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## Conceptual Changes to the Definition of Borderline Personality Disorder Proposed for *DSM-5*

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### Abstract

The *Diagnostic and Statistical Manual of Mental Disorders (DSM)-5* Personality and Personality Disorders Work Group proposed the elimination of diagnostic criterion sets in favor of a prototype matching system that defines personality disorders using narrative descriptions. Although some research supports this general approach, no empirical studies have yet examined the specific definitions proposed for *DSM-5*. Given the wide interest in borderline personality disorder (BPD), it is crucial to determine how this methodological shift might affect the content and conceptualization of the diagnosis. Eighty-two experts on BPD provided ratings of the *DSM-IV-TR* or *DSM-5* version of BPD in terms of 37 traits proposed for *DSM-5*. Analyses revealed significant and meaningful differences among the two constructs, with the *DSM-5* version evincing increased interpersonal dependency but a decreased emphasis on antagonism and disinhibition. A second study within a clinical sample demonstrated that both antagonism and disinhibition mediated the relationships between *DSM-IV* BPD and impairment, suggesting that the proposed changes might have important consequences for BPD's coverage, prevalence, and nomological network. More globally, our results illustrate that unanticipated shifts in diagnostic constructs can stem from seemingly minor revisions and suggest that research is needed to understand how these, or other changes, might affect our conceptualization, diagnosis, and treatment of BPD.

### Keywords

*DSM-5*; borderline personality disorder; prototype; antagonism; dependency

Borderline personality disorder (BPD) is an important clinical construct with a long history within the psychiatric literature (Gunderson, 2009, 2010). It became an officially recognized personality disorder (PD) diagnosis with the publication of the third edition of the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders (DSM-III;* American Psychiatric Association [APA], 1980), and it has since become the subject of a great deal of clinical and research attention.

The current edition of the diagnostic manual (*DSM-IV-TR;* APA, 2000) explicitly operationalizes BPD through a set of nine diagnostic criteria, which include 1) frantic efforts to avoid abandonment, 2) unstable relationships, 3) identity disturbance, 4) impulsivity, 5) recurrent suicidality or self-harm, 6) affective instability, 7) feelings of emptiness, 8) difficulty controlling anger, and 9) stress-related paranoia or dissociation. Individuals who meet at least five of these criteria are considered to have BPD, whereas those with fewer are not.

BPD is one of only a few PD constructs that are stimulating active research (Blashfield & Intoccia, 2000), including examinations of developmental antecedents (Cohen, Crawford, Johnson, & Kasen, 2005), (in)stability over time (Zanarini et al., 2008), and heritability (Kendler, Myers, Torgerson, Neale, & Reichborn-Kjennerud, 2008). BPD is also important clinically, as it is among the most prevalent PDs within the general population (Torgersen, 2009) and clinical practice (Zimmerman, Rothschild, & Chelminski, 2005). It is also associated with notable impairment (Parker et al., 2004) and treatment utilization (Bender et al., 2001). In addition, there are several empirically based treatments for BPD, unlike the other *DSM-IV-TR* PD constructs.

Thus, the shift in the operationalization and method of diagnosis for BPD proposed by the *DSM-5* Personality and Personality Disorders Work Group (2010) is important to examine. In contrast to the polythetic criteria sets used in *DSM-IV-TR*, the Work Group proposed that this construct should be recast as the borderline type and diagnosed using a dimensional rating on a five-point scale that quantifies the degree to which a patient resembles a narrative description. This approach is based primarily on the work of Westen and Shedler (2000), who suggested that a prototype matching approach more closely approximates how clinicians diagnose PDs in clinical practice (Shedler & Westen, 2007). Although there is some empirical support for such a diagnostic approach, it also has the potential to alter the definition of BPD. Indeed, Gunderson (2010) has raised concerns that the proposed prototype description is not explicitly tied to any research concerning either *DSM-IV-TR* BPD or the Shedler-Westen Assessment Procedure (2007) and suggested that the proposal might radically alter the meaning of the construct. His concerns about possible consequences of this change are not without foundation. Previous research has demonstrated that even seemingly minor changes to diagnostic criterion sets often result in unexpected and substantial shifts in prevalence rates, which complicate scientific theory and public health decisions (Blashfield, Blum, & Pfohl, 1992; Narrow, Rae, Robins, & Regier, 2002). With this in mind, it is important to investigate whether the proposed shift would impact the BPD construct as it has come to be understood over the past 30 years. To the degree that there are changes, it is important to index what consequences these changes might have for the nomological network associated with BPD.

One way to investigate changes to the BPD construct is through a content analysis comparing the proposed narrative (*DSM-5* Personality & Personality Disorder Work Group, 2010) to the diagnostic criteria from previous editions of the diagnostic manual. Pilkonis and colleagues (2011) provided such a comparison and concluded that the "content in the *DSM-5* type is significantly different from that in the *DSM-IV* criteria set, and that the change between *DSM-IV* and *DSM-5* is much larger than that between *DSM-III-R* and *DSM-IV*"

(p. 73). We extended this analysis to provide a more specific look at the 17 sentences in the proposed *DSM-5* borderline type description (see Appendix). In many instances these represent rewordings of the existing *DSM-IV-TR* criteria. For example, the sentence “individuals with this type are characteristically impulsive, acting on the spur of the moment, and frequently engage in activities with potentially negative consequences” appears quite similar to the fourth criterion in *DSM-IV-TR* (i.e., “impulsivity in at least two areas that are potentially self damaging,” p. 654). All nine *DSM-IV-TR* criteria are represented within the proposed *DSM-5* type description in one or more sentences. Criteria 1, 3, 4, 8, and 9 are represented by two sentences, whereas criteria 2, 5, 6, and 7 are referenced in single sentences. However, there are four remaining sentences in the *DSM-5* BPD description that appear to go beyond or even fall outside the current *DSM-IV-TR* criterion set. Interestingly, three of these sentences concern interpersonal behavior such that interpersonal dependency is emphasized substantially. For example, the sentence “relationships are based on the fantasy of the need for others for survival, excessive dependency, and a fear of rejection and/or abandonment” contains the core of criterion 1 (“efforts for avoid abandonment”) but adds the additional layer of dependency. The subsequent sentence goes even further to emphasize that “dependency involves both insecure attachment, expressed as difficulty tolerating aloneness...and urgent need for contact with significant others when stressed or distressed, accompanied sometimes by highly submissive, subservient behavior.” In total, the word “dependency” appears three times within the proposed type description. The inclusion of such wording in the proposed three-paragraph narrative description is all the more striking as the words ‘dependency,’ ‘submissive,’ or “subservient” do not appear anywhere within the *DSM-IV-TR* diagnostic criteria or in the text description of BPD, which spans five pages.

