The Paraphilic and Hypersexual Disorders: An Overview

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In this article, the first of a two-part series, the authors present reasons for considering the paraphilic and hypersexual disorders together and provide an overview of these disorders. The DSM-IV diagnostic criteria for paraphilias are reviewed, and proposed criteria for hypersexual disorders are presented. The question of whether the paraphilic and hypersexual disorders should be considered within the spectrum of obsessive-compulsive disorders is considered. The authors then review the epidemiology of these disorders, and discuss some implications of recent sexual predator legislation. The authors discuss the etiology of the paraphilias and hypersexual disorders, and consider the role of endocrinological function, findings from brain imaging and neuropsychological testing, findings from primate research, the monoamine hypothesis, the imprinting hypothesis, social learning theory, the concept of courtship disorder, the role of obsessive-compulsive elements, psychodynamic theories, and genetic factors. The phenomenology of the paraphilias and hypersexual disorders is discussed, including the tendency for multiple paraphilias to co-occur, the lack of a specific offender profile, the predominance of males among those with paraphilias, the incidence of a history of victimization in individuals with paraphilias and compulsive sexual disorders, the onset and course of both types of disorders, and the lack of internal motivation for change in individuals with paraphilias and hypersexual disorders. The authors then discuss disorders that commonly co-occur with paraphilias and compulsive sexual disorders, including mood disorders, substance abuse and dependence disorders, attention-deficit/hyperactivity disorder, anxiety and impulse control disorders, and personality disorders. The second article in the series will discuss the clinical assessment and the behavioral and psychopharmacological treatment of these disorders. A guide for clinicians and patients on where and how to find specialized clinicians and treatment resources in the United States will also be provided.
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The paraphilias and hypersexual disorders are subjects of increasing interest. The paraphilias, which are included in the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV),[1] are more familiar to the average clinician than are hypersexual disorders. The essential features of the paraphilias involve recurrent, intense, sexually arousing fantasies, urges or behaviors involving 1) nonhuman objects, 2) the suffering or humiliation of oneself or one's partner, or 3) children or other nonconsenting persons. The DSM-IV criteria for these disorders require either subjective distress or an impairment in social, occupational or other important areas of functioning.[1] Many of the paraphilias blend with consensual sexual practices that are not a source of distress or impairment of functioning but rather constitute forms of sexual expression that are chosen and practiced by significant numbers of individuals. The hypersexual disorders involve a disturbance of more conventional sexual functioning, such as masturbation or the use of pornography, to a point where such use is compulsive or excessive and becomes a source of distress to the individual engaged in the behavior or to those around him or her.

Variously described as "compulsive sexual behavior,"[2–4] "nonparaphilic compulsive sexual behavior," "paraphilia-related disorder,"[5, 6] or sexual addiction,"[7, 8] hypersexual behavior was originally described by Krafft-Ebing.[9] Stein et al.[10] have suggested that this category be considered for inclusion in the *Diagnostic and Statistical Manual* of the American Psychiatric Association.

For the most part, the paraphilias and hypersexual disorders have been considered and discussed separate-

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ly, with far more information available and research done on the paraphilias. However, one reason to consider these entities together is the fact that these disorders frequently coexist. Kafka and Hennan[5] reported that, in their sample of 143 individuals with paraphilias, 86% also reported at least one lifetime "paraphilia-related disorder." Several psychopharmacological and clinical reports have also studied these two populations of individuals together.[6, 11, 12] Furthermore both populations of individuals engage in sexual behavior that is distressful to themselves and/or others, both use cognitive distortions to support their behavior, and both have secretive emotional lives concerning their sexual behavior. Given that both entities involve sexual behavior that is a source of distress to either the individual, his or her significant other, or society, it may well be that similarities exist in the development or expression of these behaviors and that treatments relevant to one of these classes of behavior may be relevant to the other. It should be noted, however, that generally speaking, the paraphilias involve a disorder of sexual aim, involving the object of one's sexual interest, and the hypersexual disorders involve an increase in the strength of one's sexual drive towards otherwise conventional objects. This is not an absolute distinction, however; for instance, frotteurism or exhibitionism can involve adult females, who would be conventional objects of sexual interest for a heterosexual male, but the erotic activity is aberrant—rubbing up against unconsenting adults or exposing oneself to unconsenting adults. Another difference that separates these two disorders is the fact that paraphilias often involve illegal behaviors and hypersexual disorders legal behaviors, although again this is not an absolute distinction. Sexual masochists or sadists may come to treatment not because of illegal behavior but because of subjective distress or at the behest of a partner; on the other hand, individuals who compulsively visit prostitutes, for instance, could be considered to have a hypersexual disorder, but one that involves illegal activity (at least where prostitution is illegal).

In this two-part series,* we present a necessarily broad overview of paraphilic and hypersexual disorders and their treatment. Relevant citations are included with no pretense of being exhaustive.

DIAGNOSTIC CRITERIA

Paraphilias

The DSM-IV[1] general criteria for paraphilias are shown in Table 1, and the specific paraphilias included in the DSM-IV are listed in Table 2. The DSM-IV also includes a residual category of paraphilia not otherwise specified

*Editor's note: Part 2 of this series will appear in our January 2002 issue.

