

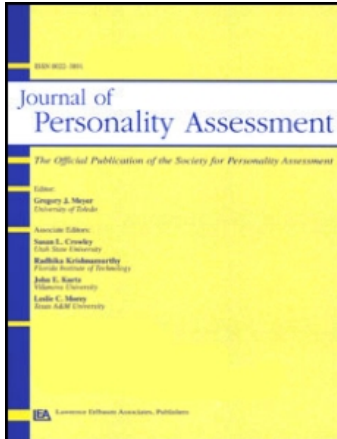
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Toward a Model for Assessing Level of Personality Functioning in DSM–5, Part II: Empirical Articulation of a Core Dimension of Personality Pathology

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The extensive comorbidity among *Diagnostic and Statistical Manual of Mental Disorders* (4th ed. [DSM–IV]; American Psychiatric Association, 1994) personality disorders might be compelling evidence of essential commonalities among these disorders reflective of a general level of personality functioning that in itself is highly relevant to clinical decision making. This study sought to identify key markers of such a level, thought to reflect a core dimension of personality pathology involving impairments in the capacities of self and interpersonal functioning, and to empirically articulate a continuum of severity of these problems for DSM–5. Using measures of hypothesized core dimensions of personality pathology, a description of a continuum of severity of personality pathology was developed. Potential markers at various levels of severity of personality pathology were identified using item response theory (IRT) in 2 samples of psychiatric patients. IRT-based estimates of participants' standings on a latent dimension of personality pathology were significantly related to the diagnosis of DSM–IV personality disorder, as well as to personality disorder comorbidity. Further analyses indicated that this continuum could be used to capture the distribution of pathology severity across the range of DSM–IV personality disorders. The identification of a continuum of personality pathology consisting of impairments in self and interpersonal functioning provides an empirical foundation for a “levels of personality functioning” rating proposed as part of a DSM–5 personality disorder diagnostic formulation.

Although the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed. [DSM–IV]; American Psychiatric Association, 1994) characterized personality disorders (PDs) as 10 discrete categories of personality problems, one of the most consistent findings in the PD literature is that of comorbidity; it is far more common for individuals to receive cooccurring rather than single PD diagnoses. Comorbidity has been cited as an important weakness of the DSM–IV, and as a rationale for a dimensional personality pathology system (Widiger, Simonsen, Sirovatka, & Regier, 2006). However, individuals with PDs often tend to lie within similar “regions” of the space defined by dimensional systems, even across dimensional approaches. For example, within the Five-factor personality trait model, a number of different DSM–IV PDs demonstrate similar configurations involving high neuroticism, low agreeableness, and low conscientiousness (Morey, Gunderson, Quigley, & Lyons, 2000; Morey et al., 2002; Saulsman & Page, 2004; Zweig-Frank & Paris, 1995). Although often understood as a problem with discriminant validity, comorbidity might also be compelling evidence of essential commonalities among PDs (Krueger & Markon, 2006; Morey, 2005), with presumably distinct criteria sets or personality dimensions tapping into these commonalities.

The DSM–IV conceptualization of PD is largely uninformative on PD commonalities. The general criteria for PD involve (a) manifestations in two domains of functioning; (b) enduring inflexibility; (c) clinically significant distress or impairment; (d) temporal stability, and diagnostic primacy relative to (e) other psychiatric or (f) medical conditions. Difficult to operationalize effectively (Livesley, 1998), this definition is nonspecific regarding to the nature of the personality dysfunctions. Furthermore, discontinuity between those with PDs and those without such disorders is implied, when there is an increasing consensus that PD is a dimensional rather than categorical phenomenon, manifesting at different levels of severity (Tyrer & Johnson, 1996).

