

## **PERSONALITY ASSESSMENT IN DSM-5: EMPIRICAL SUPPORT FOR RATING SEVERITY, STYLE, AND TRAITS**

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Despite a general consensus that dimensional models are superior to the categorical representations of personality disorders in DSM-IV, proposals for how to depict personality pathology dimensions vary substantially. One important question involves how to separate clinical severity from the style of expression through which personality pathology manifests. This study empirically distinguished stylistic elements of personality pathology symptoms from the overall severity of personality disorder in a large, longitudinally assessed clinical sample ( $N = 605$ ). Data suggest that generalized severity is the most important single predictor of current and prospective dysfunction, but that stylistic elements also indicate specific areas of difficulty. Normative personality traits tend to relate to the general propensity for personality pathology, but not stylistic elements of personality disorders. Overall, findings support a three-stage diagnostic strategy involving a global rating of personality disorder severity, ratings of parsimonious and discriminant valid stylistic elements of personality disorder, and ratings of normative personality traits.

Personality disorder (PD) categories in the *Diagnostic and Statistical Manual of Mental Disorders*, fourth edition (DSM-IV; American Psychiatric Association [APA], 1994) have been widely criticized (e.g., Widiger & Clark,

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Supported by NIMH grants MH 50837, 50838, 50839, 50840, 50850, 073708, 080221. This publication has been reviewed and approved by the Publications Committee of the Collaborative Longitudinal Personality Disorders Study. The authors would like to thank M. Brent Donnellan for his helpful comments on a previous draft of this paper.

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2000), and PD researchers now largely agree that personality pathology should be represented dimensionally rather than categorically (Cuthbert, 2005; Widiger & Samuel, 2005; although see also Rottman et al., 2009). While this shift partly reflects skepticism among experts that PDs represent natural categories (Ahn, Flanigan, Marsh, & Sanislow, 2006), categorical models also raise pragmatic clinical concerns. For example, dimensional representations of PD phenomena are more reliable (Heumann & Morey, 1990) and valid (Morey et al., 2007) than categories. Furthermore, it does not appear that clinicians regard diagnostic categories as any more useful or less taxing than dimensions (Lowe & Widiger, 2009; Widiger & Samuel, 2005), although this has been a primary argument of proponents of categorical systems in the past (e.g., Frances, First, & Pincus, 1995).

Currently, the debate is focused on how to optimally dimensionalize PD assessment for DSM-5. The DSM-5 Personality and Personality Disorder Work Group is considering integrating several approaches in a multitiered, multidimensional model in an attempt to capitalize on the strengths of ostensibly competing theoretical frameworks and to enhance clinical utility (Skodol & Bender, 2009). A clinically optimal model of personality pathology should have maximal empirical support and appropriately weigh parsimony against coverage. An unduly complicated system would likely lead to extensive construct overlap, diagnostic inefficiency, and the promotion of constructs that would ultimately receive limited research attention, as with some DSM-IV PDs. Conversely, an overly simplistic system could limit clinicians' ability to adequately describe their patients and generate conceptual and empirical confusion in the research literature.

### **SEVERITY AND STYLE**

One key question in balancing parsimony and utility in PD assessment involves how to represent both pathological severity and stylistic expression. As Parker (1997) described, confounding PD severity and style, as the DSM-IV PDs do, makes it impossible to know whether an individual who meets criteria for one PD does so because of a pattern of behavior consistent with a particular PD or a level of severity consistent with personality pathology more generally. This confound also likely contributes to the problematic comorbidity among PD categories, as individuals with greater PD severity are likely to meet more PD diagnoses. Bornstein (1998, p. 334) opined that "our ability to describe different PDs in an abstract sense has outstripped our ability to diagnose them accurately" and, like Parker, argued that separating severity and style would enhance the discriminant validity of PD assessment. In such an approach, severity would represent the extent of global personality pathology that would be anticipated to lead to all types of dysfunctional outcomes. Severity would also quantify the dysfunction associated with PD and justify giving a diagnosis. Styles of symptomatic expression would be anticipated to represent most-

ly independent elements of personality pathology that specify the manner in which dysfunction is expressed. For example, among three patients with equal levels of overall pathology, knowing which patient is likely to become detached and aloof under stress, which will become agitated and aggressive, and which will become impulsive and reckless would inform a host of clinical predictions.

