CHAPTER 20

DISORDERS OF IMPULSE CONTROL

STEPHEN J. HUCKER
MCMASTER UNIVERSITY

Currently accepted diagnostic criteria for a number of psychiatric disorders include some form of impulsive behavior, although the latter is usually not precisely defined. Nonetheless, the term *impulsive* generally refers to acts carried out without reflection or forethought (Reber & Reber, 2001). Obviously, such behavior can occur in individuals with no formal psychiatric diagnosis, though certain of the latter conditions may be particularly associated with impulsive behavior (Moeller, Barratt, Dougherty, Schmmitz, & Swann, 2001).

IMPULSIVITY AND PERSONALITY DISORDERS

Borderline personality disorder, in which affective instability and identity disturbance are prominent features, is also characterized by impulsive behavior. The latter may include suicide attempts, gestures, and threats as well as other forms of self-harm. It may also include other potentially self-damaging behaviors such as excessive spending, sexual promiscuity, substance abuse, reckless driving, and binge eating.

Impulsivity is a central feature in the diagnosis of Borderline Personality Disorder and one that links it with Antisocial Personality Disorder (ASPD). However, impulsivity, as defined by the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*) (American Psychiatric Association, 2000) is only a possible, but not essential, criterion for the disorder. In fact, individuals with ASPD vary considerably in the degree to which they demonstrate impulsivity. Some studies suggest that there is a biological basis for impulsivity in these conditions. Linnoila and colleagues (1983) found that among 36 violent individuals with personality

disorders, subjects with impulsive violence had significantly lower levels of the serotonin metabolite 5-hydroxyindoleacetic acid in their cerebrospinal fluid than individuals who had displayed premeditated violence. Also among individuals with personality disorders, those with a tendency to impulsive aggression show a significant prolactin response to the serotonin-releasing agent fenfluramine.

IMPULSIVITY AND CEREBRAL DAMAGE

Some individuals who have suffered traumatic brain injuries may be prone to impulsive behavior. Damage to the frontal cortex especially may result in impulsive behavior (Jentsch & Taylor, 1999), and head-injured patients have been described who show an acquired ASPD (Blair & Cipolotti, 2000).

IMPULSIVITY AND SUBSTANCE ABUSE

Although not a required diagnostic criterion in the *DSM-IV-TR*, many substance abusers behave impulsively, and individuals who exhibit other impulsive disorders are particularly prone to abuse substances (Brady, Myrick, & McElroy, 1998). Moreover, multiple substance abusers tend to be more impulsive that those who abuse single substances (McCown, 1988; O'Boyle & Barratt, 1993). Children with conduct disorders are particularly prone to become substance abusers (Disney, Elkins, McGue, & Iacono, 1999; Young et al., 1995). Attention Deficit Hyperactivity Disorder (ADHD) alone does not appear to increase the risk of substance abuse, but the presence of concomitant Conduct Disorder does do so (Disney et al., 1999; Molina, Smith, & Pelham, 1999).

IMPULSIVITY AND MAJOR MENTAL DISORDERS

Among psychotic disorders, Bipolar Disorder is the most usually associated with impulsive behavior. This is particularly the case with manic episodes (Swann et al., 2001). Depressive episodes may also be characterized by impulsivity, especially suicidal behavior (Corruble, Damy, & Guelfi, 1999).

IMPULSIVITY AND CHILDHOOD PSYCHIATRIC DISORDERS

Children with Attention Deficit Hyperactivity Disorder show hyperactivity, inattention, and impulsive behavior among their symptoms. In the impulsive/

hyperactive subtype, though not the inattentive subtype, there are high rates of comorbid Oppositional Defiant Disorder and Conduct Disorder symptoms (Willcutt, Pennington, Chhabildas, Friedman, & Alexander, 1999). Also, adults who show hyperactive/impulsive symptoms and Conduct Disorder symptoms as children are more likely to become adult criminals, though those with inattention symptoms alone do not (Babinski, Hartsough, & Lambert, 1999).

