PART I

OVERVIEW

CHAPTER 1

Mental Disorders as Discrete Clinical Conditions: Dimensional versus Categorical Classification

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"In *DSM-IV,* there is no assumption that each category of mental disorder is a completely discrete entity with absolute boundaries dividing it from other mental disorders or from no mental disorder" (American Psychiatric Association [APA], 2000, p. xxxi). This carefully worded disclaimer, however, is somewhat hollow, as it is the case that "*DSM-IV* is a categorical classification that divides mental disorders into types based on criterion sets with defining features" (APA, 2000, p. xxxi). Researchers and clinicians, following this lead, diagnose and interpret the conditions presented in *DSM-IV* as disorders that are qualitatively distinct from normal functioning and from one another.

The question of whether mental disorders are discrete clinical conditions or arbitrary distinctions along dimensions of functioning is a long-standing issue (Kendell, 1975), but its significance is escalating with the growing recognition of the limitations of the categorical model (Widiger & Clark, 2000; Widiger & Samuel, 2005). "Indeed, in the last 20 years, the categorical approach has been increasingly questioned as evidence has accumulated that the so-called categorical disorders like major depressive disorder and anxiety disorders, and schizophrenia and bipolar disorder seem to merge imperceptibly both into one another and into normality . . . with no demonstrable natural boundaries" (First, 2003, p. 661). In 1999, a *DSM-V* Research Planning Conference was held under joint sponsorship of the APA and the National Institute of Mental Health (NIMH), the purpose of which was to set research priorities that would optimally inform future classifications. One impetus for this effort was the frustration with the existing nomenclature.

> In the more than 30 years since the introduction of the Feighner criteria by Robins and Guze, which eventually led to *DSM-III,* the goal of validating these syndromes and discovering common etiologies has remained elusive. Despite many proposed candidates, not one laboratory marker has been found to be specific in identifying any of the *DSM*-defined syndromes. Epidemiologic and clinical studies have shown extremely high rates of comorbidities among the disorders, undermining the hypothesis that the syndromes represent distinct etiologies. Furthermore, epidemiologic studies have shown a high degree of short-term diagnostic instability for many disorders. With regard to treatment, lack of treatment specificity is the rule rather than the exception. (Kupfer, First, & Regier, 2002, p. xviii)

DSM-V Research Planning Work Groups were formed to develop white papers that would set an effective research agenda. The Nomenclature Work Group, charged with addressing fundamental assumptions of the diagnostic system, concluded that it will be "important that consideration be given to advantages and disadvantages of basing part or all of *DSM-V* on dimensions rather than categories" (Rounsaville et al., 2002, p. 12).

The purpose of this chapter is to review the *DSM-IV* categorical diagnosis. The chapter begins with a discussion of fundamental categorical distinctions, including the boundaries with normality and among the existing diagnoses (the boundary with physical disorders was discussed briefly in a prior version of this chapter; Widiger, 1997). Reasons for maintaining a categorical model will then be considered. The chapter concludes with a recommendation for an eventual conversion to a more quantitative, dimensional classification of mental disorders.

BOUNDARY WITH NORMALITY

"In *DSM-IV,* each of the mental disorders is conceptualized as a clinically significant behavioral or psychological syndrome or pattern that occurs in an individual and that is associated with present distress (e.g., a painful symptom) or disability (i.e., impairment in one or more important areas of functioning) or with a significantly increased risk of suffering death, pain, disability, or an important loss of freedom" (APA, 2000, p. xxxi). If one considers the fundamental, defining features of a mental disorder, it is perhaps apparent that it would not be realistic for a qualitative distinction between normal and abnormal functioning to exist. This will be illustrated with respect to dyscontrol, impairment, and pathology—fundamental components of most concepts of mental disorder (Bergner, 1997; Klein, 1978, 1999; Spitzer & Williams, 1982; Wakefield, 1992; Widiger & Sankis, 2000; Widiger & Trull, 1991).

Dyscontrol

Central to the concept of a mental disorder is dyscontrol (Bergner, 1997; Klein, 1999; Widiger & Trull, 1991). A mental disorder as an "*involuntary* organismic impairment in psychological functioning" (Widiger & Trull, 1991, p. 112; our emphasis). "Involuntary impairment remains the key inference" (Klein, 1999, p. 424). Dyscontrol is not within the concept of a physical disorder, but it is fundamental to a mental disorder,

as the latter concerns impairments to feelings, thoughts, and behaviors over which normal, healthy persons attempt to exert volitional or regulatory control.

Persons who freely choose to engage in harmful or impairing behaviors would not be said to have a mental disorder. Presumably, persons can choose to consume alcohol, take anabolic steroids, shoot heroin, gamble, steal, assault, or engage in deviant sexual acts without being compelled to do so by the presence of a mental disorder. Gambling, drug usage, theft, assaults, and deviant sexual acts can be harmful and maladaptive, but the occurrence of a harmful (or deviant) act would not itself constitute a mental disorder (Gorenstein, 1984; Wakefield, 1992; Widiger & Trull, 1991). Similarly, to the extent that a person can control, modulate, manage, or regulate painful or harmful feelings of sadness, anxiety, or anger, the person would not be considered to have a mood or anxiety disorder (Widiger & Sankis, 2000). "It is the ability to flexibly adjust the way one regulates one's emotions to environmental exigencies that is related to mental health" (Gross & Munoz, 1995, p. 151). It is when a person lacks sufficient control of mood, anxiety, or a harmful behavior pattern that a person might be diagnosed with a mental disorder (Frances, Widiger, & Sabshin, 1991).

There is, however, no qualitative distinction between the presence and absence of self-control. It is not even clear how much volitional or regulatory control a normal, healthy person has over adaptive, healthy behaviors (Bargh & Ferguson, 2000; Howard & Conway, 1986; Kirsch & Lynn, 2000; Wegner & Wheatley, 2000). Both normal and abnormal human functioning is, at best, the result of a complex interaction of apparent volitional choice with an array of biogenetic and environmental determinants.

A continuum (or ambiguity) of self-control is particularly evident in those disorders that involve behaviors that provide immediate benefits or pleasures to the person, such as pedophilia, intermittent explosive disorder, transvestic fetishism, kleptomania, antisocial personality, bulimia nervosa, anorexia nervosa, pathological gambling, and substance-related disorders such as alcohol abuse, cocaine abuse, anabolic steroid abuse, and nicotine dependence. These disorders are difficult to diagnose and are often controversial precisely because there is no distinct point at which dyscontrol occurs (Widiger & Smith, 1994). At one time, persons with alcohol dependence were thought to have a discrete pathology that rendered them entirely incapable of any control of their drinking. However, there is now sufficient research to indicate that persons vary in the extent to which they have inadequate control (Hyman, 2005; Kalivas & Volkow, 2005; Peele, 1984). Treatment for the purpose of controlled drinking is controversial because there is no absolute point of demarcation and persons who lack sufficient control will also lack an adequate awareness of their dyscontrol (Vaillant, 1995). In sum, determination of adequate versus inadequate self-control is fundamental to many social and clinical decisions, but the boundary is at best grossly ill-defined and poorly understood (Alper, 1998; Hyman, 2005; Kalivas & Volkow, 2005).

Impairment

An additional fundamental feature of mental disorders is impairment (APA, 1994, 2000; Wakefield, 1992; Widiger & Trull, 1991). "The definition of mental disorder in the introduction to *DSM-IV* requires that there be clinically significant impairment" (APA, 2000, p. 8). The purpose of this requirement is to distinguish between

a mental disorder and simply a problem in living. "The ever-increasing number of new categories meant to describe the less impaired outpatient population raises the question of where psychopathology ends and the wear and tear of everyday life begins" (Frances, First, & Pincus, 1995, p. 15).

