

# Personality Disorders: Theory, Research, and Treatment

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## Borderline Personality Disorder as a Female Phenotypic Expression of Psychopathy?

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Evidence suggests that the combination of the interpersonal-affective (F1) and impulsive-antisocial (F2) features of psychopathy may be associated with borderline personality disorder (BPD), specifically among women (e.g., Coid, 1993; Hicks, Vaidyanathan, & Patrick, 2010). However, empirical research explicitly examining gendered relationships between BPD and psychopathy factors is lacking. To further inform this area of research, we investigated the hypothesis that the interplay between the two psychopathy factors is associated with BPD among women across two studies. Study 1 consisted of a college sample of 318 adults (51% women), and Study 2 consisted of a large sample of 488 female prisoners. The interpersonal-affective (F1) and impulsive-antisocial psychopathy (F2) scores, measured with self-report and clinician-rated indices, respectively, were entered as explanatory variables in regression analyses to investigate their unique contributions to BPD traits. Across two independent samples, results indicated that the interaction of high F1 and F2 psychopathy scores was associated with BPD in women. This association was found to be specific to women in Study 1. These results suggest that BPD and psychopathy, at least as they are measured by current instruments, overlap in women and, accordingly, may reflect gender-differentiated phenotypic expressions of similar dispositional vulnerabilities.

*Keywords:* psychopathy, borderline personality disorder, women, classification

Psychopathy is a condition characterized by deficits in emotional processing, interpersonal relationships, and self-regulation (Hare, 1991). Individuals with psychopathic tendencies generally engage in callous and manipulative behavior toward the exploitation of others and exhibit a wide spectrum of antisocial and impulsive behaviors. Although psychopathy is typically represented as a unitary construct, current conceptualizations of the disorder also support its heterogeneity in terms of subtypes (e.g., primary and secondary subtypes; Blackburn,

1975; Skeem, Poythress, Edens, Lilienfeld, & Cale, 2003), as well as multiple underlying trait dimensions (Hare, 2003). However, much of the literature informing the heterogeneity of psychopathy has predominantly focused on male populations (e.g., Hicks, Markon, Patrick, Krueger, & Newman, 2004), with a few exceptions (e.g., Hicks et al., 2010). Thus, potential gender differences in manifestations of psychopathy are not well understood. With the re-introduction of psychopathy as a personality disorder type (i.e., the “antisocial/psychopathic” type) in the proposed fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5; APA, 2010), examining the nature of psychopathy in women is crucial in order to appropriately inform work on the classification and treatment of personality disorders across genders.

One important gap in the extant literature pertains to whether and to what extent psycho-

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pathic traits may manifest differentially as a function of gender. In particular, some theorists have argued that psychopathy represents a female phenotypic expression of borderline personality disorder (BPD; Cale & Lilienfeld, 2002; Gunderson, 1994), although there is an ongoing debate regarding this issue. This is, in part, due to the admittedly sparse literature regarding the overlaps and distinctions between BPD and psychopathy among women (cf. Herpertz et al., 2001) and is further complicated by the disproportionate prevalence of psychopathy among men versus BPD among women (APA, 2000; Salekin, Rogers, & Sewell, 1997). Nonetheless, examining the relationship between BPD and psychopathy in both male and female samples is an important area of research, as these two disorders are associated with similar symptoms (e.g., impulsivity, manipulation, aggression), risk factors (e.g., childhood abuse, poor parental attachment; Gao, Raine, Chana, Venables, & Mednicka, 2010; Zanarini, 2000), and prevalence rates (e.g., 1–2% in the general population; Neumann & Hare, 2008). As such, the present paper reports on two studies that seek to advance the literature on female-relevant manifestations of psychopathy by examining the interrelationships between psychopathy factors and BPD with attention to potential gender differences (Study 1) and in a large sample of female offenders (Study 2).

### Disaggregating Psychopathy and Its Association With BPD

Psychopathy is characterized by two primary sets of traits, the first marked by deficits in interpersonal-affective traits (referred to here as “Factor 1” or F1; grandiosity, shallow affect, callousness, deceitfulness) and the second marked by impulsive-antisocial traits (referred to here as “Factor 2” or F2; aggressiveness, impulsivity, irresponsibility, antisocial acts) (Harpur, Hare, & Hakstian, 1989). Although a variety of typological theories exist regarding the heterogeneity of psychopathy, most common are those which have posited that the disorder can be disaggregated into primary and secondary subtypes (Skeem et al., 2003) or into psychopaths scoring low versus high on anxiety (Schmitt & Newman, 1999).<sup>1</sup> Primary psychopathy is thought to be caused by an intrinsic deficit that impairs self-regulation, such as in-

nate fearlessness or attentional difficulties (Newman, 1998; Patrick & Bernat, 2009), that leads to the development of manipulative and callous traits. In contrast, the manipulative and callous traits present in secondary psychopathy are thought to arise indirectly as a means of coping with environmental stressors (e.g., abuse, low socioeconomic status) and are typically accompanied by emotional dysregulation (Karpman, 1941). Research has begun to investigate differences in the etiological pathways to these psychopathy subtypes, and some researchers have proposed that the two primary trait dimensions that emerge in factor analysis of psychopathy measures can be used to index distinct risk factors for primary and secondary psychopathy (Fowles & Dindo, 2009; Patrick & Bernat, 2009). For example, research with the Psychopathy Checklist-Revised (PCL-R; Hare, 2003) indicates that F1 of the PCL-R is associated with deficits in fear and selective attention (e.g., Newman et al., 2010; Patrick, 1994), whereas F2 is associated with excessive anxiety, comorbid psychopathology (e.g., depression, substance dependence), and elevated rates of psychosocial adversity (Smith & Newman, 1990; Verona, Hicks, & Patrick, 2005). Although primary psychopathy is theoretically linked with correlates of F1 (e.g., emotional detachment, premeditated aggression) and secondary psychopathy with correlates of F2 (e.g., impulsivity, reactive aggression), the two psychopathy subtypes are, by definition, characterized by high scores on *both* factors. In the present paper, we suggest that the two factors interact in the context of secondary psychopathy to account for BPD, specifically among women.