Despite the potential advantages of separating severity and style in PD assessment, it remains unclear how best to accomplish this in DSM-5. The closest the DSM-IV comes to a severity dimension is its definition of criteria for general PD involving (a) manifestation in two domains of functioning among cognition, affect, interpersonal behavior, or impulse control; (b) enduring inflexibility; (c) clinically significant distress or impairment; (d) stability, with onset in adolescence or childhood; and diagnostic primacy relative to (e) other psychiatric or (f) medical conditions. This model of PD severity has been described as too vague to operationalize effectively (Livesley, 1998), and it does not provide a theoretically justified quantification of severity. As it is also inefficient, researchers have argued for more parsimonious PD severity dimensions (Bornstein, 1998; Kernberg, 1984; Livesley, 1998; Morey, 2005; Parker, Hadzi-Pavlovic, Both, Kumar, Wilhelm, & Olley, 2004; Rutter, 1987). Finally, despite this general definition, severity and style remain confounded in the PD constructs of the DSM-IV (Parker, 1997).

Others have proposed models for separating PD severity from style with greater theoretical articulation and empirical promise. Livesley (1998) suggested generally defining PD as present when “the structure of personality prevents the person from achieving adaptive solutions to the universal life tasks of establishing a self-system, attachment and intimacy, and cooperativeness and prosocial behavior” (p. 141). In his model, PD would be coded, like other mental disorders, on the DSM Axis I. Livesley separates PD diagnosis from the assessment of personality traits, which would be coded on Axis II. Widiger and Trull (2007) made a similar proposal, but offered DSM-IV Global Assessment of Functioning (GAF) as a potential indicator of severity. Tyrer and Johnson (1996) proposed characterizing severity by the number and similarity of co-occurring diagnoses a particular patient met. Parker (1997; Parker et al., 2004) suggested assessing a general severity dimension alongside stylistic trait dimensions. For Parker et al., severity is best conceptualized as representing failures in cooperating and coping, or the ability to “love and work” (c.f., S. Freud, as quoted in Erikson, 1950, p. 265). Noting that “the best predictor of therapeutic outcome for PD patients is severity—not type—of personality pathology,” Bornstein (1998, p. 337) also offered tangible suggestions for assessing severity and style in DSM-5. He argued that PD assessment should involve three steps: (1) a single rating of overall personality pathology (severity), (2) intensity and impairment ratings for PD dimensions (style), and (3) ratings of potentially adaptive personality traits.

Although each of these models would probably improve upon the clarity

and diagnostic efficiency of the DSM-IV, they differ in important respects. The first involves their conceptualization of severity. While they could all be translated into a single, global rating of overall severity, the content that each model emphasizes varies. Livesley (1998) views severity as involving deficits in achieving a stable self-system, close relationships, and social obligations. Widiger and Trull (2007) see severity in a manner less specifically linked to personality. Tyrer and Johnson (1996) represent severity as the extent of diagnostic comorbidity, while Parker et al. (2004) argued for two components, failures in coping and cooperativeness, but also noted that “the need to retain non-cooperativeness can be challenged, in that non-coping was superior to non-cooperativeness in every [validity] analysis . . . [and] made its contribution redundant” (p. 236). Bornstein (1998) allied his severity dimension to domains of deficit described in the DSM-IV: distorted cognition, inappropriate affectivity, impaired interpersonal functioning, and difficulties with impulse control. Thus, the first important question in separating severity from style involves which elements comprise severity.

These models also differ in their conceptions of the role of personality traits relative to disorders. Whereas Livesley, Widiger and Trull, and Parker assert that trait dimensions should replace PDs to represent stylistic elements, Bornstein suggests that traits, and particularly possibly adaptive traits, should be coded separately from PDs. This distinction is paralleled in more general debates in the field, in which some authors view normative traits as clinically important but meaningfully separate from PDs (e.g., Morey et al., 2007), and others conceptualize traits and PDs as overlapping and redundant (e.g., Widiger & Trull, 2007).