> To highlight the importance of considering this issue, the criteria sets for most disorders include a clinical significance criterion (usually worded ". . . causes clinically significant . . . impairment in social, occupational, or other important areas of functioning"). This criterion helps establish the threshold for the diagnosis of a disorder in those situations in which the symptomatic presentation by itself (particularly in its milder forms) is not inherently pathological and may be encountered in individuals for whom a diagnosis of "mental disorder" would be inappropriate. (APA, 2000, p. 8)

DSM-III-R (APA, 1987) failed to include this requirement within the criterion sets for many of the disorders, contributing to a confusion of apparently harmless deviances, eccentricities, peculiarities, or annoyances with the presence of a mental disorder (Frances et al., 1991). For example, in *DSM-III-R* the attention-deficit hyperactivity and oppositional defiant disorders were diagnosed even if the behaviors resulted in "only minimal or no impairment in school and social functioning" (APA, 1987, pp. 53, 58). Similarly, transvestic fetishism could be diagnosed with *DSM-III-R* simply on the basis of intense sexual urges, fantasies, and behaviors involving cross-dressing that continued for more than six months (APA, 1987). A man who engaged in this behavior for longer than six months but experienced no impairment in functioning would still have been considered in *DSM-III-R* to have been mentally ill solely because he engaged in deviant sexual acts for longer than six months. It is possible that a six-month duration is a valid indicator for impairment (as well as dyscontrol) but (assuming that volitional behavior does exist) deviant sexual preferences could also be largely harmless. Therefore, *DSM-IV* required that "the fantasies, sexual urges, or behaviors cause clinically significant distress or impairment in social, occupational, or other important areas of functioning" (APA, 1994, p. 531).

However, nowhere in *DSM-IV* is a "clinically significant" impairment defined, not even within the section of the manual identified by the heading "Criteria for Clinical Significance" (APA, 2000, p. 8). It is only stated that this "is an inherently difficult clinical judgment" (APA, 2000, p. 8), and it is advised that the clinician consider information obtained from family members and other third parties. Frances et al. (1995) in fact stated that "the evaluation of clinical significance is likely to vary in different cultures and to depend on the availability and interests of clinicians" (p. 15). Absence of a clear basis for the judgment has also helped fuel the considerable controversy of premenstrual dysphoric disorder, a mental disorder that is diagnosed when normal premenstrual experiences (that occur in a substantial proportion of normal adult women) reach an ill-defined level of clinically significant impairment (Winstead & Sanchez, 2005).

Spitzer and Williams (1982), the original authors of the *DSM-IV* definition of mental disorder, defined a clinically significant impairment as that point at which the attention of a clinician is indicated. "There are many behavioral or psychological conditions that can be considered 'pathological' but the clinical manifestations of which are so mild that clinical attention is not indicated" (p. 166). They provided three examples: caffeine withdrawal, jet lag syndrome, and insomnia because of

environmental noise. Impairments in each case were considered by Spitzer and Williams to be too small to be "justified as syndromes that were clinically significant to mental health professionals" (p. 166). These three examples, however, proved to be ironic, as jet lag syndrome was actually included within *DSM-III-R* as a variant of sleep-wake schedule disorder (APA, 1987, p. 306); caffeine withdrawal was subsequently included in the appendix to *DSM-IV* (APA, 1994); and a strong case has been made for the inclusion of caffeine dependence (Hughes, Oliveto, Helzer, Higgins, & Bickel, 1992).

What is considered to be a sufficient level of impairment to warrant treatment probably varies substantially across patients and across clinicians (Samuel & Widiger, in press) as well as often being below the threshold for many of the existing *DSM-IV* criterion sets. Clark, Watson, and Reynolds (1995) documented well the reliance of clinicians on the category of "not otherwise specified" (NOS) to diagnose subthreshold cases. Whenever this catchall diagnosis is included within a study, it is often the most frequent diagnosis, as in the case of mood disorders (Angst, 1992), dissociative disorders (Spiegel & Cardena, 1991), and personality disorders (Verheul & Widiger, 2004).

New additions to the diagnostic manual rarely concern newly discovered forms of psychopathology; instead, they are typically efforts to plug holes in between existing diagnosis and normal functioning (as well as filling gaps among the existing diagnoses). For example, acute stress disorder is essentially posttraumatic stress disorder with a shorter duration; recurrent brief depressive disorder is major depression with shorter episodes; mixed anxiety-depressive disorder concerns subthreshold cases of mood and anxiety disorders; binge eating disorder concerns subthreshold cases of bulimia nervosa; and mild neurocognitive disorder concerns subthreshold cases of dementia, delirium, or amnestic disorder (Frances et al., 1995). A fundamental difficulty shared by all of these diagnoses is the lack of a clear distinction with normal functioning. Two cases that illustrate well the absence of a clear boundary between normal and abnormal functioning are minor depressive disorder (which is considered to be a mental disorder, although not yet officially recognized) and age-related cognitive decline (which is not considered to be a mental disorder).

Minor depressive disorder was a new addition to *DSM-IV* that attempted to plug the gap between *DSM-III-R* mood disorder and normal sadness. There is considerable reluctance to add a new diagnosis for subthreshold depression (Pincus, McQueen, & Elinson, 2003), but it has been estimated that up to 50% of depressive symptomatology is currently being treated by primary care physicians without any consultation or involvement of a mental health clinician in part because the depression is below the threshold of a mood disorder diagnosis (Munoz, Hollon, McGrath, Rehm, & VandenBos, 1994). Many of these persons would meet the *DSM-IV* criteria for minor depressive disorder. However, it is acknowledged in *DSM-IV* that "symptoms meeting . . . criteria for minor depressive disorder can be difficult to distinguish from periods of sadness that are an inherent part of everyday life" (APA, 2000, p. 776). Only two distinctions are provided, one of which is a two-week duration. If a person is sad for less than two weeks, it is normal sadness. If it lasts longer than two weeks, it is a mental disorder. This is comparable to diagnosing cross-dressing as a transvestic fetishism if it is done longer than six months (APA, 1987). The second distinction is that "the depressive symptoms must cause clinically significant distress or impairment" (APA, 2000, p. 776) but, again, clinical significance is left undefined.

Age-related cognitive decline was a new addition to the section of the manual for conditions that are not mental disorders but might be the focus of clinical attention. "Cognitive decline in the elderly can be considered dimensionally . . . , involving aging-associated cognitive decline, mild cognitive impairment, and dementia" (Caine, 1994, p. 335). "It may be very difficult to establish an arbitrary or numerical level where a disease state should be proclaimed" (Caine, 1994, p. 334). Age-related cognitive decline concerns "problems remembering names or appointments or . . . difficulty in solving complex problems" (APA, 2000, p. 740). Persons with this condition are often troubled by their cognitive deterioration and they seek the help of clinicians who specialize in the treatment of dementia, thereby meeting the threshold for a clinically significant level of impairment proposed by Spitzer and Williams (1982). However, the *DSM-IV* Task Force decided that age-related cognitive decline should not be classified as a mental disorder because the decline in cognitive functioning is the result of "the aging process that is within normal limits given the person's age" (APA, 2000, p. 740). The level of impairment is sufficient to warrant professional intervention but it is not considered to be a mental disorder because the level of impairment is normative for that time in life. One might question, however, whether being close to the norm is any more relevant for a diagnosis than being deviant from the norm (Frances et al., 1991; Gorenstein, 1984). The fact that age-related cognitive decline is the result of the normal (i.e., common) process of aging does not indicate that it is adaptive, healthy, or without an underlying neuropathology. The aging process is part of the explanation for the development of neuropathology. Fortunately, physicians do not apply the same reasoning by judging that deteriorations in the functioning of one's vision, liver, or bladder are not disorders because they are simply the result of aging and are common to persons within one's age group.

