# Toward an Empirically Based Classification of Personality Pathology

Erin Sheets and W. Edward Craighead, Department of Psychology, University of Colorado

**A number of investigations have utilized factor analysis or similar data analytic methods to examine the empirical validity of the *Diagnostic and Statistical Manual of Mental Disorders* classification system of Axis II personality pathology. This article reviews analyses of the Axis II cluster structure and the latent structure of individual personality disorder criteria. Overall, these studies do not provide sound empirical support for the current personality disorder organization described in the *Diagnostic and Statistical Manual of Mental Disorders*. They highlight the need for identifying the latent dimensions of personality pathology in order to create a different representation that would more accurately correspond to both a theoretical and functional model of personality disorder. Preliminary research identifying consensus across datasets is summarized. Clinical implications of these findings and future directions for research on personality pathology are discussed.**

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Over the past 25 years, one of the most controversial topics in psychopathology has been the classification of personality disorders. The 1980 edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-III*; American Psychiatric Association [APA], 1980) marked the introduction of a separate axis for the diagnosis for personality disorders. Lacking strong empirical evidence to guide the organization of this new axis, *DSM* Work Group members based the diagnostic system on expert experience with common or shared clinical features of distressed personality. From that point forward, researchers in the areas of personality and personality disorders have examined and proposed numerous alternative organizations of personality pathology symptoms. Few investigators agree as to what behavioral patterns and what structure of these behavioral patterns best describes personality dysfunction. However, the majority agree that the current rationally derived structure of the *DSM-IV* (APA, 2000) inadequately represents this area of psychopathology.

Among the arguments against the current classification system, investigators have noted that the current structure lacks a theoretical rationale; that dependence on categorical diagnoses is problematic; and that personality disorder comorbidity is far too common (Livesley, 1998). Additionally, analyses of the associations of criterion items fail to support the current organization. Although many investigators have *disconfirmed* the current structure, research on the topic has not progressed to a point of consensus on an acceptable alternative.

Several solutions for the revision of the *DSM* personality disorder system have been offered. These range from the introduction of new dimensions of personality to a rearrangement of personality disorders on Axis I. Livesley (1998) advocated a combination of these solutions, suggesting that personality disorder diagnoses fall on Axis I, while Axis II would be retained to report significant personality traits. Presumably, these new Axis II traits would resemble a model that is an extension of current personality theory. Most models of personality ("normal" personality rather than personality pathology) conceptualize

Address correspondence to Erin Sheets, Department of Psychology, University of Colorado, 345 UCB, Boulder, CO 80309. E-mail: erin.sheets@colorado.edu.

personality traits as dimensions that range from normal to abnormal (maladaptive) levels of functioning. Unlike the *DSM-IV*, most individual difference theories of personality assume that traits are organized hierarchically with both higher-order and secondary traits describing an individual's presentation (Livesley, 2005).

Several versions of dimensional models of personality have been proposed as alternatives to the current *DSM* classification system. Eysenck and Eysenck (1985) developed a hierarchical structure of personality that included three superfactors of psychoticism, extraversion, and neuroticism and several lower-level personality traits for each superfactor. Numerous studies have examined the utility of adopting the "five-factor model" of personality as the classification structure for personality pathology (Costa & Widiger, 2002). The five-factor model originally grew from lexical research on descriptive terms. With extensive, subsequent research of the model, five traits have been proposed as the broad dimensions of personality: neuroticism, agreeableness, extroversion, conscientiousness, and openness. Costa and McCrae (1992) specified six underlying facets for each of the five factors that together form a hierarchical framework of personality. Cloninger, Svrakic, and Przybeck (1993) offered a model of personality that includes two distinct factors of temperament and character. In Cloninger's model, temperamental factors (i.e., novelty seeking, harm avoidance, reward dependence, and persistence) are highly heritable and manifest early in life, while factors of character (i.e., self-directedness, cooperativeness, and self-transcendence) are thought to develop over time.

Although the preceding models and variants of these models provide information on the cognitive and emotional processes and behaviors of individuals, they do not describe the extreme nature of personality disorder features, as they have been described in the clinical literature. The clinical adoption of a model such as the five-factor model would mark a significant departure from the historical, and current, focus on psychiatric abnormality and pathology. Personality disorder treatment approaches based on individual difference models of personality have been proposed (e.g., Stone, 2002), but substantial research is needed to demonstrate the utility of these approaches over current *DSM*-driven conceptualizations of personality pathology.

It remains contentious whether personality dysfunction classifications should follow individual difference models of personality, such as the five-factor model, or should be based on empirical findings regarding the latent structure of the clinically recognized criteria. Rather than reviewing how current personality disorder criteria relate to other theories of personality development and personality organization, this article examines empirical findings on the latent structure of personality pathology as assessed through clinician ratings.

In the most recent version of the *DSM* (*DSM-IV-TR*; APA, 2000), personality disorders are conceptually grouped into three clusters with each cluster defined by similar *descriptive* features: Cluster A (odd or eccentric features) comprises paranoid, schizoid, and schizotypal personality disorders; Cluster B (dramatic, emotional, or erratic features) comprises antisocial, borderline, histrionic, and narcissistic personality disorders; and Cluster C (anxious or fearful features) comprises avoidant, dependent, and obsessive–compulsive personality disorders. This super-ordinate structure assumes that disorders within the same class are more similar than disorders across classes. However, research consistently demonstrates high comorbidity both within and across Axis II clusters. Studies indicate that at least 50% of personality disorder patients meet criteria for two or more personality disorder diagnoses (Fossati et al., 2000; Morey, 1988a; Pfohl, Coryell, Zimmerman, & Stangl, 1986). Authors have argued that these rates of comorbidity may not, in fact, reflect high levels of co-occurrence of distinct personality disorders but instead reveal significant overlap and redundancy in the disorder criteria. This consistently high rate of Axis II comorbidity suggests that the current structure may not be the most parsimonious organization of personality pathology. The current organization groups disorders by similar surface features rather than by shared etiology or by underlying structure, which limits the usefulness of the clustering system. The 10 disorders and three higher-order clusters of the *DSM-IV-TR* may not represent distinct and unique factors of psychopathology.

A number of investigators have utilized factor analysis to examine the empirical validation of the *DSM* classification system of personality pathology. In much of the early work on this topic, a team of investigators developed and employed a self-report measure of personality pathology with a variety of healthy and clinical samples (Livesley & Jackson, 1986; Livesley, Jackson, & Schroeder, 1991, 1992; Schroeder & Livesley, 1991). As one might

expect, given the nonempirical origins of Axis II, the findings of Livesley, Jackson, and Schroeder do not resemble or support the current *DSM* disorder structure. These early studies assessed personality pathology with self-report questionnaires rather than clinical interviews.

