from the dependent relationships. They usually lack assertiveness and are not direct about their own needs and wishes. They fail to ask needed questions about what is expected of them and may become anxious when forced to succeed or when their usual defense of turning anger against themselves is removed. In interpersonal relationships, these persons attempt to manipulate themselves into a position of dependence, but others often experience this passive, self-detrimental behavior as punitive and manipulative. Persons with this personality type expect others to do their errands and to carry out their routine responsibilities. Friends and clinicians may become enmeshed in trying to assuage the patients' many claims of unjust treatment. The close relationships of persons with passive-aggressive personality, however, are rarely tranquil or happy. Because they are bound to their resentment more closely than to their satisfaction, they may never even formulate goals for finding enjoyment in life. Persons with passiveaggressive personality lack self-confidence and are typically pessimistic about the future. Differential Diagnosis. Passive-aggressive personality must be differentiated from histrionic and borderline personality disorders. Passive-aggressive patients, however, are less flamboyant, dramatic, affective, and openly aggressive than those with histrionic and borderline personality disorders. Course and Prognosis. In a follow-up study averaging 11 years of 100 inpatients diagnosed with passive-aggressive disorder, Ivor Small found that the primary diagnosis in 54 was passive-aggressive personality disorder; 18 were also alcohol abusers, and 30 could be clinically labeled as depressed. Of the 73 former patients located, 58 (79 percent) had persistent psychiatric difficulties, and 9 (12 percent) were considered symptom free. Most seemed irritable, anxious, and depressed; somatic complaints were numerous. Only 32 (44 percent) were employed full time as workers or homemakers. Although neglect of responsibility and suicide attempts were common, only one patient had committed suicide in the interim. Twenty-eight (38 percent) had been readmitted to a hospital, but only three had been diagnosed as having schizophrenia.

Treatment. Patients with passive-aggressive personality who receive supportive psychotherapy have good outcomes, but psychotherapy for these patients has many pitfalls. Fulfilling their demands often supports their pathology, but refusing their demands rejects them. Therapy sessions, thus, can become a battleground on which a patient expresses feelings of resentment against a therapist on whom the patient wishes to become dependent. With these patients, clinicians must treat suicide gestures as any covert expression of anger and not as object loss in major depressive disorder. Therapists must point out the probable consequences of passive-aggressive behaviors as they occur. Such confrontations may be more helpful than a correct interpretation in changing patients' behavior. Antidepressants should be prescribed only when clinical indications of depression and the possibility of suicide exist. Otherwise, medication is not indicated. Depressive Personality Persons with depressive personality are characterized by lifelong traits that fall along the depressive spectrum. They are pessimistic, anhedonic, duty bound, self-doubting, and chronically unhappy. Melancholic personality was described by early 20th century European psychiatrists such as Ernst Kretschmer. Epidemiology. No epidemiological data are currently available; however, depressive personality type seems to be common, to occur equally in men and women, and to occur in families in which depressive disorders are found. Etiology. The cause of depressive personality is unknown, but the same factors involved in dysthymic disorder and major depressive disorder may be at work. Psychological theories involve early loss, poor

parenting, punitive superegos, and extreme feelings of guilt. Biological theories involve the hypothalamic-pituitary-adrenalthyroid axis, including the noradrenergic and serotonergic amine systems. Genetic predisposition, as indicated by Stella Chess's studies of temperament, may also play a role. Clinical Features. Patients with depressive personality feel little of the normal joy of living and are inclined to be lonely and solemn, gloomy, submissive, pessimistic, and self-deprecatory. They are prone to express regrets and feelings of inadequacy and hopelessness. They are often meticulous, perfectionistic, overconscientious, and preoccupied with work; feel responsibility keenly; and are easily discouraged under new conditions. They are fearful of disapproval; tend to suffer in silence; and perhaps to cry easily, although usually not in the presence of others. A tendency to hesitation, indecision, and caution betrays an inherent feeling of insecurity. More recently, Hagop Akiskal described seven groups of depressive traits: (1) quiet, introverted, passive, and nonassertive; (2) gloomy, pessimistic, serious, and incapable of fun; (3) self-critical, self-reproachful, and self-derogatory; (4) skeptical, critical of others, and hard to please; (5) conscientious, responsible, and self-disciplined; (6) brooding and