SPECIFIC DISORDERS OF IMPULSE CONTROL

In addition to the major psychiatric disorder categories already described, contemporary psychiatric classification systems include groups of disorders particularly characterized by impulsive behavior. The *DSM-IV-TR* (APA, 2000) includes a category of "Impulse Control Disorders Not Elsewhere Classified" (the 312 Codes, pp. 663–677). The ICD 10 has a corresponding category referred to as "Habit and Impulsive Disorders" (Code F63) (World Health Organization, 1992). Although the terminology is somewhat cumbersome, many of the conditions have been recognized by clinicians for at least two centuries and have been given time-honored names even though the conditions, if such they are, have been little studied. Those disorders named specifically in the section of *DSM-IV-TR* are Pathological Gambling, Kleptomania, Pyromania, Trichotillomania, and Intermittent Explosive Disorder. A residual category, "Impulse Control Disorder, Not Otherwise Specified" includes those conditions that do not meet the official criteria for the specific diagnoses or others elsewhere in the classification system. Although the criteria will be described in broad outline, these are not a substitute for the complete descriptions provided in the *DSM-IV-TR*.

Pathological Gambling

Individuals who are unable to resist the impulse to gamble, in contrast to more typical recreational gamblers, may be characterized by the term *pathological gamblers*. Characteristically, the tendency interferes with other aspects of their lives because they are unable to refrain from gambling, whether they are winning or losing. Jobs may be lost, personal and family relationships disrupted, and criminal behavior may be resorted to in order to support the habit. At least in the early stages, these individuals find the experience a pleasurable one, and for this reason some authorities have preferred the term *pathological* to *compulsive* gambling (Moran, 1970). Further, the condition is usually not regarded as ego-alien by the individual.

Unlike some of the other specific impulse control disorders, pathological gambling has only been recognized in the official classification of the American Psychiatric Association since the third edition of the *DSM* (APA, 1980). The

currently accepted criteria require that five or more of the list of subcriteria are met including: preoccupation with gambling; illegal acts to obtain money for gambling; gambling to escape from problems or negative feelings such as depression, etc.; persistence in gambling, even after losing, in order to recover losses; soliciting money from others in desperation; betrayal of others by lying over current predicament; loss of jobs and other opportunities and important relationships because of gambling; increased amounts of money to gain excitement; and inability to stop gambling despite attempts to do so. The second requirement is that the individual's behavior is not better explained by a manic episode.

Some authorities have regarded pathological gambling as akin to a compulsive disorder (DeCaria & Hollander, 1993) or as an addiction (Dickerson, 1984). The problem appears to occur in between 0.1 to 2.3 percent of the population in the United States (Volberg & Steadman, 1988, 1989). Almost 7 percent of adult psychiatric inpatients (Lesieur & Blume, 1990) are affected, as are 8–25 percent of alcohol and other substance abusers (Lesieur, Blume, & Zoppa, 1986). The typical North American pathological gambler is a white, middle- to upper-middle-class male aged 40 to 50 years by the time they come to professional attention. Typically, pathological gamblers follow a progressive course of increasing loss of control along with substantial monetary losses. Like substance-dependent individuals, most develop tolerance (i.e., increase in size of debts and odds to obtain the same arousal levels) and show withdrawal symptoms (irritability, restlessness, depressed mood, and poorer concentration) when their gambling pattern is interrupted. With men, pathological gambling typically begins in adolescence, whereas women tend to develop it later in life (and there may be a history of a specific stress or major loss at the time of onset).

Classical studies of gambling behavior recognize four phases (Custer & Milt, 1985). The first phase, *winning*, is seen mainly in men who report "a big win" early in the course of the disorder, which fosters overconfidence in future gambling. Women, on the other hand, tend to develop the disorder in response to some emotional problem. In the second, *losing* phase, the gambler is unable to accept a run of bad luck and tries to win his or her money back ("chasing"). Heavier and more frequent betting follows, with consequent increase in debts. Many gamblers become superstitious and resort to "magical" practices, such as blowing on dice or carrying a lucky charm, or develop irrational beliefs, as in "lucky streaks," or ignore the simple probabilities, thinking that after losing several bets in a row their luck will change (the "Gambler's Fallacy"; Wagenaar, 1988). Gamblers begin to cover up their problem, resulting in occupational and relationship problems; a sense of urgency develops. When they run out of money, they often turn to friends and relatives to bail them out. The *desperation* phase results in uncharacteristic, sometimes illegal, behavior, including writing bad checks and embezzling from work. It is reported that about two-thirds of pathological gamblers will be driven to this extreme, rationalizing their behavior so that it becomes easier each time. As their gambling increases and personal relationships fail, gamblers become increasingly depressed and enter the fourth, *hopeless*, phase (Rosenthal, 1992), in

which risk of suicide and stress-related illnesses dramatically increases. Despite the negative consequences, however, the gambling behavior continues.