Investigators disagree about the validity of self-report measures of personality pathology relative to clinical interview assessments. Certainly, every method of personality assessment has unique benefits and limitations. Self-report assessments have been critical in the development and advancement of personality pathology conceptualization. The feasibility of these measures is far superior to that of time-intensive interviews or clinician ratings. However, semistructured interviews provide the opportunity to clarify areas of confusion with patients and to obtain behavioral examples relevant to the personality disorder criteria. Interviews enable researchers to verify the consistent, enduring nature of personality disorder criteria and prevent the positive endorsement of infrequent behaviors, thoughts, or feelings. Additionally, a number of the patient characteristics described in Axis II criteria are likely to be more apparent to clinical observers and acquaintances than they are to the individual being assessed. Due to this egosyntonic nature of the behavioral patterns, individuals may lack insight into the appropriateness of their behaviors or the effects of their behaviors on others (Klein, 2003). Moreover, participants may report a level of mental health not corroborated by clinical assessment (Shedler, Mayman, & Manis, 1993). To an extent, clinical interviews and clinician-rating methods of assessment circumvent these issues by combining a participant's verbal self-report with the clinician's assessment of nonverbal cues and within-interview interactions. These methods rely on the interviewer's ability to detect deception and evasiveness that are associated with certain personality disorders and on the interviewer's ability to rate participants' comments and behavior according to their knowledge of the diagnostic criteria. Optimally, clinician-rated assessments *combine* the self-report of participants with the clinical expertise of the interviewer (Oldham & Skodol, 2000). It has been posited that method variance in personality disorder assessment has obscured the findings on the associations of personality disorder criteria (Bagby, Joffe, Parker, & Schuller, 1993). This article does not aim to review all previous literature examining the underlying structure of personality disorder symptoms. Instead, given the stated advantages of clinician-rated assessment of personality disorder criteria, we focus on a particularly important subset of this literature, studies of the latent structure of personality pathology that included clinical interview or clinician-rated assessments of personality disorder features.

Investigations have examined personality structure in the general population and in clinical samples. As an overview, this article reviews analyses of the cluster structure of Axis II and the latent structure of the individual personality disorder criteria. Such studies, primarily utilizing exploratory factor analysis, offer mixed results on the factor structure of personality disorders. Overall, the studies reviewed provide evidence that the *DSM* Axis II classification system does not adequately represent disordered personality. Two recent meta-analysis studies are summarized and discussed as models for the next phase of research efforts in personality pathology taxonomy. Future directions in research on personality pathology and clinical implications of a new model will be discussed.

### CLUSTER ORGANIZATION

Several studies have examined the *DSM* cluster organization at the disorder level by asking mental health professionals to rate the level of personality disorder that one or two of their own patients exhibited, or by assessing pathology through clinical interview (Table 1). Kass, Skodol, Charles, Spitzer, and Williams (1985) examined the Axis II severity ratings of 609 psychiatric outpatients. Psychiatry residents and psychology interns were asked to assess the severity level of each of the 11 *DSM-III* personality disorders on a four-point rating scale.[1] The authors found that 51% of their sample met criteria for one or more personality disorders; an additional 13% of the sample received a rating of "almost meets *DSM-III* criteria." Exploratory factor analysis, with varimax rotation, generated a four-factor solution that partially resembled the *DSM-III* cluster organization. Ratings for paranoid, schizoid, and schizotypal personality disorders (Cluster A) composed factor one. Factor two consisted of avoidant, dependent, and passive−aggressive personality disorders (most of *DSM-III* Cluster C). The third factor comprised narcissistic personality disorder, histrionic personality disorder, antisocial personality disorder, and

**Table 1.** Studies analyzing the structure of personality disorders—disorder level organization

| Citation | Sample size | Sample type | PD assessment | Analysis summary |
|---|---|---|---|---|
| Bell & Jackson (1992) | 112 | Psychiatric inpatients | SIDP | CA: 3 clusters<br>1. Narcissistic, histrionic, antisocial, and borderline<br>2. Schizotypal, schizoid, paranoid, dependent, and obsessive–compulsive<br>3. Dependent, avoidant, borderline, histrionic, and schizotypal |
| Blais et al. (1997) | 320 | Psychiatric patients | PD symptom checklist | FA: 3 factors<br>1. Schizotypal, schizoid, paranoid, avoidant, and obsessive–compulsive<br>2. Narcissistic, passive–aggressive, histrionic, and antisocial<br>3. Dependent and borderline |
| Fossati et al. (2000) | 431 | Psychiatric inpatients | SCID-II | PCA: 3 factors<br>1. Dependent, depressive, avoidant, narcissistic, passive–aggressive, and histrionic<br>2. Schizotypal, schizoid, and paranoid<br>3. Borderline, antisocial, and obsessive–compulsive |
| Hyler & Lyons (1988) | 358 | Psychiatric outpatients | PD severity ratings | FA: 4 factors<br>1. Schizotypal, schizoid, and paranoid<br>2. Narcissistic, histrionic, antisocial, and borderline<br>3. Dependent, passive–aggressive, and avoidant<br>4. Obsessive–compulsive |
| Kass et al. (1985) | 609 | Psychiatric outpatients | PD severity ratings | FA: 4 factors<br>1. Paranoid, schizotypal, and schizoid<br>2. Avoidant, dependent, and passive–aggressive<br>3. Narcissistic, histrionic, antisocial, and borderline<br>4. Obsessive–compulsive |
| Mulder & Joyce (1997) | 148 | Psychiatric outpatients and inpatients | SCID-II | FA: 4 factors<br>1. Antisocial, borderline, narcissistic, histrionic, passive–aggressive, and paranoid<br>2. Schizoid<br>3. Avoidant and dependent<br>4. Obsessive–compulsive |
| Rodebaugh et al. (2005) | 301 | Anxiety patients | SCID-II | CFA: Supported *DSM* 3-cluster model |
| Yang et al. (2002) | 227 | Psychiatric outpatients and inpatients | PDI-IV | CFA: Did not support *DSM* 3-cluster model |

*Note:* CA, cluster analysis; CFA, confirmatory factor analysis; FA, factor analysis; PCA, principal component analysis; PD, personality disorder; PDI-IV, Personality Disorder Interview for *DSM-IV* (Widiger et al., 1995); SCID-II, Structured Clinical Interview for *DSM-IV* Axis II Personality Disorders (First et al., 2000) or Structured Clinical Interview for *DSM-III-R* Personality Disorders (Spitzer et al., 1987, 1990); SIDP, Structured Interview for *DSM-III* Personality Disorders (Pfohl, Stangl, & Zimmerman, 1982).

borderline personality disorder (Cluster B). Obsessive–compulsive personality disorder was the sole disorder of factor four. Overall, these findings closely resemble the current cluster organization.