Those who see traits and disorders as overlapping draw upon research indicating their convergence (e.g., Samuel & Widiger, 2008). From this perspective, Bornstein’s retention of the ten DSM-IV PDs in addition to assessing traits is problematically inefficient, as it is questionable whether stylistic elements of PD (as opposed to traits) beyond a general severity dimension are necessary at all. This is particularly so because most research suggests that global severity indicators capture the lion’s share of variance in predictions of clinical dysfunction, whereas stylistic elements are limited in their increment of global markers (Parker et al., 2004). Although many clinicians and researchers would likely argue that personality pathology cannot be adequately represented simply by an overall level of pathology, few empirical efforts have shown that more complex models increment such a limited set of severity dimensions in indicating important clinical outcomes. Thus, the second question for DSM-5 is whether, in an efficient model of PD, stylistic elements that are independent of traits and incremental of a general severity composite can be identified.

Theorists who distinguish traits from PDs cite their different empirical properties, such as the greater stability of traits and their differing patterns of temporal covariation and predictive validity (Morey et al., 2007;

Morey & Zanarini, 2000; Warner et al., 2004). In fact, given that a similar normative trait constellation involving high levels of neuroticism combined with low extraversion, agreeableness, and conscientiousness generally characterizes PD (Morey et al., 2002; Saulsman & Page, 2004), traits might be anticipated to relate as strongly to a general PD severity composite as to stylistic elements of PD. As suggested in Bornstein's model, normative traits are also clinically important for reasons beyond their correspondence to PD constructs or their ability to depict PD propensity more generally, including their ability to depict different kinds of dysfunction specifically (Hopwood et al., 2009) whether or not an individual has a PD (Hopwood et al., 2007). Thus, a third important question for DSM-5 is whether PDs and traits should be assessed in parallel or whether traits should supplant diagnostic constructs as indicators of stylistic elements of personality pathology.

This present study attempts to distinguish severity and style in PD symptoms in an effort to address each of these three unresolved issues. First, we derived a PD structure that aims to statistically differentiate generalized severity from stylistic elements of PD criteria. Second, we examined the nature of the identified structure by associating its dimensions to personality traits and functional outcomes. This allowed us to test (a) the viability and nature of a unidimensional indicator of PD severity, (b) the incremental utility of stylistic elements of PD for predicting patient functioning above and beyond this severity dimension, and (c) relations of personality traits to indicators of PD severity and style.

## **METHOD**

We used data from the Collaborative Longitudinal Personality Disorders Study (CLPS), a longitudinal, follow-along study originally designed to investigate four targeted personality disorders: avoidant, borderline, obsessive-compulsive, and schizotypal, as well as a comparison group with major depression but no PD. Several research reports have shown substantial diagnostic overlap and representation of all personality and many DSM-IV Axis I disorders in this sample (e.g., McGlashan et al., 2000). We chose to focus on PD data from the second year of the study rather than those gathered at baseline to limit potential artifacts upon PD criteria distributions (e.g., those related to initial group assignment, such as the potential for bimodality of criterion counts for targeted disorders), and to limit the effects of participant attrition, which was greatest in the first stages of the study. Using the 2-year evaluation yielded a sample of 605 people (392 women), 419 (69.3%) of whom were Caucasian, 88 (14.5%) African American, 77 (12.7%) Hispanic, 12 (2.0%) Asian, and 9 of other ethnic backgrounds. Ages ranged from 20 to 47 at the second year of data collection ( $M = 34.17$ ,  $SD = 8.18$ ). We also used data from the fifth year of the CLPS study to assess the validity of identified PD dimensions to predict 3-year prospective dysfunction.

## MEASURES

The Diagnostic Interview for DSM-IV Personality Disorders (DIPD-IV; Zanarini, Frankenburg, Sickel, & Yong, 1996), a semistructured interview, assesses each of the 10 personality disorders on DSM-IV Axis II. The inter-rater (median  $\kappa = .92$ ) and test-retest reliability (median  $\kappa = .68$ ) of the original DIPD are acceptable (Zanarini, Frankenburg, Chauncey, & Gunderson, 1987), and reliability testing at baseline in the CLPS sample (Zanarini et al., 2000) suggested similar results. All study participants were assessed with the DIPD-IV at baseline to determine study eligibility, and blinded assessments recurred at 2 year follow-up.