given to worry; and (7) preoccupied with negative events, feelings of inadequacy, and personal shortcomings. Patients with depressive personality complain of chronic feelings of unhappiness. They admit to low self-esteem and difficulty finding anything in their lives about which they are joyful, hopeful, or optimistic. They are self-critical and derogatory and are likely to denigrate their work, themselves, and their relationships with others. Their physiognomy often reflects their mood—poor posture, depressed facies, hoarse voice, and psychomotor retardation. Differential Diagnosis. Dysthymic disorder is a mood disorder characterized by greater fluctuations in mood than occur in depressive personality. Dysthymic disorder is episodic, can occur at any time, and usually has a precipitating stressor. The depressive personality can be conceptualized as part of a spectrum of affective conditions in which dysthymic disorder and major depressive disorder are more severe variants. Patients with avoidant personality disorder are introverted and dependent, but they tend to be more anxious than depressed compared with persons with depressive personality. Course and Prognosis. Persons with depressive personality may be at great risk for dysthymic disorder and major depressive disorder. In a study by Donald Klein and Gregory Mills, subjects with depressive personality exhibited significantly higher rates of current mood disorder, lifetime mood disorder, major depression, and dysthymia than subjects without depressive personality. Treatment. Psychotherapy is the treatment of choice for depressive personality. Patients respond to insight-oriented psychotherapy, and because their reality testing is good, they can gain insight into the psychodynamics of their illness and appreciate its effects on their interpersonal relationships. Treatment is likely to be long term. Cognitive therapy helps patients understand the cognitive manifestations of their low self-esteem and pessimism. Group psychotherapy and interpersonal therapy are also useful. Some persons respond to self-help measures. Psychopharmacological approaches include the use of antidepressant medications, especially such serotonergic agents as sertraline (Zoloft), 50 mg a day. Some patients respond to small dosages of psychostimulants, such as amphetamine, 5 to 15 mg a day. In all cases, psychopharmacological agents should be combined with psychotherapy to achieve maximum effects. Sadomasochistic Personality Some personality types are characterized by elements of sadism or masochism or a combination of both. Sadomasochistic personality is listed here because it is of major clinical and historical interest in psychiatry. It is not an official diagnostic category in DSM-5, but it can be diagnosed as personality disorder not otherwise classified. Sadism is the desire to cause others pain by being either sexually abusive or generally physically or

psychologically abusive. It is named for the Marquis de Sade, a late 18th century writer of erotica, describing persons who experienced sexual pleasure while inflicting pain on others. Freud believed that sadists ward off castration anxiety and are able to achieve sexual pleasure only when they can do to others what they fear will be done to them. Masochism, named for Leopold von Sacher-Masoch, a 19th century German novelist, is the achievement of sexual gratification by inflicting pain on the self. So-called moral masochists generally seek humiliation and failure rather than

physical pain. Freud believed that masochists' ability to achieve orgasm is disturbed by anxiety and guilt feelings about sex, which are alleviated by suffering and punishment. Clinical observations indicate that elements of both sadistic and masochistic behavior are usually present in the same person. Treatment with insight-oriented psychotherapy, including psychoanalysis, has been effective in some cases. As a result of therapy, patients become aware of the need for self-punishment secondary to excessive unconscious guilt and come to recognize their repressed aggressive impulses, which originate in early childhood. Sadistic Personality Sadistic personality is not included in DSM-5, but it still appears in the literature and may be of descriptive use. Beginning in early adulthood, persons with sadistic personality show a pervasive pattern of cruel, demeaning, and aggressive behavior that is directed toward others. Physical cruelty or violence is used to inflict pain on others, not to achieve another goal, such as mugging a person to steal. Persons with sadistic personality like to humiliate or demean persons in front of others and have usually treated or disciplined persons uncommonly harshly, especially children. In general, persons with sadistic personality are fascinated by violence, weapons, injury, or torture. To be included in this category, such persons cannot be motivated solely by the desire to derive sexual arousal from their behavior; if they are so motivated, the paraphilia of sexual sadism should be diagnosed. PERSONALITY CHANGE DUE TO A GENERAL MEDICAL CONDITION Personality change due to a general medical condition is a significant occurrence. ICD-10 includes the category personality and behavioral disorders due to brain disease, damage, and dysfunction, which includes organic personality disorder, postencephalitic syndrome, and postconcussional syndrome. Personality change due to a general medical condition is characterized by a marked change in personality style and traits from a previous level of functioning. Patients must show evidence of a causative organic factor antedating the onset of the personality change. Etiology Structural damage to the brain is usually the cause of the personality change, and head trauma is probably the most common cause. Cerebral neoplasms and vascular accidents, particularly of the temporal and frontal lobes, are also common causes. The conditions most often associated with personality change are listed in Table 22-11. Table 22-11 Medical Conditions Associated with Personality Change