Three-quarters of gamblers justify a diagnosis of Major Depressive Disorder and one-third suffer from bipolar disorders (Linden, Pope, & Jones, 1986). Fifty percent also develop problems with alcohol abuse (Smart & Ferris, 1996), and 17 to 24 percent attempt suicide (Ciarrocchi & Richardson, 1989). Personality disorders, especially narcissistic and antisocial types, are commonly noted in pathological gamblers (Blaszczynski, McConaghy, & Frakova, 1989). More recently, Black and Moyer (1998) used standardized diagnostic interviewing and specially developed impulsivity questionnaires to study 30 pathological gamblers. Sixty percent had a mood disorder, 64 percent a substance abuse disorder, and 40 percent an anxiety disorder, over the course of their lifetime. Eighty-seven percent had a personality disorder, the most common being obsessive-compulsive, avoidant, schizotypal, and paranoid disorders, as well as a relatively high rate of ASPDs. Other impulse control disorders were common, including compulsive buying and compulsive sexual behavior. These authors favored the continued inclusion of pathological gambling in the diagnostic category of Impulse Control Disorders. Large numbers report also dissociative experiences, including "trances," "memory blackouts," and the like during gambling sprees (Jacobs, 1988, p. 31).

Also, using structured clinical interviews with the *DSM-IV*, Grant and Kim (2001) recently found that most gamblers have severe financial, social, and legal problems and 58 percent had at least one first-degree relative who also showed problematic gambling behavior.

Lack of insight is typical in pathological gamblers and this, together with comorbid psychopathology such as substance abuse, makes treatment difficult (Ibanez et al., 2001). Although some authorities have claimed that pathological gambling is an eminently treatable disorder (e.g. Rosenthal, 1992, p. 77), there are few well-designed studies to support the claim. Some gamblers may find that attendance at Gamblers Anonymous, with its twelve-step approach, is sufficient to help them abstain. However, behavior therapy and psychodynamic psychotherapy have shown limited success. Newer cognitive behavioral approaches show greater promise, although clinicians must specifically address cognitive distortions and employ other specialized techniques (Tavares, Zilberman, & el-Guebaly, 2003). With the high comorbidity of mood and anxiety disorders and substance abuse, treatment of these underlying conditions will typically be necessary.

Trichotillomania

Trichotillomania is a chronic maladaptive and irresistible urge to pluck out one's hair. Usually it is scalp hair that is removed, although eyebrows and eyelashes and even body hair may be completely removed (Krishnan, Davidson, & Guajardo, 1985). Some have regarded the condition as a simple bad habit (Jillson, 1983),

whereas others view it as a symptom of major mental illness (Oguchi & Miura, 1977) or as a variant of obsessive-compulsive disorder (Swedo, 1993) instead of an impulse control disorder. Typically, tension increases before the hair is pulled out or when the individual is trying to refrain from pulling, and relief or pleasure is obtained when the hair is being pulled out. In addition, to fulfill *DSM-IV-TR* criteria, the problem is not better explained by an alternative mental or medical disorder; clinically meaningful complications occur in social, vocational, and other areas; and hair loss is noticeable.

In most cases the condition may be concealed or not reported, but surveys suggest that 0.6 to 1.5 percent of males and 0.6 to 3 percent of females are affected (Christenson, Pyle, & Mitchell, 1991). Female patients, in fact, present more often to clinicians than males. The condition may begin very early in childhood and at this stage may respond to simple remedies or remit spontaneously. It may be accompanied by thumb sucking and dismissed as normal. Onset during the teens is more common in females, who conceal any disfigurement with wigs, hair styling, or cosmetics but may lead to avoidance of social contacts and impaired self-esteem. Despite these impairments, many never consult a mental health professional. Individuals may eat the plucked hairs and cause the formation of hair balls, which may cause medical complications.