The Revised NEO Personality Inventory (NEO-PI-R; Costa & McCrae, 1992) is a self-report questionnaire designed to assess the FFM traits neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. Participants answer its 240 items on a 5-point scale. The NEO-PI-R was administered at 2-year study follow up. Internal consistency coefficients for the FFM domains in this sample ranged from .88 to .92.

The Schedule for Nonadaptive and Adaptive Personality (SNAP; Clark, 1993) is a 375-item, self-report questionnaire designed to assess 15 personality characteristics in both the normal (3 traits) and abnormal (12 traits) range. Internal consistency in our study sample was consistent with results described in the SNAP manual (Clark, 1993): medians of .89 for the higher order scales and .84 for the lower order scales (Morey et al., 2003).

The Longitudinal Interval Follow-up Examination (LIFE; Keller et al., 1987), a semistructured interview, measures variables including DSM-IV Global Assessment of Functioning and social, occupational, and leisure dysfunction. The occupational and leisure dysfunction markers are derived from single items. Social functioning was indexed by averaging ratings across several kinds of relationships (e.g., romantic partner, friends, and family members).

The Social Adjustment Scale—Self-Report (SAS-SR; Weissman & Bothwell, 1976) is a 54-item, self-report measure of clinically relevant functioning with scales that measure work, leisure, and social functioning. As with the LIFE, SAS-SR social functioning in this study represents a composite from scales measuring functioning in the family, with romantic relationships, and with friends. The median internal consistency across SAS-SR scales was .70 in the current sample. Higher LIFE and SAS-SR scores indicate greater dysfunction.

Scores that collapsed self-report and interview-measured indicators were computed for each of the three domains of dysfunction at 2- and 5-year CLPS follow-ups (which represent baseline and 3-year prospective data in this study). To compute these scores, scales depicting the same functional domains from different instruments were subjected to principal components analysis (PCA) and the score was retained. The use of two measures of the same domains of dysfunction, one based on interview



data and one on self-report, likely yields more reliable estimates than would be observed on a single instrument. In particular, applying measures that used two methods limits the potential that results could be explained by shared method variance (e.g., between interview-rated PD and interview-rated dysfunction).

## ANALYSES

Analyses were conducted in two steps, the first to construct a PD structure that differentiates generalized severity and stylistic elements of symptomatic expression, and the second to examine the nature of the identified structure. We constructed a general PD dimension (severity) by summing the dichotomously-scored criteria of all ten DSM-IV personality disorders. This approach was consistent with the view that severity represents the fundamental quality that links all of the PD symptoms. This approach also allowed us to test, through analyses of internal consistency, criterion-total correlations, and through validity correlates, the degree to which severity could be represented this way.

We then undertook a series of analyses designed to identify stylistic elements of PD symptom expression independent of severity. We refer to these as “stylistic elements of symptom expression” based on our expectation that they would describe behavioral patterns with differentiated, as opposed to global, relations to various forms of dysfunction. First, we used multiple regression analyses to compute ten residual terms that represented elements of each disorder independent of severity. We conducted a PCA on these residual terms and rotated extracted components orthogonally to understand the nature of stylistic elements of personality pathology symptom expression. The severity dimension and these stylistic dimensions represented the novel PD structure used in the remainder of the study. We used multiple regression analyses to test the relations of both severity and stylistic components to GAF scores and social, occupational, and leisure dysfunction, and in particular the increment of stylistic components over severity. To better understand severity and these stylistic elements of symptom expression, and how these elements relate to personality traits, we correlated these components with NEO-PI-R and SNAP traits.

## RESULTS

The coefficient alpha for the severity composite was .90, supporting the view that PD symptoms are sufficiently homogeneous to be represented as a unitary dimension. Furthermore, every PD criterion except four (schizotypal “constricted affect,” schizoid “limited interest in sex,” and obsessive-compulsive “miserly” and “workaholic”) was significantly and positively correlated with this composite. Criterion-total correlations can be used to indicate the nature or core of this PD severity in that they reflect which

specific PD symptoms relate most strongly to this dimension. Seven PD criteria demonstrated correlations  $>.49$  with overall severity. These included avoidant “preoccupation with being rejected” (.60), “social ineptness” (.57), and “feelings of inadequacy” (.53); borderline “anger” (.52) and “identity disturbance” (.50); and schizotypal “paranoid ideation” (.55).

