

## Facets of Psychopathy in Relation to Potentially Traumatic Events and Posttraumatic Stress Disorder Among Female Prisoners: The Mediating Role of Borderline Personality Disorder Traits

Daniel M. Blonigen

Veterans Affairs Palo Alto Health Care System,  
Menlo Park, CA

Elizabeth A. Sullivan

New Mexico Veterans Affairs Health Care System,  
Albuquerque, New Mexico

Brian M. Hicks

University of Michigan

Christopher J. Patrick

Florida State University

Despite the high prevalence of trauma exposure in female prisoners, few studies have examined the link between psychopathy and posttraumatic stress disorder (PTSD)—or the potential mediating role of borderline personality disorder traits. Using a sample of incarcerated women, we identified differential associations across facets of psychopathy, as assessed via the Psychopathy Checklist–Revised (PCL–R; Hare, 2003), with potentially traumatic events (PTE) and symptoms of PTSD. Specifically, the Interpersonal and Affective facets were unrelated to both PTE and PTSD, while the Lifestyle and Antisocial facets were each associated with PTE and the Antisocial facet was uniquely associated with PTSD symptoms. Borderline personality disorder traits fully accounted for the association between the Antisocial facet and both PTE and PTSD, while the Lifestyle facet contributed incrementally to the prediction of PTE. The findings clarify linkages among psychopathy, trauma, PTSD, and borderline personality disorder traits, and extend our understanding of the clinical presentation of psychopathy in women.

*Keywords:* psychopathy, trauma, PTSD, borderline personality disorder, female prisoners

Psychopathy is a virulent personality disorder marked by a constellation of maladaptive traits and a chronic pattern of antisocial behavior. Relative to men, women remain an understudied population in the psychopathy literature, particularly in incarcerated settings and with regard to issues of diagnostic comorbidity. Surprisingly, despite the high prevalence of trauma

among incarcerated women (Warren et al., 2002), no studies to date have directly examined the link between psychopathy and posttraumatic stress disorder (PTSD).

Using a sample of female prisoners, we examined associations across the facets of psychopathy from the Psychopathy Checklist–Revised (PCL–R; Hare, 2003) with a composite

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Daniel M. Blonigen, Center for Health Care Evaluation, Veterans Affairs Palo Alto Health Care System, Menlo Park, CA; Elizabeth A. Sullivan, Department of Psychology, New Mexico Veterans Affairs Health Care System, Albuquerque, New Mexico; Brian M. Hicks, Department of Psychiatry, University of Michigan; Christopher J. Patrick, Department of Psychology, Florida State University.

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Correspondence concerning this article should be addressed to Daniel M. Blonigen, Center for Health Care Evaluation, Department of Veterans Affairs Palo Alto Health Care System, 795 Willow Road, Menlo Park, CA 94025. E-mail: dmblonigen@gmail.com

measure of potentially traumatic events (PTE) and symptoms of PTSD. Additionally, given established connections between borderline personality disorder (BPD) with trauma and PTSD (Pagura et al., 2010), as well as antisocial personality disorder (APD; Paris, 1997), we examined whether BPD traits account for associations between the PCL-R facets with PTE and PTSD.

### **Psychopathy: Theoretical and Empirical Links With Trauma Exposure and PTSD**

Trauma (e.g., physical and sexual abuse) is a robust risk factor for antisociality (Trickett & McBride-Chang, 1995), has been discussed prominently in etiologic theories of psychopathy (Karpman, 1955), and is associated with higher scores on the PCL-R (Krischer & Sevecke, 2008). However, only two studies have examined the relationship between psychopathy and PTSD, and both did so indirectly. In a sample of male offenders, Stinson, Becker, and Tromp (2005) reported that among individuals diagnosed as psychopaths with the PCL-R (total score  $\geq 30$ ), 26% reported "symptoms consistent with an anxiety disorder" (p. 643). PTSD was reported to be the most common anxiety disorder diagnosis in this sample; however, its prevalence was not reported in either the total sample or the psychopathic subsample. Conversely, Moeller and Hell (2003) reported that none of the high psychopathic offenders from their sample of male prisoners met diagnostic criteria for PTSD, despite a significant correlation between PCL-R total scores and number of traumatic experiences.