Hair loss is variable but may be complete; when the hair grows again, it usually appears normal though may appear coarser and curlier. Usually the hair is pulled in private, though family members may be privileged to observe the act. The condition may increase at times of stress or, paradoxically, during relaxation. The episodes may be brief or prolonged. After the hair is plucked, the individual may stroke it against the cheek and lips or eat it, sometimes in a quite ritualistic fashion. The process of plucking is rarely described as painful and many are unaware that they are, in fact, doing it. On the other hand, attempts to inhibit the behavior may be accompanied by dramatic increase in anxiety and tension. Denial of the behavior is common in both the patients and their families.

Common comorbid conditions include major depressive disorder, generalized anxiety disorder, substance abuse, eating disorders, and excessive compulsive disorder (Swedo, 1993; Christianson, Pyle, & Mitchell, 1991). Personality disorders, usually histrionic, borderline, or passive-aggressive types, are often noted, but many patients otherwise appear perfectly normal (Winchell, 1992).

This strange phenomenon remains to be adequately explained, though there is currently a tendency to regard it as an atypical variant of obsessive-compulsive disorder. Various types of treatment have been proposed, including stress reduction and other behavioral therapies, hypnotherapy, dynamic psychotherapy, and self-help groups, all with variable success (Winchell, 1992). Medications that are used to treat both depression and obsessive-compulsive disorders—namely, the selective serotonin reuptake inhibitors (SSRIs, such as Prozac)—have been used successfully, although it has been noted that in some the underlying depression improves while the trichotillomania persists (Winchell, 1992).

Pyromania

The term *pyromania* has been used to identify fire setting for which there is no clear motive (Koson & Dvoskin, 1982; Lewis & Yarnell, 1951), although more obvious motives such as financial gain, concealment of some other crime, or expression of anger or revenge are easily concealed or overlooked. According to current criteria in *DSM-IV-TR* (APA, 2000), the person obtains relief, gratification, or pleasure from setting fires, watching them, or playing a role in the aftermath. Monetary gain is not the intent, and the fires are not set for political or criminal reasons or because of poor judgment induced by a mental disorder. Affect or tension is aroused before the act and the problem is not better explained by antisocial personality disorder, a manic episode or conduct disorder. The intent to set fires is deliberate and is repeated. Attraction to or fascination with fire is evident.

Although earlier studies suggested that pyromania was a common disorder, more recent research has suggested that it is in fact quite rare (APA, 2000, p. 670). Most pyromaniacs are male. Arousal and pleasure from setting fires may be explicitly sexual, but such "fire fetishes" are very rarely encountered despite their prominence in literature on fire setting. Indeed, there is little good research on pyromaniacs as distinct from fire setters in general. Many pyromaniacs also meet *DSM* criteria for intermittent explosive disorder, and the majority suffer from a mood disorder and alcohol abuse (Virkkunen et al., 1989). Common motives for fire setting are anger and vengeance (Prins, 1994). Classical psychoanalytic authors (Stekel, 1924; Freud, 1932/1964; Fenichel, 1945) suggested that pyromania is the result of unresolved sexual feelings though the one empirical study that explored this hypothesis failed to confirm it (Quinsey, Chaplin, & Upfold, 1989).

Low levels of serotonin metabolites have been found in the cerebrospinal fluid of "impulsive arsonists" (Roy, Virkkunen, Guthrie, & Linnoila, 1986) and recidivistic arsonists also have lower levels of these metabolites than nonrecidivists (Virkkunen et al., 1989). An underlying serotonergic or adrenergic disturbance may be present, leading some authors to suggest that the disorder be considered part of the "Affective Disorder Spectrum" (McElroy et al., 1995).

Systematic studies of treatments have rarely been carried out, and most reports are of single cases. Lack of insight, denial, and refusal to accept responsibility, together with comorbid alcohol problems, makes these patients difficult to treat (Mavromatis & Lion, 1977), although behavioral techniques have been successfully used. Multimodular programs have also claimed low recidivism rates of 1.4 to 6.3 percent (Kolko, 1988). An interesting personal account by a young woman who was a compulsive fire setter and diagnosed as having a Borderline Personality Disorder indicates that she responded well to intensive biofeedback therapy, social skills training, and treatment with clomipramine (Wheaton, 2001).