Recent research examining the relationship between psychopathy and BPD has found that

<sup>1</sup> Although the two-factor model has largely dominated psychopathy research over the past several decades, factor analytic studies also provide evidence for the existence of three- (Cooke & Michie, 2001) and four-factor models (Hare, 2003). Both the three- and four-factor models disaggregate Factor 1 into two separate, but correlated, “Interpersonal” and “Affective” facets. In the three-factor model, the third factor is a comprised of an abbreviated version of Factor 2, which just includes items related to an impulsive and irresponsible lifestyle (while eliminating any items related to explicit antisocial behavior). The four-factor model, in contrast, retains the antisocial behavior items and splits Factor 2 into “Lifestyle” and “Antisocial” facets.

the F2 traits of psychopathy are more closely associated with BPD than are F1 traits (Miller et al., 2010), though there is a lack of work regarding gender differences in this area. It makes conceptual sense that the F2 traits associated with psychopathy would relate to BPD, as evidenced by their parallels in affective instability, reactive aggression, and impulsivity. However, psychopaths nonetheless exhibit both F1 and F2 traits. It may appear counterintuitive that F1 traits would characterize BPD as well, as these traits bear poor resemblance to BPD, a disorder marked by extreme levels of emotionality. However, this paradox can be reconciled by considering etiological differences in the development of F1 traits in primary versus secondary psychopathy. As with secondary psychopathy, it may be that the presence of F2 traits in BPD leads to the manifestation of F1 traits.

For example, a woman with BPD who faces the prospect of being abandoned by her partner may become dysregulated and emotionally unstable upon hearing this possibility. In turn, she may engage in behavior toward her partner that is manipulative and callous (e.g., lying, calculated physical assaults, purposeful infidelity) as a means of salvaging the relationship. In this respect, her manipulative and seemingly callous behavior emerges in an attempt to cope with the intense and variable emotions promoted by her F2 traits. Accordingly, one view advanced in the present paper is that the interplay between the two psychopathy factors may be associated with BPD, at least among women who presumably exhibit the secondary variant of psychopathy. Indeed, research conducted on female psychopaths indicates that the *combination* of F1 and F2 traits is associated with problems in affective regulation, including intense dysphoria, self-mutilation, binge-eating, and property damage (Coid, 1993). Further, some studies have found psychopathy-factor level interactions to predict both self- and other-directed violence, such that the effect of F2 is intensified at higher levels of F1 (Verona, Sprague, & Javdani, under review; Walsh & Kosson, 2008), although other studies have failed to find such interaction effects (see Kennealy et al., 2010, for a recent example).

Despite this conceptual overlap, BPD and psychopathy are still considered distinct and exhibit different prevalence rates across genders, particularly in clinical samples. For exam-

ple, though both disorders are characterized by problems in regulating affect and behavior, there are various differences in the manifestation of these problems—such as greater distress and suicide risk in BPD, and greater violence and criminality in psychopathy (Walters & Heilbrun, 2010). BPD has also been traditionally associated with greater reactivity and disruptions in relationships (APA, 2000). Accordingly, it may be that conceptualizations of psychopathy are characterized by an overreliance on masculine experiences and expressions of the disorder (e.g., other-directed violence) and have failed to adequately capture experiences that best represent psychopathy in women. Examining gender differences in the overlaps and distinctions between BPD and psychopathy is thus an important area of research, as it can impact the ways in which personality disorders are conceptualized in future editions of the DSM, as well as provide information about gender differences in symptom manifestations. Recognizing differential overlap in the assessment and diagnosis of psychopathy and BPD in women versus men also bears significant implications for both legal and clinical practice, as gendered expressions of the disorders are likely to differ in terms of violence risk and treatment responsivity (Nicholls & Petrila, 2005).

### The Present Studies

Although there is conceptual and diagnostic overlap between BPD and psychopathy, little empirical research has attempted to disaggregate their relationship across men and women. Thus, the present paper sought to provide a more systematic investigation into this issue by examining psychopathic and BPD traits across two independent samples: a nonclinical college sample of both genders (Study 1) and a forensic sample of women (Study 2). Although prior research has found that BPD is more strongly related to the impulsive-antisocial traits of psychopathy (i.e., F2 traits), such research has failed to disentangle any potential gender differences that characterize this relationship (e.g., Salekin et al., 1997). As such, in Study 1, we sought to examine whether gender would moderate the relationship between psychopathic traits and BPD. We hypothesized that F2 would be more strongly associated with BPD in women than in men. Furthermore,

given that psychopathy is nonetheless defined as being high in *both* interpersonal-affective and impulsive-antisocial factors, we also sought to examine whether and how the interaction of the two psychopathy factors would be associated with BPD (Studies 1 and 2), as well as whether any observed psychopathy-factor level interactions would be further moderated by gender (Study 1). Prior work is equivocal regarding the extent to which an interaction between the psychopathy factors is important for understanding forensic or psychopathology outcomes (Kennealy et al., 2010; Verona et al., under review; Walsh & Kosson, 2008). Nonetheless, our conceptualization regarding the overlap between secondary psychopathy and BPD would suggest that the two factors interact in accounting for BPD, specifically among women.

## Study 1

### Method

#### Participants

Participants consisted of 318 undergraduate students (51% female) enrolled at a large Midwestern university. The sample was predominantly between the ages of 18 and 21 (90%), and most identified as Caucasian (63%), followed by Asian (9%), Hispanic (8%), other (5%), and African American (3%). Participants provided informed consent, as per IRB-approved procedures, and received course credit in exchange for participation.

#### Psychopathic Personality Measures

The Psychopathic Personality Inventory, Short Form (PPI-S; Lilienfeld & Andrews, 1996) is a 56-item questionnaire designed to measure psychopathic characteristics in non-criminal populations. The questionnaire measures global psychopathy and also contains eight factor analytically derived subscales, seven of which can be grouped to form two factors that reflect F1 (“fearless-dominance” scale) and F2 (“antisocial-impulsivity” scale; Benning, Patrick, Hicks, Blonigen, & Krueger, 2003). One subscale, coldheartedness, does not load strongly on either factor. Participants indi-

cate to what extent each statement applies to them on a 4-point scale (1 = *false* to 4 = *true*).

Participants were also administered the Self-Report Psychopathy Scale (SRP-II; Hare, Hemphill, & Harpur, 1989), a well-validated 60-item self-report measure of psychopathy that consists of interpersonal-affective and social-deviance scales (intended to reflect F1 and F2 of the PCL-R, respectively). Participants indicate how much they agree or disagree with each statement, with responses ranging from 1 = *disagree strongly* to 7 = *agree strongly*. The SRP-II has been found to correlate at .54 with the PCL-R in forensic populations (Hare, 1991).