In view of this limited body of work, further research is warranted; in particular, research focusing on psychopathy and PTSD in female offenders, and an analysis of whether there are differential associations across the distinct facets of psychopathy with PTSD. Factor-analyses of the PCL-R have yielded two dominant, moderately correlated factors (Harpur, Hare, & Hakstian, 1989). Factor 1 (F1) taps features of grandiosity, manipulation, and emotional detachment; Factor 2 (F2) comprises features of impulsivity and irresponsibility and a chronic pattern of social deviance.<sup>1</sup> Recently, Hare (2003) proposed a four-facet model, which parses F1 into facets reflecting an arrogant and deceitful interpersonal style (Interpersonal) and

deficient affective experience (Affective), and F2 into facets marked by impulsivity and irresponsibility (Lifestyle) and chronic antisocial behavior (Antisocial).

At the factor level, F1 and F2 exhibit divergent associations with indices of negative affect (i.e., tendencies to experience a range of unpleasant emotions). Specifically, F1 has been found to be negatively correlated with measures of anxiety, fear, and emotional distress, particularly when controlling for variance shared with F2 (indicative of a suppressor effect), whereas F2 has been found to exhibit positive associations with such measures (Hicks & Patrick, 2006). Given that PTSD symptoms are highly saturated with negative affectivity, we hypothesized a similar pattern of divergence across these factors in relation to PTSD; that is, negative and positive associations with F1 and F2, respectively.

At the facet level, both the Lifestyle and Antisocial facets have evinced positive correlations with indices of trauma (Kimonis et al., 2010), suggesting that each may be associated with symptoms of PTSD. However, when examining their unique variance, only the Antisocial facet has been selectively linked to known correlates of PTSD in the form of higher trait negative emotionality (Kennealy, Hicks, & Patrick, 2007) and suicide-related behaviors (Kimonis et al., 2010). Hence, we hypothesized that the Lifestyle and Antisocial facets would both be independently associated with PTE in our sample of incarcerated women, whereas the Antisocial facet would be preferentially linked to symptoms of PTSD.

### **Borderline Personality Disorder Traits as Mediators of Relations Between Psychopathy and PTSD**

Relative to women from the general population, BPD has been linked to elevated rates of trauma among female offenders (Jordan, Schlinger, Fairbank, & Cadell, 1996) and is highly

<sup>1</sup> Cooke and Michie (2001) have proposed an alternative three-factor model for the PCL-R, comprising factors of Arrogant and Deceitful Interpersonal style, Deficient Affective Experiences, and Impulsive and Irresponsible Behavior, which are analogous to the Interpersonal, Affective, and Lifestyle facets, respectively, from the PCL-R four-facet model (Hare, 2003).

comorbid with PTSD (Pagura et al., 2010). In addition, among incarcerated women, BPD is one of the most common Axis II diagnoses (Warren et al., 2002) and is more likely to be diagnosed than APD (Jordan et al., 1996). Such findings have led several scholars to posit that BPD may represent a female-specific expression of antisocial personality (Beauchaine, Klein, Crowell, Derbidge, & Gatzke-Kopp, 2009; Paris, 1997; Verona & Vitale, 2006). Thus, we hypothesized that associations between the PCL-R (specifically F2; Warren et al., 2003) with trauma and PTSD would be at least partially accounted for by BPD traits.

### Novel Focus of the Current Study

In prior research utilizing the present sample, Verona, Hicks, and Patrick (2005) examined associations between F1 and F2 with childhood abuse and suicidality, and Hicks, Vaidyanathan, and Patrick (2010) examined associations with trauma and PTSD as part of a validation study of psychopathy subtypes. The present study expands on this prior work by (1) utilizing the PCL-R four-facet model to examine links between psychopathy and PTSD, (2) incorporating a composite measure of PTE, and (3) testing the mediating role of BPD traits.