Pathology

Fundamental to many definitions of mental disorder is the presence of some form of pathology (Klein, 1978; Wakefield, 1992, 1997). "The necessary crucial inference is that something has gone wrong, not simply that something is undesirable or rare" (Klein, 1999, p. 421). Clinicians do not treat normal, healthy functioning; clinicians treat pathologies in cognitive, interpersonal, neurochemical, or psychodynamic functioning. Textbooks of psychopathology, such as this one, are largely efforts to identify and characterize pathologies that are the bases for each respective mental disorder. Presumably, there are persons who lack these pathologies. Such persons could be described as having normal, healthy psychological functioning. The boundary between normal and abnormal psychological functioning might then be identified by the presence versus absence of a respective pathology (Klein, 1978).

Missing from the diagnostic criterion sets in *DSM-IV,* however, are references to underlying pathologies (Wakefield, 1997). Explicit within the *DSM-IV* definition of mental disorder is that the condition "must currently be considered a manifestation of a behavioral, psychological, or biological dysfunction in the individual" (APA, 2000, p. xxxi) but few, if any, of the criterion sets refer explicitly to a behavioral, psychological, or biological dysfunction or abnormality. The diagnostic criterion sets emphasize instead the distress or impairment that is presumably the manifestations of an underlying pathology. Perhaps inclusion of the underlying pathology within a diagnostic criterion set would provide a

scientifically and clinically meaningful distinction between a respective mental disorder and normal (nonpathological) functioning (Spitzer & Wakefield, 1999; Wakefield, 1997; Wakefield & Spitzer, 2002).

A limitation of this proposal, however, is the absence of consensus as to fundamental pathologies that should be required. Pathologies are not currently included within diagnostic criterion sets in part because there is insufficient empirical support favoring one particular cognitive, interpersonal, neurochemical, or psychodynamic model of pathology over another (Widiger, 2004). Wakefield (1997), for example, indicated that in order to provide a meaningful distinction between major depressive disorder and normal bereavement, it is "necessary to formulate some account . . . of the evolutionary programming of the mechanisms with respect to what kinds of triggering circumstances are supposed to cause which kinds of responses (e.g., loss-response mechanisms are designed so that perceptions of major losses trigger roughly proportional sadness responses)" (p. 647). Wakefield's (1992) conceptualization of mental disorder is tied to evolutionary theory. Evolutionary theory has enriched current understanding of the etiology and pathology of many mental disorders but it is unclear whether the normal and pathologic behavioral response mechanisms from the perspective of evolutionary theory can be adequately specified for the purposes of a clinician's diagnosis. In addition, because it is a model of psychopathology that is derived from a particular theoretical perspective, it may not be capable of serving as a general definition of mental disorder that would be compatible with or suitable for alternative theoretical models (Bergner, 1997; Lilienfeld & Marino, 1999; Widiger & Sankis, 2000).

Even if clinicians and researchers agreed on a particular theoretical model of pathology, it is unclear whether qualitative distinctions between normal functioning and abnormal pathologies could be identified. Klein (1999) believes that there are qualitative distinctions between normal and abnormal neurochemical functioning that would provide a compelling basis for classification. As suggested by Klein, "currently, positive experience with psychopharmacological agents, which have little effect on normal people but have marked benefits on patients with chronic disorders, leads to the inference of something chronically but reversibly wrong" (p. 425). However, there has not in fact been much research on the effects of current psychopharmacological agents on normal neurochemical functioning, and what limited research there is contradicts Klein's assertion.

For example, Knutson et al. (1998) administered paroxetine, a selective serotonin reuptake inhibitor (SSRI), for four weeks in a double-blind study to 23 of 48 normal volunteers. None of the participants met currently, or throughout their lifetime, the *DSM-IV* diagnostic criteria for a mental disorder, as assessed with a semistructured interview. None of them had ever previously received a psychotropic medication, had ever abused drugs, or had ever been in treatment for a mental disorder, nor were any of them currently seeking or desiring treatment for a mental disorder. In sum, they were in many respects above normal in psychological functioning. The paroxetine and placebo treatments continued for four weeks. Knutson et al. reported that SSRI administration (relative to placebo) reduced negative effects and increased social facilitation. The magnitude of changes in functioning even correlated with the plasma levels of SSRI within the treatment group. "This is the first empirical demonstration that chronic administration of a selective serotonin reuptake blockade can have significant personality and behavioral effects in normal humans in the absence of baseline depression or other psychopathology" (p. 378). More generally,

effectiveness of anxiolytics and antidepressants for clinical treatment might be their ability to impair, inhibit, or block normal neurochemical mechanisms of sadness and anxiousness rather than reversing or altering pathological neurochemical processes.

Mayberg et al. (1999) investigated with positron emission techniques two complementary alterations in mood: transient sadness provoked in healthy volunteers and treatment-induced resolution of dysphoria in clinically depressed patients. The results indicated "reciprocal changes involving nearly identical limbic-paralimbic and neocortical regions" (pp. 678–679). In other words, the neurophysiology of a mood disorder might be, at best, only quantitatively different from the neurophysiology of normal sadness. Kendler (2005) goes further to suggest for anxiety disorders that neurophysiologically "a panic attack during a near-fatal climbing accident in a psychiatrically healthy individual or in a crowded shopping mall in a patient with agoraphobia are probably the same" (p. 437).

No neurophysiological laboratory technique is currently able to identify the presence of psychopathology independent of or blind to a clinical diagnosis (Steffens & Krishnan, 2003). Substantial attention is being given to structural and functional brain imaging with the hope that these instruments could be used eventually to diagnose neurophysiological pathology (Drevets, 2002; Epstein, Isenberg, Stern, & Silbersweig, 2002). However, there is a virtual absence of research indicating their ability to provide independent, blind diagnoses. Despite enthusiasm for their potential diagnostic value, there are no studies that have assessed the sensitivity and specificity of neuroimaging techniques for the diagnosis or differential diagnosis of specific mental disorders (Steffens & Krishnan, 2003). The diagnosis of a mental disorder requires instead an assessment of the person's behavior within an environmental context, as "functional impairment or disability, not the presence of a lesion, is the essential element in the medical concept of disease" (Bergner, 1997, p. 245).

BOUNDARIES AMONG MENTAL DISORDERS

A concern that predominates attention of many clinicians and researchers is the excessive comorbidity among mental disorders (Caron & Rutter, 1991; Clark et al., 1995; Krueger & Markon, in press; Widiger & Clark, 2000). A fundamental question is whether this apparent comorbidity is the co-occurring presence of multiple mental disorders or the presence of one disorder that is being given multiple diagnoses.

DSM-IV provides diagnostic criterion sets to help guide the clinician toward a purportedly correct diagnosis and an additional section devoted to differential diagnosis that indicates "how to differentiate [the] disorder from other disorders that have similar presenting characteristics" (APA, 2000, p. 10). The intention of the diagnostic manual is to help the clinician determine which particular mental disorder is present, the selection of which would presumably indicate the presence of a specific pathology that will explain the occurrence of the symptoms and suggest a specific treatment that will ameliorate the patient's suffering (Frances et al., 1995; Kendell, 1975).

However, it is evident that *DSM-IV* routinely fails in the goal of guiding the clinician to the presence of one specific disorder. Despite the best efforts of the leading clinicians and researchers who have been the primary authors of each

revision of the diagnostic manual, diagnostic comorbidity rather than specificity is the norm (Clark et al., 1995; Krueger & Markon, in press). The high rate of multiple diagnoses at the time of clinical treatment is problematic to the conceptualization of mental disorders as distinct clinical conditions, and the extent of this comorbidity is even higher when one includes lifetime as well as current comorbidity (Brown, Campbell, Lehman, Grisham, & Mancill, 2001). "The greatest challenge that the extensive comorbidity data pose to the current nosological system concerns the validity of the diagnostic categories themselves—do these disorders constitute distinct clinical entities?" (Mineka, Watson, & Clark, 1998, p. 380). "It is clear that the classic Kraepelinian model in which all psychopathology is comprised of discrete and mutually exclusive diseases must be modified or rejected" (Maser & Cloninger, 1990, p. 12). Diagnostic comorbidity has become so prevalent that some researchers argue for an abandonment of the term *comorbidity* in favor of a term (e.g., *co-occurrence*) that is more simply descriptive and does not imply the presence of distinct clinical entities (Lilienfeld, Waldman, & Israel, 1994). There are instances in which presence of multiple diagnoses does suggest presence of distinct yet comorbid psychopathologies, but in most instances presence of co-occurring diagnoses does appear to suggest the presence of a common, shared pathology (Clark, in press; Kendler, Prescott, Myers, & Neale, 2003; Krueger & Markon, in press; Watson, in press; Widiger & Clark, 2000). "Comorbidity may be trying to show us that many current treatments are not so much treatments for transient 'state' mental disorders of affect and anxiety as they are treatments for core processes, such as negative affectivity, that span normal and abnormal variation as well as undergird multiple mental disorders" (Krueger, 2002, p. 44).