#### Borderline Personality Trait Measures

Participants completed the Borderline Features Scale of the Personality Assessment Inventory (PAI-BOR; Morey, 1991), which has been used extensively in studies of BPD in both community and clinical samples. The PAI-BOR contains 24 items that assess four subscales of borderline pathology: affective instability, identity problems, negative relationships, and self-harm. These items are rated on a 4-point scale, and possible scores range from 0 to 72. The PAI-BOR exhibits acceptable reliability and validity (Morey, 1991; Trull, 1995).

Participants also completed the Short Coolidge Axis II Inventory (SCATI; Coolidge, 2001), which is a short version of the original Coolidge Axis II Inventory (CATI; Coolidge, 1993). The SCATI is a 70-item self-report measure of 12 personality disorders, and the 5-item Borderline scale of the SCATI was used in this study. A normative study that examined the psychometric properties of the SCATI found that it retained many of the same properties as the original measure and demonstrated good internal reliability and validity (Watson & Sinha, 2007).

#### Composite Measures of Psychopathic and Borderline Traits

In order to more reliably index psychopathic and borderline traits, we standardized and averaged together individual factor scores on the PPI-S and SRP-II (composite F1 and F2 psychopathic traits, respectively) and the PAI-BOR and SCATI (composite borderline traits), con-

sistent with prior work (Sprague & Verona, 2010). The composite F1 and F2 psychopathic personality scores demonstrated high internal consistency in the present sample for both men ( $\alpha = .83$  for F1 and  $.81$  for F2) and women ( $\alpha = .86$  for F1 and  $.86$  for F2). The composite measure of borderline personality also demonstrated high internal consistency across men ( $\alpha = .86$ ) and women ( $\alpha = .91$ ).

### Data Analytic Plan

Hierarchical regression analyses were conducted to examine the independent and interactive effects of gender and continuous psychopathy factor scores in predicting borderline traits. The main effects associated with gender and the two psychopathy factor scores were entered into the first step of analyses, followed by their two-way interactions in the second step, and the three-way F1  $\times$  F2  $\times$  Gender interaction in the third step. All independent variables were standardized prior to the creation of the interaction terms (Aiken & West, 1991).

## Results

### Descriptive Statistics

Table 1 presents the means, standard deviations, and range of scores for the psychopathic and borderline personality measures separately for men and women. As would be expected based on the literature, a pattern of findings emerged where men scored higher on psychopathy measures and women scored higher on features of BPD. Of note, the descriptive statistics in this sample parallel those that have been found in other college, community, and forensic samples using the same measures.<sup>2</sup>

### Regression Analyses

Table 2 depicts the analyses of psychopathic personality factors and gender in accounting for borderline traits. Analyses revealed a main effect of gender ( $\beta = .19, p < .001$ ), such that women showed stronger associations with borderline traits than men. F1 and F2 traits also predicted borderline traits in expected directions, with F1 exhibiting a negative relationship and F2 exhibiting a positive relationship with borderline traits ( $\beta$ s =  $-.34$

and  $.68$ , respectively,  $ps < .05$ ). There was also a F2  $\times$  Gender interaction ( $\beta = .36, p = .03$ ), indicating that, as expected, F2 is more strongly associated with borderline traits in women than men. However, these effects were qualified by a F1  $\times$  F2  $\times$  Gender interaction ( $\beta = .31, p = .03$ ). Separate analyses conducted within each gender revealed a F1  $\times$  F2 interaction in predicting borderline traits among women ( $\beta = .11, p = .05$ ) but not men ( $\beta = -.08, p = .25$ ). In order to further examine this interaction, we calculated high and low F1 groups within each gender (i.e.,  $\pm 1 SD$  from the mean) for each predictor (Aiken & West, 1991). Decomposition of this interaction indicated that, as expected, the relationship between F2 and borderline traits was stronger among women who were also high in F1 traits ( $\beta = .80, p < .001$ ). In contrast, the relationship between F2 and borderline traits among men remained

<sup>2</sup> With regard to psychopathic traits in Study 1, the descriptive statistics reported here are comparable to those found in other college samples. On this SRP-II, this includes both F1 scores ( $M = 15.5 [SD = 4.8]$  for Hicklin & Widiger, 2005; and  $M = 24.17 [SD = 4.33]$  for Lilienfeld & Hess, 2001), as well as F2 scores ( $M = 20.9 [SD = 8.5]$  for Hicklin & Widiger, 2005; and  $M = 31.87 [SD = 7.81]$  for Lilienfeld & Hess, 2001). On the PPI-S, this also includes both F1 and F2 scores ( $M = 78.08 [SD = 13.44]$  and  $M = 40.71 [SD = 7.97]$ , respectively; Lilienfeld & Hess, 2001). Additionally, participants' mean scores on these same scales in Study 1 were comparable to those obtained in a forensic population by Cale and Lilienfeld on F1 (2006;  $M = 35.84 [SD = 7.99]$  for the SRP-II; and  $M = 85.16 [SD = 10.31]$  for the PPI-S) and F2 (2006;  $M = 44.94 [SD = 15.22]$  for the SRP-II; and  $M = 47.07 [SD = 8.27]$  for the PPI-S).

With regard to borderline traits, participants' scores in Study 1 also reflect those found in other college and community samples which have used the PAI Borderline Scales ( $M = 26.71 [SD = 14.70]$  for Gardner & Qualter, 2009; and  $M = 27.23 [SD = 10.87]$  for Trull, 1995), as well as the SCATI Borderline Scales ( $M = 9.67 [SD = 2.64]$  for Schmeelk, Sylvers, & Lilienfeld, 2008; and  $M = 8.77 [SD = 2.95]$  for Sylvers, Brubaker, Alden, Brennan, & Lilienfeld, 2008). Although mean scores on the PAI Borderline Scales in forensic populations ( $M = 54.76 [SD = 11.84]$ ; Douglas, Guy, Edens, Boer, & Hamilton, 2007) and psychiatric inpatients ( $M = 45.89 [SD = 6.55]$ ; Evershed et al., 2003) are higher than those in the Study 1 college sample, this is not surprising given the different levels of symptom severity observed in clinical versus non-clinical populations.