Further analyses were conducted to identify and understand any variance in PDs unrelated to generalized severity. First, we used bivariate regression analyses to compute standardized residual terms representing the elements of each PD independent of severity. We conducted a PCA on these residuals and orthogonally rotated the components to identify stylistic dimensions of personality pathology symptom expression. Kaiser’s rule, scree test, and parallel analysis all suggested the extraction of five factors (eigenvalues = 2.00, 1.85, 1.21, 1.10, 1.09), which collectively accounted for 72.47% of the variance in residualized PDs.

The structure coefficients of the resulting dimensions are shown in Table 1. These coefficients reflect relations of residualized disorders (i.e., whatever in these disorders is independent of severity) to higher-order dimensions, not the relations of the disorders themselves to higher-order dimensions. The first component had the largest coefficients on paranoid, schizoid, and schizotypal PDs. As these disorders are thought to share a tendency for mistrust, oddness, and eccentricity, we labeled this dimension *Peculiarity*. Component two had large negative coefficients on histrionic and narcissistic disorders and a positive coefficient on avoidant PD. Inasmuch as the overlap of narcissistic and histrionic PDs primarily involves a need for admiration and attention, whereas avoidant individuals retreat from attention lest others view them negatively, this dimension was named *Withdrawal*. The third component had the largest positive coefficients on avoidant and dependent PDs, as well as a strong negative coefficient with antisocial personality disorder. Whereas avoidant and dependent PDs share the tendency to feel inadequate and behave submissively, antisocial PD indicates a disregard for the rights of others. This

**TABLE 1. Structure Coefficients of Residualized Personality Disorders with Stylistic Components of Personality Pathology**

	Rotated Component				
	Peculiarity	Withdrawal	Fearfulness	Instability	Deliberateness
Avoidant	-.24	.54*	.50*	-.47*	-.24
Antisocial	-.21	-.08	-.90*	-.05	-.22
Borderline	-.16	.01	.04	.92*	-.06
Dependent	-.24	-.09	.66*	-.01	-.27
Histrionic	-.09	-.79*	-.03	.10	-.16
Narcissistic	-.08	-.77*	.05	-.11	.20
Obsessive-Compulsive	-.08	-.06	-.03	-.03	.96*
Paranoid	.75*	.19	.06	.13	.09
Schizoid	.62*	.04	-.01	-.32*	-.06
Schizotypal	.79*	-.06	-.11	-.07	-.08

Note. A very similar solution is obtained with oblique rotation.

\* coefficients  $>.29$ .



constellation therefore suggested the tendency to fear others in relationships and was labeled *Fearfulness*. The fourth component had a strong relation to borderline PD, a disorder defined by instability across multiple domains of functioning, and was thus called *Instability*. Finally, the fifth component demonstrated a strong and fairly unique relation with obsessive-compulsive PD, and was therefore labeled *Deliberateness* (see Shapiro, 1965).

Next, severity (i.e., sum of PD criteria) and these orthogonal stylistic symptom expression dimensions were correlated with FFM and SNAP traits. FFM traits neuroticism, extraversion, agreeableness, and conscientiousness significantly correlated in the expected directions with the general severity dimension (Table 2). Somewhat surprisingly, all five traits had stronger correlations with severity than with any of the symptom expression dimensions, which tended to be relatively weak. Similarly, of 15 SNAP scales, the correlation with severity was strongest for 12 (Table 2).

Given their limited relations with SNAP and FFM traits, the validity of the derived stylistic elements of symptom expression remained to be demonstrated, as these residual dimensions might be expected to include error as well as substantive variance. Multiple regression analyses predicting functional outcomes were conducted to test their ability to indicate dysfunction. The PD severity dimension and five stylistic components were entered as respective steps in hierarchical models to predict concurrent

**TABLE 2. Correlations of General Severity and Stylistic Elements of Personality Pathology Symptoms with Personality Traits**