Table 1. DSM-IV diagnostic criteria for paraphilias

Essential features are

Recurrent, intense sexually arousing fantasies, sexual urges, or behaviors generally involving 1) nonhuman objects, 2) the suffering or humiliation of oneself or one's partner, or 3) children or other nonconsenting persons, that occur over a period of at least 6 months (Criterion A)

and that cause

clinically significant distress or impairment in social, occupational, or other important areas of functioning (Criterion B).

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Table 2. Specific paraphilias listed in the DSM-IV

Exhibitionism: the exposure of one's genitals to an unsuspecting stranger

Fetishism: the use of nonliving objects

Frotteurism: touching and rubbing against a nonconsenting person

Pedophilia: recurrent, intense sexually arousing fantasies, sexual urges, or behaviors involving sexual activity with a prepubescent child or children, generally age 13 years or younger

Sexual masochism: recurrent intense sexually arousing fantasies, sexual urges, or behaviors involving the act of being humiliated, beaten, bound, or otherwise made to suffer

Sexual sadism: recurrent intense sexually arousing fantasies, sexual urges, or behaviors involving acts in which the psychological or physical suffering, including humiliation, of the victim is sexually exciting to the person

Transvestic fetishism: involving cross-dressing in a heterosexual male

Voyeurism: involving the act of observing an unsuspecting person who is naked, in the process of disrobing, or engaged in sexual activity

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Table 3. Examples of paraphilia not otherwise specified listed in the DSM-IV

Telephone scatologia (making obscene phone calls)
Necrophilia (sexual fantasy or activity with corpses)
Partialism (exclusive focus on a part of the body, such as a foot)
Zoophilia (sexual activity with animals)
Coprophilia (sexual excitement associated with feces)
Klismaphilia (sexual pleasure from enemas)
Urophilia (sexual pleasure from urination)

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Table 4. Proposed diagnostic criteria for hypersexual disorder

1. The existence of recurrent, intense, sexually arousing fantasies, sexual urges, or behaviors that persist over a period of at least 6 months and do not fall under the definition of paraphilia.
2. The fantasies, sexual urges, or behaviors cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.
3. The symptoms are not better accounted for by another Axis I disorder (e.g., manic episode, delusional disorder, erotomanic subtype).
4. The symptoms are not due to the direct physiologic effects of a substance (e.g., a drug of abuse or a medication) or a general medical condition.

Reprinted with permission from Stein et al. 2000[10]

(NOS) for paraphilias that do not meet the criteria for any of the other specific paraphilias. The examples of paraphilia NOS listed in the DSM-IV are shown in Table 3.

As any visit to the Internet will demonstrate, many of these behaviors are not seen as pathological or a source of distress at all; indeed there are numerous Internet sites and chat groups for all of the sexual behaviors noted above, including pedophilia. Furthermore, this list by no means exhausts the variety of sexual behaviors that have been named. Money[13] lists 33 categories of unconventional sexual behavior and discusses some of them in detail.[14] The DSM nomenclature referring to sexual psychopathology has been criticized[15, 16] as being vague and not having undergone DSM field trials. Others have argued[17] against inclusion of the paraphilias in the *Diagnostic and Statistical Manual* at all, expressing the view that such an inclusion pathologizes particular consensual sexual activity between adults in the same way that homosexuality was once pathologized in earlier diagnostic nomenclature until is was dropped from the DSM, and that the present classification of sexual disorders merely amounts to a codification of social mores. Moser[18] has argued that what is perceived as "normal" sexual activity is socially relative and that society becomes an agent of control over aberrant sexual expression; he also emphasizes the difficulty in establishing objective criteria in the DSM for diagnosing hypersexuality and suggests that this concept is reflective of a negative environment and negative attitude towards sexuality.

It should be noted that there is a difference between the term "paraphilia" and "sex offender." "Sex offender" is a legal term, whereas the term "paraphilia" denotes a sexual disorder according to the DSM-IV. Not all sex offenders have paraphilias. For instance, in a study by McElroy et al.[19] of 36 men convicted of sexual offenses, only 58% achieved a diagnosis of paraphilia when given structured clinical interviews for DSM-IV Axis I and II disorders.

Hypersexual Disorders

Stein et al.[10] have proposed that the category of "hypersexual disorder" be included in the *Diagnostic and Statistical Manual*; the criteria they propose are shown in Table 4. Kafka[20] has suggested some examples of hypersexual disorder, which are shown in Table 5.

Again, as with many of the paraphilic disorders, these disorders represent a spectrum between sexual behavior that is socially acceptable and nonpathological and behavior that becomes pathological when an individual begins to suffer subjective distress or an impairment in functioning before identifying this as a problem for which he or she seeks treatment. Although, as noted above, several terms have been suggested to refer to such hypersexual behavior, in this article we will use the term "hypersexual disorder" to refer to these nonparaphilic hypersexual behaviors.