Hyler and Lyons (1988) replicated these findings using data from 287 psychiatrists. The investigators asked each physician to rate one of his or her patients who had significant personality disturbance that met *DSM-III* criteria for a personality disorder, and to rate one patient who did not have severe personality disturbance, on a four-point scale. Of the 552 patients whom the psychiatrists rated, 358 had ratings for all 11 personality disorder scales; thus, these 358 participants were included in a factor analysis. Ninety percent of the patients in this sample were outpatients. The varimax-rotated solution of the factor analysis yielded four factors that were similar to the *DSM* cluster structure. Ratings on schizotypal,

schizoid, and paranoid personality disorders (Cluster A) composed factor one. Factor two consisted of narcissistic personality disorder, histrionic personality disorder, antisocial personality disorder, and borderline personality disorder (Cluster B). Dependent, passive–aggressive, and avoidant personality disorders (most of *DSM-III* Cluster C) composed the third factor, with obsessive–compulsive personality disorder being the only disorder represented on the fourth factor. As the authors note, these findings may be an artifact of psychiatrists' beliefs about which personality disorder diagnoses are closely related. The findings, otherwise, offer support for the *DSM-III* cluster structure, closely replicating the results of Kass et al. (1985).

Blais, McCann, Benedict, and Norman (1997) adopted a similar methodology, but they reported notably different results than Kass et al. (1985) and Hyler and Lyons (1988). The investigators asked psychiatrists, doctoral-level

psychologists, and master's-level psychiatric social workers to rate one of their patients who had been diagnosed with a personality disorder, and with whom they had at least 10 hours of clinical contact, on a symptom checklist questionnaire comprised of the 92 criteria for the *DSM-III-R* personality disorders. Total scores (total number of endorsements) were computed for each personality disorder for 320 identified patients. The investigators describe a three-factor solution, with varimax rotation, that accounted for 61% of the disorder variance. Similar to Kass et al. (1985) and Hyler and Lyons (1988), the authors' first factor included the Cluster A disorders of schizotypal, schizoid, and paranoid personality disorders. However, Cluster C disorders avoidant personality disorder and obsessive–compulsive personality disorder also loaded on the first factor. The narcissistic, passive–aggressive, histrionic, and antisocial personality disorders composed the second factor. Loading on the third factor were dependent personality disorder and borderline personality disorder. The authors described these factors as (a) a social detachment/emotional constriction factor; (b) a self-centered, extraverted factor; and (c) an emotionality, interpersonal neediness factor. Even though awareness of the *DSM* criteria and beliefs about the relationships of personality disorder behaviors could also have biased raters in this study, investigators did not find support for the organization of the *DSM* Axis II. Furthermore, the methodology of the three studies above may be more representative of many clinicians' diagnostic process in which professionals review criteria sets and determine how closely a patient meets the disorder description.

Bell and Jackson (1992) examined personality pathology organization in 112 psychiatric inpatients. Unlike the psychiatric ratings of the preceding studies, Axis II symptomatology was assessed using the Structured Interview for *DSM-III* Personality Disorders (Pfohl et al., 1982). In this study of the disorder scale scores, the authors performed an additive clustering analysis, allowing for overlapping clusters, that did not yield strong support for the *DSM-III* cluster organization. Analyses indicated that a three-cluster solution best represented the data. The first cluster included all of the Cluster B disorders. The second cluster comprised odd/eccentric disorders of Cluster A, but this cluster also included dependent and obsessive–compulsive personality disorders. The third cluster comprised dependent,

avoidant, borderline, histrionic, and schizotypal personality disorders. The authors concluded that these findings offered moderate support for Clusters A and B but did not provide empirical support for Cluster C, as these disorders were split across the second and third clusters. This conclusion echoed that of Kass and colleagues' (1985) and Hyler and Lyons' (1988) finding of less consistent association among the Cluster C disorders.

Mulder and Joyce (1997) reviewed the cluster organization of personality disorders as part of an investigation of the relationship of personality disorder categories with dimensions of normally distributed personality characteristics. A sample of 148 participants, primarily recruited during outpatient treatment for major depression or anxiety, completed the Structured Clinical Interview for *DSM-III-R* Personality Disorders (SCID-II; Spitzer et al., 1987). The four-factor solution, with varimax rotation, did not closely resemble current *DSM* organization. Factor one comprised antisocial, borderline, narcissistic, histrionic, passive–aggressive, and paranoid personality disorders, while factor two consisted solely of schizoid personality disorder. Avoidant and dependent personality disorders loaded on factor three and obsessive–compulsive personality disorder was the only disorder with a notable loading on factor four. Schizotypal personality disorder did not have a strong loading on any of the factors but displayed loadings between 0.41 and 0.48 across factors one, two, and three. It was concluded that personality disorder symptoms can be reduced to four factors termed "the four A's": antisocial, asocial, asthenic (anxious), and anankastic (obsessive–compulsive). Mulder and Joyce then demonstrated how the "four A's" relate to dimensions of temperament, such as novelty seeking and reward dependence, noting that often personality pathology relates to one end of a personality dimension but not both extremes. These findings fail to support the *DSM* cluster structure, while also relating the empirical findings to dimensions of inherited traits of temperament.

Fossati et al. (2000) enrolled 431 Italian psychiatric patients in a study on the prevalence and structure of personality pathology in an inpatient sample. All patients were administered the SCID-II (First, Spitzer, Gibbon, Williams, & Benjamin, 1994). The authors found that over 70% of the sample met *DSM-IV* criteria for at least one personality disorder and the rate of co-occurrence

of personality disorders in the sample was greater than 50%. Principal component analysis generated a three-factor solution to the personality disorder structure. The first factor comprised disorders connected by a theme of social insecurity. This factor combined dependent personality disorder, avoidant personality disorder, and narcissistic personality disorder. The second component closely resembled Cluster A, merging paranoid, schizotypal, and schizoid personality disorders. Component three included disorders on a continuum of instability/rigidity; borderline and antisocial personality disorder loaded on this component as did obsessive–compulsive personality disorder. Although these results confirm the Cluster A dimension of "odd/eccentric" features, the findings overall do not support the disorder-level organization of personality pathology.

Yang, Bagby, Costa, Ryder, and Herbst (2002) examined the validity of the *DSM-IV* cluster structure in a sample of 227 Chinese psychiatric patients. For this study, the investigators administered the Personality Disorder Interview for *DSM-IV* (Widiger, Mangine, Corbitt, Ellis, & Thomas, 1995) and added 31 additional questions based on Chinese culture, clinical findings, and *DSM-IV* criteria. Confirmatory factor analysis failed to provide support for the *DSM-IV* cluster system. The authors noted that they were unable to identify a more valid organization for the *DSM-IV* personality disorders. The findings of this study are limited due to the additional questions and cultural differences that may have impacted the diagnosis of each personality disorder. Nevertheless, these results from a cross-cultural sample further cast doubt on the validity of the *DSM* cluster organization.