	Sever- ity	Pecul- iarity	With- drawal	Fear- fulness	Insta- bility	Deliber- ateness
	FFM					
Neuroticism	.51	-.08	.03	.25	.09	-.07
Extraversion	-.35	-.08	-.27	-.08	.11	.09
Openness	-.15	-.13	-.02	.03	.07	.10
Agreeableness	-.37	-.12	.14	.19	-.06	-.08
Conscientiousness	-.31	.12	.09	-.11	-.07	.18
	SNAP					
Negative Temperament	.46	.01	.01	.12	.17	.04
Positive Temperament	-.23	-.02	-.21	-.18	.00	.10
Disinhibition	.28	-.12	-.20	-.19	.03	-.16
Aggression	.46	.06	-.03	-.21	.20	.07
Dependency	.39	-.17	-.07	.27	.03	-.08
Detachment	.40	.16	.22	.03	-.11	-.01
Eccentric Perceptions	.42	.15	-.02	-.13	.12	-.05
Entitlement	-.03	.10	-.26	-.19	.00	.18
Exhibitionism	-.04	-.12	-.42	-.25	.02	.07
Impulsivity	.22	-.09	-.17	-.07	.17	-.12
Manipulativeness	.36	-.11	-.25	-.16	.00	-.09
Mistrust	.56	.27	.04	-.05	.07	-.07
Propriety	.26	.21	-.01	.04	-.03	.08
Self-harm	.53	-.03	.12	.04	.18	-.16
Workaholism	.20	.04	.00	-.04	.03	.27

Note. All correlations > |.11| are significant at  $p < .01$ .

and 3-year prospective global, social, occupational, and leisure functioning. These results appear in Table 3. The first general conclusion to draw is that PD severity is a robust indicator of dysfunction: it had the highest overall beta coefficient across all models. However, stylistic elements of symptom expression significantly incremented severity in predicting concurrent and prospective global, social, and leisure dysfunction. Within these domains (excluding work dysfunction), Peculiarity had a significant coefficient in all models; Withdrawal in half of the models; and Deliberateness, Fearfulness, and Instability in one of the six models apiece.

## DISCUSSION

This study was designed to test the validity of a general personality pathology severity dimension, identify stylistic elements of personality pathology symptom expression independent of global severity, and articulate the severity and stylistic dimensions by correlating them with personality traits and functional outcomes. Overall, the study results suggest that a single dimension representing generalized personality pathology severity is a relatively strong predictor of concurrent and 3-year prospective dysfunction, but that stylistic elements of personality pathology symptom expression independent of this dimension are incrementally valid indicators of specific kinds of dysfunction. Results also suggest that personality traits relate mostly to severity and are less useful for depicting individual differences in stylistic features of PDs.

Conceptualizing PDs as the combination of a general severity component and relatively independent stylistic symptom expression components helps address what is perhaps the most striking shortcoming of the DSM-IV PDs, namely diagnostic co-occurrence. In the DSM-IV representation of PDs as independent categories, co-occurrence of two or more diagnoses

**TABLE 3. Concurrent (C) and Three-Year Prospective (P) Validity for Personality Disorder Components**

	GAF		Social Dysfunction		Work Dysfunction		Leisure Dysfunction	
	C	P	C	P	C	P	C	P
<b>Step 1</b>								
Severity	-.56*	-.44*	.52*	.50*	.33*	.38*	.49*	.41*
<b>Step 2</b>								
Peculiarity	-.14*	-.23*	.25*	.20*	.03	.14	.13*	.21*
Withdrawal	-.09	-.05	.12*	.08	.02	.07	.13*	.14*
Fearfulness	-.01	.02	.06	-.04	.10	-.10	.16*	.03
Instability	-.17*	-.05	.04	.01	.09	.05	.01	-.01
Deliberateness	.12*	.09	-.10	-.07	-.07	-.11	-.07	-.06
$\Delta R^2$	.07*	.07*	.09*	.05*	.02	.05	.07*	.07*
Overall $R^2$	.38*	.26*	.35*	.30*	.14*	.17*	.30*	.24*

*Note.*  $R^2$  shows coefficients of determination for the overall model and second incremental step, other coefficients represent beta weights. Whereas high GAF scores indicate better functioning, high scores on the other dimensions indicate worse functioning.