Intermittent Explosive Disorder

Despite its inclusion in several editions of the *Diagnostic and Statistical Manual*, many researchers and clinicians have doubted the existence of this disorder as an independent entity and it was almost excluded from the current edition (Bradford, Geller, Lesieur, Rosenthal, & Wise, 1994). Indeed, anger and aggression are extremely common in a wide range of psychiatric conditions. For example, Posternak and Zimmerman (2002) reported that about half of a sample of 1300 psychiatric outpatients reported currently experiencing moderate to severe levels of subjective anger and about a quarter had shown aggressive behavior in the preceding week. Anger levels correlated with depressed mood and anxiety. Although major depression disorder, bipolar I disorder, and cluster B personality disorders contributed to problems with anger and aggression in this sample, there were 40 individuals who met criteria for intermittent explosive disorder. However, clinicians usually apply the label very loosely to patients with a history of severe explosive outbursts (APA, 2000; Monopolis & Lion, 1983). Few studies use rigorous *DSM* criteria and as a result of using stringent methodology, Felthous, Bryant, Wingerter, and Barrett (1991) could identify only 13 cases. Strictly defined, therefore, the condition seems to be rare. In a review of over 800 possible cases in the preparation of *DSM-IV*, only 17 likely cases were identified (Bradford et al., 1994).

DSM-IV-TR criteria essentially require that impulses of aggression are uncontrolled in several separate episodes and result in serious assaults or destruction, that episodic violence is disproportionate to the provocation, and that disorders listed elsewhere in the *DSM* are insufficient to account for the episodes. Thus, currently the disorder is essentially defined by exclusion of other conditions. Problems with relationships, job loss, criminal behavior, alcohol abuse, and injuries resulting from fights and accidents are commonly seen in such patients. Early studies suggested that the violent outbursts may have some kind of subtle organic basis and terms such as *episodic dyscontrol* (Menninger & Mayman, 1956; Monroe, 1970) were used. Many textbooks suggest that a full neurological and neuropsychological assessment is required in these cases though discrete organic pathology is usually not identifiable.

In clinical practice it is often difficult to disentangle the features of intermittent explosive disorder from the typical background of antisocial or borderline personality characteristics, substance abuse, and deliberate violence for some specific end. Chronic aggression is typical of many patients with cluster B personality disorders and several studies show an overlap with Intermittent Explosive Disorder (Virkkunen, 1976; Pattison & Kahnan, 1983).

In addition to the possible significance of minor neurological abnormalities (Stein, Towey, & Hollander, 1995), interest in recent years has focused on serotonergic and adrenergic abnormalities in violence-prone individuals (Brown et al., 1989; Virkkunen et al., 1989). Serotonergic medications have been added to traditional psychodynamic behavioral and social therapies, but these have usually

been heterogeneous populations so it is difficult to evaluate the true efficacy of these substances in intermittent explosive disorders. In fact, medication alone is usually quite insufficient to manage these patients and many of them have a tendency to abuse drugs in any case.

Kleptomania

The core notion of *kleptomania* is that the individual repeatedly gives in to the impulse to steal when he or she has sufficient money and no need for what is stolen. The *DSM-IV-TR* requires that the person be unsuccessful in resisting impulses to steal and has no other obvious motives such as anger, delusional ideas, and the like that might explain the behavior. Various other disorders or episodes must be excluded, and it is necessary that the person experiences gratification, relief, or pleasure when carrying out the theft and that the tension immediately increases prior to the act of stealing.

The validity of kleptomania as a discrete disorder has been questioned, although in recent years there have been a number of studies using *DSM*-defined subjects. Most of the literature on the topic refers in fact to shoplifters in general, most of whom likely would not fulfill the required criteria. Indeed, studies of shoplifters suggest that perhaps fewer than 5 percent would fulfill such criteria (APA, 2000). Nonetheless, the condition may be more common, particularly as it has been noted that many sufferers tend to be exceptionally secretive about their behavior (Goldman, 1991). Most reported cases of kleptomania have been female (McElroy, Pope, Hudson, Keeck, & White, 1991).

Though well aware they are committing a crime, most kleptomaniacs do not steal for personal gain. As required by the official criteria, they typically describe a feeling of increasing tension and pressure to steal followed by immediate pleasure or relief though subsequently often with residual guilt and shame as well.