Finally, Rodebaugh, Chambless, Renneberg, and Fydrich (2005) combined data from three archival data-sets to examine the factor structure of *DSM-III-R* personality disorders. In those previous studies, Axis II pathology had been assessed with the Structured Clinical Interview for *DSM-III-R* (Spitzer, Williams, Gibbon, & First, 1990). Rodebaugh et al. conducted confirmatory factor analyses testing competing models of personality disorder structure. Their findings provide support for the *DSM* cluster organization with the *DSM* three-factor model being a significant improvement over a one-factor model of personality pathology.

Three of the preceding studies provided support for the *DSM* organization, while the other five failed to replicate the *DSM* cluster structure as a valid representation of the underlying structure of personality pathology. Because each personality disorder is a collection of multiple symptoms and multiple constructs, studies examining cluster structure either affirm or refute the *DSM* organization but do not indicate which individual, underlying factors account for personality pathology covariation. For example, the Cluster A disorders of paranoid, schizotypal, and schizoid personality disorders generally are included under one factor, but it is unknown from disorder-level studies whether dimensions of suspiciousness, low sociability, limited emotionality, an unknown construct, or a combination of these characteristics is responsible for the relationship of these disorders.[2] All of the above studies thus are limited in that they were conducted with personality disorders, rather than personality disorder criteria items, as the measurement units of the factor analyses. In the study of Blais et al. (1997), exploratory factor analysis on the 92 symptom checklist items would have provided further information on the validity of the personality disorder classification system. Additionally, Bell and Jackson (1992) noted that future reports should consider analysis at the item level, but they only considered scale totals in the published study. Analyses examining the structure of individual personality constructs—investigations of criterion-level covariation—provide more meaningful data that will aid in the development of the *DSM-V* conceptualization and definition of personality disorders. The investigations reviewed below analyzed the factor structure of personality pathology at the criterion item level (Table 2).

## CRITERIA ORGANIZATION

### Community Samples

Two investigations have examined the structure of personality disorder traits in the general population. Nestadt et al. (1994) argued that comorbid psychiatric problems bias clinical samples toward overestimation of distressing traits, which may confound the results of factor-analytic studies of personality disturbance. Accordingly, the investigators recruited a sample of 763 participants from the surrounding community in order to identify empirically valid constructs of personality pathology. The authors did not utilize a semistructured interview to assess personality pathology, but rather asked psychiatrists to rate participants on 93 *DSM-III* personality disorder

**Table 2.** Studies analyzing the structure of personality disorders—criteria organization

| Citation | Sample size | Sample type | PD assessment | Factor labels[a] |
|---|---|---|---|---|
| Moldin et al. (1994) | 302 | Psychiatric controls | PDE | CFA: 3 factors—men<br>  1. Social inhibition/restricted affectivity<br>  2. Irritable aloofness/hypersensitivity<br>  3. Emotional instability/dependence avoidance<br>CFA: 3 factors—women<br>  1. Social inhibition/aloof hypersensitivity<br>  2. Inflexible hypersensitivity/emotional hyperreactivity<br>  3. Emotional instability/dependence avoidance |
| Morey (1988b) | 291 | Psychiatric patients | PD symptom checklist | CA: 2 superordinate classes<br>  1. Dependent, avoidant, obsessive–compulsive, schizotypal, and schizoid<br>  2. Histrionic, borderline, paranoid, passive–aggressive, and antisocial |
| Nestadt et al. (1994) | 763 | Community sample | PD severity ratings | FA: 2 factors<br>  1. Antisocial<br>  2. Schizotypal and schizoid<br>FA: 5 factors<br>  1. Scrupulousness<br>  2. Timidity<br>  3. Animation<br>  4. Trust<br>  5. Warmth |
| Sanislow et al. (2002) | 668 | Psychiatric outpatients and inpatients | DIPD-IV | CFA: 4 factors<br>  1. Borderline<br>  2. Schizotypal<br>  3. Avoidant<br>  4. Obsessive–compulsive |
| Torgersen et al. (1993) | 445 | Relatives of psychiatric patients | SCID-II | FA: 12 factors<br>  1. Suspicious<br>  2. Seclusive<br>  3. Affect-constricted<br>  4. Unreliable<br>  5. Disorganized<br>  6. Appealing<br>  7. Egocentric<br>  8. Insecure<br>  9. Submissive<br>  10. Perfectionistic<br>  11. Contrary<br>  12. Self-effacive |

*Note:* CA, cluster analysis; CFA, confirmatory factor analysis; DIPD-IV, Diagnostic Interview for *DSM-IV* Personality Disorders (Zanarini, Frankenburg, Sickel, & Yong, 1996); FA, factor analysis; PDE, Personality Disorder Examination (Loranger et al., 1985); PD, personality disorder; SCID-II, Structured Clinical Interview for *DSM-III-R* Personality Disorders (Spitzer & Williams, 1985).
[a] Where possible, authors' labels are listed.

criteria. Ratings were based on the historical information that the four participating psychiatrists gathered during the psychiatric examinations and on the patients' behavior during the interviews. The authors first conducted a confirmatory factor analysis on the structure of each of the *DSM-III* personality disorders, hypothesizing that if the criteria for a given disorder did not fit a single-factor model, then the 93 Axis II traits were not best organized into the 11 *DSM-III* disorders. Because the *DSM-III* only listed three symptoms for dependent and schizoid personality disorders, the authors were unable to perform the analysis on these two disorders. The investigators found that only one personality disorder, obsessive–compulsive

personality disorder, fit a single-factor model with all relevant traits included. Histrionic personality disorder was fit by two factors and avoidant personality disorder was fit by three factors with all relevant symptoms included. Traits were omitted from the other disorder models, which allowed schizotypal and narcissistic personality disorders to fit a single-factor model, paranoid personality disorder a two-factor model, and antisocial personality disorder a three-factor model. The authors did not report successful models for borderline or passive–aggressive personality disorders.