In light of the shortcomings of the DSM–IV conceptualization of PD, the DSM–5 Personality and Personality Disorders Work Group has proposed an approach that describes core features of personality psychopathology at different levels of severity (Skodol et al., 2011). As noted in the accompanying review by Bender, Morey, and Skodol (2011/this issue), there is considerable convergence in theoretical accounts and empirical research on measures of core personality pathology (e.g., Blatt & Auerbach, 2003; Diguier et al., 2004; Dimaggio, Semerari, Carcione, Procacci, & Nicolo, 2006; Fonagy & Target, 2006; Huprich & Greenberg, 2003; Kernberg & Caligor, 2005; Levy et al., 2006; Piper, Ogrodniczuk, & Joyce, 2004), and each of these formulations discusses the potential clinical utility of a severity dimension of personality pathology. Such a dimension can be viewed as conceptually independent of specific personality

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traits, instead representing a more general adaptive failure or delayed development of an intrapsychic system needed to fulfill adult life tasks (Livesley, 2003). As noted by Bornstein (1998), “the best predictor of the therapeutic outcome for PD patients is severity—not type—of personality pathology” (p. 337). This conclusion is also supported by the findings of Hopwood et al. (in press), who found that general severity of personality pathology was the single best predictor of prospectively assessed functional impairment in patients with PD after 10 years of follow-up. Furthermore, such a severity dimension can be modeled independently from various trait dimensional systems of personality that have been proposed (Berghuis, Kamphuis, & Verheul, in press; Hopwood et al., in press). An influential mapping of various *DSM-IV* PD concepts onto a core continuum of “personality organization” is provided by Kernberg and Caligor (2005), who organized the various specific disorders into a conceptual scheme that described the range of severity of personality organization from the more severe (e.g., schizoid, borderline) to less severe (e.g., obsessive-compulsive, avoidant, dependent) PD phenomena.

Bender et al. (2011/*this issue*) describe a severity continuum consisting of impairment in identity, self-direction, empathy, and intimacy. The purpose of this article was to provide an empirically based articulation of this global continuum, with the aim of characterizing its manifestations at different levels of severity. It was hypothesized that a core dimension of personality pathology, involving impairments in self and interpersonal functioning, can be extracted from symptomatic and phenomenological measures of personality problems, with key markers identified to anchor dimensional ratings of severity of personality pathology and to help establish “caseness” in personality pathology. The study sought to identify these markers at different levels of this continuum, using item response theory (IRT; Lord, 1980). Articulation of this dimension is critical both as a basis for defining the core features of personality pathology, as well as representing differences in personality functioning within and among different PDs.

METHOD

Participants

Two samples involving participants from the Netherlands were examined. The Berghuis et al. (in press) sample included 424 psychiatric patients: a mixture of outpatients (87.3%) and inpatients (12.7%), ranging in age from 17 to 66 years old ($M = 33.9$, $SD = 11.3$), and 72.4% women. Among participants 33.1% had a specific *DSM-IV* PD diagnosis (i.e., assigned by their treating clinician); 39.0% received a PD not otherwise specified (PD-NOS) diagnosis, and 27.9% received no or deferred PD diagnosis. Study diagnoses were assigned with the Structured Clinical Interview for *DSM-IV* Axis II Personality Disorders (SCID-II), as described later: 43.9% met criteria for at least one *DSM-IV* PD, and 11.3% met criteria for more than one. The most common SCID-II diagnoses were borderline PD (21.2%) and avoidant PD (20.5%). Most patients met criteria for one or more comorbid Axis I disorders (clinical diagnosis), most often a mood disorder (42%) or an anxiety disorder (13.7%). IRT models and parameter estimates were derived from this sample.

A second sample, from Verheul et al. (2008) came from multiple sites and included a total of 2,730 participants (2,252 psy-

chiatric patients from treatment centers in the Netherlands and 478 from the general population). A total of 1,759 participants who provided complete data were included in the analyses. Study diagnoses were assigned with the Structured Interview for *DSM-IV* Personality (SIDP-IV), as described later; 52.1% met criteria for at least one *DSM-IV* PD, and 23.3% met criteria for more than one. The most common SIDP-IV diagnoses were avoidant PD (24.6%) and PD-NOS (19.5%). This sample was used to test the generalization of results from the Berghuis et al. (24) sample and to examine the relationship of the empirically derived markers to specific *DSM-IV* PDs in more detail.