DSM-IV appears to be replete with unresolvable boundary distinctions, and, as suggested earlier, the function of new diagnoses is generally to fill these problematic gaps, thereby making the problem even worse by adding to the nomenclature new problematic boundaries (Phillips, Price, Greenburg, & Rasmussen, 2003; Pincus et al., 2003). Notable examples include bipolar II (filling a gap between *DSM-III-R* bipolar and cyclothymic mood disorders), mixed anxiety-depressive disorder (anxiety and mood disorders), depressive personality disorder (personality and mood disorders), and postpsychotic depressive disorder of schizophrenia (schizophrenia and major depression). These new diagnostic categories are helpful in decreasing clinicians' reliance on the NOS diagnostic category to plug the holes among the existing categories, but they also have the effect of creating additional boundary confusions.

Problematic boundaries within *DSM-IV* include such well-known examples as the distinction between oppositional defiant, attention-deficit (with and without hyperactivity-impulsivity), and conduct disorder; anorexia and bulimia; trichotillomania and obsessive-compulsive anxiety disorder; depressive personality disorder and dysthymia; conversion and dissociative disorder; and body dysmorphic disorder and anxiety disorder (First, 2003; Frances et al., 1995). To illustrate, we will discuss briefly problematic boundaries for generalized social phobia, acute stress disorder, and schizoaffective disorder.

Generalized Social Phobia

Social phobia was a new addition to *DSM-III* (Spitzer, Williams, & Skodol, 1980; Turner & Beidel, 1989). It was considered to be a distinct, circumscribed condition,

consistent with the definition of a phobia, or a "persistent, irrational fear of a *specific* object, activity, or situation" (APA, 1994, p. 770, our emphasis). However, it became apparent to anxiety disorder researchers and clinicians that the behavior of many of their patients was rarely so discrete and circumscribed (Spitzer & Williams, 1985). Therefore, authors of *DSM-III-R* developed a generalized subtype for when "the phobic situation includes most social situations" (APA, 1987, p. 243).

DSM-III-R generalized social phobia, however, merged into the *DSM-III* diagnosis of avoidant personality disorder. Both were concerned with a pervasive, generalized social insecurity, discomfort, and timidity. Efforts to distinguish them have indicated only that avoidant personality disorder tends to be, on average, relatively more dysfunctional than generalized social phobia (Turner, Beidel, & Townsley, 1992; Widiger, 1992).

DSM-IV provided no solution. In fact, it was acknowledged that generalized social phobia emerges "out of a childhood history of social inhibition or shyness" (APA, 1994, p. 414), consistent with the concept of a personality disorder. An argument for classifying this condition as an anxiety rather than a personality disorder is that many persons with the disorder benefit from pharmacologic interventions (Liebowitz, 1992). "One may have to rethink what the personality disorder concept means in an instance where 6 weeks of phenelzine therapy begins to reverse longstanding interpersonal hypersensitivity as well as discomfort in socializing" (p. 251). If so, one might have to rethink what the anxiety disorder concept means when an antidepressant is an effective form of treating an anxiety disorder. In any case, it is unclear why a maladaptive personality trait should not be responsive to a pharmacologic intervention (Knutson et al., 1998; Livesley, 2001b). *DSM-IV* concluded that these two conditions "may be alternative conceptualizations of the same or similar conditions" (APA, 2000, p. 720).

Acute Stress Disorder

Spiegel and his colleagues proposed a new diagnosis for *DSM-IV,* brief reactive dissociative disorder, for inclusion within the dissociative disorders section (Cardena, Lewis-Fernandez, Bear, Pakianathan, & Spiegel, 1996; Task Force, 1991). The predominant phenomenology consisted of symptoms of dissociation, including derealization, depersonalization, detachment, stupor, and amnesia. However, brief reactive dissociative disorder resembled closely posttraumatic stress disorder (PTSD), classified as an anxiety disorder (APA, 1987). The major distinction between them was simply that brief reactive dissociative disorder was of a shorter duration (2 days to 4 weeks, whereas PTSD requires a duration of longer than 4 weeks).

Compelling arguments were therefore made for moving PTSD to the dissociative disorders section (Cardena, Butler, & Spiegel, 2003; Spiegel & Cardena, 1991). The etiology and treatment of persons suffering from PTSD resembles more closely the etiology and treatment of dissociative disorders than most anxiety disorders (e.g., panic disorder, social phobia, obsessive-compulsive anxiety disorder, or specific phobia). Dissociative identity disorder and dissociative amnesia are almost invariably in response to having experienced, witnessed, or been confronted with a PTSD stressor. The cognitive pathology of PTSD and dissociative disorders concerns difficulties accepting or integrating a severe trauma (expressed dysfunctionally through gross denial, avoidance, and/or recurrent

recollections). The theories, treatment techniques, and concerns of persons who specialize in crisis intervention, trauma, victimization, and abuse may overlap more with specialists in dissociative disorders than with specialists in anxiety disorders.

On the other hand, there are arguments to support the conceptualization of PTSD as an anxiety disorder (Davidson & Foa, 1991). Dissociative symptomatology is often seen in persons with PTSD but this dissociation could be understood as a cognitive avoidance of anxiety. In addition, dissociative symptoms are not as prevalent or predominant as anxious, avoidant symptoms in cases of PTSD. Finally, animal models can reproduce much of the PTSD symptomatology without invoking the notion that the animal is experiencing dissociation.

The final decision for *DSM-IV* was to classify brief reactive dissociative disorder within the anxiety disorders section and to rename it as acute stress disorder (i.e., subthreshold PTSD). The best solution might have been to classify it as both an anxiety and as a dissociative disorder so that clinicians would recognize the importance of considering the presence of both a dysregulation of anxiety and dissociation in their understanding of the pathology and treatment of the condition, but this option would be inconsistent with the categorical assumption of distinct conditions and was not available to the authors of *DSM-IV.*

Schizoaffective Disorder

Schizoaffective disorder might be the prototypic boundary condition. It had the unique distinction in *DSM-III* (APA, 1980) of being the only disorder that lacked the specific and explicit criterion set that was the major innovation of the diagnostic manual (Spitzer et al., 1980). A consensus could not be reached on its defining features in large part because it represented the grey area between schizophrenia and mood disorders. It was to be used in *DSM-III* "for those instances in which the clinician is unable to make a differential diagnosis with any degree of certainty" (APA, 1980, p. 202).

However, clinicians had difficulty identifying and researchers had difficulty studying a condition with no diagnostic criteria. Therefore, specific and explicit diagnostic criteria were developed for *DSM-III-R* (APA, 1987). The *DSM-III-R* diagnostic criteria, though, were notably complex and problematic (Frances et al., 1995). Proposed revisions therefore included the development of increasingly more narrow definitions, hoping to eventually identify a distinct clinical entity, or, alternatively, the delineation of new diagnoses, such as "mainly affective" and "mainly schizophrenic" subtypes (Aubert & Rush, 1996).