Based on the preceding results, Nestadt et al. (1994) abandoned the *DSM-III* disorder structure and executed

an exploratory factor analysis of the 93 criteria. They described both a two-factor orthogonal solution and a five-factor orthogonal solution to the 93 personality disorder traits. In the two-factor solution, the first factor contained antisocial features of deviant and delinquent behaviors. The second factor primarily included schizotypal and schizoid characteristics. In the five-factor solution, the first factor again included antisocial features, which led the authors to label the factor "scrupulousness." The second factor comprised avoidant and dependent personality disorder features; thus, the authors labeled this factor "timidity." The third factor, named "animation," included behavioral patterns of social sensitivity, emotional lability, and impetuousness. The fourth factor, "trust," covered traits of paranoia and irritability. The final factor, which the authors labeled "warmth," included patterns of behavior that actually related to lack of warmth or social affiliation. The authors commented that the five-factor solution selected for their sample resembled the five-factor model (Costa & Widiger, 2002) with the first factor of scrupulousness corresponding to the five-factor concept of conscientiousness, timidity aligning with neuroticism, animation with extroversion, trust with agreeableness, and warmth with openness. It is of note that the personality factor structure found in this study, with a sample of participants *not* selected for psychopathology, more closely resembles a model of "normal" personality than the structure suggested in the *DSM*.

In another study of personality pathology in otherwise psychologically healthy participants, Moldin, Rice, Erlenmeyer-Kimling, and Squires-Wheeler (1994) examined the latent structure of personality disorders in a sample of 302 healthy control adult participants who enrolled in a larger longitudinal investigation of the offspring of schizophrenic patients. The subjects included in this study completed the Personality Disorder Examination (Loranger, Susman, Oldham, & Russakoff, 1985), a clinician-rated interview assessing *DSM* personality disorder symptomatology. The authors reported that 7.3% of their "healthy sample" met *DSM-III-R* criteria for a personality disorder, with a high rate of personality disorder comorbidity among those patients meeting criteria for any Axis II disorder. More than half of the participants diagnosed with schizotypal personality disorder, borderline personality disorder, histrionic personality disorder, and obsessive–compulsive personality

disorder in this study met criteria for a second personality disorder. Confirmatory factor analysis indicated that a three-factor model of personality pathology was superior to one- or two-factor models. The three-factor model indicated in the analyses, however, did not correspond to the *DSM-III-R* cluster organization. Additionally, the authors found distinct latent structures for men and women in the project. The investigators labeled the three factors for men as social inhibition/restricted affectivity, irritable aloofness/hypersensitivity, and emotional instability/dependence avoidance. The female latent structure comprised factors of social inhibition/aloof hypersensitivity, inflexible hypersensitivity/emotional hyperreactivity, and emotional instability/dependence avoidance. The authors suggest that both three-factor models correspond closely with Eysenck's theory of normal personality (factors of neuroticism, extraversion/ introversion, and psychoticism; Eysenck, 1970) and with aspects of other personality models. Given that the study sampled psychologically healthy controls with a relatively low base rate of personality pathology, one would not be surprised to identify a latent structure in accord with theories of general personality development. In fact, in both studies that examined personality pathology in community samples, the factor structure of pathology more closely resembled primary models of normal personality development than the *DSM* structure of personality dysfunction.

### Clinical Samples

A limited number of studies have examined the classification system of personality pathology at the criteria level in clinical, treatment-seeking populations.[3] Compared to the two studies with community samples reviewed above, the clinical samples exhibited a more impaired level of functioning. Aiming to test the *DSM-IV* disorder organization, Sanislow et al. (2002) recruited 668 patients who were currently or had recently been in psychiatric treatment or psychotherapy. The authors only enrolled participants who met *DSM-IV* criteria for one of four personality disorders (borderline, schizotypal, avoidant, or obsessive–compulsive personality disorder) or met criteria for major depression but no personality disorder. Axis II symptoms were assessed using the Diagnostic Interview for *DSM-IV* Personality Disorders (Zanarini et al., 1996), a semistructured interview that includes

multiple questions pertaining to each *DSM-IV* criterion. On average, participants in the study met criteria for 1.4 personality disorders. Confirmatory factor analysis supported the four disorders as distinct factors with personality criteria loading on their respective disorders; two-year follow-up data reinforced that this four-factor structure was the best fit for this Axis II data. Thus, this study provides empirical support for the Axis II criteria organization. However, the impact of these findings is tempered by the select sample included in the study. The authors examined four disorders that most researchers and clinicians conceptualize as quite distinct from each other. It is quite possible that confirmatory factor analysis would produce a different result had the authors recruited individuals who met criteria for each of the 10 *DSM-IV* personality disorders. With multiple disorders from each cluster represented, one would expect greater overlap of disorder criteria, which would decrease the likelihood of model confirmation.

Based on the categorical nature of *DSM* personality disorder criteria, Morey (1988b) executed a hierarchical clustering technique, rather than factor analysis, to examine personality disorder traits in 291 patients who were identified by their clinician as having a personality disorder. Using recruitment and assessment strategies similar to Hyler and Lyons (1988) and Blais et al. (1997), Morey contacted psychiatrists and clinical psychologists, asking them to provide ratings for one or two of their patients who had been diagnosed with a personality disorder and with whom the clinician had a minimum of 10 hours of contact during the past year. The clinicians were asked to complete a 166-item checklist, which described features of the 11 *DSM-III-R* personality disorders, by indicating which items were representative of the patient's current and long-term functioning. Cluster analysis identified two, rather than three, superordinate classes of disorders that could be described as internalizing versus externalizing disorders. The first class contained features of dependent, avoidant, obsessive–compulsive, schizotypal, and schizoid personality disorders. The second, "externalizing" class contained traits from the histrionic, borderline, paranoid, passive–aggressive, and antisocial personality disorders. Although many of the criteria were not found to be most closely linked with their respective personality disorders, the author named most of the "disorder" clusters for the most prevalent criteria

members. Within the internalizing class, dependent and avoidant traits were more closely related than either was to obsessive–compulsive personality disorder. Additionally, dependent, avoidant, and obsessive–compulsive personality disorders were more closely associated with each other than with schizotypal and schizoid personality disorders. Interestingly, paranoid personality disorder was not placed within this class and was more closely related to borderline and histrionic personality disorders than to other disorders. Antisocial features were split into two clusters within the externalizing class. One small cluster of symptoms, primarily comprised of childhood deviance and impulsivity, was named "aggressive," while the other nonaggressive features combined with exploitive narcissistic personality disorder features to form a "psychopathic" cluster. The relationships of personality disorder traits in this study did not reflect the assumptions of the current Axis II organization. Again, the structure of personality disorder traits in this investigation does not support the *DSM* classification system.