Instruments

Study instruments included two self-report instruments, the Severity Indices of Personality Problems (SIPP-118; Verheul et al., 2008), and the General Assessment of Personality Disorder (GAPD; Livesley, 2006), to measure markers of global personality pathology, and two semistructured interviews, the SCID-II (First, Spitzer, Gibbon, & Williams, 1997) and the SIDP-IV (Pfohl, Blum, & Zimmerman, 1997), from which *DSM-IV* PD diagnoses and associated criteria were obtained. Data on the SIPP-118, GAPD, and SCID-II were collected in the Berghuis et al. (in press) sample, whereas data on the SIPP-118 and SIDP-IV were gathered for the Verheul et al. (2008) study.

GAPD (Livesley, 2006). The GAPD is a recently developed questionnaire measuring hypothesized core components of personality pathology according to Livesley’s (2003) adaptive failure model. The GAPD version used in this study consists of 142 items rated on a 5-point Likert scale, ranging from 1 (*very unlike me*) to 5 (*very like me*), and made up of two main scales: Self-Pathology and Interpersonal Problems, and 19 subscales. Self-Pathology covers items regarding the structure of personality (e.g., problems of differentiation and integration) and agency (e.g., conative pathology). The Interpersonal Problems scale includes items measuring various impairments in social functioning. This study utilized the authorized Dutch translation by Berghuis (2007). In this sample, the internal consistency (coefficient alpha) reliability for the Self-Pathology scale was .87, and for the Interpersonal Problems scale was .89. However, it is important to note that for this project all analyses of GAPD were at the level of individual items rather than scales.

SIPP-118 (Verheul et al., 2008). The SIPP-118 is a dimensional self-report measure of the severity and core components of personality pathology. The SIPP-118 consists of 118 4-point Likert scale items (time frame of last 3 months), covering 16 facets of personality functioning, clustering in five higher order domains: self-control, identity integration, relational functioning, social concordance, and responsibility. Good psychometric properties, including (cross-national) validity, have been reported (Arnevik, Wilberg, Monsen, Andrea, & Karterud, 2009; Verheul et al., 2008). The median internal consistency (coefficient alpha) reliability of the 16 facets as measured in this sample was .77. As with the GAPD, all analyses of SIPP-118 data were at the level of individual items rather than scales.

SCID-II. The SCID-II (First et al., 1997; Weertman, Arntz, & Kerkhofs, 2000) is a widely used 119-item semistructured interview for the assessment of personality disorders. Each item

is scored as 1 (*absent*), 2 (*subthreshold*), or 3 (*threshold*). In the Berghuis et al. (in press) sample, dimensional scores were obtained by summing raw scores of the criteria for each PD category and cluster. Master's-level psychologists conducted the interviews, but no formal assessment of interrater reliability was conducted.

SIDP-IV (Pfohl et al., 1997). The Verheul et al. (2008) study measured PDs using the *SIDP-IV* (Dutch version) administered by master's-level psychologists. Verheul et al. reported a median interrater reliability of 95% agreement (ranging from 84%–100%) on diagnosis, with a median intraclass correlation coefficient of .74 (ranging from .60–.92) for the sum of *DSM-IV* PD traits present.

Analyses

Specific items from the SIPP-118 and GAPD questionnaires were selected based on markers of global personality pathology identified in the Bender et al. (2011/*this issue*) literature review, using a Situational Judgment Test (Motowidlo, Dunnette, & Carter, 1990) strategy. Two expert Work Group members (D. Bender and A. Skodol) independently rated every item on the SIPP-118 and GAPD questionnaires, specifying the level of personality pathology expected to be associated with each potential response on the Likert-type scales of these items. Consensual agreement on ratings was used to identify a set of items to discriminate across different levels of personality pathology. This set of items was examined using internal consistency analyses, made up of coefficient alpha, item-total correlations, and principal components analyses. The goal was to isolate a unidimensional set of items, consistent with the assumptions of IRT and with developing a single coherent index of overall personality pathology. Items demonstrating low item-total correlations or factorial complexity were eliminated.