Obsessive-Compulsive Spectrum Disorder and Categorization of the Paraphilias and Hypersexual Disorders

Several articles have discussed the location of paraphilic and hypersexual disorders within the spectrum of the obsessive-compulsive disorders (OCDs).[10, 21–26] Certainly, these sexual disorders share elements of obsession and compulsion with other entities on this spectrum, although they differ inasmuch as the obsessions and compulsions involving sexuality are ego-syntonic, consisting of pleasurable sexual thoughts and feelings, and it

Table 5. Examples of hypersexual disorder

1. Compulsive masturbation (where masturbation is the primary sexual outlet even during a stable intimate relationship)
2. Protracted promiscuity (which could include a pattern of engaging in one-night stands, use of prostitutes, massage parlors, "cruising," brief or protracted repetitive sexual affairs, or use of escort services)
3. Pornography dependence (wherein an individual would exhibit a pattern of dependence on visual pornographic materials)
4. Telephone sex dependence (dependence on telephone sex which is time-consuming and costly)
5. Cybersex (wherein individuals would participate excessively in Internet-related sexually oriented chat-rooms or message boards primarily for sexual arousal and attracting)
6. Severe sexual desire incompatibility (such as a romantic affiliation in which excessive sexual desire in one partner produces sexual demands on the other that interfere with the relationship)

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almost always takes the intervention of some external agency to create motivation for change.

Likewise, these sexual disorders are characterized by impulsive behavior, which also characterizes the addictions and other impulse control disorders. Blum et al.[27] have developed the concept of reward deficiency syndrome to tie together addictive, impulsive, and compulsive behavior. The occurrence of obsessions, compulsions and impulsive behavior certainly is characteristic of the addictions and the impulse control disorders, and suggests some common underlying mechanisms associated with different drives (e.g., towards sex, food, or substances of abuse). In its substance dependence and abuse categories, the DSM-IV places emphasis on the degree to which an individual has become dysfunctional, and such a characterization may be a more useful way of conceptualizing paraphilic and hypersexual disorders, once such a disorder has been diagnosed, rather than focusing on a nosological debate as to whether compulsive, obsessive, addictive, or impulsive nomenclature is the most appropriate categorization.

For instance, some exhibitionists may function well in most aspects of their lives and expose themselves until apprehended, and then manage to control themselves after only one arrest. Others progress in a way that is much more extensive and refractory, resulting in repeated and progressively longer jail sentences and loss of job and family. Whether this exhibitionistic behavior is considered compulsive, obsessive, addictive, or impulsive is not the most salient feature of this disorder; the retention or loss of functioning is.

Finally, such conceptualizations may have legal significance. For instance, federal sentencing guidelines provide for downward departures (i.e., sentencing below applicable imprisonment ranges as determined by federal sentencing guidelines) in sentencing in the event that an individual has a "significantly reduced mental ability" … "to control behavior that the defendant knows is wrongful."[28] The degree to which a behavior is "compulsive" "addictive" "obsessive" or "impulsive," inasmuch as it might reflect a lessened degree of control, could certainly be relevant to such a consideration.

EPIDEMIOLOGY AND COST

Epidemiology of Paraphilias

The incidence and prevalence of the paraphilias is unknown. Unlike other psychiatric disorders, which were included in national surveys of the epidemiology of mental disorders,[29, 30] these disorders were not included in such questionnaires. Reasons for this vary, but one significant factor is that many of the paraphilic behaviors are illegal and, in the case of child molestation, mandated reporting is required in the United States and many other countries. Accordingly, the occurrence of the paraphilias may at this point only be inferred from indirect evidence.

Victim reports of rates of childhood sexual abuse or rape document the occurrence of abuse. In an early study of a sample of 930 adult women in the San Francisco area, Russell[31] reported that 31% mentioned the occurrence of at least one episode of extrafamilial abuse before the age of 18. In a British study of 2,019 men and women 15 years of age and older, Baker[32] noted that 12% of women and 8% of men reported that they had been sexually abused by the age of 15. Finkelhor et al.[33] described a national poll in the United States that revealed that 27% of women and 16% of men reported victimization. While criticisms about definitions of abuse have been brought up when these and other studies are cited, nevertheless these numbers do suggest a substantial occurrence of child abuse and thus of individuals with deviant sexual interests who have perpetrated this abuse.

Another source of evidence comes from statistics describing prison or correctional populations. Greenfeld[34] reported that, among 906,000 offenders confined to State prisons in the United States in 1994, 9.7% (88,000) were violent sex offenders. This is probably an underestimate inasmuch as offenders often plea-bargain their offenses to nonsexual crimes.

Retention of an individual under sexual predator statutes requires the state to prove a history of sexually violent acts, the existence of a current mental disorder or abnormality, and that, as a consequence of these two elements, it is likely that future sexually harmful acts will be committed by the individual if he or she is not detained.