Drawing from a twin-family study of psychiatric patients, Torgersen, Skre, Onstad, Edvardsen, and Kringlen (1993) examined the factor structure of personality pathology in nonschizophrenic twins and their relatives for a total sample of 445 individuals. All participants were administered the SCID-II (Spitzer & Williams, 1985). Rather than including all of the SCID-II items in one exploratory factor analysis, the authors conducted separate factor analyses for the criteria of each personality disorder. Individual analyses of the criteria of each of the personality disorders mostly generated three-factor solutions. These within-disorder factors were then included in a higher-order factor analysis, with oblique rotation, which resulted in 12 factors of personality pathology. It is unclear why this two-stage approach to analysis was chosen, but the results describe 12 clinically meaningful factors that do not closely adhere to the *DSM-III-R* structure. The authors labeled the 12 dimensions of their findings as suspicious, seclusive, affect-constricted, unreliable, disorganized, appealing, egocentric, insecure, submissive, perfectionistic, contrary, and self-effacive dimensions. Although a few of these factors resemble *DSM* personality disorders (i.e., suspicious [paranoid], seclusive [avoidant], perfectionistic [obsessive–compulsive]), items corresponding to the *DSM-III-R* criteria of each personality disorder typically were spread between two

or three of these personality dimensions. The dispersal of these items substantiates claims that high rates of personality disorder comorbidity may be the consequence of diagnostic overlap.

## SUMMARY

The studies reviewed highlight the need for identifying the latent dimensions of personality pathology to form an alternative representation that would more accurately correspond to the true associations of maladaptive personality traits. Findings indicate that personality pathology does not exist on one continuum of severity, but little consensus has been reached on the nature of the organizing factors. Results from investigations examining the factor structure of the current *DSM* disorders have been mixed. Three studies generally supported the current three-cluster organization, while five others suggested other organizations of the current disorders. Other investigations have examined the structure of personality disorder criteria, using criteria items rather than disorders as the unit of measurement. Two investigations with community samples produced factor structures that resembled models of "normal" personality development rather than the current organization of personality dysfunction. Studies examining the criteria structure in clinical samples generally have not supported the *DSM* organization, suggesting that personality pathology does not, in fact, occur in patients in the patterns currently described in the *DSM*. Overall, empirical investigations of the structure of personality pathology have failed to replicate the Axis II organization. With this fact solidly established, additional factor analytic studies are not needed. Instead, further efforts are required to integrate existing findings and move toward consensus on an empirical approach to personality pathology taxonomy. Rather than only failing to support the *DSM*, it is important to use the existing data constructively to identify consensus across studies about alternative organizations of personality pathology symptoms. Two investigations by O'Connor provide preliminary models for this next phase of research.

## SEEKING CONSENSUS ON AN ALTERNATIVE STRUCTURE

Two studies to date have combined multiple factor analytic studies to test models of personality structure. In a sophisticated examination of varying theories of

personality disorder configuration, O'Connor and Dyce (1998) evaluated the fit of personality disorder models, including the *DSM* structure, using the data of 12 previously reported datasets from nine separate studies. The correlation matrices included in O'Connor and Dyce's analyses involved general community samples and clinical samples, and covered a range of personality assessment methods including clinician ratings, semistructured interviews, and self-report measures. In the first step of analysis, target factor loading matrices were constructed according to each theory's model of the relationships between personality disorders. Following common factor analysis of the personality disorder correlation matrices and rotation using the orthogonal Procrustes technique, the degree to which each model-based matrix fit the data (the rotated matrices) was computed. The fit of the *DSM* theory of personality disorder structure indicated that it was a statistically significant, but imperfect, model of personality disorder correlations. In these analyses, the overall fit of the Cluster B disorders consistently was higher than the other two cluster factors. Generally, the *DSM* cluster model outperformed other personality theories as a model of personality disorder correlations. Circumplex models and Millon's biosocial learning theory did not equal the *DSM* structure as a standard of fit; Cloninger's tridimensional theory and Torgersen and Alnaes's four-dimensional models similarly did not outperform the *DSM* standard. However, of the different personality structure theories tested, the five-factor model and Cloninger and Svrakic's seven-factor model had the highest congruence coefficients, both being superior to the *DSM* model. These preliminary findings on personality disorder structure provide support for ongoing efforts to reconceptualize personality pathology within the framework of "normal" personality theory (e.g., Costa & Widiger, 2002). In order to expand on O'Connor and Dyce's work, additional studies are needed that evaluate the correlation matrices of more recently published factor analytic work and more closely control for method variance in personality pathology assessment.

In a second study, O'Connor (2005) gathered 33 previously published personality disorder correlation matrices in order to identify a consensus personality disorder structure. The datasets again represented community samples and clinical samples and combined clinician symptom ratings, semistructured interviews, and self-report measures.

Principal components analyses were conducted on each correlation matrix and the consequent loading matrices were then rotated for maximum convergence. Varimax rotation then was applied to the initial consensus structure. Taken together, these data indicated that a four-component structure best represented the relationships of personality disorders. Dependent, avoidant, and borderline personality disorders had the highest loadings on the first component of the consensus structure. Antisocial, narcissistic, paranoid, and histrionic personality disorders loaded on the second component, although borderline personality disorder also had a lower but notable loading on this factor. Schizoid, schizotypal, and avoidant personality disorders formed component three, and histrionic personality disorder had a meaningful negative loading on this component. Only obsessive–compulsive personality disorder loaded on the fourth component. O'Connor notes that these components resemble four factors of the five-factor model, the four factors that most commonly relate to personality disorder structures. The first component of the consensus structure represents neuroticism, the second component resembles low agreeableness, the third relates to introversion/extroversion, and the fourth component resembles conscientiousness. These findings again support the reconceptualization of personality pathology within the multidimensional space of a model of "normal" personality such as the five-factor model.

These two studies (O'Connor, 2005; O'Connor & Dyce, 1998) provide models for future work in personality disorder taxonomy as forerunners for similar meta-analytic investigations that seek a level of empirical consensus on an alternative structure of personality pathology from the existing literature. The investigations provide preliminary data on a consensus structure of personality disorders; they suggest an alternative *disorder-level* organization of pathology. However, as summarized above, nearly all investigations of the item-level, or criteria-level, structure of personality pathology fail to confirm the current criteria organization between disorders. There is a strong need for further research similar to the work of O'Connor that integrates the findings of past evaluations of item-level organization to develop a valid, alternative model of personality pathology symptoms. Although disconfirmation of the *DSM* structure has been an important step in the evolution of personality disorder conceptualization,

the benefit of previous factor analytic studies will be further extended when the data also are used to identify an empirically based consensus structure. Future research that analyzes the criteria-level correlation matrices of multiple studies is likely to provide the most valid representation of the true structure of personality pathology.