Table 1

*Study 1: Descriptive Statistics for Psychopathic and Borderline Personality Traits Across Men and Women*

Variables	Men ( <i>n</i> = 156)		Women ( <i>n</i> = 162)		<i>F</i>
	<i>M</i> ( <i>SD</i> )	Range	<i>M</i> ( <i>SD</i> )	Range	
PAI - Borderline Subscales					
Affective Instability	5.81 (3.51)	0–17	6.43 (3.68)	0–18	2.31
Identity Disturbance	7.17 (3.69)	1–21	8.59 (3.54)	0–18	<b>12.09**</b>
Negative Relationships	5.93 (3.14)	0–16	7.36 (3.94)	0–18	<b>12.63**</b>
Self-Harm	5.10 (3.08)	0–13	4.93 (3.54)	0–17	.21
SCATI - Borderline Total	8.63 (2.46)	5–17	9.10 (3.26)	5–23	2.15
PPI-S Factors					
PPI-S Fearless Dominance	57.64 (9.08)	35–81	52.56 (10.34)	29–78	<b>21.21**</b>
PPI-S Impulsive Antisociality	57.03 (8.45)	37–84	54.71 (9.33)	38–82	<b>5.26*</b>
SRP-II Factors					
SRP-II Factor 1	34.28 (7.17)	16–53	30.38 (7.07)	14–50	<b>23.34**</b>
SRP-II Factor 2	47.29 (10.74)	17–76	40.35 (11.71)	16–77	<b>29.58**</b>

*Note.* PAI = Personality Assessment Inventory (Morey, 1991); SCATI = Short Coolidge Axis II Inventory (Coolidge, 2001); PPI-S = Psychopathic Personality Inventory-Short Form (Lilienfeld & Andrews, 1996); SRP-II = Self-Report Psychopathy Scales (Hare, 1991).

\*  $p < .05$ . \*\*  $p < .01$ .

similar regardless of F1 scores. This interaction is depicted in Figure 1.<sup>3</sup>

### Study 1 Discussion

The results of Study 1 suggest that the interaction of the two psychopathy factors increases risk for borderline personality among women but not men. Rather, in men, borderline traits were solely associated with F2 traits and did not vary as a function of F1 traits. Indeed, there is

evidence to suggest that F1 traits may actually be protective against negative emotionality in men (Verona, Patrick, & Joiner, 2001). Although the findings of Study 1 provide preliminary evidence for the differential relationship between psychopathic personality facets and borderline personality traits across gender, they must be considered in light of some limitations. In particular, these results are reliant on self-report based measures distributed to a relatively homogenous population of college students. This limits our ability to index a broad range of symptom severity, as well as our ability to generalize to other samples. Thus, the aim of Study 2 was to extend the validity and generalizability of findings for females in Study 1 by examining the results in a forensic sample of

Table 2

*Study 1: Hierarchical Regression Analyses of Psychopathy Factors and Gender in Predicting Borderline Personality Traits*

Model	Borderline personality traits					
	B	SE B	$\beta$	$R^2$	$\Delta R^2$	$\Delta F$
Step 1				.45	.45	<b>85.08**</b>
Gender	.35	.08	.19**			
F1 Score	-.35	.05	-.34*			
F2 Score	.72	.05	.68**			
Step 2				.46	.01	2.39 <sup>†</sup>
F1 × F2	.04	.05	.04			
F1 × Gender	.06	.10	.09			
F2 × Gender	.23	.10	.36*			
Step 3				.01		<b>4.68**</b>
F1 × F2 × Gender	.21	.10	.31*			

*Note.* F1 = Factor 1; F2 = Factor 2.

<sup>†</sup>  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ .

<sup>3</sup> When the PAI-BOR and SCATI scales are used independently in analyses, the same pattern of effects emerges. For the SCATI, the F1 × F2 × Gender interaction is significant ( $\Delta R^2 = .01$ ,  $\beta = .36$ ,  $p = .02$ ), with the F1 × F2 interaction being significant in women ( $\beta = .13$ ,  $p = .05$ ) but not men ( $\beta = -.10$ ,  $p = .17$ ). The simple effects also demonstrate the same pattern (i.e., F2 is significantly more predictive of BPD in women at higher levels of F1). For the PAI-BOR, the F1 × F2 × Gender interaction is not significant ( $\Delta R^2 = .003$ ,  $\beta = .20$ ,  $p = .15$ ). When looking within each gender, the F1 × F2 interaction is marginally significant in women ( $\beta = .08$ ,  $p = .13$ ), but not men ( $\beta = -.04$ ,  $p = .55$ ). The simple effects also demonstrate the same pattern as the SCATI.

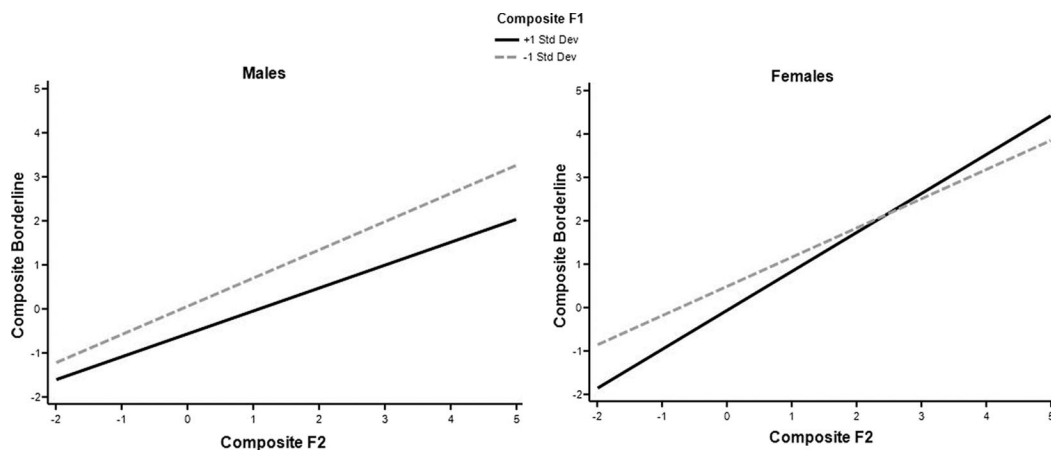


Figure 1. Study 1: Borderline Personality Symptoms as a Function of Psychopathic Personality Factors and Gender. The graph to the left represents males. The graph to the right represents females. Note. F1 = Factor 1; F2 = Factor 2.

women and using structured diagnostic interviews.