Sexual Predator Legislation

Reflecting public concern over sexually aggressive behavior, it is notable that there has been a resurgence of so-called "sexual predator legislation." Originally passed in the 1930s and 1940s,[35] such legislation was condemned by the Group for Advancement of Psychiatry.[36] However, it has resurfaced since the Supreme Court decision *Kansas v. Hendricks*[37] in 1996, with 17 states having passed such legislation by the end of 1999.[38] These sexual predator laws use civil commitment procedures in order to retain sex offenders after they have completed serving criminal sentences for their crimes. Retention of an individual under these statutes generally involves extensive legal procedures, including trials, and requires the state to prove a history of sexually violent acts, the existence of a current mental disorder or abnormality, and that, as a consequence of these two elements, it is likely that future sexually harmful acts will be committed by the individual if he or she is not detained.[38] Such programs have the potential to become extraordinarily costly to society. For example, California is budgeting $349,287,000 to build a new facility to house 1,500 sex offenders by 2003, with an estimated $42,693,000 expenditure per annum to fund 409 level of care positions (personal communication, Bukowski G, California SVP Program, Department of Mental Health, Sacramento, California). The New York Times[39] reported that, as of the year 2000, nearly 900 sex offenders had been committed under these statutes, with the state of Washington estimating that it would cost $110,000 per year to house and treat each of its sex offenders, with annual legal bills for each sex offender of up to $70,000. Furthermore, offenders committed under such legislation are retained and not discharged. In the state of Washington, for instance, since sexually violent predator (SVP) legislation was enacted in 1990, there have been 92 men committed under this legislation, with only 6 having been conditionally released; as of October 31, 2001, there were an additional 60 men retained for trial under SVP commitment proceedings (personal communication, Terrance Ryan, Assistant Attorney General and Section Chief, Mental Health Services, Attorney General's Office, Seattle, Washington). This presents the specter of an ever-increasing number of individuals who are retained with little likelihood of release, with the budgeted monies to care for and treat them increasing dramatically. This information suggests that sexually aggressive behavior and the paraphilias will constitute a significant focus of concern and a significant cost center for society in the years to come.

Hypersexual Disorders

Information on the rates of occurrence of hypersexual disorders is lacking. Black suggests that as much as 5% of the United States population could suffer from compulsive sexual behavior;[2] Carnes has estimated that 3%–6% of the population is affected;[7] and Coleman suggests 5%;[4] however these figures appear to be based on personal estimates and not epidemiological surveys. Kinsey et al.[40] reported that 7.6% of American men from adolescence through 30 years of age reported a total sexual outlet (total number of orgasms achieved through any combination of sexual outlet during a week) of seven or more for at least 5 years, but did not characterize such behavior as constituting a source of distress or impairment. Kafka and Hennen[5] noted that the largest recent survey of American males[41] reported that 3.1% of high-school or college-age males masturbated daily or more than once a day.

ETIOLOGY

The etiology of the paraphilias and the hypersexual disorders is unknown. Various theories have been proposed and researchers have looked for differences in individuals with these disorders compared with controls. These theories are discussed below.

Endocrinological Function

Several studies have examined serum testosterone and sexual activity in nonparaphilic samples. Note that in adult males testosterone is secreted in pulsatile fashion with the pulse height and frequency varying slightly throughout the day and at different times of the year. While these variations are not felt to be significant in routine clinical situations, they are important in research.[42] Brown et al.[43] took serum testosterone concentrations from 101 young adult men and recorded the frequency of sexual activity and level of sexual interest; they reported that serum testosterone concentration did not correlate with sexual activity and interest variables.

However, in a study of four heterosexual couples, Dabbs and Mohammed[44] sampled salivary testosterone concentrations in both males and females on 11 evenings before and after sexual intercourse and on 11 evenings on which there was no intercourse and found that, for both males and females, testosterone increased across the evenings when there was intercourse and decreased when there was none. Pirke et al.[45] sampled testosterone every 15 minutes for 3.5 hours in eight male subjects before, during, and after the showing of a sexually explicit movie and found an average increase of 35% in testosterone compared with control subjects who saw a sexually neutral film.

Paraphilias. Is there any suggestion that endocrinological abnormalities exist in paraphilias? In studies of the paraphilias, Rada et al.[46] found no statistically significant differences in plasma androgen levels of rapists, compared with child molesters and controls. Gaffney and Berlin[47] found no differences in baseline testosterone (T), luteinising hormone (LH), and follicle stimulating hormone (FSH) in three groups composed of 7 pedophiles, 5 nonpedophilic paraphiliacs, and 5 controls; they did find that the pedophilic group differed significantly from the other two groups in having a marked elevation of LH after LHRH infusion. Buhrich et al.[48] found no difference in serum FSH, LH, and plasma testosterone levels in 26 members of a club for heterosexual transvestites compared with controls. Bradford and McLean[49] examined 50 consecutive male sexual offenders and compared them with controls; they found no difference in testosterone levels in the two groups and failed to show any correlation between the degree of violence in the alleged offense and plasma testosterone levels. Therefore, no abnormalities have been detected in endocrinological functioning in the paraphilias aside from the increased responsiveness in the pedophilic group of LH to LHRH infusion in the study by Gaffney and Berlin.[47]

Hypersexual Disorders. We are aware of no studies of endocrinological function in individuals with hypersexual disorders.

Brain Imaging and Neuropsychological Testing

With regard to sexual functioning in individuals without paraphilias or hypersexual disorders, Tiihonen et al.[50] used single photon emission computed tomography (SPECT) to examine eight heterosexual men during orgasm; they reported that cerebral blood flow decreased in all cortical areas except the right prefrontal cortex, where it increased. Stoléru et al.[51] used positron emission tomography to study eight males who were presented with visual sexual stimuli; they found a threefold pattern of activation consisting of bilateral activation of the inferior temporal cortex (a visual association area), activation of the right insula and right inferior frontal cortex (two paralimbic areas), and activation of the left anterior cingulate cortex.