## Study 1

A content analysis is limited in that it might fail to capture the intricacies of the construct and could capitalize on individual wording changes that do not substantively alter the underlying meaning. A more systematic, empirical comparison between *DSM-IV-TR* and the proposed *DSM-5* operationalizations of BPD would provide stronger evidence. One way to obtain such a comparison is to ask experts to describe BPD from *DSM-IV-TR* and *DSM-5* perspectives using a set of external criteria as a lens through which the two constructs can be quantified. Aggregating these ratings across the experts provides a consensus description for each construct that can be compared statistically. The goal of such a comparison would not be to determine whether changes to BPD are consequential but simply to provide an objective accounting of whether a shift has occurred.

This approach has precedent within the PD literature as a means by which to compare constructs. For example, Miller, Lynam, Widiger, and Leukefeld (2001) surveyed a group of experts on psychopathy and had them describe a prototypic male and female psychopath in terms of the five-factor model of personality (FFM; McCrae & Costa, 2008). In addition, Lynam and Widiger (2001) asked experts to describe the 10 *DSM-IV-TR* PDs in terms of the FFM and Samuel and Widiger (2004) replicated these findings using a sample of practicing clinicians. These results illustrated that the FFM traits could be used as a lens through which to understand the similarities and differences among the PD constructs.

We used a similar strategy to compare and contrast the *DSM-IV-TR* and *DSM-5* operationalizations of BPD. Rather than use the FFM, we collected descriptions in terms of the maladaptive trait model proposed for *DSM-5*, which contained 37 traits organized under six broad factors: negative emotionality, introversion, antagonism, disinhibition, compulsivity, and schizotypy. All traits assess maladaptive functioning, and the model provides a relatively inclusive list that is likely to capture aspects that are relevant to the

description of BPD. The *DSM-5* proposal explicitly indicates that 10 of these 37 traits are relevant to BPD (i.e., emotional lability, anxiousness, separation insecurity, low self-esteem, self-harm, depressivity, hostility, aggression, impulsivity, and dissociation proneness).

The borderline construct has traditionally been defined, from a trait perspective, by a high standing on negative emotionality, and we expected that both *DSM-IV-TR* and *DSM-5* constructs would be rated highly on this dimension. However, others have also noted that *DSM-IV-TR* BPD taps a number of other personality domains, including antagonism, disinhibition, and peculiarity (Gunderson, 2010; Krueger & Eaton, 2010). Based on our content analysis of the proposed *DSM-5* narrative description and the *DSM-IV-TR* diagnostic criteria, we hypothesized several differences. Specifically, we predicted that the *DSM-5* borderline type would obtain significantly different ratings on traits related to the construct of dependency, such that the *DSM-5* BPD construct would be rated as being higher on submissiveness and separation insecurity from the domain of negative emotionality. However, dependency also concerns interpersonal behavior that is overly agreeable and deferential, which would be reflected as low standings on traits such as oppositionality from the domain of antagonism (Lowe, Widiger, & Edmundson, 2009). Thus, we further predicted that the proposed *DSM-5* BPD narrative would be rated lower than the *DSM-IV-TR* version on traits from the domain of antagonism.

## Method

**Procedures**—We first updated the list of PD experts assembled by Lynam and Widiger (2001) by excluding individuals who had not published since 2000. Next, we searched PsycINFO for “Borderline Personality Disorder,” published between 2001 and 2010 and added the contact author for each relevant search result. For the purposes of a study concerning all 10 *DSM-IV-TR* PDs (Samuel, Lynam, Widiger, & Ball, in press), we assigned individuals with expertise in more than one PD to a single construct, with the goal of maximizing the samples for specific disorders with small research literatures. This process resulted in a total list of 93 BPD experts. Using a random number generator, 45 were assigned to describe a prototypic case of *DSM-IV-TR* BPD and 48 to describe the proposed *DSM-5* borderline type. We invited all participants to rate a second PD to ensure the full representation of opinions from all BPD experts. Although portions of this data have been used in a previous publication (Samuel et al., in press) concerning the relationship between the proposed traits and types, the current results represent a novel application.

We contacted experts via email and invited them to participate in the survey within a web-based research suite (Qualtrics Labs Inc., Provo, UT). All participants provided background demographic information. They also rated their familiarity with the *DSM-IV-TR* PDs and *DSM-5* proposal on a 0–3 scale (*not at all, mildly, moderately, or extremely familiar*) and reported their number of publications concerning PDs. Experts assigned to the *DSM-IV-TR* version were instructed to “describe a prototypic case of *DSM-IV* borderline personality disorder” in terms of the 37 traits proposed for inclusion in *DSM-5*. These instructions were consistent with prior studies obtaining prototype descriptions of the *DSM-IV-TR* PDs (e.g., Lynam & Widiger, 2001) and were designed to elicit raters’ mental prototype of BPD. However, those experts assigned to the *DSM-5* types were explicitly provided with the narrative description drawn from the website in May 2010 and asked to rate the proposed type in terms of the 37 traits. The narrative description was continuously available so that the experts could consult it as necessary. It is important to note that this method was conservative and favored the null hypothesis of no differences between the two versions. If the experts assigned to the *DSM-5* borderline type failed to adequately consult the proposed narrative description then the ratings would reflect their existing understanding (i.e., *DSM-IV-TR*) of the construct and would minimize differences with the *DSM-IV-TR* condition.