It is perhaps paradoxical to create a distinct clinical entity that demarcates the overlapping and nebulous area between two other disorders. Schizoaffective disorder might be best understood as an inherently ambiguous condition that occupies the overlapping boundary between the categories of schizophrenia and mood disorder (Blacker & Tsuang, 1992). It could be a phenotypic variation of either schizophrenia or mood disorder that over time crosses the boundaries between them or a genetic interform that occupies their border (Kendler, Neale, & Walsh, 1995). Schizoaffective disorder may not itself be a distinct condition; it may represent instead an inevitable point of confusion in the effort to demarcate a clear, unambiguous distinction between the overlapping schizophrenic, mood, and psychotic disorders (Fowles, 2003).

RATIONALE AND JUSTIFICATION FOR CATEGORICAL MODEL

There are a number of reasons that diagnostic categories are used rather than clinical spectra or dimensions of functioning (Kendell, 1975), including simplicity, tradition, credibility, utility, and validity. Each of these will be considered in turn.

Simplicity

It is human nature to categorize (De Boeck, Wilson, & Acton, 2005). It is difficult to be cognizant of all shades of gray. Typologies are created in large part to render information into simpler, more succinct formats, and proponents of categorical systems argue that dimensional models are too complex and confusing for clinical use (Frances et al., 1995).

However, as the diagnostic manual continues to expand, filling gaps among arbitrary boundaries of overlapping categories, the illusion of the simplicity of the categorical model may continue to weaken. Mental disorder categories are frustrating and troublesome to clinicians precisely because they suggest a uniformity of presentation and homogeneity of pathology that rarely seems to be present. Widiger, Costa, and McCrae (2002) suggest that dimensional classifications that offer more precise and accurate descriptions may in fact be less cumbersome and complex than the existing diagnostic categories that require the assessment of numerous diagnostic criteria in a frustratingly unsuccessful effort to make illusory categorical distinctions. For example, semistructured interviews for the *DSM-IV* personality disorders must evaluate 80 diagnostic criteria, which does not even include the 14 additional criteria for the two personality disorders included within the appendix to *DSM-IV,* the not-otherwise-specified diagnosis, nor the criteria for conduct disorder that are necessary for the diagnosis of antisocial personality disorder. In contrast, a semistructured interview for the five-factor model of personality that provides a more comprehensive dimensional description of normal and maladaptive personality functioning requires the assessment of only 30 facets of personality functioning (Trull & Widiger, 1997). A classification system that abandons the fruitless effort to make illusory distinctions among overlapping diagnostic categories in favor of a more straightforward description of each individual's unique profile of psychopathology will likely be much easier to use.

Tradition and Credibility

The diagnosis of mental disorders has been largely within the domain of medicine, which has used since the days of Hippocrates a categorical model of classification (Kendell, 1975). It might seem to be a major departure from this tradition to convert to a dimensional form of describing and diagnosing psychopathology. Many clinicians identify themselves as being within a branch of medicine, treating pathologies that are qualitatively distinct from normal functioning. A reformulation of mental disorders as shading imperceptibly into normal psychological functioning could complicate the identity of the profession (Guze, 1978; Guze & Helzer, 1987).

Advocates of categorical distinctions also suggest that dimensional models might trivialize the concept of mental disorder. If the distinction between mental disorders and normal psychological functioning is arbitrary, then perhaps there is

no meaningful justification for differentiating persons as having versus not having a mental disorder. Perhaps there is a loss of credibility if mental disorders are not considered to be qualitatively distinct from normal psychological processes (Regier et al., 1998).

However, absence of a discrete, qualitative point of demarcation does not suggest the absence of meaningful distinctions. Mental retardation is currently defined dimensionally as a level of intelligence below an intelligence quotient (IQ) of approximately 70 (APA, 1980, 2000). This point of demarcation does not carve nature at a discrete joint. It is an arbitrary point of demarcation along a continuous distribution, but the arbitrariness of this point of demarcation does not suggest that the disorder of mental retardation is illusory, invalid, or trivial. Persons with IQs lower than 70 do suffer from a wide variety of quite significant and meaningful impairments secondary to their limited levels of intelligence, and it is very helpful and meaningful to identify a specific point of demarcation at which one would or should provide professional intervention to address these impairments (Zachar, 2000).

A related concern is that a dimensional model of psychopathology might trivialize or hinder the study of psychopathology by suggesting that it can be meaningfully or adequately studied within nonclinical populations, such as college students enrolled within introductory psychology courses (Coyne, 1994; Flett, Vredenburg, & Krames, 1997). However, absence of a qualitative point of demarcation between mild, moderate, or severe levels of depression does not necessarily suggest that research on mild levels of depression would generalize meaningfully to high levels of depression. Being extremely tall, introverted, or depressed is not equivalent to being somewhat tall, introverted, or depressed. The experiences, social impairments, treatment implications, and other important correlates of depression will vary with the severity of the disorder. Presence of a continuous distribution does not suggest that the psychopathology seen within clinical settings can always or fully be understood by studies of the psychopathology seen within college students.

Regier and Narrow (2002) suggest that the thresholds for diagnosis in *DSM-IV* should be raised because epidemiologic research has obtained prevalence rates that are beyond expectations. They question whether the diagnostic criterion sets are identifying instances of "true psychopathologic disorder" (p. 114). However, Regier et al. (1998) are forthright in their acknowledgment that their concern is based in part on the implications of high prevalence rates for health care policy. "In the current US climate of determining the medical necessity for care in managed health care plans, it is doubtful that 28% or 29% of the population would be judged to need mental health treatment" (p. 114). However, in order to protect the availability of treatment for the most severe variants of psychopathology, many additional persons in need of treatment are also being neglected. At the same time that Regier et al. suggest raising the bar of diagnosis to limit health care coverage, other clinicians and researchers are arguing for lowering the bar to help gain access to health care coverage for persons with subthreshold anxiety, mood, eating, and other forms of psychopathology (e.g., Magruder & Calderone, 2000; Shisslak, Crago, & Estes, 1995; Stein, Walker, Hazen, & Forde, 1997).

We suspect that a dimensional model might in fact increase the credibility of mental disorder classification by providing the means with which to identify more explicitly and reliably the precise points at which access to health care funding is optimally provided. The credibility of the profession is perhaps being undermined more by the substantial problems and errors generated by a model that claims to

carve psychological or neurochemical functioning at discrete joints but fails to do so. A dimensional model of classification could be preferable to governmental, social, and professional agencies because it would provide more reliable, valid, and explicitly defined bases for making these important social and clinical decisions.

Utility

The first paragraph of the introduction to *DSM-IV* states that "our highest priority has been to provide a helpful guide to clinical practice" (APA, 2000, p. xxiii). Revisions to the diagnostic manual have usually emphasized matters of reliability and validity (Frances, Widiger, & Pincus, 1989; Spitzer et al., 1980), but it is possible that matters of clinical utility will be provided greater emphasis with *DSM-V* (First et al., 2004). A valid diagnostic manual that is not being used effectively within clinical practice is unlikely to realize its full potential. First et al. suggest that for *DSM-V* a "crucial target for evaluating the advantages and disadvantages of a particular change is its effect on clinical utility" (p. 953), and it is matters of clinical utility that concern many of those who argue against shifting to a dimensional model (Benjamin, 1993; Shedler & Westen, 2004; Sprock, 2003).

Consider, for example, the personality disorder diagnostic categories. There is currently a considerable amount of clinical literature concerning the treatment of each diagnostic category (e.g., Beck, Freeman, and Davis, 2003; Benjamin, 2002). The APA (2001) has even published an authoritative guideline for the treatment of borderline personality disorder. It is the concern of many clinicians that much of this experience and wisdom will be lost if the diagnostic manual shifted to a dimensional model of classification.

This concern, however, is addressed in a number of ways. First, many of the alternative dimensional models of personality disorder concern dimensions that are currently the explicit focus of treatment and treatment outcome research (e.g., dimensions of emotional dysregulation, self-harm, social avoidance, workaholism, and impulsivity). It would require very little, if any, additional training to have clinicians focus their clinical attention on these maladaptive personality traits rather than on the global personality disorder constructs. In fact, it is likely that clinicians already focus on these underlying components of a respective personality disorder rather than attempting to treat the entire diagnostic category as a single entity (e.g., the focus of dialectical behavior therapy is on emotion regulation, distress tolerance, and interpersonal effectiveness rather than on the global construct of borderline personality disorder; Linehan, 1993).