## Study 2

### Method

#### Participants

The sample consisted of 488 women incarcerated in an all female maximum-security prison in Wisconsin (cf. Vitale, Smith, Brinkley, & Newman, 2002). Participants were between the ages of 18 and 43 ( $M = 29.38$ ,  $SD = 6.51$ ) and identified either as Caucasian ( $n = 267$ ; 55%) or African American ( $n = 214$ ; 44%). Seven participants did not have information regarding ethnicity. In terms of education level, the majority of the sample reported completing at least some high school education ( $n = 440$ ; 86%), and approximately half reported obtaining their GED ( $n = 202$ ; 42%). All participants received the elements of consent in both verbal and written form and were informed that participation in the project would have no effect on their status within the correctional system. IRB approval was obtained for all aspects of the study.

#### Psychopathy Measure

Data collected from a semistructured interview and prison records were used to diagnose

psychopathy via the well-validated PCL-R (Hare, 1991, 2003). The PCL-R is comprised of 20 items rated on a three-point scale (0 = *not at all characteristic*; 1 = *moderately characteristic*; 2 = *extremely characteristic*). Items were summed to create F1 and F2 factors, per previous research (e.g., Harpur et al., 1989).

#### Borderline Personality Disorder Measure

BPD was assessed via the Diagnostic Interview for Borderline Personality Disorder-Revised (DIB-R; Zanarini, Gunderson, Frankenburg, & Chauncey, 1989), which is a semistructured interview that parallels the *DSM-IV* criteria for BPD. The DIB-R consists of 186 questions, from which raters obtain the necessary information to rate 22 summary statements that are central to BPD. These 22 summary statements are used to yield scaled section scores (Affect, Cognition, Impulse Action Patterns, Interpersonal Relationships). The DIB-R has demonstrated reliability and validity across numerous studies, including in both clinical (Zanarini, Frankenburg, & Vujanovic, 2002) and incarcerated samples (Hochhausen, Lorenz, & Newman, 2002).

#### Data Analytic Plan

The primary regression analyses for Study 2 involved the same analytic procedure as Study 1. However, given that Study 2 only

included female participants, gender was not included in the model. Accordingly, the two psychopathy factors were entered as continuous predictors of BPD into the first step of analyses, followed by their two-way interaction in the second step.<sup>4</sup>

## Results

Analyses regarding the interactive effects of F1 and F2 psychopathy on BPD symptoms are presented in Table 3. Results indicated a significant main effect of F2 traits ( $\beta = .32, p < .001$ ) and no effect of F1 traits ( $\beta = .00, p = .94$ ) on BPD symptoms. However, these results were qualified by a  $F1 \times F2$  interaction ( $\beta = .09, p = .05$ ). Similar to Study 1, decomposition of the interaction revealed that F2 was associated with BPD symptoms among women high ( $\beta = .33, p = .001$ ), but not low ( $\beta = .07, p = .47$ ), in F1 traits. This interaction is depicted in Figure 2.

## General Discussion

Across two independent samples, results indicated that the interaction of the two psychopathy factors was associated with BPD in women. The finding that similar associations between the psychopathy factors and BPD emerged in two strikingly different samples of women, using different assessment instruments (self-report and interview-based), has several important implications. First, the consistency of our findings across two samples characterized by relatively low and high base rates of psychopathy, respectively, suggests that these as-

sociations are valid for women exhibiting symptoms at different extremes of the spectrum. Second, results indicate that BPD and psychopathy share a significant constellation of traits in women—potentially more so than in men—and, accordingly, that the two disorders may reflect gender-differentiated phenotypic expressions of similar dispositional vulnerabilities. While we acknowledge that the two disorders are likely not identical (given different symptom clusters in BPD and psychopathy, such as self-harm vs. chronic antisociality/violence, respectively), the current findings support the idea of a BPD-variant of psychopathy in women, reminiscent of the secondary psychopathic variant validated decades ago in men (Karpman, 1941). In view of this, our results raise questions about phenotypic heterogeneity of psychopathy across genders and have several implications for the “antisocial/psychopathic” and “borderline” personality types in the proposed DSM-5.

## Psychopathy and BPD: A Double-Edged Sword for Women

The current results suggest that the interplay of the two psychopathy factors is associated with BPD symptoms in women. First, F2 traits were found to be independently associated with BPD symptoms in both men and women. This finding is not surprising, given overlapping symptom clusters in psychopathy and BPD, such as impulsivity, emotional lability, anger, and aggression. However, of even greater interest was the finding that F1 traits were also related to BPD in women, but only in the presence of high F2 traits. Conceptually, F1 traits associated with deficient emotionality and callousness seem like poor predictors of BPD, a disorder in which emotionality and affective extremes are considered hallmarks. Indeed, the simple effect of F1 was negatively or nonsignificantly associated with BPD across the college and forensic samples, respectively. Importantly, though, our results suggest that it is the presence of *both* F1 and F2 traits that promote

Table 3  
Study 2: Hierarchical Regression Analyses of PCL-R Psychopathy Factors Predicting BPD Among Female Inmates ( $N = 488$ )

Model	BPD					
	B	SE B	$\beta$	$R^2$	$\Delta R^2$	$\Delta F$
Step 1				.11	.10	<b>28.52**</b>
F1 Score	.00	.04	.00			
F2 Score	.24	.04	.32**			
Step 2				.11	.01	<b>3.86*</b>
$F1 \times F2$	.24	.12	.09*			

Note. BPD = Borderline Personality Disorder; F1 = Factor 1; F2 = Factor 2.  
\*  $p < .05$ . \*\*  $p < .01$ .

<sup>4</sup> We conducted additional regression analyses in Studies 1 and 2 to determine if including demographic factors (e.g., age, ethnicity) as covariates would appreciably affect our results. The inclusion of demographic covariates did not substantially alter the pattern of results.