Paraphilic behavior and hypersexuality have been described in many instances of neurological injury, including traumatic brain injury, epilepsy, Tourette's syndrome, and stroke.[52–55]

Paraphilias. A number of studies have examined brain differences in sex offenders based on the suggestion that the temporal lobes of sex offenders have some abnormalities. Hucker et al.[54] examined 41 pedophiles using CT scanning and found that left temporal parietal pathology was noted more often in pedophiles than in controls. In a later study, Hucker et al.[56] compared CT scans of 51 men who had sexually assaulted adult females with 36 nonviolent nonsex offenders and found that right-sided temporal horn dilatation occurred significantly more often in the sadists than in the controls. Wright et al.[57] computed brain area from CT scans of three groups of sex offenders and one group of controls and found that the brains of sex offenders were relatively smaller in the left hemisphere compared with those of the controls.

However, a number of studies have failed to show any consistent imagining or neuropsychological differences. Langevin et al.[58] examined 160 extrafamilial child sexual abusers, 123 incest perpetrators, 108 sexual aggressors against adult females, and 36 nonviolent nonsex offender controls with CT scans and the Halstead-Reitan Neuropsychological Test Battery[59] and found no difference in memory or imaging outcome variables in the groups of sex offenders compared with controls. Langevin et al.[60] examined 36 nonviolent nonsex offenders and 91 incest perpetrators and found no difference in abnormalities on CT scan. Langevin et al.[61] examined 15 male exhibitionists and compared these with 36 nonviolent nonsex offender controls using CT scans, the Wechsler Adult Intelligence Scale,[62] and the Halstead-Reitan Neuropsychological Test Battery; they found no difference between the two groups in terms of CT abnormalities, intellectual ability, or overall neuropsychological impairment. Garnett et al.[63] reported on PET scanning of one sexual sadist and two controls while an erotic audiotape was played and penile circumference was monitored; no distinctive pattern of brain activity was associated with sexual arousal. Hendricks et al.[64] evaluated 16 child molesters with CT scans and regional cerebral blood flow assessments (rCBF) and found that the child molesters had lower rCBF values compared with controls.

Taken together, these results are mixed, with some studies finding neuropsychological and brain-imaging abnormalities in individuals with a history of child molestation and/or paraphilias compared with controls and some not.

Occurrence in Primates

Paraphilias. Are there animal models of the paraphilias or has paraphilic behavior been seen to occur in primates? Masturbation has been observed in both caged and wild primates.[65] Aggression occurs in a variety of nonhuman primates in the context of sexual behavior[66] and orangutan males have been described as engaging in forced sexual activity with females which has been referred to by some scientists as "rape."[67] Vassey has reviewed this literature[68] and has reported on same-sex behavior in female Japanese macaques under conditions where males are available.[69] The closest approximation of paraphilic activity the authors have heard of was related in an anecdote by Dixson (personal communication; Alan Dixson D.Sc., Director of Conservation and Science, Zoological Society of San Diego, California), in which he described an observation on captive chimpanzees. Adult males had been habituated to provide semen samples by manual stimulation by veterinary workers who wore disposable gloves. Eventually the chimpanzees became conditioned to the sight of the gloves so that, as the workers put on gloves in preparation for taking the chimpanzees out of their cages to obtain samples, the animals developed erections and presented to the front of the cage to accept stimulation, suggesting habituation.

The Monoamine Hypothesis

Kafka,[70] drawing on a variety of observations, has suggested that a disturbance involving monoamine (norepinephrine, dopamine, and serotonin) metabolism may be responsible for pathological sexual behavior. The evidence he cites is indirect, but includes the involvement of monoamines in appetitive behaviors of laboratory animals, the role of monoamine systems in human and animal psychopathology, including impulsivity, anxiety, depression, compulsivity, and antisocial behavior, many of which characterize paraphiliacs, and the efficacy of selective serotonin reuptake inhibitors, which modulate serotonin, in controlling deviant sexual behavior. Other studies have related low serotonin levels to aggression[71] and suicidal behavior.[72] However, a vast number of neurotransmitters and systems are important to sexual behavior,[73–75] and we are aware of no human studies that have directly demonstrated abnormalities in neurotransmitters in either hypersexual or paraphilic populations.

The Imprinting Hypothesis

Imprinting has been suggested as one explanation for some of the paraphilias.[76, 77] Borrowed from ethological concepts,[78, 79] this theory suggests that, in adolescence, humans, as do animals, progress through a certain period of sexual development during which they are vulnerable to the imprinting of various methods or stimuli for sexual arousal into their repertoire of sexual arousal. Through a particular "sentinel" experience occurring as someone is aroused or which leads an individual to become aroused, such as seeing a couple making love or becoming aroused while being naked outdoors, this experience becomes imprinted and associated with sexual arousal (the above examples could lead to voyeurism or exhibitionism, respectively). The individual might then masturbate in private or reproduce this experience repeatedly and preferentially.