### IMPROVEMENTS IN THE PERSONALITY DISORDER CONFIGURATION

The studies reviewed in the previous sections of this article highlight the need for an alternative, empirically based model of personality pathology that would more accurately represent maladaptive personality. Future investigations that incorporate other types of data such as informants' reports on patient behavior would complement and extend the existing findings. The research of O'Connor and Dyce (1998; O'Connor, 2005) demonstrates how statistical evaluation of the existing *DSM* criteria can be used in the development and modification of an empirically valid diagnostic structure. Continuing this line of study would culminate in the identification of a personality disorder configuration that systematically considers findings in the existing literature and represents personality disorder structure across different populations. Diagnostic categories based on the identified, valid structure could then be created. Alternatively, the new structure could be tailored into a dimensional model of personality disorder, a theoretical shift advocated by many researchers (for recent discussion, see Widiger & Simonsen, 2005). Whether the final Axis II organization continues the present categorical approach or is changed to a dimensional conceptualization of personality pathology, empirical work on the true structure of personality disorders must continue in order to inform and shape the revision process.

Among current problems with personality disorder conceptualization, authors have argued that high rates of comorbidity may not be the consequence of actual rates of co-occurrence of personality disorders but rather are the product of significant overlap and redundancy in the disorder criteria. An empirically derived structure of personality pathology remedies this potential problem by grouping together commonly "comorbid" symptom profiles that actually stem from the same underlying construct. Once the diagnostic system is empirically informed and based on the latent structure of pathology, observed comorbidity will truly represent diagnosis co-occurrence.

One other advantage of the identification of an empirically supported personality pathology configuration is that the new structure will provide a more solid foundation for the modification and advancement of theory on the etiology and consequences of maladaptive personality traits. Nearly all personality disorder traits relate to poorer interpersonal functioning, and personality disorder pathology typically associates with more challenging courses of comorbid Axis I symptomatology. A valid, alternative model would greatly facilitate research that examines these processes. An eventual empirically derived classification system of personality pathology will help to clarify the clinical significance of these dysfunctional patterns of behavior.

Although it is beyond the scope of this review of factor analytic work to discuss each conceptual issue to be considered in the creation of a new *DSM* classification system, an important, recent series of articles on Axis II modification must be noted. In 2005, the *Journal of Personality Disorders* published a series of articles that outlined "the research agenda for the development of a dimensional classification of personality disorders." These articles present abbreviated versions of presentations given at a conference, sponsored by the American Psychiatric Association, on setting a research agenda for the next edition of the *DSM*. Widiger and Simonsen (2005) provided a noteworthy integration of 18 previously proposed dimensional models in their proposal of a hierarchical model of personality. The authors suggest that the two clinical spectra of internalization and externalization would be at the highest level of this proposed model. Four or five broad domains of personality functioning could follow at the next structural level. Personality trait scales would be placed below these and the lowest level of the hierarchical model would include behaviorally specific diagnostic criteria. The series also offers discussion on a number of critical considerations in personality disorder model revision, including issues of Axis I/Axis II continuity, diagnostic cutoff points, and the clinical utility of the alternate model. All of these considerations for the future research agenda are summarized in a final article by Widiger, Simonsen, Krueger, Livesley, and Verheul (2005). This series of articles highlights the fact that the empirical integration of the factor analytic findings reviewed in this article is but one step, albeit an important one, in the revision of the *DSM* classification system.

## RESEARCH AND CLINICAL IMPLICATIONS

The final section of this article will discuss research questions related to the empirically driven modification of the *DSM* classification system, and then will note clinical implications of the adoption of an alternate structure of personality pathology. Various existing and proposed lines of inquiry will benefit from the adoption of an empirically valid model for personality disorders.

A growing body of research on Axis I and Axis II comorbidity has associated personality dysfunction with more challenging courses of Axis I symptomatology and more complicated treatment for Axis I disorders. However, the paucity of empirical support for the current *DSM* structure suggests there is much more to be understood about the impact of personality on comorbid psychopathology. Findings on the beneficial versus detrimental impact of particular clusters on treatment outcome or course of illness vary across studies. Given the lack of empirical evidence for the cluster structure, it seems that an empirically derived organization of personality pathology would provide more clinically useful and precise information on the effects of maladaptive personality on Axis I disorders. Further research seeking an integrative model is needed to clarify the structure of personality pathology so that clinicians may utilize Axis II diagnostic information as intended in their case conceptualization and treatment planning.

For example, the negative impact of personality dysfunction on the course of major depressive disorder has been well established. Among potential vulnerability factors, Axis II pathology has emerged as one of the strongest predictors of time to relapse and recurrence among previously depressed individuals (Alnaes & Torgersen, 1997; Hart, Craighead, & Craighead, 2001; Ilardi, Craighead, & Evans, 1997; Lewinsohn, Rohde, Seeley, Klein, & Gotlib, 2000). The presence of personality pathology predicts a less stable course of depression and poorer prognosis in pharmacological and psychosocial treatments for depression (for review, see Ilardi & Craighead, 1995; Mulder, 2002). However, discrepancies and inconsistencies concerning the predictive validity of cluster–level pathology suggest that certain specific behavioral patterns of personality disorders may predict depressive course better than the current *DSM* cluster system. An empirically derived classification system could provide valuable information on the effects of different elements of maladaptive interpersonal functioning on Axis I disorders,

such as major depressive disorder, bipolar disorder, social phobia, or bulimia nervosa. Future studies are needed to identify an empirically derived factor structure for the personality pathology criteria and then to test the predictive validity of that new model with the course of Axis I disorders.

As *DSM* Axis II structure revisions progress, future investigations additionally must examine the unidirectional or bidirectional influence of Axis I symptomatology and personality pathology. Much of the existing research on personality disorder comorbidity with Axis I disorders has adopted a pathoplasty model of disorder influence, assuming that one condition affects the presentation or course of another. Research in this area generally has examined the impact of personality disorder patterns on the naturalistic course of a disorder or on treatment outcome for an Axis I disorder. Using the example of personality pathology and onset of depression, it is possible that maladaptive personality patterns contribute to the early onset of depression. However, it also is possible that the early onset of major depressive disorder may affect interpersonal functioning leading to the development of personality pathology (Ramklint & Ekselius, 2003). Alternatively, major depression and personality dysfunction may affect the development and course of each other equally and interactively. Further research needs to be undertaken to uncover the direction of effect between factors of personality dysfunction and Axis I disorders.