The final step in the analysis involved constructing a two-parameter IRT model of the remaining items. The SIPP-118 and GAPD both use Likert-type scales, but the number of response alternatives differ (four vs. five alternatives). Because the goal of the study was to relate item content to severity of global personality pathology rather than to scale responses from particular options, scoring was dichotomized to facilitate interpretation (for the SIPP-118, *fully agree* and *agree* responses were combined and contrasted with other responses, whereas for the GAPD *completely applicable* and *more applicable than not* item scores were combined). Threshold parameters of these items were used to identify items characterizing the types of problems associated with different levels of severity on the latent trait of personality pathology, whereas discrimination parameters provided an estimate of the ability of the item to distinguish individuals at this level of the trait from those at lower levels of pathology. Analyses were performed with the MULTILOG 7.0 (Scientific Software International, 2003) program. Estimates of the score for each individual in the sample on this latent trait (i.e., the maximum likelihood estimate of theta, or estimated theta) were retained for additional analyses examining the relationship of this trait to *DSM-IV* PD diagnoses.

RESULTS

The first step in selecting items from the two self-report instruments was based on the situational judgment ratings of individual items from the instruments, as provided by the two expert

raters. There was reasonable interrater reliability for these ratings of the SIPP-118 and GAPD items (interrater correlation on the *fully agree* ratings on the SIPP-118 was .76; and .74 on *completely applicable to me* ratings on GAPD items). Items on these two instruments that demonstrated high agreement across the two expert raters were selected if the raters agreed that a particular item was discriminating for the theoretical construct. Agreement between the raters was calculated as the squared Euclidean distance between the ratings for each response option across the two raters. Based on their agreement and differentiation properties, a total of 49 (of 118) potential SIPP-118 markers and 57 (of 142) GAPD items were retained as potential indicators of the global personality pathology dimension. Subsequent analyses were then conducted to empirically refine this subset of items in preparation for the IRT analyses, using patient data from the Berghuis et al. sample. Internal consistency analyses for patient responses in the Berghuis et al. sample yielded an alpha for the 49-item SIPP-118 scale of .93, with a mean interitem correlation of .22; the alpha for the 57-item GAPD scale was .96, with a mean interitem correlation of .30. One item from the GAPD was eliminated as it demonstrated a moderate (i.e., neither extremely high nor low) mean and low item-total correlation (below .25). Remaining items were factor analyzed to further assess the unidimensionality of these constructed scales and their suitability for IRT analyses (Hambleton, Swaminathan, & Rogers, 1991). For both the SIPP and the GAPD, there were large first components (representing 17.8% and 27.1% of the variance, respectively) and two other components (on both instruments) with eigenvalues above what would be predicted from parallel analyses (O'Connor, 2000), but each accounting for 6% of the variance or less. On both the SIPP-118 and the GAPD, six items were identified with potentially problematic cross-loadings on secondary components, factors that appeared to tap aggressive behaviors and anhedonia. The factor scores from the first principal component of the SIPP-118 correlated .80 with the first principal component of the GAPD, supporting the conclusion that the primary factors from both sets of items were measuring the same construct.

After eliminating items from the SIPP-118 and GAPD that had low item-total correlations or problematic factor loadings, the two scales were combined to form a single 93-item scale (43 from the SIPP-118 and 50 from the GAPD) that demonstrated considerable internal consistency (coefficient alpha = .96). This 93-item scale was then analyzed using a two-parameter IRT model. Items achieving a discrimination parameter > 1 were retained (a total of 65 items); a summed binary scoring of these items yielded a score that correlated .98 with the theta estimate from the IRT analyses. This scale also correlated above .90 with both the earlier GAPD and SIPP-118 separate versions, as well as .51 with the sum of the total *DSM-IV* PD criteria as assessed by the SCID-II. A sampling of items providing information at various levels of the latent trait is presented in Table 1, with estimated threshold and discrimination parameters for these items. Items are listed in order of threshold values; higher (positive) threshold scores indicate items that tend to discriminate at milder levels of personality pathology, whereas lower (negative) threshold scores indicate items informative around more severe pathology.