Diagnosis and Clinical Features A change in personality from previous patterns of behavior or an exacerbation of previous personality characteristics is notable. Impaired control of the expression of emotions and impulses is a cardinal feature. Emotions are characteristically labile and shallow, although euphoria or apathy may be prominent. The euphoria may mimic hypomania, but true elation is absent, and patients may admit to not really feeling happy. There is a hollow and silly ring to their excitement and facile jocularity, particularly when the frontal lobes are involved. Also associated with damage to the frontal lobes, the so-called frontal lobe syndrome, consists of prominent indifference and apathy, characterized by a lack of concern for events in the immediate environment. Temper outbursts, which can occur with little or no provocation, especially after alcohol ingestion, can result in violent behavior. The expression of impulses may be manifested by inappropriate jokes; a coarse manner; improper sexual advances; and antisocial conduct resulting

in conflicts with the law, such as assaults on others, sexual misdemeanors, and shoplifting. Foresight and the ability to anticipate the social or legal consequences of actions are typically diminished. Persons with temporal lobe epilepsy characteristically show humorlessness, hypergraphia, hyperreligiosity, and marked aggressiveness during seizures. Persons with personality change due to a general medical condition have a clear sensorium. Mild disorders of cognitive function often coexist but do not amount to intellectual deterioration. Patients may be inattentive, which may account for disorders of recent memory. With some prodding, however, patients are likely to recall what they claim to have forgotten. The diagnosis should be suspected in patients who show marked changes in behavior or personality involving emotional lability and impaired impulse control, who have no history of mental disorder, and whose personality changes occur abruptly or over a relatively brief time. Anabolic Steroids. An increasing number of high school and college athletes and bodybuilders are using anabolic steroids as a shortcut to maximize physical development. Anabolic steroids include oxymetholone (Anadrol), somatropin (Humatrope), stanozolol (Winstrol), and testosterone. It is unclear whether a personality change caused by steroid abuse is better diagnosed as personality change due to a general medical condition or as one of the other (or unknown) substance use disorders. It is mentioned here because anabolic steroids can cause persistent alterations of personality and behavior. Anabolic steroid abuse is discussed in Section 12.13. Differential Diagnosis Dementia involves global deterioration in intellectual and behavioral capacities, of which personality change is just one category. A personality change may herald a cognitive disorder that eventually will evolve into dementia. In these cases, as deterioration begins to encompass significant memory and cognitive deficits, the

diagnosis of the disorder changes from personality change caused by a general medical condition to dementia. In differentiating the specific syndrome from other disorders in which personality change may occur—such as schizophrenia, delusional disorder, mood disorders, and impulse control disorders—physicians must consider the most important factor, the presence in personality change disorder of a specific organic causative factor. Course and Prognosis Both the course and the prognosis of personality change due to a general medical condition depend on its cause. If the disorder results from structural damage to the brain, the disorder tends to persist. The disorder may follow a period of coma and delirium in cases of head trauma or vascular accident and may be permanent. The personality change can evolve into dementia in cases of brain tumor, multiple sclerosis, and Huntington’s disease. Personality changes produced by chronic intoxication, medical illness, or drug therapy (such as levodopa [Larodopa] for parkinsonism) may be reversed if the underlying cause is treated. Some patients require custodial care or at least close supervision to meet their basic needs, avoid repeated conflicts with the law, and protect themselves and their families from the hostility of others and from destitution resulting from impulsive and ill-considered actions. Treatment Management of personality change disorder involves treatment of the underlying organic condition when possible. Psychopharmacological treatment of specific symptoms may be indicated in some cases, such as imipramine or fluoxetine for depression. Patients with severe cognitive impairment or weakened behavioral controls may need counseling to help avoid difficulties at work or to prevent social embarrassment. As a rule, patients’ families need emotional support and concrete advice on how to help minimize patients’ undesirable conduct. Alcohol should be avoided, and social engagements should be curtailed when patients tend to act in a grossly offensive manner. PSYCHOBIOLOGICAL MODEL OF TREATMENT The psychobiological model of treatment combines psychotherapy and pharmacotherapy and is based on the established structural, clinical, and postulated neurochemical characteristics of