In other words, differences in the *DSM-5* version should only emerge if the experts explicitly recognized and rated them.

The 37 trait names were followed by the brief definitions posted with the *DSM-5* proposal (e.g., “Emotional Lability-Having unstable emotional experiences and frequent, large mood changes; having emotions that are easily aroused, intense, and/or out of proportion to events and circumstances”). For each trait, experts selected from the response options of *not at all* or *very little*, *mildly descriptive*, *moderately descriptive*, or *extremely descriptive*, which were scored on a 0–3 metric. The traits were organized under the six higher order domains and appeared in the same order proposed by the *DSM-5* Personality and Personality Disorders Work Group (2010).

**Data Analysis**—The aim of the study was to compare expert consensus descriptions of *DSM-IV-TR* BPD and the proposed *DSM-5* borderline type in terms of the proposed trait set. To do so, we calculated the means and standard deviations of the trait ratings for each PD, which produced a trait profile for each version of the borderline construct. We then compared these profiles. First, we used an intraclass correlation (ICC) to index the overall degree of similarity between the *DSM-IV-TR* and *DSM-5* versions of BPD. Next, to better understand the nature of this agreement, we disaggregated the three aspects of profile similarity that influence ICCs (Furr, 2010): shape (indexed by a Pearson correlation), elevation (the sum of all 37 trait ratings), and scatter (variance across the ratings) of the overall profile.

To provide a specific and detailed examination of potential differences between the *DSM-IV-TR* and *DSM-5* version of BPD, we also compared the individual trait and domain ratings. To be more conservative, we used three decision rules before interpreting differences that emerged. Specifically, we required that any difference be 1) significant, 2) of medium or greater effect size, and 3) meaningful. We first conducted independent samples *t* tests on each of the 37 traits and the six domains to detect significant ( $p < .05$ ) differences. We then computed Cohen’s *d* to measure the effect size of these differences and, guided by Cohen’s (1992) guidelines (i.e., .20 = small, .50 = medium, and .80 = large), we required that effect sizes be at least medium in size. Finally, recognizing that even medium or large effects might be unimportant we also inspected the differences to determine whether they were meaningful. For example, a difference was not considered meaningful if it concerned a trait that was not rated as at least mildly descriptive (i.e., a mean rating  $>1.00$ ) for one of the versions. Similarly, we did not consider a trait difference meaningful if it was rated as extremely descriptive ( $>2.50$ ) for both constructs.

## Results

**Participants**—Of the 93 BPD experts invited to participate in this study, 55 (59%) provided usable responses. An additional 27 raters, included for their general expertise or expertise in another PD, also provided ratings. Of these 82 ratings, 42 described the *DSM-5* type and 40 described the *DSM-IV-TR* version. Independent samples *t* tests and chi-squares were conducted to examine potential differences in demographic variables across the groups that described *DSM-5* and *DSM-IV-TR* versions of BPD and only one emerged. The experts who described the *DSM-5* borderline type spent significantly more of their work time engaged in teaching (25%) than did those who described *DSM-IV-TR* BPD (13.5%),  $t(53) = 2.40, p = .02$ . All other demographic variables were not significantly different and we therefore present them collapsed across the two groups. A majority of the respondents were male (60%) and white (87%), but Asians (9%), Blacks (2%), and American Indian/Alaskan Natives (2%) were also represented. Most had a Ph.D. (66%), but there were also those with an M.D. (19%), Master’s Degree (10%), or other (5%). Most participants lived



and worked in North America (67%), but a notable number were from Europe (27%) and Asia (6%). The experts were primarily engaged in research (42% of working hours) and had considerable experience in this domain, with an average of 22.0 ( $SD = 35.3$ ) publications concerning PDs. They also spent a significant portion of their time providing direct patient care (23%), supervision (9%), and administration (8%). They were quite familiar with the *DSM-IV-TR* PDs with a mean rating of 2.74 ( $SD = .52$ ), but only mildly familiar with the *DSM-5* proposal ( $M = 1.27$ ,  $SD = .83$ ).

**Interrater Agreement**—We transposed the data such that the raters were treated as variables and the traits as cases and computed four measures of interrater agreement for each construct (i.e., *DSM-5* type or *DSM-IV-TR* PD). The average interrater  $r$ , which indicated the mean correlation between all possible pairs of raters, was .53 for each version. We then computed the average corrected item-total correlation, which indicated the correlation of each individual's profile ratings with the mean profile of all the other raters, excluding themselves and the value for both constructs was .72. Cronbach's alpha was .98 for both versions. Finally, we computed the average within group correlation (James, Demaree, & Wolf, 1993), which indexes interrater agreement among raters of a single target and represents the proportional reduction in error variance relative to a random process. These values were .44 for the *DSM-5* borderline type and .54 for *DSM-IV-TR* BPD.

**Global Profile Similarity**—The double entry, or intraclass, correlation between the two borderline profiles was .92, suggesting relatively strong agreement. Following Furr's (2010) method, we disaggregated this ICC into its shape, elevation, and scatter components. The shape similarity (i.e., Pearson correlation) was .94, which suggested very similar overall profiles. However, the elevation (i.e., the average across all 37 trait ratings) was 1.31 for the *DSM-IV-TR* PD and 1.18 for the *DSM-5* type; a difference that was significant,  $t(36) = 2.91$ ,  $p < .01$ . Because all traits are unipolar, a higher score indicates greater maladaptivity. Finally, the scatter (i.e., variance) of the two profiles was comparable at .62 for the *DSM-IV-TR* and .53 for the *DSM-5* version.