For each patient in the sample, the estimated theta score was computed as an estimate of the patient's score on the latent trait of global personality pathology. It was hypothesized that

TABLE 1.—Item response theory parameters for example GAPD/SIPP-118 items discriminating at different levels of a core personality pathology continuum.

| Item | Discrimination | SE | Threshold | SE |
|--|----------------|------|-----------|------|
| I believe that it does not help to try to work together with people. | 1.15 | 0.24 | -1.28 | 0.2 |
| I can hardly remember what kind of person I was only a few months ago. | 1.61 | 0.24 | -0.53 | 0.12 |
| I can't make close ties with people. | 1.29 | 0.22 | -0.47 | 0.14 |
| My feelings about people change a great deal from day to day. | 2.01 | 0.31 | -0.23 | 0.09 |
| Sometimes I think that I am a fake or a sham. | 1.91 | 0.26 | -0.16 | 0.09 |
| I worry that I will lose my sense of who I really am. | 2.40 | 0.33 | 0.02 | 0.08 |
| My feelings about other people are very confused. | 1.61 | 0.24 | 0.29 | 0.11 |
| I drift through life without a clear sense of direction. | 2.76 | 0.41 | 0.48 | 0.08 |
| I have very contradictory feelings about myself. | 2.23 | 0.32 | 0.95 | 0.11 |
| I mostly have the feeling that my true self is hidden. | 2.05 | 0.33 | 0.96 | 0.11 |

Note. GAPD = General Assessment of Personality Disorder; SIPP-118 = Severity Indices of Personality Problems.

this score would prove to be a predictor of the assignment of a *DSM-IV* PD diagnosis, as well as predicting comorbidity among PDs. Table 2 provides the estimated theta means for study participants who received none, one, or two or more specific *DSM-IV* PD diagnoses as determined by the SCID-II. One-way analysis of variance followed by Bonferroni post-hoc tests revealed that these three diagnostic groupings all differed significantly, $F(2, 421) = 54.18, p < .001$. These results demonstrate that lower (i.e., more severe) theta scores were associated with assignment of a specific PD diagnosis and were also associated with assignment of multiple PD diagnoses. The area under the receiver operating characteristic (ROC) curve of .756 ($SE = .023$; asymptotic significance $< .001$) reveals that the theta score was a significant predictor of being assigned a specific PD diagnosis; a cutting score of zero (the theoretical mean of theta in a clinical sample) demonstrated a 73% sensitivity and 63% specificity for identifying individuals diagnosed with at least one of the 10 specific PDs in the Berghuis et al. sample.

To relate this latent trait dimension to specific *DSM-IV* PD criteria, a regression function (using a stepwise procedure with

TABLE 2.—Predicted theta means by number of personality disorder diagnoses in two study samples.

| Number of Personality Disorder Diagnoses | Berghuis et al. (in press) | | | Verheul et al. (2008) | | |
|--|----------------------------|-------|-----|-----------------------|-------|-----|
| | M | SD | N | M | SD | N |
| 0 | .3802 | .9231 | 238 | .3874 | .7449 | 842 |
| 1 | -.3416 | .7297 | 138 | .0613 | .6733 | 507 |
| 2+ | -.7120 | .5673 | 48 | -.2263 | .6624 | 410 |

Note. All three groups significantly different within each sample, $p < .001$.

TABLE 3.—Coefficients for predicting estimated theta from SCID-II *DSM-IV* criteria.

| Model | Unstandardized Coefficients | | Standardized Coefficients | | t | Sig. |
|----------------------------------|-----------------------------|------------|---------------------------|--|--------|------|
| | B | Std. Error | Beta | | | |
| (Constant) | 2.398 | .255 | | | 9.418 | .000 |
| Identity disturbance (BPD3) | -.291 | .053 | -.262 | | -5.478 | .000 |
| Views self as inept (AVD7) | -.143 | .048 | -.140 | | -2.955 | .003 |
| Impulsivity (BPD4) | -.204 | .050 | -.194 | | -4.068 | .000 |
| Unwilling to get involved (AVD2) | -.231 | .054 | -.195 | | -4.274 | .000 |
| Reads hidden threat (PAR4) | -.176 | .060 | -.138 | | -2.932 | .004 |
| Emptiness (BPD7) | -.134 | .048 | -.129 | | -2.799 | .005 |
| Overconscientious (OCPD4) | .227 | .074 | .133 | | 3.085 | .002 |
| Deceitfulness (ANT2) | -.218 | .112 | -.084 | | -1.958 | .051 |
| Reckless (ANT5) | -.302 | .121 | -.108 | | -2.490 | .013 |
| Seductive (HIS2) | .221 | .097 | .100 | | 2.288 | .023 |
| Reluctant to confide (PAR3) | -.110 | .055 | -.090 | | -1.997 | .047 |
| Bears grudges (PAR5) | -.113 | .057 | -.092 | | -1.983 | .048 |