Furthermore, if personality pathology does in fact negatively impact the course of an Axis I disorder and treatment prognosis, what are the mechanisms of these effects? Various explanations for the deleterious effects of comorbid personality disorders, including increased generation of negative life events and exacerbation of the impact of negative events (Rao, Hammen, & Daley, 1999), remain to be explored. The concept of stress generation, one of the most common explanations for the effects of personality dysfunction on other disorders, states that displaying the maladaptive interpersonal patterns that are the essence of personality pathology may create stressful life events or a chronic state of stress that increases the risk for other disorders. For example, individuals with comorbid personality pathology may generate a greater number of interpersonal stressful events than other patients, which results in their greater vulnerability for depression. This heightened level of stress may partially explain the higher

rate of depression recurrence found in patients with comorbid personality pathology. Given the lack of empirical support for the *DSM* Axis II organization, it is necessary to investigate the factor structure of personality pathology before research makes advances in examining stress generation as a mediator of Axis I psychopathology among individuals with personality disorder symptoms. Further work identifying a consensus structure of personality pathology will contribute to and enhance theoretical conceptualizations of stress generation. With further advancement on the specification of the most fundamental behavioral patterns of personality pathology, the level and method of influence of personality pathology on Axis I disorders can be more adequately explored.

In addition to research on issues of comorbidity, a future step in the evaluation of a new empirically derived model of personality pathology will be to identify whether the structure of personality disorder behavioral patterns relates to underlying biological influences or causes. It is essential that our psychiatric diagnostic system be consistent with the relevant findings of neuroscience and behavioral genetics. Given the inconsistencies in linking individual difference models of personality to neurobiological and genetic influences, Paris (2005) has suggested that the field will be best served by exploring the associations of empirically derived factors of personality pathology (and better identified phenotypes) with neurobiological factors and genetic correlates. As the field's understanding of the neuroscience of emotion and subsequent behavior progresses, investigators will be able to determine the developmental processes of the latent dimensions of personality pathology (Pollak, 2005).

One of the previously reviewed studies (Torgersen et al., 1993) provides a preliminary model of the methodology of future investigations. In a twin-family study of psychiatric patients, Torgersen et al. adopted a psychometric–genetic approach of inquiry and examined the heritability of the 12 personality pathology dimensions generated in their factor analysis. Genetic analyses indicated that the affect-constricted and self-effacive dimensions showed fairly high heritability. The dimensions labeled contrary, perfectionistic, suspicious, and egocentric demonstrated moderate heritability, while the appealing, seclusive, disorganized, insecure, and unreliable dimensions displayed minimal heritability but relatively high common

environmental variance. The submissive dimension appeared to be completely explained by unique environmental variance. Indications that the affect-constricted dimension, a dimension of Cluster A items, is highly heritable are not surprising given the connection of these items to schizophrenia spectrum disorders (APA, 2000). On the other hand, the investigators' discovery that a self-effacing dimension, which includes items such as "accepts exploitation in his or her relationships" and "remains in relationships despite mistreatment out of fear of being alone," is strongly influenced by genetics is unexpected. One might presume that such traits are the more direct product of early attachment, behavioral reinforcement, or childhood abuse. These findings provide preliminary evidence of biological influence on personality pathology factors and emphasize the importance of further investigations that identify genetic correlates. The psychometric–genetic approach to this investigation serves as a model of future studies.

Finally, the clinical implications of a reorganization of Axis II are as substantial as the impact that an alternative model will have on research. A major consequence of a consistent, empirically derived classification of personality disorders is that the clinical significance of personality disorders will be elucidated. Because data, even with the current classification system, have illustrated the long-standing nature, significant impairments, and treatment resistance of personality disorders, it has become clear that the fundamental behavioral patterns associated with personality dysfunction are of great clinical significance. When the empirically valid, fundamental patterns have been identified, reliable diagnosis will likely follow. Furthermore, specific clinical interventions can be developed, matched, and tailored to the fundamental disorders. Then, the focus of clinical research on personality disorders can move to treatment outcome evaluations rather than stay with the historical and current emphasis on comorbidity and impact on Axis I disorders.

The prospect of an alternative, empirically valid model of personality dysfunction produces important clinical questions. If many symptoms that are not organized together in the *DSM* frequently occur in the same clients, could existing psychosocial treatments be modified to treat more effectively typical presentations of personality dysfunction? Would specific, new forms of treatment need to be developed to address the specific needs of

patients with extreme scores on empirically derived dimensions of personality pathology? What information would the dimensions of personality pathology provide clinicians about the predicted course and treatment of Axis I disorders? An eventual empirically derived classification system of personality pathology will help provide answers to these critical issues and will produce new insights in the treatment of personality pathology.

**CONCLUSIONS**

The personality disorder criteria and cluster organization of the *DSM-III* were developed through committee consensus on common or shared clinical features of distressed personality. Because this structure was rationally rather than empirically derived, the Axis II organization and diagnoses still necessitate empirical validation. Investigations of the structure of personality disorder criteria do not replicate the current classification system, signifying that Axis II must be reorganized based on empirical evidence. With this fact established in the literature, additional factor-analytic studies are not needed. Instead, further efforts are required to integrate existing findings and move toward consensus on an empirical approach to personality pathology taxonomy.

In the end, the primary purpose of any medically oriented diagnostic system is to create a language that permits the exchange of information in research and that guides health professionals to the most appropriate forms of treatment. A valid system of personality disorder diagnosis is needed to aid in treatment planning and in communication between researchers, practitioners, and patients. Although researchers debate the validity of the current personality classification system, its categorical nature, and the absence of "normal" personality dimensions, many would agree that the primary purpose of the current Axis II is to bring practitioners' attention to maladaptive traits that affect functioning, cause distress, and complicate treatment. With this information, treatment providers can tailor treatment to the potentially more complex needs of patients with Axis II disorders. Future investigations focused on the identification and description of the "true" factors of personality pathology will lead to the more valid and clinically meaningful use of the multiaxial system. Given that numerous studies indicate that personality disorders negatively affect the course of many other psychiatric disorders, research

investment now that enhances our understanding of the nature of these personality pathology factors will ultimately expand into therapeutic benefits for patients with a range of clinical presentations. Finally, the identification of empirically derived personality disorders is likely to lead to the development and evaluation of clinical interventions tailored to these disorders.

**NOTES**

1. Passive–aggressive personality disorder was not included in *DSM-IV*. Thus, there are 11 *DSM-III/DSM-III-R* personality disorders but only 10 *DSM-IV* personality disorders.

2. We would like to express our gratitude to an anonymous reviewer for noting this limitation in research on personality disorder cluster structure.

3. Shedler and Westen also have examined personality structure in clinical samples using their SWAP-200 assessment tool (Shedler & Westen, 2004a, 2004b; Westen, Dutra, & Shedler, 2005). These studies were not included in this review due to the measure's prespecified, or "fixed," distribution of personality descriptor ratings. When using this measure, which is based on the Q-sort method, half of the 200 personality descriptor statements must be rated as "0," least descriptive; only 8 of the 200 items are rated "7" as most descriptive. Previous investigations that have used this measure make important contributions in the expansion of personality pathology description. However, because of the SWAP-200's fixed distribution of personality features, these findings are not as relevant to discussion of the true structure of personality pathology.

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