temperament and character. Pharmacotherapy and psychotherapy can be systematically matched to the personality structure and stage of character development of each patient—clearly a unique advantage over other available approaches. The newest development is treating personality disorders pharmacologically. Target symptoms are identified, and particular drugs with known effects on personality traits (e.g., harm avoidance) are used. Table 22-12 summarizes drug choices for various target

symptoms of personality disorders. Table 22-12 Pharmacotherapy of Target Symptom Domains of Personality Disorders In his book, Listening to Prozac, Peter Kramer described dramatic personality changes when serotonin levels are raised by fluoxetine administration, such as decreased sensitivity to rejection, increased assertiveness, improved self-esteem, and the ability to tolerate stress. These changes in personality traits occur in patients with a wide range of psychiatric conditions as well as in persons without diagnosable mental disorders. Using medications to treat specific traits in a person who is otherwise normal (i.e., does not meet the criteria for a full-blown personality disorder) is controversial. It has been called “cosmetic psychopharmacology” by its critics. Temperament Temperament refers to the body’s biases in the modulation of conditioned behavioral

responses to prescriptive physical stimuli. Behavioral conditioning (i.e., procedural learning) involves presemantic sensations that elicit basic emotions, such as fear or anger, independent of conscious recognition, descriptive observation, reflection, or reasoning. Pioneering work by A. Thomas and S. Chess conceptualized temperament as the stylistic component (“how”) of behavior, as differentiated from the motivation (“why”) and the content (“what”) of behavior. Modern concepts of temperament, however, emphasize its emotional, motivational, and adaptive aspects. Specifically, four major temperament traits have been identified and subjected to extensive neurobiological, psychosocial, and clinical investigation: harm avoidance, novelty seeking, reward dependence, and persistence. It is remarkable that this four-factor model of temperament can, in retrospect, be seen as a modern interpretation of the ancient four temperaments: Individuals differ in the degree to which they are melancholic (harm avoidance), choleric (novelty seeking), sanguine (reward dependence), and phlegmatic (persistence). However, the four temperaments are now understood to be genetically independent dimensions that occur in all possible combinations within the same individual rather than as mutually exclusive categories. Biological Character Traits. Four character traits have been described, each with certain neurochemical and neurophysiological substrates. They share a common source of covariation that is strong and invariant regardless of changes in the environment and past experience. Table 22-13 summarizes contrasting sets of behaviors that distinguish extreme scorers on the four dimensions of temperament. Note that each extreme of these dimensions has specific adaptive advantages and disadvantages, so that neither high nor low scores inherently mean better adaptation. Each of the four temperament dimensions has unique genetic determinants according to family and twin studies, as well as studies of genetic associations with specific DNA markers. Some workers postulate specific genes for some traits, such as a novelty-seeking gene. Table 22-13 Descriptors of Individuals Who Score High or Low on the Four Temperament Dimensions

HARM AVOIDANCE. Harm avoidance involves a heritable bias in the inhibition of behavior in response to signals of punishment and nonreward. High harm avoidance is observed as fear of uncertainty, social inhibition, shyness with strangers, rapid fatigability, and pessimistic worry in

anticipation of problems even in situations that do not worry other persons. Persons low in harm avoidance are carefree, courageous, energetic, outgoing, and optimistic even in situations that worry most persons. The psychobiology of harm avoidance is complex. Benzodiazepines disinhibit avoidance by γ-aminobutyric acid (GABA)-ergic inhibition of serotonergic neurons originating in the dorsal raphe nuclei. Positron emission tomography (PET) at the National Institute of Mental Health (NIMH) with [18F]-deoxyglucose (FDG) in 31 healthy adult volunteers during a simple, continuous performance task showed that harm avoidance was associated with increased activity in the anterior paralimbic circuit, specifically the right amygdala and insula, the right orbitofrontal cortex, and the left medial prefrontal cortex. High GABA concentrations in plasma have also been correlated with low harm avoidance. Plasma GABA concentration has also been correlated with other measures of anxiety susceptibility, and it correlates highly with GABA concentration in the brain. Finally, a gene on chromosome 17q12 that regulates the expression of the serotonin transporter accounts for 4 to 9 percent of the total variance in harm avoidance. These findings support a role for both GABA and serotonergic projections from the dorsal raphe underlying individual differences in behavioral inhibition as measured by harm avoidance. Persons given serotonin drugs show decreased harm avoidance behavior. NOVELTY SEEKING. Novelty seeking reflects a heritable bias in the initiation or activation of appetitive approach in response to novelty, approach to signals of reward, active avoidance of conditioned signals of punishment, and escape from unconditioned punishment (all of which are hypothesized to covary as part of one heritable system of learning). Novelty seeking is observed as exploratory activity in response to novelty, impulsiveness, extravagance in approach to cues of reward, and active avoidance of