Note. Dependent variable: theta; multiple $r = .679$. 1 = absent, 2 = subclinical, 3 = present; SCID-II = Structured Clinical Interview for *DSM-IV* Axis II Personality Disorders.

backward elimination) was calculated to estimate the obtained theta score for each patient, using all specific SCID-II criteria (see Table 3). Twelve *DSM-IV* PD criteria were retained in this function, sampled from across 6 of the 10 PD categories. The estimates provided by this function demonstrated a multiple correlation of .68 with the calculated theta score for participants.

To extend these findings into a second patient sample, estimated theta scores were also derived for participants in the Verheul et al. (2008) sample using only the SIPP-118 items. To estimate corresponding theta scores in this second sample, a regression model was constructed from the sum of the 43 SIPP-118 items included in the original IRT scaling. The fit of this model was quite high (multiple $r = .97$) and as such should provide a reasonable estimate of theta in this new sample.

As was the case in the derivation sample, the estimated theta score in this cross-validation sample was significantly correlated with the total dimensional PD symptom score from the SIPD-IV (-.52, as compared to -.51 in the derivation sample). As with the Berghuis et al. data, the mean score on the predicted theta score was compared for patients from the Verheul et al. sample who received no specific PD diagnosis (for this sample, this included those receiving a PD-NOS designation), those receiving a single specific *DSM-IV* PD diagnosis, and those receiving multiple PD diagnoses. These means are shown in Table 2; one-way analysis of variance followed by Bonferroni post-hoc tests revealed that these three diagnostic groupings all differed significantly, $F(2, 1756) = 54.75, p < .001$. Results were similar to those noted in the Berghuis et al. sample, in that lower (i.e., more severe) theta scores were associated with assignment of a specific PD diagnosis, although there were also higher levels of personality pathology in those receiving multiple PD diagnoses. ROC analyses to determine the diagnostic efficiency of the theta estimate to predict a SIPD-IV personality diagnosis in the Verheul et al. (2008) data resulted in a significant but somewhat lower (relative to the original sample) estimated area under the curve of .673 ($SE = .015$; asymptotic significance $< .001$). As with the Berghuis et al. sample, in the Verheul et al. data, a theta

TABLE 4.—Mean theta estimates for personality disorder categories: Verheul et al. (2008) data.

| SIDP-IV Diagnosis | N | M | SD |
|----------------------|-----|--------|-------|
| Paranoid | 86 | -.4116 | .6762 |
| Schizoid | 18 | -.1130 | .7435 |
| Schizotypal | 16 | -.2942 | .7950 |
| Antisocial | 55 | -.3086 | .7675 |
| Borderline | 314 | -.3692 | .6439 |
| Histrionic | 41 | -.1764 | .6000 |
| Narcissistic | 89 | .0035 | .6131 |
| Avoidant | 432 | -.1427 | .6395 |
| Dependent | 165 | -.2410 | .7436 |
| Obsessive-compulsive | 316 | .0544 | .7044 |
| PD NOS | 343 | .2517 | .6597 |
| No PD | 499 | .4807 | .7854 |

Note. SIDP-IV = Structured Interview for *DSM-IV* Personality; PD = personality disorder; NOS = not otherwise specified.

cutting score of zero demonstrated reasonable diagnostic efficiency for identifying individuals diagnosed with at least one of the 10 specific PDs by the SIDP-IV, with 72% sensitivity and 82% specificity.