In addition, it is not in fact the case that the existing diagnostic categories have considerable treatment utility (Verheul, 2005). "Apologists for categorical diagnoses argue that the system has clinical utility being easy to use and valuable in formulating cases and planning treatment [but] there is little evidence for these assertions" (Livesley, 2001a, p. 278). Psychosocial and pharmacologic interventions, with few exceptions, target and have effects upon broad domains of symptomatology rather than being specific to individual diagnostic categories that describe a heterogenous constellation of symptoms and traits (Livesley, 2001b). In fact, a unique advantage of dimensional models of classification would be the ability to provide alternative cutoff points along dimensions of maladaptive personality functioning for different social and clinical decisions. Cutoff points can be placed along distribution of anxious, depressive, introverted, and other dimensions of

functioning that will be more meaningful and specific to various social and clinical decisions. The optimal points along a distribution of aberrant cognitions (for instance) at which a particular medication, hospitalization, insurance coverage, and disability are optimally provided are unlikely to be equivalent (Kendler, 1990). A dimensional model of classification has considerably greater flexibility in setting alternative cutoff points than the categorical system; minimally, a dimensional model of classification can be readily converted to the categorical classification whereas the categorical diagnosis, once implemented, cannot recover the dimensional profile (Trull, 2005; Verheul, 2005). A classification system that provided different cutoff points specific to different clinical and social decisions would probably have greater utility than the existing diagnostic system that relies on a single diagnostic threshold.

Even if *DSM-V* shifted to a dimensional classification of general personality structure, we would argue that this classification system would still prove to have greater clinical utility for treatment decisions than the existing diagnostic categories. Widiger et al. (2002) have proposed a four-step procedure for clinicians to use to diagnose the presence of a personality disorder from the perspective of the five-factor model (FFM) of general personality structure. The FFM consists of five broad domains of personality: extraversion (or positive affectivity) versus introversion, antagonism versus agreeableness, conscientiousness (or constraint), emotional instability (or neuroticism), and unconventionality (or openness). Each of the five broad domains has been further differentiated by Costa and McCrae (1992) into more specific facets. For example, the facets of agreeableness versus antagonism are trust versus mistrust, straightforwardness versus deception, altruism versus exploitation, compliance versus opposition, modesty versus arrogance, and tender-mindedness versus tough-mindedness.

The first step in a diagnosis of personality disorder using the FFM is to obtain a comprehensive assessment of personality functioning with an existing measure of the FFM, of which there are many alternative options (De Raad & Perugini, 2002). The most commonly used self-report measure is the NEO Personality Inventory-Revised (Costa & McCrae, 1992). However, a semistructured interview that includes the maladaptive variants of each pole of each facet was developed by Trull and Widiger (1997), and Mullins-Sweatt, Jamerson, Samuel, Olson, and Widiger (in press) report good convergent and discriminant validity for a very brief, one-page assessment instrument. The second step is to identify the social and occupational impairments and distress associated with the individual's characteristic personality traits. Widiger et al. (2002) identify common impairments that are associated with each of the 60 poles of the 30 facets of the FFM, including (but not limited to) *DSM-IV* personality disorder symptomatology. The third step is to determine whether the dysfunction and distress reach a clinically significant level of impairment. The fourth step is a quantitative matching of the individual's personality profile to prototypic profiles of diagnostic constructs. This last step is provided for clinicians and researchers who wish to continue to provide single diagnostic labels to characterize a person's personality profile. To the extent that an individual's profile does match the FFM profile of a prototypic case, a single term (e.g., psychopathic) would provide a succinct means of communication (Lynam, 2002). However, prototypic profiles will be quite rare within clinical practice. In such cases, the matching can serve to indicate the extent to which any particular diagnostic category would be adequately descriptive.

Widiger et al. (2002) expect that an FFM diagnosis of personality disorder will in fact prove to have considerable clinical utility. A five-factor description of maladaptive personality functioning will facilitate the development of more specific treatment recommendations, as each domain has more differentiated implications for functioning and treatment planning than the existing diagnostic categories. For example, the extraversion and agreeableness domains concern disorders of interpersonal relatedness that would be of particular interest and concern to clinicians specializing in marital, family, or other forms of interpersonal dysfunction. The domain of conscientiousness involves, at the low end, disorders of impulse dysregulation and disinhibition for which there is again a considerable amount of specific treatment literature. Disorders within this realm would be particularly evident in behavior that affects work, career, and parenting, with laxness, irresponsibility, and negligence at one pole and a maladaptively excessive perfectionism and workaholism at the other pole. The domain of neuroticism or negative affectivity would be most suggestive of pharmacotherapy (as well as psychotherapeutic) interventions for the treatment of various forms of affective dysregulation that are currently spread across the diagnostic categories, including anxiousness, depressiveness, anger, and instability of mood. Finally, high levels of the domain of openness would have specific implications for impaired reality testing, magical thinking, and perceptual aberrations, whereas at the other pole, it includes alexithymia, prejudice, closed-mindedness, and a sterile absence of imagination.

Validity

The major reason for retaining a categorical model should be its validity and there is the concern that dimensional models could mask underlying latent class taxons (Benjamin, 1993; Gunderson, Links, & Reich, 1991; Lenzenweger & Korfine, 1992; Meehl, 1995). A wide variety of statistical and methodological approaches for testing the validity of categorical and dimensional models of classification has been used, including (but not limited to) the search for evidence of incremental validity, bimodality, discrete breaks within distributions, and reproducibility of factor analytic solutions across groups, as well as taxometric, latent class, item response theory, and admixture analyses (De Boeck et al., 2005; Klein & Riso, 1993; Kraemer, Noda, & O'Hara, 2004; Ruscio & Ruscio, 2004; Trull & Durrett, 2005; Waller & Meehl, 1998). Researchers have at times obtained results that are more consistent with a categorical than a dimensional model of classification (e.g., Lenzenweger & Korfine, 1992; Santor & Coyne, 2001), but the body of research does appear to be more consistent with a dimensional model (Blacker & Tsuang, 1992; First et al., 2002; Flett et al., 1997; Klein & Riso, 1993; Widiger & Clark, 2000).

For the purpose of illustration, we will summarize some of the empirical support for a dimensional classification of personality disorder. We are confining this summary to personality disorders as the magnitude of this research across all areas of psychopathology has now grown so large that it is not feasible to do justice to any one of them. Quite extensive and compelling arguments regarding other areas of psychopathology are available elsewhere (e.g., Cloninger, 1998; Goldberg, 1996; Krueger and Markon, in press; Widiger & Samuel, 2005), including more specifically (but not limited to) depression (Flett et al., 1997), anxiety disorders (Watson, in press), mood and anxiety disorders (Clark, in press), alcoholism (Meyer, 2001; Widiger & Smith, 1994), and psychotic disorders (Peralta, Cuesta,

Giraldo, Cardenas, & Gonzales, 2002; Serreti, Macciardi, & Smeraldi, 1996; Van Os et al., 1999). It is perhaps appropriate though to confine this particular discussion to the personality disorders, as the *DSM-V* Research Planning Nomenclature Work Group highlighted the particular need and benefit of piloting a shift to a dimensional classification of psychopathology first with the personality disorders. "If a dimensional system of personality performs well and is acceptable to clinicians, it might then be appropriate to explore dimensional approaches in other domains" (Rounsaville et al., 2002, p. 13).

It is also important to appreciate at the outset that no single study, or method of study, will provide conclusive results. The conclusion that a dimensional model provides a more valid description and classification of personality disorders will be reached instead through the cumulative and converging impact of construct validation studies that address different assumptions and hypotheses of these alternative models.