Many kleptomaniacs develop self-control strategies, such as avoiding shopping malls or going shopping only when accompanied by other individuals. Some stop shopping altogether and become socially isolated. McElroy and her colleagues found kleptomania to be strongly associated with mood disorders (especially depression) and anxiety disorders, eating disorders, substance abuse, and other impulse control disorders (McElroy et al., 1991). Grant and Kim (2002a) more recently studied 22 kleptomaniacs identified using the structured clinical interview for the *DSM-IV* (SCID) and found that most had an average age of onset of 16 years with an average of 21 years duration of symptoms. Seventy-three percent reported specific triggers of their urges to steal, and 77 percent qualified for a lifetime diagnosis of various Axis I disorders, including major depressions, alcoholic dependence, and so on. More than 40 percent justified a current Axis I diagnosis. Sixty-eight percent reported intense shame or guilt following the thefts. Other impulse specific disorders of impulse control are reported in 18 percent. As with other recent studies, kleptomania is described by these

authors as "a distressing and disabling disorder associated with high rates of psychiatric comorbidity."

Findings of this kind have led some researchers to suggest that kleptomania, and possibly other impulse control disorders as well, form part of the "affective spectrum disorders" linked by some common neurochemical abnormality involving low brain serotonin levels (McElroy, Hudson, Pope, Keck, & Aizley, 1992).

Psychoanalytic writers have tended to view compulsive stealing as a compensation for lack of affection in early life or as a defense against "castration anxiety." However, these elaborate speculations are difficult to evaluate and explore empirically. Cupchick and Atcheson (1983) suggested that some otherwise noncriminal shoplifters steal to compensate symbolically for some real or anticipated loss. Others, in line with the common observation of depression in shoplifters, have argued that stealing may have antidepressant effects by temporarily relieving feelings of anxiety (Fishbain, 1987; Goldman, 1991).

It is clear that many sufferers from kleptomania do not seek professional assistance and the natural history of the disorder is not known. Clinical studies do, however, suggest that it follows a chronic course (McElroy et al., 1991). Other than the work of McElroy and her colleagues, most research on the area of treatment is extremely difficult to evaluate as it is not applied to strictly defined cases. Behavioral strategies have been reported as successful (Glover, 1985; Guidry, 1975), though the soundest research points to promising results with the use of antidepressant medication, supporting the idea that these patients are suffering from some variant of a mood disorder (Hudson & Pope, 1990; McElroy et al., 1991; McElroy, Keck, Pope, Smith, & Strakowski, 1994). In particular, the serotonergic group of drugs such as fluoxetine and trazodone are reported as producing various degrees of remission. Recently, Naltrexone, an opioid antagonist, was found to be effective in the treatment of a small group of strictly defined kleptomaniacs (Grant & Kim, 2002b).

IMPULSE CONTROL DISORDER, NOT OTHERWISE SPECIFIED

As elsewhere in the *DSM-IV* classification scheme (APA, 2000), there is a residual category for those impulse control disorders that do not fulfill either the criteria for specific disorders outlined earlier or those other mental disorders with impulsive characteristics covered in other sections of the *DSM-IV-TR*. For example, substance abuse and paraphilia are not placed in this residual category because they are classified elsewhere in the manual.

Increasing attention has been paid to compulsive masturbation, habitual promiscuity, pornography dependence, compulsive use of telephone sex lines, and other behaviors. Some authors have referred to these as "nonparaphilic sexual disorders" or "paraphilia-related disorders" (Kafka, 1995; Travin, 1995). Other authors have referred to these as "sexual addictions" (Carnes, 1989, 2001) or

"sexual compulsions" (Coleman, 1991, 1992; Anthony & Hollander, 1993). Some have suggested that these phenomena are related to mood disorders (Kafka, 1991; Kafka & Prentky, 1992), and in fact there have been encouraging reports indicating that not only these behavioral problems but also more discrete paraphilias may respond to antidepressant medications (Kafka, 1995). However, in the current *DSM-IV-TR* scheme, a diagnosis of Sexual Disorder Not Otherwise Specified (Code 302.9) rather than the corresponding Residual Impulse Control Disorder diagnosis (312.30) is to be preferred.