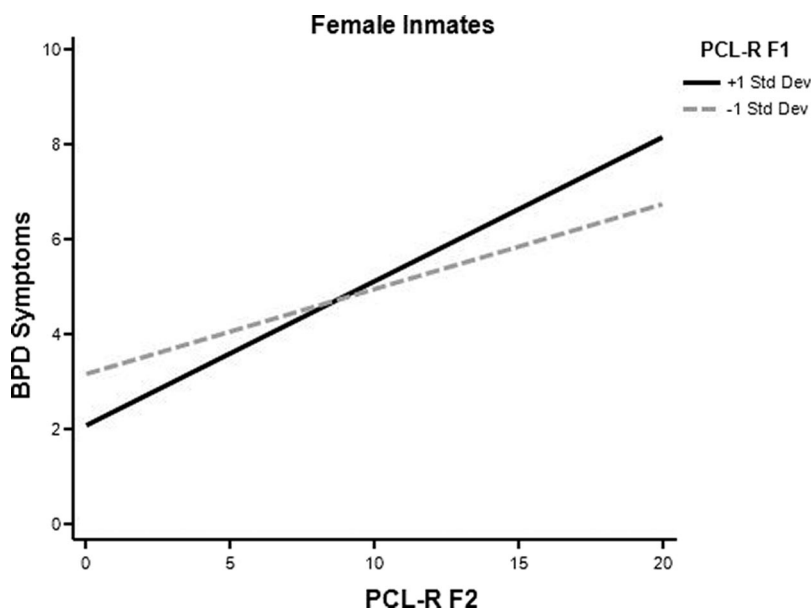


Figure 2. Study 2: Borderline Personality Symptoms as a Function of Psychopathic Personality Factors among Female Inmates. *Note.* BPD = Borderline Personality Disorder; F1 = Factor 1; F2 = Factor 2; PCL-R = Psychopathy Checklist-Revised (Hare, 2003).

liability for BPD in women, even above the influence of F2 traits alone.

One interpretation of these findings requires attention to the nature and complexity of symptoms associated with BPD, as they promote an alternation between emotional and behavioral extremes. In particular, the pattern of behavior associated with certain BPD symptoms (e.g., frantic efforts to avoid abandonment, wavering between devaluation and idealization) often necessitates an oscillation between extremes of highly emotional, impulsive, and aggressive reactivity on the one hand, and disengaged, calculating, and emotionally restrictive behavior on the other hand (Linehan, 1993). Our results suggest that this latter, more restrictive extreme likely manifests as F1 behaviors, whereas the former represents the female expression of F2 traits. Moreover, F2 may be a weaker predictor of BPD at lower levels of F1, as being low in F1 implies that one has the capacity for greater empathic responding. Therefore, even if a woman is high on F2 traits (e.g., impulsivity, anger), being low in F1 traits is likely to prevent her from acting upon such urges (i.e., because she is able to recognize the consequences of her actions on others; Miller & Eisenberg, 1988). In

contrast, a woman high in F2 traits who is *also* high in F1 traits does not have a buffer preventing her from acting upon the dysregulated, impulsive, and aggressive urges promoted by her F2 traits. Thus, one interpretation is that BPD may be a female-specific manifestation of psychopathy—at least the secondary variant—among women who oscillate between extremes of emotional dysregulation and manipulative callousness. This potential female variant of psychopathy is similar to the one recognized in a recent cluster analysis of high psychopathy female offenders (Hicks et al., 2010).

### Implications for the DSM-5

Despite preliminary evidence for the existence of a “borderline psychopath” in women, more research is needed to fully explore the extent to which psychopathy and BPD share similar etiological pathways in women more so than in men. However, evidence informing the nature of women’s externalizing tendencies supports the notion that psychopathy may manifest according to a borderline-specific pattern in women. In women, the symptoms associated with secondary psychopathy and BPD are likely

to manifest within relational, interpersonal, and intimate contexts—given that women’s externalizing behaviors are most often directed toward intimates and acquaintances, whereas men are more likely to externalize in relation to strangers (Miller & Meloy, 2006). These gender differences are, in part, due to the socialization processes that promote women’s disproportionate sensitivity to relational contexts (Gilligan, 1993). Thus, for women, both disorders would be highly relational in nature and likely to revolve around destructive interpersonal dynamics. Given this, examinations of psychopathy with women in particular would benefit from assessing self- and other-directed harm that manifests in more female-typical ways (i.e., that which occurs in interpersonal contexts), whereas examinations of BPD would benefit from assessing other-directed harm more systematically.

Although we detected comorbidity between psychopathy and BPD among this subset of women, the present study could not address the specific reasons for this overlap. Future research should aim to uncover what specific traits or vulnerabilities underlie the observed overlap, as well as how these traits are phenotypically manifested differentially in men and women. Though the proposed dimensional approach for personality disorders in DSM-5 is attempting to move in such a direction (Krueger & Eaton, 2010), the recommended “antisocial/psychopathic” and “borderline” personality types are still considered conceptually distinct, despite sharing a high level of overlap in their proposed trait dimensions. Accordingly, DSM-5 would perhaps benefit from creating a “dysregulated” personality type (reflecting secondary psychopathy and BPD) to supplement a “psychopathic/callous” type (reflecting primary psychopathy). Such an approach would facilitate a movement toward classifying disorders on the basis of their fundamental etiology versus superficial phenotypic descriptions (Hyman, 2007). Moreover, more optimal measures of these phenotypes across genders may yield better distinctions between the callous and manipulative behaviors observed in primary psychopaths versus those in individuals with high F2 traits or BPD, especially among women. This distinction is important, as the callous and manipulative behaviors observed among women with BPD are likely of a qualitatively different nature (e.g., in terms of

motives) than are those observed in primary psychopathy.

### Limitations, Strengths, and Conclusions

As with any investigation, this study has limitations. First, though our findings were replicated across two samples, the second sample only consisted of women, which precluded comparisons across genders. Future research comparing male and female prisoners could extend and clarify the results of the current study. Second, the effect sizes observed for the F1 × F2 interactions were small (i.e., accounting for an additional 1% of the variance in both Studies 1 and 2), albeit replicated in two samples. Third, the use of self-report data for our assessments in Study 1 may have been influenced by social desirability—though our use of clinician-rated variables in Study 2 limited the influence of social desirability and/or method overlap. Despite these limitations, the current study (a) provides important information regarding the relationship between BPD and psychopathy, (b) implicates the need for attention to potential gender differences in the manifestations of these disorders, and (c) highlights some important areas of consideration for the proposed classification system in DSM-5. These findings serve as an important starting place to examine similar or distinct etiologies for BPD and psychopathy in men versus women and, moreover, can help inform reconceptualization efforts so as to ensure the development of more parsimonious models of personality psychopathology in DSM-5.