Social Learning Theory

Social learning theory suggests that deviant sexual behaviors are learned in the same manner by which normative sexual behaviors and expressions are learned.[80, 81] In two large-scale national surveys of sexual behavior by Kinsey et al.[40] and Laumann et al.,[41] both groups of researchers concluded that, aside from anatomy, most other aspects of human sexual behavior were the product of learning and conditioning, with such learning coming about through cultural factors including observation and modeling of various behaviors, with this learning then being reinforced through masturbation. This view has been repeatedly challenged by Diamond,[82, 83] who suggests the primacy of biological determination of gender identity. Biological determination is supported by the vast number of sexually dimorphic structures and behaviors which have been identified in animals and man.[84]

A relatively recent theoretical perspective, social constructionism, posits that sociocultural factors and social context are essential in how individuals perceive themselves and their sexuality.[85, 86] Gagnon has emphasized scripting theories of sexual conduct (structured patterns of sexual interactions that are embedded in each culture).[87]

Courtship Disorder

Freund et al.[76, 88–90] have suggested the concept of "courtship disorder" to explain the paraphilias. Freund notes that usually courtship is characterized by a set of preferences for a sequence of erotic sensory stimuli and erotic activities and suggests that in paraphiliacs this has been disrupted. Freund and Kolarsky[90] described an idealized sequence of courtship behaviors as involving four phases: first, a finding phase (looking for a potential partner; if a patient were "trapped" in this phase, he would become a voyeur); second, an affiliative phase (verbal and nonverbal communications with a prospective partner; with deviancy resulting in exhibitionism); third, a tactile phase (in which physical contact is made; with a deviation resulting in frotteurism), and, fourth, a copulatory phase (in which sexual intercourse occurs; with a deviancy resulting in rape). These concepts are more descriptive than explanatory.

Obsessive-Compulsive Spectrum Disorder

Several authors[22, 23, 91, 92] have suggested that paraphilias fall within part of a broader spectrum of obsessive-

compulsive disorders, with other entities, including kleptomania, pathological gambling, and perhaps body dysmorphic disorder, also occurring in this spectrum. Indeed, the phenomenology of the paraphilias and the hypersexual disorders suggests that there is very much of an obsessive element, with some individuals preoccupied mentally with sexual material for most of their waking life, and with individuals experiencing a compulsion to act out sexually, be it through masturbation, sexual intercourse, or paraphilic behaviors. The apparent responsiveness of these disorders to medication effective for obsessive-compulsive disorder also suggests some similarity.[20, 93–95] One important difference between obsessive-compulsive disorder and the paraphilias is the degree to which thoughts and compulsions are ego-syntonic versus ego-dystonic. In obsessive-compulsive disorder, obsessions and compulsions are viewed as something unwanted and not pleasurable, whereas sexual obsessions and compulsions are often highly pleasurable and ego-syntonic and it takes the occurrence of legal or other consequences to begin to make these ego-dystonic.

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Psychodynamic Theories

These are thoroughly reviewed by Goodman,[96] Rosen,[97–99] and Stoller.[100, 101] Psychoanalytic theory relates the causes of "perversion" to early childhood. Freud emphasized the notion that perversion may be a regression to perverse sexuality, an early state of sensual gratification. Stoller has hypothesized that a perversion is the result of unresolved intrapsychic conflicts emanating from an individual's past; perversion is "the result of family dynamics, that, by inducing fear, force the child who yearns for the full immersion in the oedipal situation… to avoid it" (p. xvii).[100] He theorizes that perversion is the erotic form of hatred, primarily motivated by hostility, and is a state in which one wishes to harm an object. According to Stoller, this "takes form in a fantasy of revenge hidden in the actions that make up the perversion and serves to convert childhood trauma to adult triumph" (p 4).[100] While psychodynamic and personality factors are frequently important in the treatment of individuals with these disorders, there is a lack of organized studies exploring psychodynamic treatment. There are no empirical data to indicate that psychodynamic therapy as a sole treatment modality is effective.[20, 102] However, psychodynamic psychotherapy can help the individual with developmental antecedents or other dynamic issues.[20]

Genetics

There has been relatively little investigation of the genetics of paraphilias or hypersexual disorders. Schiavi et al.[103] compared XYY men, XXY men, and controls and found significantly greater unconventional sexual activity and fantasy in the XYY group compared with the other two groups. Comings[104] reported a positive association between deviant sexual behaviors and the degree of genetic loading for the *Gts* gene(s) in a study of individuals with Tourette's syndrome and their relatives. Hamer et al.[105] reported on a study suggesting that an X-linked gene plays a role in male homosexuality. Others have suggested that dopamine receptor genes and pathways may be involved in a "reward deficiency syndrome" and various addictive behaviors, including the paraphilias.[27, 106]

PHENOMENOLOGY OF PARAPHILIAS

Co-Occurrence of Multiple Paraphilias

It is well established that multiple paraphilias coexist or occur sequentially in many individuals. In their study of 561 nonincarcerated paraphiliacs, Abel et al.[107, 108] reported that only 10.4% of this group had had experience with only one paraphilia; most had diagnoses of more than one paraphilia. Likewise, Bradford et al.[109] interviewed 443 adult males consecutively evaluated at the Sexual Behaviors Clinic at the Royal Ottawa Hospital and reported that most individuals had multiple sexual deviations. Both groups noted that paraphiliacs had a tendency to start with one behavior and move to other deviancies.