frustration. Individuals high in novelty seeking are quick tempered, curious, easily bored, impulsive, extravagant, and disorderly. Persons low in novelty seeking are slow tempered, uninquiring, stoical, reflective, frugal, reserved, tolerant of monotony, and orderly. Dopaminergic projections have a crucial role in novelty seeking. Novelty seeking involves increased reuptake of dopamine at presynaptic terminals, thereby requiring frequent stimulation to maintain optimal levels of postsynaptic dopaminergic stimulation. Novelty seeking leads to various pleasure-seeking behaviors, including cigarette smoking, which may explain the frequent observation of low platelet MAO type B (MAOB) activity because cigarette smoking inhibits MAOB activity in platelets and brain. Studies of genes involved in dopamine neurotransmission, such as the dopamine transporter gene (DAT1) and the type 4 dopamine receptor gene (DRD4), have provided evidence of association with novelty seeking or risk-taking behavior. REWARD DEPENDENCE. Reward dependence reflects maintenance of behavior in response to cues of social reward. Individuals high in reward dependence are tender hearted, sensitive, socially dependent, and sociable. Individuals low in reward dependence are practical, tough minded, cold, socially insensitive, irresolute, and indifferent if alone. Noradrenergic projections from the locus ceruleus and serotonergic projections from the median raphe are thought to influence such reward conditioning. High reward dependence is associated with increased activity in the thalamus. The 3-methoxy-4hydroxyphenylglycol (MHPG) concentration is low in persons with high reward dependence. PERSISTENCE. Persistence reflects maintenance of behavior despite frustration, fatigue, and intermittent reinforcement. Highly persistent persons are hard-working, perseverant, and ambitious overachievers who tend to intensify their effort in response to anticipated rewards and view frustration and fatigue as personal challenges. Individuals low in persistence are indolent, inactive, unstable, and erratic; they tend to give up easily when faced with frustration, rarely strive for higher accomplishments, and manifest little perseverance even in response to intermittent reward.

Recent work in rodents related the integrity of the partial reinforcement extinction effect to hippocampal connections and glutamate metabolism. Persistence may be enhanced by psychostimulants. Psychobiology of Temperament. Temperament traits of harm avoidance, novelty seeking, reward dependence, and persistence are defined as heritable differences underlying automatic responses to danger, novelty, social approval, and intermittent reward, respectively. The component traits (“facets”) for each of the four temperament dimensions have distinct learning characteristics and correlate more strongly with one another than with other components of temperament. The most comprehensive neurobiological model of learning in animals that has been

systematically related to the structure of human temperament is summarized in Table 22-14. This model distinguishes four dissociable brain systems for behavioral inhibition (harm avoidance), behavioral activation (novelty seeking), social attachment (reward dependence), and partial reinforcement (persistence). Table 22-14 Four Dissociable Brain Systems Influencing Stimulus–Response Patterns Underlying Temperament Individual differences in temperament and basic emotions modify the processing of sensory information and shape early learning characteristics, especially associative conditioning of unconscious behavior responses. Temperament is conceptualized in terms of heritable biases in emotionality and learning that underlie the acquisition of emotion-based, automatic behavioral traits and habits observable early in life and relatively stable over an individual’s lifespan. Each of the four major dimensions is a normally distributed quantitative trait, moderately heritable, observable early in childhood, relatively stable in time, and moderately predictive of adolescent and adult behavior. The four dimensions have been shown to be genetically homogeneous and independently inherited from one another in large, independent twin studies in the United States, Australia, and Japan. Temperamental differences, which are not very stable initially, tend to stabilize during the second and third years of life. Accordingly, ratings of these four temperament traits at age 10 to 11 years were moderately predictive of personality traits at ages 15, 18, and 27 years in a large sample of Swedish children. The four dimensions have been repeatedly shown to be universal across different cultures, ethnic groups, and political systems on every inhabited continent. In summary, these aspects of personality are called temperament because they are heritable, manifest early in life, are developmentally stable, and are consistent in different cultures. Temperament traits are similar to crystallized intelligence in that they do not show the rapid changes with increasing age or across birth cohorts that are observed for fluid intelligence and character traits.

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