REPETITIVE SELF-MUTILATION

As with impulsivity in general, *self-mutilation* can occur in a wide range of psychiatric disorders. It is particularly associated with borderline personality disorder, the *DSM-IV* criteria that includes repetitive self-mutilation. Many authors have described individuals who episodically cut, carve, or burn their skin; interfere with healing of their wounds; and so on. Such people describe tension relief and other positive affects as a result of the self-mutilation (Favazza, 1987, 1992, 1995).

Usually the behavior begins in early adolescence, and self-harmful behavior becomes the individual's habitual way of dealing with personal distress. Between the episodes of self-harm there are periods of calm, though eating disorders, alcoholism, and substance abuse or kleptomania may also complicate the clinical picture. These patients are preoccupied with, and repeatedly fail to resist, harming themselves. As in other impulse control disorders, they experience feelings of tension immediately before hurting themselves, followed by feelings of relief or pleasure subsequently. The behavior is not suicidal and not a response to psychotic experiences. It has much in common with trichotillomania and some forms of nail biting and skin picking (Arnold, McElroy, Mutasim, Dwight, Lamerson, & Morris, 1998).

Once again, considerable interest has been focused on possible abnormalities of serotonin metabolism in these patients (Coccaro et al., 1989; Coccaro, Aspill, Herbert, & Schute, 1990). Psychotherapy is regarded as central to the management of repetitive self-mutilation (Walsh & Rosen, 1988), but there have been encouraging reports that selective serotonin reuptake inhibitors such as Prozac may help these patients even when there is no evidence of concomitant major depression (Markovitz, Calebresi, Schultz, & Meltzer, 1991).

COMPULSIVE SHOPPING

This behavioral problem, also referred to as *compulsive spending* or *oniomania* (Kraepelin, 1915; Bleuler, 1924) shows many affinities to kleptomania (McElroy, Keck, Pope, Smith, & Strakowski, 1994). Women appear to be more often afflicted

than men (Faber, 1992; O'Guinn & Faber, 1989). In common with kleptomania, there is substantial comorbidity with mood and anxiety disorders (Christianson et al., 1994; McElroy et al., 1994). The relationship between compulsive buying and depression is well shown in the study of 119 depressed patients, 38 of whom were diagnosed as compulsive buyers. The latter tended to be associated with recurrent depression, comorbid with kleptomania and bulimia as well as benzodiazepine abuse or dependence (Lejoyeux, Tassain, Solomon, & Ades, 1997). Mood regulation is therefore a major determinant in impulse buying (Faber, 1992; O'Guinn & Faber, 1989), and these patients experience shopping or buying as exciting and mood enhancing. However, as with kleptomania, the behavior is followed later by remorse and regret. Once again, there is evidence that treatment with antidepressants may be helpful in alleviating the problem (McElroy, Satlin, Pope, Keck, & Hudson, 1991).

CONCLUSION

Although the specific category of Impulse Control Disorders has become firmly entrenched in the official diagnostic classification scheme in North America (APA, 2000), strictly defined cases are nonetheless relatively uncommon, with a result that large scale studies of homogeneous populations have been few. However, over the past decade more research has appeared that has stressed the substantial comorbidity of these disorders with mood disorders, anxiety disorders, eating disorders, substance abuse, personality disorders, and other specific impulse control disorders. Sometimes the features of individual diagnostic entities may in fact be clinically difficult to disentangle from one another, with a result that the impulsivity at the core of the disorders is obscured. Some disorders, such as compulsive buying, compulsive sexual behavior, and repetitive self-mutilation appear to show considerable similarities with other more traditional impulse control disorders and indeed may be more common. Certainly, clinicians have widely appreciated that these behavioral problems may cause significant distress for individuals and their families and may justify further study and attempts at treatment. In the future, other problem behaviors may well become included in this category and justify further study. At the present time, for example, there has been increasing interest in so-called Internet addiction, as a result of which individuals spend most of their waking hours in front of a computer screen. Similarly, other individuals may be observed to compulsively use their mobile telephones.

Finally, interest in a possible neurochemical basis for impulsive behaviors continues to proliferate with the eventual hope that newer pharmacological therapies may be available. Meanwhile, advances in cognitive behavioral treatment suggests that, as with other psychiatric conditions, pharmacotherapy and cognitive behavioral treatment in combination may mutually enhance each other's benefits.

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