Lack of Offender Profile

In perhaps the most thoroughgoing structured study of sex offenders we have encountered, Gebhard et al.[110] interviewed some 1,356 white males in prison who had been convicted for one or more sex offenses in the 1940s and 1950s and concluded that there was no common

denominator distinguishing all sex offenders and that there was a wide variety of types and subtypes defying any attempts to generalize. The Association for the Treatment of Sexual Abusers in its manual "Ethical Standards and Principles for the Management of Sexual Abusers"[111] says that there is no known set of personality characteristics that differentiate a sexual abuser from a nonabuser and that psychological profiles cannot be used to prove or disprove an individual's likelihood of acting in a sexually deviant manner. After reviewing studies in the field, Okami and Goldberg[112] concluded that little could be said regarding personality characteristics of either pedophiles or sex offenders and that there were substantial problems in methodology, sample characteristics, and operational definitions in the studies they had reviewed that investigated this relationship.

Male Predominance

Paraphilias. Most studies of paraphilias have exclusively involved males,[11, 107, 109] although female paraphliacs and offenders have been described.[113–116]

Hypersexual disorders. Black et al.[117] found that, in a sample of 36 individuals reporting compulsive sexual behavior, 22% were female. Similarly, Carnes and Delmonico[118] reported that 80% of a sample of 290 persons surveyed at a center specializing in the treatment of sexual addiction were male, and that 84% of 76 married individuals attending a 12-step program for sexual addicts were male.

History of Victimization of Sex Offenders

Paraphilias. Garland and Dougher[119] reviewed the literature on histories of sexual abuse in sexual offenders and found a great deal of variance, with childhood and adolescent sexual contact reported by 3%–16% of nonoffenders, 10%–47% of nonsexual offenders, 0%–57% of sex offenders of children, and 8%–57% of other sex offenders. They concluded that sexual contact with an adult during childhood or adolescence was neither a necessary nor sufficient cause of adult sexual interest in children or adolescents. Hanson and Slater[120] did a thorough review of the literature of studies in this area and found that, on average, 28% of sex offenders reported a history of sexual victimization as children compared with about 10% in community samples of nonoffending individuals; however this rate in sex offenders was similar to that found in other nonsexual offender populations. They concluded that there did not appear to be a specific or causal relationship between abuse and abusing, but rather that more general childhood maltreatment led to behavioral and psychological problems in adulthood. It should be noted that various surveys of sexual offenders have relied largely on self-report, which is suspect because it is often given as exculpatory information by sex offenders seeking leniency or to obviate their guilt.

Hypersexual Disorders. Coleman[4] and Carnes[7] have suggested that childhood sexual abuse could be a risk factor for the development of compulsive sexual behavior. Carnes and Delmonico[118] reported that 78% of a sample of 290 persons treated for hypersexual behavior reported childhood sexual abuse. In a sample of 36 subjects, Black et al.[117] found that 31% had reported sexual abuse; Kafka and Prentky[6] reported a rate of 28%.

Onset and Course

Paraphilias. For many individuals, paraphilias have their onset in adolescence. In a sample of 411 adult sex offenders, 58.4% reported the onset of deviant sexual arousal prior to the age of 18.[121] Other studies have found that the age of onset ranged from 13 to 15.5 years.[122] Kafka and Prentky[6] reported a mean age of onset of 21 years for men with paraphilias and 14 years for men with paraphilia-related disorders.

Hypersexual disorders. Black et al.[117] reported a mean age of onset for hypersexual disorders of 18. Goodman[96] reported that the frequency of addictive sexual behavior usually peaks between the ages of 20 and 30, and then gradually declines.

Lack of Internal Motivation for Change

Paraphilias. Individuals with paraphilias often lack motivation to change their behavior, because the sexual behavior they engage in is pleasurable and often ego-syntonic; consequently, intervention of the legal system is usually required to create negative consequences to establish motivation for change.

Hypersexual disorders. In the case of hypersexual individuals, it is often a spouse or significant other who insists that the individual stop his behavior and seek treatment.

COMORBIDITY

Affective Disorders

Several studies have demonstrated the coexistence of affective disorders in individuals with paraphilias and/or hypersexual disorders.

Paraphilias. McElroy et al.[19] interviewed 36 consecutive male sex offenders admitted to a residential treatment facility and found that 61% had a mood disorder and 36% had bipolar disorder. Raymond et al.[123] interviewed 45 male subjects with pedophilia who were participating in resident or outpatient sex offender treatment programs and found that 93% of subjects met criteria for some Axis I disorder other than pedophilia, with the lifetime prevalence of a mood disorder in this group being 67%. Galli et al.[124] interviewed 22 adolescent

males who had sexually molested other children and found that 82% had a mood disorder and that 55% had a bipolar disorder. In an uncontrolled sample of 26 individuals with both paraphilias and paraphilia-related disorders, Kafka and Prentky[125] reported that 62% had major depression.

Hypersexual disorders. Black et al.[117] reported that 39% of 36 subjects with compulsive sexual behavior met criteria for major depression.

These rates can be compared with those from larger normative samples: the epidemiological catchment area survey found a lifetime prevalence of major depression of 6%,[30] while the National Comorbidity Study reported a lifetime prevalence of major depression of 17%.[29] The lifetime diagnosis of mania was 1% in both of these studies.

Substance Abuse and/or Dependence Disorders

Substance abuse and/or dependence disorders have been found in populations with paraphilias and hypersexual disorders to varying degrees.