\* $p < .01$

should occur primarily because of shared etiology, which would suggest collapsing phenotypic criteria. However, from a psychometric perspective, optimal measurement practice involves, among other criteria, identifying and measuring core features of constructs that are well-articulated and largely discrete from one other (Loevinger, 1957). Measuring constructs that have limited validity support and that correlate substantially with one another has questionable interpretive value, particularly when choosing a primary diagnosis. Yet measuring constructs within the same domain of functioning that are fairly independent of one another can increase confidence about which issues are primary. Therefore, the specification of both pathological severity and the style of expression in which pathology manifests would be particularly helpful for clinicians and provides a more useful basis for treatment decisions than a determination of which personality disorder a person has, or more likely, which among several is primary.

Separating severity and style therefore offers a useful heuristic framework for conceptualizing and researching personality pathology. If severity approximates a shared etiological loading that may account for what has previously been considered diagnostic comorbidity, investigating it represents an important future objective. Analogous to broad severity constructs such as Kernberg's personality organization, the GAF score to represent psychiatric severity more broadly, or the "g" factor in intelligence (Spearman, 1904), correlations of this dimension with PD criteria highlight the influence of multiple psychological domains, including the social (e.g., feelings of inadequacy and ineptness, paranoia), the self (identity problems), and emotion (anger). Moreover, correlations with personality traits are consistent with previous results (e.g., Morey, Gunderson, Quigley, & Lyons, 2000; Morey et al., 2002; Saulsman & Page, 2004) in suggesting that a constellation of traits in a particularly maladaptive direction, rather than one or two specific and extreme traits, can lead to a broad propensity for personality pathology.

The stylistic symptom expression components identified here appear to operate in a manner consistent with our expectation: they are (by design) completely independent of global severity and one another, but also incrementally and differentially related to various kinds of dysfunction. These results suggest that such elements can be described more economically than the ten PD constructs of the DSM-IV, and that doing so allows a more precise assessment of PD expression in terms of its influence on dysfunction in particular domains of living.

Results, in conjunction with previous reports from the CLPS sample on the incremental validity of FFM traits over PD symptoms (e.g., Hopwood et al., 2007, 2009; Morey et al., 2007); also support assessing personality traits separately from either PD severity or style. One might have anticipated that normative traits would relate more directly to the stylistic dimensions identified in the PD symptoms than we observed. Indeed, the labels that seemed appropriate for these dimensions encourage hypothe-

sizing specific relations between five-factor traits and stylistic dimensions. Neuroticism might have been anticipated to relate to instability and fearfulness, openness to peculiarity, low extraversion to withdrawal, and conscientiousness to deliberateness. Interestingly, this was not the case. The four FFM traits most strongly linked to clinical dysfunction—neuroticism, extraversion, agreeableness, and conscientiousness—were all substantially related to the general severity dimension but were mostly unrelated to identified stylistic elements of symptom expression. SNAP traits also generally related more strongly to severity rather than to symptomatic expression. For example, the average absolute correlation of SNAP traits with severity was .32, whereas absolute correlations with symptomatic expression components ranged from .08–.14. This suggests that particular personality trait constellations may represent powerful diatheses to personality-related dysfunction in general, but that more specific indicators are needed to characterize that dysfunction at the level of symptomatic expression.

#### RECOMMENDATIONS FOR DSM-5

CLPS data have previously revealed the differential stabilities of PD symptoms (McGlashan et al., 2005), differential stabilities and predictive validities of trait and pathological personality models (Morey et al., 2007), the specificity of trait predictions (Hopwood et al., 2009), and the predictive validity of traits independent of PD status (Hopwood et al., 2007). Taken together, these results favor explicitly separating pathological disorder dimensions from normative trait dimensions and measuring both in the assessment of personality pathology. The results of this study augment these previous findings and yield suggestions for the DSM-5 representation of personality pathology. Based on the current results, we emphasize the utility of separating generalized severity from stylistic elements of personality pathology symptom expression in DSM-5, in addition to separating normative personality traits from pathological PDs. In such a scheme, the overall severity of pathology would be most useful for indicating global dysfunction and the level of necessary care (e.g., hospitalization vs. outpatient treatment). Style would indicate the likely manner of expression of pathology and the most appropriate type of intervention (e.g., choice of type of pharmacotherapy, pharmacotherapy vs. psychotherapy, or type of psychotherapy). Normative traits would indicate a propensity for personality dysfunction, but also features that would likely be useful for developing clinical hypotheses regarding treatment planning or other clinical considerations (e.g., adaptive strengths that might buffer patients against the effects of personality pathology).