**Specific Profile Similarity**—Table 1 provides the results of independent sample  $t$  tests, which indicated that the *DSM-IV-TR* version of BPD obtained significantly higher mean ratings than the *DSM-5* type for the domains of antagonism [ $t(80) = 2.47$ ,  $d = -.54$ ] and disinhibition [ $t(80) = 2.70$ ,  $d = -.60$ ]. In addition, there were nine traits that evinced significant changes between the *DSM-IV-TR* and *DSM-5* versions. The *DSM-5* type was rated higher on the traits of submissiveness [ $t(80) = 2.91$ ,  $d = .64$ ], orderliness [ $t(80) = 2.50$ ,  $d = .55$ ], and risk aversion [ $t(80) = 2.04$ ,  $d = .45$ ] and lower on the traits of manipulativeness [ $t(80) = -3.22$ ,  $d = -.71$ ], narcissism [ $t(80) = -2.84$ ,  $d = -.62$ ], oppositionality [ $t(80) = -2.56$ ,  $d = -.57$ ], impulsivity [ $t(80) = -2.53$ ,  $d = -.55$ ], irresponsibility [ $t(80) = -2.40$ ,  $d = -.54$ ], and self-harm [ $t(80) = -2.67$ ,  $d = -.59$ ]. Of these significant differences all but one (risk aversion) were classified as at least a medium effect size.

We then examined each of those that remained and determined that two of the significant, medium effects were not meaningful. Although the trait of self-harm did obtain a significantly higher rating for the *DSM-IV-TR* BPD than the *DSM-5* type, both versions obtained ratings that were above 2.50. This suggested that there was not a fundamental shift in the importance of self-harm for the diagnosis of BPD within the new proposal. Similarly, the rating for the trait of orderliness from the domain of compulsivity was higher for the *DSM-5* type, but this was simply a reflection of the lack of variability in the *DSM-IV-TR* ratings. Whereas the mean rating for the *DSM-IV-TR* was .00, it was only .24 for the *DSM-5*, indicating that being orderly remained quite irrelevant to the diagnosis of borderline. Nonetheless, there was evidence of significant, medium, and meaningful differences between the *DSM-IV-TR* and *DSM-5* versions on six specific traits. Our BPD

experts indicated that the proposed narrative description of the borderline type for *DSM-5* was higher on submissiveness but lower in terms of manipulativeness, narcissism, oppositionality, impulsivity, and irresponsibility.

As these traits are suggestive of increased dependency, as well as decreased antagonism and disinhibition, we sought to further explore how the *DSM-5* borderline type and the *DSM-IV-TR* BPD related to dependent PD and other existing PD constructs. To do so, we correlated each of the borderline profiles with the trait profile of each *DSM-IV-TR* PD, as well as psychopathy, which we reported in a previous analysis of this dataset (Samuel et al., in press). These results are provided in Table 2. For example, we correlated the two borderline profiles with that of dependent personality disorder (DPD). The Pearson correlation between *DSM-5* borderline and *DSM-IV-TR* DPD was .48, whereas the value for *DSM-IV-TR* BPD with DPD was .31. The fact that the correlation with DPD increased by .17 supported our hypothesis that the *DSM-5* narrative moved closer to this construct. However, equally important changes were noted as BPD became more distinct from other *DSM-IV-TR* PDs. For instance, the correlation with antisocial PD decreased by .20, from .33 to .13. Similarly, the *DSM-5* narrative also evinced substantially decreased relations with psychopathy (decrease of .20) and narcissistic PD (decrease of .16).

### Study 1 Discussion

The experts' consensus ratings did evince significant and meaningful differences between the *DSM-IV-TR* BPD and the proposed *DSM-5* borderline type that were consistent with our hypotheses. Specifically, the *DSM-5* narrative description eschews aspects of antagonism and disinhibition, which are important aspects of the *DSM-IV-TR* BPD (e.g., Krueger & Watson, 2010; Saulsman & Page, 2004). Instead, the *DSM-5* narrative displays an increased emphasis on interpersonal dependency, which has been conceptualized by some as maladaptively high agreeableness (Lowe et al., 2009). In this way, it appears as though the borderline PD construct has been shifted in its placement along a dimension running from antagonism to agreeableness. Whereas the *DSM-IV-TR* version leaned more heavily toward antagonism, the *DSM-5* narrative now emphasizes agreeableness. In addition to the specific changes on a number of traits, the *DSM-5* conceptualization also appears less pathological, as the overall mean rating across the 37 traits was significantly lower than *DSM-IV-TR* BPD.

These potential shifts are perhaps surprising as the *DSM-IV-TR* conceptualization of BPD is relatively robust, and some have argued that only minimal changes are warranted (Gunderson, 2010). It is possible that these changes reflect explicit decisions by the committee to alter BPD to improve its validity or utility. For example, some might suggest that the *DSM-5* description might be less saturated with general maladjustment and thus actually improves the discriminant validity of the diagnosis. Although, if this were the goal, a more likely target would have been a reduction in the role of Neuroticism/Negative Emotionality, rather than Antagonism, given the near ubiquitous role of Neuroticism in the *DSM-IV* PDs (e.g., Saulsman & Page, 2004; Samuel & Widiger, 2008). Nonetheless, it is difficult to discern whether these changes were intentional as no acknowledgment of (or support for) conceptual changes was provided within the proposal or more recent descriptions (*DSM-5* Personality & Personality Disorder Work Group, 2010; Skodol, Clark et al., 2011; Skodol, Bender et al., 2011).

It should be repeated here that the goal of this first study was not to determine whether changes to BPD are consequential but to simply provide an objective accounting of whether a shift has occurred. We believe that the current method is useful for examining this question as the expert consensus approach had the appreciable advantage of measuring the opinions of researchers from a variety of backgrounds and theoretical orientations. This

minimized the impact of idiosyncratic interpretations and allowed for a more direct and cautious comparison of the two operationalizations of BPD.

Nonetheless, these results are potentially limited in that they are descriptive and do not indicate how such changes might affect the prevalence or correlates of BPD. One method of addressing this would be to investigate how the two conceptualizations of BPD relate with various other measures. Unfortunately, such data are not yet available for the *DSM-5* narrative description, but we can investigate whether the elements of BPD that have been altered (e.g., a shift away from antagonism toward dependency/agreeableness) relate to important outcomes. In the second study, we address this question by examining whether antagonism and disinhibition are consequential for BPD's relationship with psychosocial functioning.