Paraphilias. McElroy et al.[19] found that 83% of their sample of sex offenders had a substance use disorder. Raymond et al.[123] found that 60% had a psychoactive substance use disorder. Galli et al.[124] found that 50% of her sample of 22 adolescents who had sexually molested children had a substance use disorder. Langevin and Lang[126] administered the Michigan Alcoholism Screening Test (MAST)[127] and the Drug Abuse Screening Test (DAST)[128] to 461 male sex offenders and found that half of the sex offenders were "alcoholics" based on the MAST and that one fifth had a drug abuse problem according to the DAST. Bradford and McLean[49] found a correlation between a history of serious alcohol abuse and dependence and a high-violence group in his study of 50 consecutive male sexual offenders. In their sample of 26 individuals, some with paraphilias and some with paraphilia-related disorders, Kafka and Prentky[125] found a 38% rate of alcohol abuse/dependence and a 33% rate of drug abuse/dependence.

Hypersexual disorders. Black[3] noted that alcohol abuse/dependence was present in 58% of individuals with compulsive sexual behavior he examined and that drug abuse/dependence was present in 33%. In a survey of almost 1,000 persons admitted for inpatient treatment of compulsive sexual disorders, Carnes[7] reported that 42% were chemically dependent.

These figures can be compared with larger normative samples: the epidemiological catchement area survey found a lifetime prevalence of alcohol abuse/dependence of 16% and of drug abuse/dependence of 6%,[30] while the National Comorbidity Study found a prevalence of alcohol abuse/dependence of 24% and a prevalence of drug abuse/dependence of 12%.[29]

Attention-Deficit Hyperactivity Disorder

Attention-deficit/hyperactivity disorder (ADHD) has also been identified in a substantial number of studies. Galli et al.[124] found that 71% of her sample of 22 adolescents who had sexually molested children had a diagnosis of attention-deficit hyperactivity disorder, and that 94% had a diagnosis of conduct disorder. In an uncontrolled study, Kafka and Prentky[129] found that 50% of their paraphilia group and 16.7% of their paraphilia-related disorder group had childhood ADHD. Kavoussi et al.[130] found that 48.3% of outpatient male adolescent sexually offenders had a diagnosis of conduct disorder and that 6.9% had a diagnosis of attention-deficit disorder.

Anxiety-Impulse Disorders

Paraphilias. McElroy et al.[19] noted that 39% of their sample of convicted sexual offenders had an impulse control disorder and that 36% had an anxiety disorder. Raymond et al.[123] identified an anxiety disorder in 64% of their sample.

Hypersexual disorders. Black et al.[117] found that 6% of patients with compulsive sexual behavior also had a diagnosis of pathological gambling. In his sample of 1,000 persons admitted for inpatient treatment of compulsive sexual disorders, Carnes[7] reported that 26% were compulsive spenders and 5% were compulsive gamblers.

Personality Disorders

McElroy et al.[19] found that 72% of their sample of 36 men convicted of sexual offenses met DSM-IV criteria for antisocial personality disorder. Black et al.[117] found an increased incidence of personality disorders in their sample of 36 subjects with sexually compulsive behavior compared with normative data. Rice and Harris[131] demonstrated an interaction of phallometrically measured sexual deviance and high scores on the Hare Psychopathy Checklist,[132] with men who had high scores on the Hare Checklist and sexual deviance having the greatest risk of relapse.

Other Disorders

Paraphilias. McElroy et al.[19] noted that 17% of their sample of adult sex offenders had an eating disorder. Raymond et al.[123] found that 24% of their sample of sex offenders had a diagnosis of sexual dysfunction.

Hypersexual disorders. Carnes[7] reported that 38% of patients admitted for inpatient treatment of sexual addiction had an eating disorder.

SUMMARY AND CONCLUSIONS

In summary, many paraphilias exist and constitute a significant source of distress to the individuals afflicted with them and to society in the form of victimization and costs for incarceration and treatment. The DSM-IV contains a number of well-known paraphilias but seems to fall short in its failure to categorize a number of other behaviors of a hypersexual nature, some of which have become apparent only with the advent of modern telecommunications and the Internet, and it would seem to be of benefit to expand the DSM-IV to include these hypersexual disorders.

The paraphilias and hypersexual disorders often co-occur and have much in common in terms of their phenomenology and comorbidity. Little is established in terms of the etiology or biology of these disorders. Indeed, knowledge of the development of patterns of sexual interest and sexual orientation in individuals with typical sexual interest and activity is lacking. Of the paraphilias and hypersexual disorders, the paraphilias have been more studied, but well-designed and well-controlled studies investigating the etiology and phenomenology of both sets of disorders are lacking.

Available information suggests that both disorders begin in adolescence, afflict mostly males, and are not associated with any personality types or other psychometric predictors. These entities appear to be associated with an increased incidence of mood disorders, anxiety and impulse disorders, alcohol and substance abuse disorders, personality disorders, and a variety of other psychiatric entities, although well-controlled studies have not been done. Development of motivation for change is problematic for individuals afflicted with either or both of these disorders, and the intervention of the legal system or efforts of a family member or significant other are often required to bring an individual into therapy.

In the second article in this series, we will discuss the assessment and treatment of paraphilias and hypersexual disorders.

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