An initial argument in favor of a dimensional classification of personality disorders is the repeated failure to obtain compelling empirical support for a categorical classification. Four concerns with respect to the categorical model of personality disorder diagnosis commonly cited are excessive diagnostic co-occurrence, heterogeneity among persons with the same diagnosis, absence of a nonarbitrary boundary with normal functioning (contributing to unstable prevalence estimates with each revision to the diagnostic manual), and inadequate coverage of maladaptive personality functioning (Livesley, 2003; Widiger & Mullins-Sweatt, 2005; Widiger & Sanderson, 1995). A dimensional model of personality disorder classification would address effectively all of these problems. Patients would be provided with specific, individualized descriptions of their profile of maladaptive personality traits rather than being placed within inadequate, overlapping, and arbitrary diagnostic categories. In addition, any dimensional model of personality disorder classification that is reasonably comprehensive would be able to cover a greater range of maladaptive personality functioning without requiring additional diagnostic categories by avoiding the inclusion of redundant, overlapping diagnoses, by organizing the traits within a hierarchical structure, by representing a broader range of maladaptive personality functioning along each particular dimension, and by allowing for the representation of relatively unique or atypical personality profiles.

In addition, integrating the APA classification of personality disorders with a dimensional model of general personality structure has a number of advantages, notably the incorporation of the considerable amount of basic science research on personality into our understanding of disorders of personality. Blashfield and Intoccia (2000) conducted a computer search of the personality disorder research literature and concluded that there were "five disorders (dependent, narcissistic, obsessive-compulsive, paranoid, and passive-aggressive) that had very small literatures" (p. 473). "The only personality disorder whose literature is clearly alive and growing is that of borderline personality disorder" (p. 473). They characterized the literature concerning the dependent, narcissistic, obsessive-compulsive, paranoid, passive-aggressive, schizoid, and histrionic personality disorders as being "dead" or "dying" (p. 473).

In contrast, dimensions of general personality structure, and the FFM in particular, have obtained considerable scientific support. The FFM was derived originally from factor analytic studies of extensive samples of trait terms within the English language (Ashton & Lee, 2001). The relative importance of a trait is indicated by

the number of terms that have been developed within a language to describe the various degrees and nuances of that trait, and the structure of the traits is evident by the relationship among the trait terms. The five broad domains of the FFM have been replicated in lexical studies of the trait terms in a wide variety of languages (Ashton & Lee, 2001). The FFM is the predominant model of personality in a number of different fields, including health psychology, aging, and developmental research (McCrae & Costa, 1999; Mullins-Sweatt & Widiger, in press). Empirical support for the FFM has been extensive, including convergent-discriminant validity across self, peer, and spouses ratings (Costa & McCrae, 1992), etic and emic cross-cultural research (Allik, 2005; Ashton & Lee, 2001), temporal stability across the life span (Roberts & DelVecchio, 2000), behavioral and molecular genetic heritability (Livesley, 2005; Sen, Burmeister, & Ghosh, 2004), and integration with the fundamental childhood temperaments (Mervielde, De Clercq, De Fruyt, & Van Leeuwen, 2005; Shiner & Caspi, 2003). This is a scientific foundation that is virtually nonexistent for the personality disorder diagnostic categories.

Research that has documented whether and how the existing personality disorder diagnostic categories can be understood in terms of the FFM is also extensive. Widiger and Costa (2002) identified more than 50 studies that have addressed explicitly an understanding of personality disorders from the perspective of the FFM. These studies have used a wide variety of measures and have sampled from a variety of clinical and nonclinical populations. All but a few of the authors concluded that the personality disorders are well understood from the perspective of the FFM. Saulsman and Page (2004) conducted a meta-analysis of FFM personality disorder studies and concluded that "the results showed that each [personality] disorder displays a five-factor model profile that is meaningful and predictable given its unique diagnostic criteria" (p. 1055). Livesley (2001b) concluded on the basis of his review of this research that "multiple studies provide convincing evidence that the *DSM* personality disorder diagnoses show a systematic relationship to the five-factor framework" (p. 24). We will briefly describe a few of these individual studies.

O'Connor and Dyce (1998) conducted independent principal-axes common factor analyses on the correlation matrices among the personality disorders using a variety of samples and assessment instruments reported in nine previously published studies. The personality disorder matrices were rotated to a least squares fit to the target matrices generated by alternative dimensional models. These analyses were not exploratory searches of data sets, obtaining whatever factor analytic solution might capitalize on the particular measures and samples that were used. The confirmatory analyses "were powerful, support-seeking attempts to find the view on a correlational structure that was most consistent with a given model" (O'Connor & Dyce, 1998, p. 14). They found consistent support for the ability of the FFM to account for the personality disorder symptomatology: "The highest and most consistent level of fit were obtained for the five-factor model" (O'Connor & Dyce, 1998, p. 14).

Livesley, Jang, and Vernon (1998) compared the phenotypic and genetic structure of a comprehensive set of personality disorder symptoms in samples of 656 personality disordered patients, 939 general community participants, and 686 twin pairs. Principal components analysis yielded four broad dimensions (emotional dysregulation, dissocial behavior, inhibitedness, and compulsivity) that were replicated across all three samples. Multivariate genetic analyses also yielded the same four factors. "The stable structure of traits across clinical and nonclinical samples is

consistent with dimensional representations of personality disorders" (Livesley et al., 1998, p. 941). Livesley et al. noted as well how "the higher-order traits of personality disorder strongly resemble dimensions of normal personality" (p. 941). Emotional dysregulation corresponded to five-factor model (FFM) neuroticism (identified by others as negative affectivity, as it includes such traits as fearfulness, depressiveness, anxiousness, anger, guilt, and vulnerability); the dissocial domain (defined by interpersonal hostility, judgmental attitudes, callousness, criminal behavior, and conduct problems) corresponded to FFM antagonism (which includes such traits as deceptiveness, exploitation, aggression, oppositionality, arrogance, and callousness); inhibitedness (defined by intimacy problems and restricted affect) corresponded to FFM introversion (which includes such traits as placidity, withdrawal, reservation, aloofness, and passivity); and *DSM-IV* compulsivity corresponded to FFM conscientiousness (which includes such traits as perfectionism, dutifulness, industriousness, discipline, deliberation, and organization). It is "quite striking that an extensive history of research to develop a dimensional model of normal personality functioning that has been confined to community populations is so closely congruent with a model that was derived from an analysis confined to personality disorder symptoms" (Widiger, 1998, p. 865).

Joint factor analyses of measures of the FFM and comprehensive representations of personality disorder symptoms have consistently identified a common underlying structure (Clark & Livesley, 2002; Markon, Krueger, & Watson, 2005; Widiger & Costa, 2002). "The evidence suggests that personality disorders are not characterized by functioning that differs in quality from normal functioning; rather, personality disorder can be described with traits or dimensions that are descriptive of personality, both disordered and normal" (Schroeder, Wormworth, & Livesley, 1992, p. 52).

Quite a few studies not considered in the reviews of Livesley (2001b), Saulsman and Page (2004), and Widiger and Costa (2002) have since been published. We will provide a few illustrative examples. For example, although many studies have verified that FFM agreeableness is associated with dependent personality traits, conscientiousness with obsessive-compulsive personality traits, and openness with schizotypal traits (Mullins-Sweatt & Widiger, in press), some studies have failed to confirm these associations, the reason for which appears to be methodological rather than substantive. Most existing FFM instruments have been developed for the study of general personality functioning (De Raad & Perugini, 2002) rather than being concerned specifically with the maladaptive personality traits included within the FFM. As a result, they might not provide adequate fidelity for the assessment and description of the maladaptive variants of the FFM. Haigler and Widiger (2001) demonstrated empirically that the negative findings for agreeableness, extraversion, and openness are largely because of the absence of adequate representation of the maladaptive variants of these domains within the predominant measures of the FFM. Haigler and Widiger first replicated the insignificant to marginal correlations of NEO PI-R (Costa & McCae, 1992) agreeableness, conscientiousness, and openness scales with the dependent, obsessive-compulsive, and schizotypal personality disorders (each of the latter was assessed by three independent measures). They then revised existing NEO PI-R items by inserting words to indicate that the behavior described within each item was excessive, extreme, or maladaptive. The content of the items was not otherwise altered. This experimental manipulation of the NEO PI-R items resulted in quite substantial correlations of agreeableness

with dependency, conscientiousness with the obsessive-compulsive personality disorder, and (to a somewhat lesser extent) openness with schizotypal personality disorder. Haigler and Widiger (2001) concluded that their findings "offer further support for the hypothesis that personality disorders are maladaptive variants of normal personality traits by indicating that correlations of NEO PI-R conscientiousness, agreeableness, and openness scales with obsessive-compulsive, dependent, and schizotypal symptomatology would . . . be obtained by simply altering existing NEO PI-R . . . items that describe desirable, adaptive behaviors or traits into items that describe undesirable, maladaptive variants of the same traits" (p. 356).