## Study 2

The results from Study 1 suggested that the *DSM-5* BPD type has less representation of interpersonal antagonism and traits related to conscientiousness (i.e., disinhibition) than did the *DSM-IV* BPD diagnosis, both of which have been empirically (Samuel & Widiger, 2008; Saulsman & Page, 2004) and theoretically linked with BPD (Lynam & Widiger, 2001; Samuel & Widiger, 2004). In the current study, we considered the potential implications of these changes by examining the roles that agreeableness (vs. antagonism) and conscientiousness (vs. disinhibition) play in the well-known relations between BPD and impairment (e.g., Coid et al., 2009; Hill et al., 2008; Jovev & Jackson, 2006; Parker et al., 2004; Skodol et al., 2002; Zanarini, Frankenburg, Hennen, Reich, & Silk, 2005). To do so, we tested whether antagonism and disinhibition served as mediators of the relations between BPD and various forms of functional impairment. These mediational analyses serve as a test of whether these traits account, in part, for BPD's relation to impairment; they are not meant to suggest that BPD causes these general traits, which in turn cause functional impairment.

## Method

**Participants and Procedure**—Participants included 130 outpatients (97 females; 33 males) from Western Psychiatric Institute and Clinic (WPIC) in Pittsburgh, Pennsylvania between the ages of 21 and 60 ( $M = 37.9$ ,  $SD = 10.6$ ). The majority of participants were white (75%); the remaining participants were almost entirely African American (24%). Ninety-two participants (71%) had a current mood disorder diagnosis, and 71 (55%) had a current anxiety disorder. One hundred two participants (78%) met criteria for a *DSM-IV* PD; the most prevalent PD diagnoses were Borderline (43%) and Avoidant (32%).

Participants were recruited via study advertisements posted in outpatient and intensive outpatient clinics at WPIC. The current study is part of a larger project, the goal of which was to compare the interpersonal functioning of patients with BPD with those patients with either Avoidant PD and those with Axis I diagnoses but no PD. During the initial recruitment of the sample, it became clear that individuals with many other PDs were responding to the study advertisements, and ultimately a fourth group of patients with other PDs was also included.

Interested participants contacted the research staff and were screened via telephone to determine whether they met any of the following exclusion criteria: psychotic disorders, organic mental disorders, mental retardation, and major medical illnesses that influence the central nervous system and might be associated with organic personality disturbance. Eligible participants provided written consent and were assessed by a primary interviewer across a minimum of three sessions (each session lasted between 2 and 3 hours) that



included Axis I (i.e., Structured Clinical Interview for *DSM-IV* Axis I disorders; First, Gibbon, Spitzer, & Williams, 1997) and II (i.e., Structured Clinical Interview for *DSM-IV* Axis II Disorders; First, Gibbon, Spitzer, Williams, & Benjamin, 1997) interviews and a detailed social and developmental history. Participants were paid approximately \$30 to \$40 per assessment session.

Following the assessment sessions, the primary interviewer presented the case at a 3- to 4-hour diagnostic conference with colleagues from the research team. A minimum of three judges participated. All available data were reviewed and discussed at the conference. During the case conference, consensus ratings were derived for Axis I diagnoses, Axis II individual criteria and diagnoses, and impairment domains (e.g., occupational, romantic). Five-Factor Model Score Sheet (FFMSS) ratings were completed by the primary interviewer before the case conference, whereas the secondary FFMSS rater (where available) did so after the completion of the case conference (the FFMSS ratings were not discussed during the case conference).

### Measures

**Five Factor Model Score Sheet (FFMSS):** The FFMSS (Widiger & Spitzer, 2002) is a one-page rating sheet consisting of 30 items representing each of the facets of the FFM, as conceptualized in the NEO Personality Inventory-Revised (NEO PI-R). These facets are organized with respect to the FFM domains, such that there are six items beneath a listed domain. Each item includes a list of two to four adjectives describing the trait. Each item is rated on a scale from 1 (*problematic, very low on the trait*) to 7 (*problematic, very high on the trait*). For instance, the FFM trait “anxiousness” includes adjectives relevant to high (i.e., fearful, apprehensive) and low (i.e., relaxed, unconcerned, cool) levels of this trait. Previous examinations within this sample have demonstrated support for its validity (Few et al., 2010). Interrater reliability, examined via double-entry intraclass correlations, for the five domains ranged from .55 (Neuroticism) to .72 (Conscientiousness). Alphas ranged from .61 (Neuroticism) to .92 (Conscientiousness).

**Consensus ratings of *DSM-IV* PD criteria:** These ratings were determined in each participant’s case conference. A consensus rating of each *DSM-IV* PD symptom was determined using a 0–2 scale, with 0 indicating “absent,” 1 indicating “present,” and 2 indicating “strongly present.” Consensus was based on the collective judgment of the expert raters; where there was disagreement, the preference of the majority was used. Symptom counts were generated by adding all scores (i.e., 0, 1, 2) for each PD. Alpha coefficient for BPD was .86.

**Consensus ratings of impairment:** Consensus ratings were determined separately for romantic relationships, other social relationships (e.g., friends, family members), occupational impairment, distress caused to significant others (e.g., friends, children), and overall impairment using a 1 (exceptionally positive functioning) to 9 (difficulties are persistent and pervasive, without clearly identifiable elements of functioning relevant to the domain) one-item scale. The information used to derive these consensus ratings was gathered across the extensive diagnostic interviewing and during a 2- to 3-hour long interview that gathered information germane to current and lifetime functioning across a variety of domains.

## Study 2 Results and Discussion

We used Preacher and Hayes (2008) bootstrapping technique to test multiple mediator models in a manner that results in significance tests for the direct effect of  $x$  on  $y$  controlling for more than one mediator, as well as the specific indirect effects of various mediators. This

method allows for multiple mediators to be examined within the same model and does not impose questionable distributional assumptions on the data (e.g., Preacher & Hayes, 2004). Preacher and Hayes' technique also produces point estimates and bias-corrected and accelerated (BCA) confidence intervals for each of the proposed indirect effects, as well as a point estimate of the remaining direct effect. For the indirect effects tests, confidence intervals that do not include zero suggest significant mediation.