The large size of the Verheul et al. (2008) sample also allowed for examining mean estimated theta scores for each of the specific PDs; in addition, the SIDP-IV provides for scoring of PD-NOS (which includes the three PDs found in the *DSM-IV* appendix), which allows an exploration as to how this concept fits within a dimension of general personality pathology. The mean theta values for the specific PD diagnostic groups (note that, because of PD comorbidity, these groups are not independent) and the PD-NOS group are presented in Table 4. As might be expected theoretically, the most pathological scores (i.e., the greatest level of personality pathology) were found in the borderline, schizotypal, antisocial, and paranoid groups. The least pathological specific *DSM-IV* PDs appeared to be narcissistic and obsessive-compulsive. Those receiving a PD-NOS diagnosis from the SIDP-IV had mean theta scores indicative of appreciably less personality pathology than those meeting criteria for one of the specific PDs, whereas those with no indication of PD had theta scores that were consistent with low personality pathology.

DISCUSSION

The results presented here indicate that it is possible to identify a global dimension of personality pathology that is significantly associated with (a) the probability of being assigned any *DSM-IV* PD diagnosis, (b) the total number of *DSM-IV* PD features manifested, and (c) the probability of being assigned multiple *DSM-IV* PD diagnoses. Indicators of this dimension involve important functions related to self (e.g., identity integration, integrity of self-concept) and interpersonal (e.g., capacity for empathy and intimacy) relatedness—features that, as reviewed earlier (Bender et al., 2011/this issue) play a prominent role in influential theoretical conceptualizations of core personality pathology (Livesley, 2003; Kernberg & Caligor, 2005; Kohut, 1971). Such results support the feasibility and potential utility of establishing a global PD severity scale in *DSM-5* to capture this dimension, in doing so helping to clarify the continuum that distinguishes PD from non-PD patients, unlike more global measures such as the GAF scale (Axis V) in *DSM-IV*.

TABLE 5.—Example of a clinician rating scale for levels of personality pathology.

| Level of Personality Pathology | GAPD/SIPP-118 Item Indicators |
|--|---|
| Level 5 (item IRT thresholds in the +0.75 and greater range) | Some uncertainty and indecision around values and goals; occasional lapses in self-directedness; periodic self-doubt |
| Level 4 (item IRT thresholds in the +0.25 to +0.75 range) | Feelings of emptiness, insincerity, or lack of authenticity around identity; low frustration tolerance; consistent feelings of worthlessness |
| Level 3 (item IRT thresholds in the -0.25 to +0.25 range) | Little sense of direction or meaning in life; marked instability in perception and evaluation of others |
| Level 2 (item IRT thresholds in the -0.55 to -0.25 range) | Alienation from others and from own feelings; poorly integrated and contradictory aspects of personality |
| Level 1 (item IRT thresholds in the -0.75 and lower range) | Marked shifts in identity and goals; fragmentary and defective sense of self; poor boundaries between self and other; little or no capacity for cooperative relationships |

Note. GAPD = General Assessment of Personality Disorder; SIPP-118 = Severity Indices of Personality Problems.

As an example, total number of *DSM-IV* PD criteria present (which demonstrated significant correlations with the continuum described here) have been found to predict longer term personological and functional outcomes, differentiating the PDs from Axis I disorders such as major depression (Morey et al., 2010). Future research should be directed at a more detailed examination of the specificity of these self-other issues to the PD with respect to other psychiatric disorders.

The nature of the items presented in Table 1 reveals that this continuum reflects variations in degree of self-other pathology. Certain items proved to be good indicators of personality function at various points on this continuum. However, these are self-report items; ultimately, the challenge is to try to turn these self-reported experiences into a clinical rating scale, using the identified items as guidelines to markers of level of personality pathology. Table 5 represents an approximation of what such a rating scale might involve, drawing directly from the content of SIPP-118 and GAPD that are maximally informative at various points on this personality pathology continuum. It will be important for future studies to evaluate the reliability and validity of a clinician-based rating scale that incorporates such concepts.

The ordinal patterning of severity described in Table 5 has a number of interesting features. Various features such as identity issues, interpersonal relatedness deficits, low self-worth, and low self-direction appeared to differentiate levels of personality pathology. In most instances, these indicators tended to vary quantitatively more than qualitatively at different levels of severity. However, as shown in Table 5, the markers that differentiated milder forms of personality pathology addressed primarily self and identity issues, whereas interpersonal issues (in addition to self-pathology) become discriminating at the more severe levels of personality pathology. Such a finding is consistent with the view of Kernberg (e.g., 1984, 1996) and others that identity issues play a foundational role in driving the characteristic interpersonal dysfunction noted in PDs. However, this observation needs replication using markers independent of the particular set of items examined in this study.