### References

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. (pp. 813–825). Newbury Park, CA: Sage.
- American Psychiatric Association. (2010). *DSM-5: The future of psychiatric diagnosis*. Retrieved October 1, 2010, from <http://www.dsm5.org/Pages/Default.aspx>
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text revision). Washington, DC: Author.
- Benning, S. D., Patrick, C. J., Hicks, B. M., Blonigen, D. M., & Krueger, R. F. (2003). Factor structure of the Psychopathic Personality Inventory: Validity and implications for clinical assessment. *Psychological Assessment, 15*, 340–350.

- Blackburn, R. (1975). An empirical classification of psychopathic personality. *British Journal of Psychiatry*, *127*, 456–460.
- Cale, E. M., & Lilienfeld, S. O. (2002). Histrionic personality disorder and antisocial personality disorder: Sex-differentiated manifestations of psychopathy? *Journal of Personality Disorders*, *16*, 52–72.
- Coid, J. W. (1993). An affective syndrome in psychopaths with borderline personality disorder? *The British Journal of Psychiatry*, *162*, 641–650.
- Cooke, D. J., & Michie, C. (2001). Refining the construct of psychopath: Towards a hierarchical model. *Psychological Assessment*, *13*, 171–188.
- Coolidge, F. L. (1993). *The Coolidge Axis II Inventory: Manual*. Colorado Springs, CO: University of Colorado.
- Coolidge, F. L. (2001). *Short-form of the Coolidge Axis II Inventory (SCATI): Manual*. Colorado Springs, CO: Author.
- Douglas, K. S., Guy, L. S., Edens, J. F., Boer, D. P., & Hamilton, J. (2007). The Personality Assessment Inventory as a proxy for the Psychopathy Checklist-Revised: Testing the incremental validity and cross-sample robustness of the Antisocial Features Scale. *Assessment*, *14*, 255–269.
- Evershed, S., Tennant, A., Boomer, D., Rees, A., Barkham, M., & Watsons, A. (2003). Practice-based outcomes of dialectical behaviour therapy (DBT) targeting anger and violence, with male forensic patients: A pragmatic and non-contemporaneous comparison. *Criminal Behaviour and Mental Health*, *13*, 198–213.
- Fowles, D. C., & Dindo, L. (2006). A dual deficit model of psychopathy. In C. J. Patrick (Ed.), *Handbook of psychopathy* (pp. 14–34). New York, NY: Guilford Press.
- Gao, Y., Raine, A., Chana, F., Venables, P. H., & Mednicka, S. A. (2010). Early maternal and paternal bonding, childhood physical abuse, and adult psychopathic personality. *Psychological Medicine*, *40*, 1007–1016.
- Gardner, K., & Qualter, P. (2009). Reliability and validity of three screening measures of borderline personality disorder in a nonclinical population. *Journal of Personality and Individual Differences*, *46*, 636–641.
- Gilligan, C. (1993). *In a different voice: Psychological theory and women's development* (2nd ed.). Cambridge, MA: Harvard University Press.
- Gunderson, J. G. (1994). Building structure for the borderline construct. *Acta Psychiatrica Scandinavica*, *89*, 12–18.
- Hare, R. D. (1991). *The Hare Psychopathy Checklist-Revised*. Toronto: Multi-Health Systems.
- Hare, R. D. (2003). *Manual for the Psychopathy Checklist-Revisited* (2nd ed.). Toronto: Multi-Health Systems.
- Hare, R. D., Harpur, T. J., & Hemphill, J. D. (1989). Scoring pamphlet for the Self-Report Psychopathy scale: SRP-II. Unpublished manuscript, Simon Fraser University, Vancouver, British Columbia, Canada.
- Harpur, T. J., Hare, R. D., & Hakstian, A. R. (1989). Two-factor conceptualization of psychopathy: Construct validity and assessment implications. *Psychological Assessment*, *1*, 6–17.
- Herpertz, S. C., Werth, U., Lukas, G., Qunaibi, M., Scheurkens, A., Kunert, H. J., . . . Sass, H. (2001). Emotion in criminal offenders with psychopathy and borderline personality disorder. *Archives of General Psychiatry*, *58*, 737–745.
- Hicklin, J., & Widiger, T. A. (2005). Similarities and differences among antisocial and psychopathic self-report inventories from the perspective of general personality functioning. *European Journal of Personality*, *19*, 325–342.
- Hicks, B. M., Markon, K. E., Patrick, C. J., Krueger, R. F., & Newman, J. P. (2004). Identifying psychopathy subtypes on the basis of personality structure. *Psychological Assessment*, *16*, 276–288.
- Hicks, B. M., Vaidyanathan, U., & Patrick, C. J. (2010). Validating female psychopathy subtypes: Differences in personality, antisocial and violent behavior, substance abuse, trauma, and mental health. *Personality Disorders: Theory, Research, & Treatment*, *1*, 38–57.
- Hochhausen, N. M., Lorenz, A. R., & Newman, J. P. (2002). Specifying the impulsivity of female inmates with borderline personality disorder. *Journal of Abnormal Psychology*, *111*, 495–501.
- Hyman, S. E. (2007). Can neuroscience be integrated into the DSM-V? *Nature Reviews Neuroscience*, *8*, 725–732.
- Karpman, B. (1941). On the need of separating psychopathy into two distinct clinical types: The symptomatic and the idiopathic. *Journal of Criminal Psychopathology*, *3*, 112–137.
- Kennealy, P. J., Skeem, J. L., Walters, G. D., & Camp, J. (2010). Do core interpersonal and affective traits of PCL-R psychopathy interact with antisocial behavior and disinhibition to predict violence? *Psychological Assessment*, *22*, 569–580.
- Krueger, R. F., & Eaton, N. R. (2010). Personality traits and the classification of mental disorders: Toward a more complete integration in DSM-5 and an empirical model of psychopathology. *Personality Disorders: Theory, Research, and Treatment*, *1*, 97–118.
- Lilienfeld, S. O., & Andrews, B. P. (1996). Development and preliminary validation of a self-report measure of psychopathic personality traits in non-criminal populations. *Journal of Personality Assessment*, *66*, 488–524.
- Lilienfeld, S. O., & Hess, T. H. (2001). Psychopathic personality traits and somatization: Sex differences