To test whether antagonism (i.e., low agreeableness) and disinhibition (i.e., low conscientiousness) were significant mediators of the relations between BPD symptoms and impairment, we first examined the relevant bivariate correlations. BPD was significantly correlated ( $p < .01$ ) with antagonism (.33) and disinhibition (.45) and with all five indices of impairment: overall (.56), marital (.37), social (.42), occupational (.48), and distress to others (.65). Antagonism and disinhibition were also significantly correlated with all five indices of impairment: overall (.45; .51), marital (.26; .31), social (.37; .39), occupational (.41; .62), and distress to others (.52; .56).

Next, we used simultaneous multiple mediator models to test whether the inclusion of antagonism and disinhibition resulted in a significant reduction in the relation between BPD and the five impairment variables. The total effects of BPD on overall impairment, marital, social, occupational, and distress to others significant were all significant ( $Bs = .15, .10, .14, .18, \text{ and } .25$ , respectively,  $p < .01$ ) and remained significant even when antagonism and disinhibition were included in the model ( $Bs = .10, .08, .09, .09, \text{ and } .18$ , respectively,  $p < .01$ ). However, the inclusion of antagonism and disinhibition resulted in significant reductions in the relations between BPD and all five impairment ratings: overall (33% reduction), marital (27% reduction), social (36% reduction), occupational (54% reduction), and distress to others (30% reduction). With the exception of marital impairment, both traits uniquely contributed to the significant reductions as noted by the significant indirect paths operating through them: overall impairment (*antagonism*: point estimate: .02; 95% BCA confidence intervals: .01 to .04; *disinhibition*: point estimate: .03; 95% BCA confidence intervals: .01 to .05), social impairment (*antagonism*: point estimate: .02; 95% BCA confidence intervals: .004 to .06; *disinhibition*: point estimate: .03; 95% BCA confidence intervals: .0001 to .06), occupational impairment (*antagonism*: point estimate: .02; 95% BCA confidence intervals: .0004 to .05; *disinhibition*: point estimate: .08; 95% BCA confidence intervals: .05 to .12), and distress to others (*antagonism*: point estimate: .04; 95% BCA confidence intervals: .01 to .07; *disinhibition*: point estimate: .04; 95% BCA confidence intervals: .02 to .08). In the case of marital impairment, although antagonism and disinhibition together provided a significant reduction in the BPD relation, neither uniquely did so.

The current results highlight the significant relations between BPD and the personality domains of antagonism and disinhibition, and the role these domains may play in the relations between BPD and impairment in multiple domains of functioning. These findings raise the concern that the reduction or removal of content related to antagonism (e.g., narcissism, manipulativeness, oppositionality) and disinhibition (e.g., impulsivity, irresponsibility) in *DSM-5* BPD will have important consequences for the manner in which BPD operates with regard to central aspects of its well-established nomological network.

## General Discussion

These two studies suggest that proposed changes to the description of BPD have a meaningful impact on its conceptualization and well-known relationship with functional impairment. Despite taking a conservative three-pronged approach that required differences in trait ratings between the two constructs to be significant, medium, and meaningful, we

noted that the proposed borderline type for *DSM-5* was higher on submissiveness but lower in terms of manipulateness, narcissism, oppositionality, impulsivity, and irresponsibility. Considered broadly, these differences indicate that the *DSM-5* borderline type increased its focus on interpersonal dependency (i.e., agreeableness) but de-emphasized antagonism and disinhibition. The results from Study 2 demonstrate that these changes will have implications for the manner in which the *DSM-5* borderline type will function. More specifically, the shift away from antagonism and disinhibition will likely reduce the impairment associated with BPD. Indeed, it is inevitable that a shift from polythetic diagnostic criteria to a prototype matching system would produce differences in the PD constructs. Previous research has shown the global impressions of PDs often differ from systematic assessments of individual criteria, even when both are provided by the same clinician (e.g., Morey & Ochoa, 1989) and it is likely that similar situations will arise with prototype matching. However, the current study goes further to suggest that the specific reformulation of the borderline type for *DSM-5* shifts the definition of the construct in meaningful ways.

It appears that these definitional changes will have important ramifications for the study and treatment of BPD. Past research has demonstrated that even seemingly minor shifts to diagnostic criterion sets often produce substantial shifts in prevalence rates that complicate scientific theory and public health decisions (Blashfield et al., 1992; Narrow et al., 2002). The current results indicate that changing the degree to which the BPD construct is situated along the dimensions of agreeableness versus antagonism and conscientiousness versus disinhibition will have important consequences for its relationship with a variety of forms of impairment. It is also likely to alter which individuals meet the diagnosis, potentially affecting prevalence rates. Finally, there might be unintended consequences for treatment, as individuals deemed a good fit for the *DSM-5* borderline type would potentially interact with therapists in a manner that is different from those who met *DSM-IV-TR* BPD criteria.

### **Subsequent and Ongoing Revisions to the *DSM-5* Proposal for BPD**

We note that the present study considered the *proposed* narrative descriptions that were initially posted on the *DSM-5* website in the spring of 2010. An inherent reality in studying any proposal is it has the potential to change at some future date. In fact, the narrative description for BPD was modified after the completion of this survey. The revised proposal posted on January 21, 2011 shortened the type description from three paragraphs to two but did not alter the content (Skodol, Clark et al., 2011). The narrative used in the current study is provided in the Appendix, while the revised narrative is available on the *DSM-5* website and within the Skodol, Clark et al. (2011) publication. Nonetheless, as the current findings indicate, the potential for shifts in content based on any shortenings or rearrangements is ultimately an empirical question that can and should be investigated in future studies. Further, we believe that the current results demonstrate the critical point that empirical findings must guide revisions to existing diagnoses, and this point remains relevant even if the specific narrative is further altered in a substantive way.