As a statistical manual, the *DSM-5* will ultimately identify a threshold necessary to describe an individual as having a “personality disorder.” In *DSM-IV*, there was considerable ambiguity around the nature and placement of this threshold, particularly with respect to the PD-NOS category (Pagan, Oltmanns, Whitmore, & Turkheimer, 2005; Trull, 2005; Verheul, Bartak, & Widiger, 2007). It was also unclear whether the boundary was to be drawn along some continuum, and if so, what the rationale for that cutting point might have been. The analyses described here provide both a foundation for articulating this continuum, as well as some information about the relationship of *DSM-IV* PD concepts to this latent continuum. It is worth noting that the ordering of *DSM-IV* disorders along this continuum shown in Table 4 bears considerable correspondence to the comparable ordering of personality organization severity described in Kernberg and Caligor’s (2005) characterization; in fact, the ordinal association between the two orderings was moderately strong (Spearman’s $\rho = .57$). Perhaps the largest difference between these two conceptualizations involved the placement of narcissistic personality, which was described by Kernberg and Caligor in the moderate to severe range, whereas in our analyses it appeared to characterize milder forms of personality impairment. This difference might reflect differences between the *DSM-IV* characterization of narcissism as primarily involving inflated self-esteem, as compared to a broader description of narcissistic pathology described by Kernberg and other authors. These latter theoretical accounts of the narcissism construct tend to resemble the core dimension described here—suggesting that narcissistic impairments can be found across a broad range of personality functioning. Such a view is corroborated by the characterization of the severity of narcissistic personality described in Kernberg and Caligor’s (2005) conceptual scheme, which indicated that narcissism and malignant narcissism spans the full range of personality organization. It is worth noting that a proposal to exclude narcissistic personality as a specific PD type has proven to be controversial; for this construct to be useful, it will be important to clarify with greater precision how this concept relates to personality severity.

Although this study represents an important step in describing a global dimension of personality pathology, future research is needed to address a number of questions. As noted previously, important questions remain regarding whether such a rating scale reflecting this dimension can be assessed by clinicians with reasonable interrater reliability, and whether such ratings will also be related to *DSM-IV* PD diagnoses (as were the self-reported characteristics examined in this study), as well as to adaptive functioning and outcome. It should also be noted that this continuum needs to be examined in additional samples. For example, the treatment-seeking nature of the samples examined here both limits the inclusion of some forms of PD (e.g., antisocial) that might not seek treatment, and it also limits the study of the “healthier” end of this continuum, which could be accomplished through the use of community samples. Furthermore, the use of European samples of patients bears replication in North American samples, as well as in other cultures, to determine whether the descriptors of general personality pathology generalize across such cultures. Finally, given the variability in theta estimates for patients with PD diagnoses observed across the two samples (noted in Table 2), additional samples would be particularly useful for calibrating diagnostic thresholds for PD as referenced against the *DSM-IV*.

Although our data indicate clear differences between individuals manifesting *DSM-IV* PDs and those without such disorders on a latent variable reflecting general personality pathology, we conceptualize it as a continuous dimension, analogous to intelligence, and that like the concept of mental retardation superimposed on this intelligence continuum, any threshold for diagnosis will be arbitrary, in that individuals slightly above and below this threshold can be quite similar. It appears that there is considerable variability in severity on the personality pathology dimension among the *DSM-IV* disorders, with some (e.g., paranoid, borderline) representing particularly severe variants, whereas others—in particular, PD-NOS, but also obsessive-compulsive—appreciably less severe. Although a threshold for PD diagnosis could be calibrated against the *DSM-IV*, ultimately it will be important to examine other validators—such as functional impairment or disability—for optimal placement of a diagnostic boundary. Regardless, increasing efforts to describe and understand this core dimension of personality pathology will provide critical information about essential commonalities in these conditions, with significant implications for their etiology and treatment.

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