- and the mediating role of negative emotionality. *Journal of Psychopathology and Behavioral Assessment*, 23, 11–24.
- Linehan, M. M. (1993). *Cognitive-behavioral treatment of borderline personality disorder*. The Guilford Press, New York.
- Miller, J. D., Dir, A., Gentile, B., Wilson, L., Pryor, L. R., & Campbell, W. K. (2010). Searching for a vulnerable dark triad: Comparing factor 2 psychopathy, vulnerable narcissism, and borderline personality disorder. *Journal of Personality*, 78, 1529–1564.
- Miller, P. A., & Eisenberg, N. (1988). The relation of empathy to aggressive and externalizing/antisocial behavior. *Psychological Bulletin*, 103, 324–344.
- Miller, S., & Meloy, M. L. (2006). Women's use of force: Voices of women arrested for domestic violence. *Violence Against Women*, 12, 89–115.
- Morey, L. C. (1991). *Personality Assessment Inventory: Professional manual*. Odessa, FL: Psychological Assessment Resources.
- Neumann, C. S., & Hare, R. D. (2008). Psychopathic traits in a large community sample: Links to violence, alcohol use, and intelligence. *Journal of Consulting and Clinical Psychology*, 76, 893–899.
- Newman, J. P. (1998). Psychopathic behavior: An information processing perspective. In D. J. Cooke, R. D. Hare, & A. Forth (Eds.), *Psychopathy: Theory, research and implications for society* (pp. 81–104). The Netherlands: Kluwer Academic.
- Newman, J. P., Curtin, J. J., Bertsch, J. D., & Baskin-Sommers, A. (2010). Attention moderates the fearlessness of psychopathic offenders. *Biological Psychiatry*, 67, 66–70.
- Nicholls, T., & Petrila, J. (2005). Gender and psychopathy: An overview of important issues and introduction to the special issue. *Behavioral Sciences and the Law*, 23, 729–741.
- Patrick, C. J. (1994). Emotion and psychopathy: Startling new insights. *Psychophysiology*, 31, 319–330.
- Patrick, C. J., & Bernat, E. (2009). From markers to mechanisms: Using psychophysiological measures to elucidate basic processes underlying aggressive externalizing behavior. In S. Hodgins, E. Viding, & A. Plodowski (Eds.), *Persistent violent offenders: Neurobiology and rehabilitation* (pp. 223–250). Oxford, United Kingdom: Oxford University Press.
- Salekin, R. T., Rogers, R., & Sewell, K. W. (1997). Construct validity of psychopathy in a female offender sample: A multitrait-multimethod evaluation. *Journal of Abnormal Psychology*, 106, 576–585.
- Schmeelk, K. M., Sylvers, P., & Lilienfeld, S. O. (2008). Trait correlates of relational aggression in a nonclinical sample: *DSM-IV* personality disorders and psychopathy. *Journal of Personality Disorders*, 22, 269–283.
- Schmitt, W. A., & Newman, J. P. (1999). Are all psychopathic individuals low-anxious? *Journal of Abnormal Psychology*, 108, 353–358.
- Skeem, J. L., Poythress, N., Edens, J. F., Lilienfeld, S. O., & Cale, E. M. (2003). Psychopathic personality or personalities? Exploring potential variants of psychopathy and their implications for risk assessment. *Aggression and Violent Behavior*, 8, 513–546.
- Smith, S. S., & Newman, J. P. (1990). Alcohol and drug abuse/dependence in psychopathic and non-psychopathic criminal offenders. *Journal of Abnormal Psychology*, 99, 430–439.
- Sprague, J., & Verona, E. (2010). Emotional conditions disrupt behavioral control among individuals with dysregulated personality traits. *Journal of Abnormal Psychology*, 114, 410–419.
- Sylvers, P., Brubaker, N., Alden, S. A., Brennan, P. A., & Lilienfeld, S. O. (2008). Differential endophenotypic markers of narcissistic and antisocial personality features: A psychophysiological investigation. *Journal of Research in Personality*, 42, 1260–1270.
- Trull, T. J. (1995). Borderline personality disorder features in nonclinical young adults: I. Identification and validation. *Psychological Assessment*, 7, 33–41.
- Verona, E., Hicks, B., & Patrick, C. J. (2005). Psychopathy and suicidality in female offenders: Mediating effects of temperament and abuse. *Journal of Consulting and Clinical Psychology*, 73, 1065–1073.
- Verona, E., Patrick, C. J., & Joiner, T. E. (2001). Psychopathy, antisocial personality, and suicide risk. *Journal of Abnormal Psychology*, 110, 462–470.
- Verona, E., Sprague, J., & Javdani, S. (under review). Gender and factor-level interactions in psychopathy: Implications for suicide risk and borderline personality disorder symptoms.
- Vitale, J., Smith, S., Brinkley, C., & Newman, J. (2002). The reliability and validity of the Psychopathy Checklist-Revised in a sample of female offenders. *Criminal Justice and Behavior*, 29, 202–231.
- Walsh, Z., & Kosson, D. S. (2008). Psychopathy and violence: The importance of factor level interactions. *Psychological Assessment*, 20, 114–120.
- Walters, G. D., & Heilbrun, K. (2010). Violence risk assessment and facet 4 of the Psychopathy Checklist: Predicting institutional and community aggression in two forensic samples. *Assessment*, 17, 259–268.
- Watson, D., & Sinha, B. (2007). A normative study of the Coolidge axis-II inventory, short form. *Psy-*

- chology and Psychotherapy: Theory, Research, and Practice*, 80, 437–441.
- Zanarini, M. C. (2000). Childhood experience associated with the development of borderline personality disorder. *Psychiatric Clinics of North America*, 182, 135–140.
- Zanarini, M. C., Frankenburg, F. R., & Vujanovic, A. A. (2002). Inter-rater and test-retest reliability of the Revised Diagnostic Interview for Borderlines. *Journal of Personality Disorders*, 16, 270–276.
- Zanarini, M. C., Gunderson, J. G., Frankenburg, F. R., & Chauncey, D. L. (1989). The Revised Diagnostic Interview for Borderlines: Discriminating BPD from other axis II disorders. *Journal of Personality Disorders*, 3, 10–18.