In fact, the *DSM-5* proposal for BPD underwent another radical shift on June 21, 2011 such that the prototype matching system was abandoned in favor of diagnosis in terms of a specific set of traits drawn from a revised 25-trait model that is a reduction from the 37 traits proposed previously. In this regard, we believe the current results not only have the potential to inform the *DSM-5* process but in fact may have been incorporated into this revised proposal. We provided these results (both for BPD and other PD constructs) to the *DSM-5* Work Group before submitting this manuscript for publication. The revised proposal is now closely aligned with the ratings by our experts. For example, it is now proposed that BPD be defined, in large part, by the traits of emotional lability, anxiousness, separation insecurity, depressivity, impulsivity, risk-taking, and hostility. These are precisely the traits that would

be suggested by the expert consensus ratings of *DSM-IV* BPD within the current study. Specifically, these are the traits that obtained a mean rating above 2.00 and continue to have a place within the current 25-trait system. Nonetheless, as the *DSM-5* proposal presented on June 21, 2011 represents the third major revision, it is possible, if not likely, that additional changes will take place. Thus, the current study and others concerned with the *DSM-5* proposals are likely to remain quite useful as the process evolves.

It is important to note that the new *DSM-5* BPD count also weighs traits from the domain of antagonism in a restricted manner; only the domain of hostility is included, despite some elevations in traits related to oppositionality and aggression. We suggest that the Samuel et al. (in press) ratings should be considered only one source of relevant information as to which traits most exemplify BPD (and thus should be included in a trait-based diagnosis of BPD). From a five-factor model perspective, there are a number of sources of data including research (Lynam & Widiger, 2001) and clinical (Samuel & Widiger, 2004) ratings, as well as meta-analytic findings (e.g., Samuel & Widiger, 2008) that suggest that other traits from the domain of Antagonism should be considered for inclusion in a trait-based diagnostic system for BPD, including traits such as oppositionality and perhaps even deceitfulness.

### Limitations

The current study provides the first data bearing on the potential shifts in the conceptualization of BPD proposed for *DSM-5*, using an expert consensus approach. Although this approach has proven useful in past research, there are certainly other methods by which to compare the *DSM-5* and *DSM-IV-TR* BPD constructs. For example, the field trials will presumably provide data regarding the application of both diagnostic systems to the same patients, yielding information on their correspondence and relations with other variables. Nonetheless, we believe that the current data provide a useful complement to those being obtained in the field trial and will help to facilitate discussion and research on potential changes to the definition of BPD. A potential limitation of the current Study 1 is that we surveyed a group of researchers who were largely psychologists and spent a majority of their time in academic roles. Previous research has demonstrated that descriptions of *DSM-IV-TR* BPD in terms of the five-factor model of personality are extremely consistent across researchers and psychologists in independent practice, with mean profiles for each group correlating .93 (Samuel & Widiger, 2004). Nonetheless, future research that extends the current findings using a sample of practicing clinicians from a variety of educational backgrounds (i.e., social workers, psychologists, psychiatrists) would be helpful.

Further, this is just one study and our findings illustrate the need for continued research given the dynamic evolution of the *DSM-5* PD nomenclature. This is particularly important as our data may have helped form, or at least confirmed, the current definition of BPD offered by the *DSM-5* Work Group. No single study is authoritative, and the results from Study 1 were confined to those traits included in the originally proposed model. It is possible that other trait models might have obtained somewhat different findings. As noted earlier, previous research using the 30 facets of the FFM has indicated that antagonism might be even more central to the description of BPD than was indicated by the experts in our current study (Lynam & Widiger, 2001; Samuel & Widiger, 2004, 2008). Future data from the field trials and other studies will be particularly useful in this regard to better understand how to best elucidate the traits that constitute BPD. Further, our findings from Study 2 could also be impacted by issues of instrumentation as the FFMSS has been used in a number of studies, but it is certainly conceivable that it might have limitations or idiosyncrasies that colored the current findings.

## Conclusions

The revisions to the diagnostic manual proposed by the *DSM-5* Personality and Personality Disorders Work Group contained sweeping changes for the diagnosis and conceptualization of personality pathology. Among these changes was the departure from the use of polythetic criterion sets in favor of a prototype matching approach that defines constructs using a narrative description. Our survey data suggested that the narrative description for the *DSM-5* borderline type included significant and meaningful changes from the construct included in *DSM-IV-TR*. Chief among these changes were the diminished emphases on antagonism and disinhibition, which our research indicate mediate the relationship between BPD and functional impairment. In light of these findings, we suggest that further research on the proposed changes is needed to better understand how these, or other changes, might affect our conceptualization, diagnosis, and treatment of BPD.

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## Appendix. Borderline Type Narrative

Individuals who match this personality disorder type have an extremely fragile self-concept that is easily disrupted and fragmented under stress and results in the experience of a lack of identity or chronic feelings of emptiness. As a result, they have an impoverished and/or unstable self structure and difficulty maintaining enduring intimate relationships. Self-appraisal is often associated with self-loathing, rage, and despondency. Individuals with this disorder experience rapidly changing, intense, unpredictable, and reactive emotions and can become extremely anxious or depressed. They may also become angry or hostile and feel misunderstood, mistreated, or victimized. They may engage in verbal or physical acts of aggression when angry. Emotional reactions are typically in response to negative interpersonal events involving loss or disappointment.

Relationships are based on the fantasy of the need for others for survival, excessive dependency, and a fear of rejection and/or abandonment. Dependency involves both insecure attachment, expressed as difficulty tolerating aloneness; intense fear of loss, abandonment, or rejection by significant others; and urgent need for contact with significant others when stressed or distressed, accompanied sometimes by highly submissive, subservient behavior. At the same time, intense, intimate involvement with another person often leads to a fear of loss of an identity as an individual. Thus, interpersonal relationships

are highly unstable and alternate between excessive dependency and flight from involvement. Empathy for others is severely impaired.