Lynam and Widiger (2001) explored whether the co-occurrence among the *DSM-IV* personality disorders could itself be explained by the FFM. They had personality disorder researchers describe prototypic cases of each *DSM-IV* personality disorder in terms of the 30 facets of the FFM. They then obtained the correlations among the personality disorders with respect to their FFM descriptions, and they found that the personality disorder diagnostic co-occurrence reported in 15 previous studies could be largely accounted for by the covariation among the FFM personality trait profiles. For example, the FFM understanding of the antisocial personality disorder accounted for 85% of its diagnostic occurrence reported in nine *DSM-III* (APA, 1980) studies and 76% of its diagnostic co-occurrence reported in the six *DSM-III-R* (APA, 1987) studies obtained for the authors of the *DSM-IV* criterion sets. "Under the FFM account, disorders appear comorbid to the extent that they are characterized by the same [FFM] facets" (Lynam & Widiger, 2001, p. 409).

O'Connor (2005) conducted a joint factor analysis of 33 previously published personality disorder studies to yield a consensus comorbidity structure. He then conducted a comparable interbattery factor analysis to yield a consensus model for the relationship of the FFM to the personality disorders, using results reported in 20 previously published studies. He then determined empirically whether the congruence between the consensus personality disorder and consensus FFM-personality disorder structure was consistent with the theoretically based descriptions of these personality disorders provided by Widiger, Trull, Clarkin, Sanderson, and Costa (2002). He concluded that "the obtained congruences for their model are . . . quite impressive, especially considering that no other . . . personality disorder configuration model receives comparable degrees of support" (p. 340). "The interbattery factor analytic technique, used in the present study, provided a more stringent test of the empirically based representation of the FFM, yet stronger support for the FFM nevertheless emerged" (O'Connor, 2005, p. 340).

Warner et al. (2004) considered the role of FFM personality traits in accounting for the temporal stability of personality disorder symptoms. Using data obtained from the Collaborative Longitudinal Study of Personality Disorders (Gunderson et al., 2000), they reported that "there is a specific temporal relationship between traits and disorder whereby changes in the [FFM] personality traits hypothesized to underlie personality disorders lead to subsequent changes in the disorder [but] this relationship does not seem to hold in the opposite direction, which supports the contention that personality disorders stem from particular constellations of personality traits" (Warner et al., 2004, pp. 222–223).

Miller and Lynam (2003) demonstrated that a quantitative measure of the extent to which a person's FFM personality trait profile matched the hypothesized FFM profile of psychopathy reproduced the findings commonly reported for psychopathy, including drug usage, delinquency, risky sex, aggression, and several

laboratory assessments of associated pathologies, including willingness to delay gratification in a time discounting task and a preference for aggressive responses in a social-information processing paradigm. Trull, Widiger, Lynam, and Costa (2003) similarly demonstrated that the extent to which a person's FFM personality trait profile matched the hypothesized FFM profile of borderline personality disorder correlated as highly with measures of borderline personality disorder as the latter correlated with one another. The FFM borderline index even demonstrated incremental validity in accounting for borderline psychopathology beyond the variance that was explained by a two-hour, semistructured interview devoted to the assessment of this personality disorder. In sum, the extent to which a person's FFM profile of personality traits is consistent with hypothesized FFM profiles for a respective personality disorder reproduces the nomological net of predictions that have been hypothesized for that personality disorder (Miller & Lynam, 2003; Trull et al., 2003).

CONCLUSIONS

The modern effort to demarcate a taxonomy of distinct clinical conditions is often traced to Kraepelin (1917). Kraepelin, however, had himself acknowledged that "wherever we try to mark out the frontier between mental health and disease, we find a neutral territory, in which the imperceptible change from the realm of normal life to that of obvious derangement takes place" (p. 295). The *DSM-IV* diagnostic categories do provide valid and useful information (as indicated in the chapters included within this text). However, undermining their validity and clinical utility is the false assumption that they are qualitatively distinct conditions. An adequate understanding of the diagnosis, etiology, pathology, comorbidity, and treatment of all mental disorders may require an acknowledgment that they are not conditions qualitatively distinct from one another nor from the anxiety, depression, sexual functioning, sleep, cognitive aberrations, drug and alcohol usage, and personality traits evident within all persons.

Most mental disorders appear to be the result of a complex interaction of an array of interacting biological vulnerabilities and dispositions with an equally complex array of environmental, psychosocial events unfolding over time (Rutter, 2003). The symptoms and pathologies of mental disorders are highly responsive to a wide variety of neurochemical, interpersonal, cognitive, and other mediating and moderating variables that help to develop, shape, and form a particular individual's psychopathology profile (Andreasen, 1997; Rutter, 2003; Tsuang, Stone, & Faraone, 2000). This complex etiological history and individual psychopathology profile are unlikely to be well described by a single diagnostic category.

A model for the future might be provided by one of the more well-established diagnoses, mental retardation. A dimensional classification of mental disorders is viewed by some as a radical departure, but *DSM-IV* already includes a strong precedent. The point of demarcation for the diagnosis of mental retardation is an arbitrary, quantitative distinction along the normally distributed levels of hierarchically and multifactorially defined intelligence. The current point of demarcation is an intelligence quotient of 70, along with a clinically significant level of impairment. This point of demarcation is arbitrary in the sense that it does not carve nature at a discrete joint, but it was not randomly or mindlessly chosen (Haslam, 2002). It is

a well-reasoned and defensible selection that was informed by the impairments in functioning commonly associated with an IQ of 70 or below (Zachar, 2000).

The *DSM-IV* classification of maladaptive levels of intelligence is also a useful model because it illustrates how categorical and dimensional diagnoses are not necessarily mutually exclusive. There are instances of mental retardation that have specific etiologies. Recognizing that psychopathology is generally best classified along continuous distributions does not imply that no instances of qualitatively distinct conditions would not exist or could not be recognized. On the other hand, the categorical diagnoses in the case of mental retardation are generally placed on Axis III as physical disorders (e.g., Down syndrome) that can be traced to a specific biological event (i.e., trisomy 21), and the mental retardation of persons with these categorically distinct disorders is still described well in terms of the continuously distributed cognitive impairments. A general factor of intelligence (ability to reason, plan, solve, learn, and comprehend information) saturates most to all measures of cognitive ability (as a temperament of neuroticism might be common to many anxiety disorders), but it can in turn be further differentiated with respect to particular facets (e.g., quantitative, spatial, and verbal intelligence) that can themselves be in turn further differentiated into more specific components (Lubinski, 2004). The domain of intelligence is distributed as a hierarchical, multifactorial continuous variable, as most persons' level of intelligence, including most of those with mental retardation, is the result of a complex interaction of multiple genetic, fetal and infant development, and environmental influences (Lubinski, 2004; Neisser et al., 1996). There are no discrete breaks in its distribution that would provide an absolute distinction between normal and abnormal intelligence. We suggest that the future classification of anxiety, sleep, sexual, substance, mood, psychotic, personality, and other mental disorders would do best to follow the lead provided by mental retardation.

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