We therefore suggest a three-stage personality assessment process for the DSM-5 similar to that proposed by Bornstein (1998): a global rating of personality disorder severity, ratings of meaningful stylistic dimensions of personality pathology, and ratings of normative personality traits. PD se-

verity should be represented in the DSM-5 by a single quantitative dimension that accommodates a diverse array of elements, including dysfunction in social, emotional, and identity-related functioning, analogous to the GAF score for general functioning but specifically linked to personality systems. Style should be represented by dimensional ratings of the factors identified in this study as meaningfully separate from severity but also significantly and incrementally predictive of functioning: peculiarity, withdrawal, fearfulness, instability, and deliberateness. The current data cannot establish whether these ratings should take the form of prototype similarity scores, criterion counts, or some other method. Most important from a psychometric perspective is that the ratings should demonstrate discriminant validity in showing minimal relations to the severity dimension and to one another, yet also have predictive validity in indicating specific areas of dysfunction. Normative traits should be represented separately, with emphases placed on their ability to depict a propensity for PD and other forms of psychopathology as well as potential for adaptive strengths. We would suggest that the "Big Four" bipolar traits (Krueger, Skodol, Livesley, Shrout, & Huang, 2007), which include neuroticism versus emotional stability, extraversion versus introversion, agreeableness versus antagonism, and constraint versus disinhibition represent a well-validated trait system that might be useful for this purpose.

#### DIRECTIONS FOR FUTURE RESEARCH

Several limitations of this study highlight the need for further research on this model. Although the DSM-IV PD criteria likely represent a more or less comprehensive list of personality pathology indicators, important elements may be missing from the ten official diagnoses in the manual, like those represented by appendicized or previously abandoned diagnoses such as depressive, passive-aggressive, or sadistic. Given that the elements identified here are a function of the DSM-IV criteria used in this study, other indicators of PD could yield somewhat different stylistic patterns. Thus, ongoing development of a personality severity dimension and these stylistic elements of symptom expression might best derive from a wider list of variables than this study included, and should be based, in part, on theories of personality pathology as well as ongoing empirical analyses of their construct validity.

Furthermore, DSM-IV PD criteria were not constructed to independently assess severity and styles of symptomatic expression. As a result, most of the DSM-IV variables load on both the general dimension and one or two other, stylistic dimensions. This was particularly problematic for some dimensions. For example, all borderline PD criteria had strong correlations with the instability dimension, but they were also among the strongest indicators of generalized pathology (e.g., the affective and interpersonal instability criteria had point-biserial correlations  $>.40$  with both dimensions). Hence, further efforts to develop PD dimensions from this

framework should attend closely to the psychometric principle of discriminant validity (Bornstein, 1998). Creating scales for a dimension like instability would require identifying items that strongly indicate instability (and related dysfunction) but only modestly relate to generalized pathology. Although discriminant validity is particularly difficult in clinical measurement because psychopathological constructs tend to interrelate, it greatly economizes assessment and enhances the interpretability of psychometric indicators. Finally, criterion sets or prototype descriptions for ratings of each level of our proposed model would need more specific articulation and empirical testing before such a model could be useful for the DSM-5.

## CONCLUSION

We believe an assessment model that explicitly distinguishes global personality pathology severity, stylistic expression of personality disorder features, and normative personality traits represents a more scientifically viable, theoretically integrative, and clinically useful system of personality pathology than the DSM-IV Axis II. We have also proposed which elements should specifically comprise each level of such a system. Severity should constitute a single composite rating which includes components related to dysregulated self-system, interpersonal behavior, and social achievements. Peculiarity, withdrawal, fearfulness, instability, and deliberate-ness represent stylistic elements of PD that should be rated separately and in a manner that maximizes their discriminant and predictive validity. Emotional stability, extraversion, agreeableness, and constraint should be represented as normally distributed bipolar traits to denote the propensity for personality pathology as well as adaptive strengths that are important for clinical predictions. Further identification, measurement, and validity research on each level of this system are important areas for ongoing research, and we recommend that the articulation of these elements be a primary goal toward the DSM-5 and other future representations of personality pathology structure.

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