Core emotional traits and interpersonal behaviors may be associated with cognitive dysregulation (i.e., cognitive functions may become impaired at times of interpersonal stress leading to information processing in a concrete, black-and white, all-or-nothing manner). Quasi-psychotic reactions, including paranoia and dissociation, may progress to transient psychosis. Individuals with this type are characteristically impulsive, acting on the spur of the moment, and frequently engage in activities with potentially negative consequences. Deliberate acts of self-harm (e.g., cutting, burning), suicidal ideation, and suicide attempts typically occur in the context of intense distress and dysphoria, particularly in the context of feelings of abandonment when an important relationship is disrupted. Intense distress may also lead to other risky behaviors, including substance misuse, reckless driving, binge eating, or promiscuous sex.

Table 1

Comparison of Expert Consensus Ratings of DSM-IV and Proposed DSM-5 Borderline PD

<i>DSM-5 traits</i>	<i>DSM-IV borderline PD</i>	<i>DSM-5 borderline type<sup>d</sup></i>	<i>t(80)</i>	<i>d</i>
Negative emotionality	1.99 (.44)	1.94 (0.46)	0.48	-.11
Emotional lability	2.93 (.27)	2.79 (0.47)	1.66	-.36
Anxiousness	2.00 (.85)	1.93 (0.81)	0.39	-.09
Submissiveness	0.93 (.86)	1.43 (0.70)	-2.91*	.64
Separation insecurity	2.50 (.72)	2.69 (0.56)	-1.34	.29
Pessimism	1.69 (.95)	1.29 (0.94)	1.93	-.43
Low self-esteem	1.88 (.85)	2.00 (0.70)	-0.73	.16
Guilt/shame	1.53 (1.13)	1.48 (1.02)	0.21	-.05
Self-harm	2.88 (.33)	2.60 (0.59)	2.67*	-.59
Depressivity	2.00 (.78)	1.90 (1.01)	0.48	-.11
Suspiciousness	1.60 (.74)	1.32 (0.91)	1.53	-.34
Introversion	0.40 0.56	0.46 (0.63)	-0.44	.10
Social withdrawal	0.48 (.72)	0.48 (0.77)	-0.01	.00
Social detachment	0.33 (.57)	0.29 (0.64)	0.29	-.07
Intimacy avoidance	0.50 (.78)	0.67 (0.95)	-0.86	.19
Restricted affectivity	0.18 (.50)	0.29 (0.67)	-0.84	.19
Anhedonia	0.53 (.88)	0.57 (0.74)	-0.26	.06
Antagonism	1.43 (0.65)	1.07 (0.65)	2.47*	-.54
Callousness	1.10 (.84)	1.17 (0.91)	-0.34	.08
Manipulativeness	1.65 (.98)	0.95 (0.99)	3.22*	-.71
Narcissism	1.10 (.96)	0.55 (0.80)	2.84*	-.62
Histrionism	1.48 (.91)	1.10 (1.10)	1.70	-.38
Hostility	2.08 (.74)	1.90 (0.73)	1.06	-.23
Aggression	1.58 (.93)	1.31 (0.81)	1.38	-.30
Oppositionality	1.45 (.88)	0.93 (0.96)	2.56*	-.57
Deceitfulness	1.00 (.72)	0.69 (0.84)	1.79	-.40
Disinhibition	1.99 0.49	1.60 (0.77)	2.70*	-.60
Impulsivity	2.83 (.38)	2.48 (0.80)	2.53*	-.55
Distractibility	1.43 (.84)	1.12 (1.08)	1.41	-.31
Recklessness	2.08 (.83)	1.69 (0.95)	1.95	-.43
Irresponsibility	1.64 (.87)	1.12 (1.06)	2.40*	-.54
Compulsivity	0.39 (0.4)	0.45 (0.63)	-0.53	.12
Perfectionism	0.53 (.82)	0.57 (0.80)	-0.26	.06
Perseveration	0.50 (.68)	0.45 (0.80)	0.29	-.06
Rigidity	0.83 (.90)	0.74 (0.91)	0.43	-.10
Orderliness	0.00 (.00)	0.24 (0.62)	-2.50*	.55
Risk aversion	0.05 (.22)	0.26 (0.63)	-2.04*	.45
Schizotypy	1.04 (0.49)	0.95 (0.65)	0.70	-.16
Unusual perceptions	0.82 (.68)	0.57 (0.67)	1.66	-.37

<i>DSM-5</i> traits	<i>DSM-IV</i> borderline PD	<i>DSM-5</i> borderline type <sup>a</sup>	<i>t</i> (80)	<i>d</i>
Unusual beliefs	0.80 (.56)	0.55 (0.86)	1.58	-.35
Eccentricity	0.69 (.69)	0.49 (0.95)	1.09	-.25
Cognitive dysregulation	1.10 (.90)	1.43 (0.94)	-1.61	.36
Dissociation proneness	1.75 (.84)	1.70 (0.82)	0.27	-.06

*Note.* All ratings on a 0–3 Likert-type Scale where 0 = very little or not at all, 1 = mildly descriptive, 2 = moderately descriptive, and 3 = extremely descriptive. Asterisks indicate those differences that were significant at  $p < .05$  (two-tailed).

<sup>a</sup>The *DSM-5* borderline ratings are reproduced from D.B. Samuel, D. R. Lynam, T.A. Widiger, & S. A. Ball (in press), An expert consensus approach to relating the proposed *DSM-5* types and traits. *Personality Disorders: Theory, Research, and Treatment*.



**Table 2**

## Profile Similarity Correlations With Existing PD Constructs

	DSM-IV-TR	DSM-5
Paranoid	-0.34	-0.37
Schizoid	-0.63	-0.54
Schizotypal	-0.28	-0.25
Antisocial	0.33	0.13
Histrionic	0.61	0.50
Narcissistic	0.17	0.01
Avoidant	-0.05	0.11
Dependent	0.31	0.48
Obsessive compulsive	-0.52	-0.43
Psychopathy	0.14	-0.06

*Note.* PD = Personality disorder. Values represent the Pearson correlations between the trait profiles for the *DSM-IV-TR* BPD and *DSM-5* Borderline Type with the trait profiles for the other *DSM-IV-TR* PDs and psychopathy.