## Method

### Participants

Participants were 226 female inmates from a Federal Correctional Institution in Tallahassee, FL (Age:  $M = 31.9$ ,  $SD = 6.8$ , range = 19–53). Prior to recruitment, participants were selected randomly from the prison roster and invited to a preparticipation screening. Individuals who demonstrated English-language proficiency, had no imminent release date, and (based on file review) no evidence of cognitive impairment, psychosis, or bipolar disorder, were recruited into the study and scheduled for an interview and questionnaire session. Individuals who appeared for testing provided informed written consent prior to study participation. Sample ethnicity was as follows: African American (57.1%,  $n = 129$ ), Caucasian (29.6%,  $n = 67$ ), Latino (10.6%,  $n = 24$ ), Asian (0.4%,  $n = 1$ ), and Other (2.2%,  $n = 5$ ).

### Measures and Procedures

**Psychopathy.** Participants were administered the PCL-R, a semistructured interview that is used in conjunction with a review of institutional files to gain information about life history and assess for features of psychopathy (Hare, 2003). Scores on its 20 items were summed to provide total, factor, and facet scores. Ratings were completed by senior undergraduate and graduate students who underwent intensive training in the administration and scoring of the PCL-R. Each participant was rated by two independent diagnosticians—the individual who conducted the interview, and a secondary rater who completed the ratings after viewing a videotaped recording of the interview. The two sets of ratings were averaged to increase the reliability of PCL-R scores. Using the mean of two raters, the intraclass correlation coefficients (ICC) indicated excellent interrater reliability for all scores, which were comparable for senior undergraduate and doctoral-level graduate students (ICCs for total, F1, and F2 scores were .94, .92, and .92, respectively; ICCs for the Interpersonal, Affective, Lifestyle, and Antisocial facets were .89, .87, .85, and .92, respectively). The current sample had a mean PCL-R total score of 20.7 ( $SD = 7.80$ ), mean F1 and F2 scores of 8.4 ( $SD = 3.9$ ) and 9.8 ( $SD = 3.9$ ), respectively, and mean scores of 4.3 ( $SD = 2.1$ ), 4.1 ( $SD = 2.2$ ), 6.4 ( $SD = 2.2$ ), and 3.1 ( $SD = 2.1$ ) for the Interpersonal, Affective, Lifestyle, and Antisocial facets, respectively. Twenty-nine women (12.8%) had a total score above the recommended cutoff of 30 (Hare, 2003).

**Potentially traumatic events.** PTE was assessed by self-report and interview/file-review. Regarding the former, the Life Events Checklist (LEC; Gray, Litz, Hsu & Lombardo, 2004) is a 16-item self-report measure assessing whether participants have directly experienced or witnessed PTE in their lifetime, and has shown good test–retest reliability ( $r = .82$ ) and strong convergent and divergent validity with other measures of trauma and symptoms in past research (Gray et al., 2004). In the current study, we focused on items related to incidents of abuse that were personally experienced by the participant, specifically: physical assault, assault with a weapon, captivity, sexual assault, and other unwanted or uncomfortable sexual

experience. These events were summed to calculate an LEC abuse score ( $M = 1.98$ ,  $SD = 1.48$ , range 0–5). Out of the total sample, 82.7% endorsed at least one item on this scale.

During the PCL-R interview, participants were asked whether “force, intimidation or coercion” was ever used to get them to engage in a sexual act as a child or an adult. Similar questions were posed about physical abuse or assault as a child or adult. Participants’ institution files were also reviewed for additional evidence of abuse history. Participants were coded as positive for childhood physical abuse (27.4%,  $n = 62$ ), childhood sexual abuse (33.6%,  $n = 76$ ), adult physical assault (61.5%,  $n = 139$ ), and adult sexual assault (26.1%,  $n = 59$ ) if they reported this information during the interview or if it was documented in their institution file. These variables were summed to form an interview/file-review abuse variable. Among individuals who experienced some form of abuse in childhood ( $n = 103$ ), 77% ( $n = 79$ ) also experienced some form of abuse in adulthood. The majority of participants (76.5%,  $n = 173$ ) experienced at least one form of abuse in their lifetime. The correlation between scores on the self-report and interview/file-review variables was .67 ( $p < .01$ ). PTE composite scores—the average of standardized ( $z$ ) scores on the self-report and interview/file-review variables—were used in the primary analyses.

**Posttraumatic stress disorder.** Symptoms of PTSD were assessed using the PTSD Checklist–Civilian version (PCL-C; Weathers, Litz, Herman, Huska, & Keane, 1993), a 17-item measure that asks participants to rate the severity with which they have been bothered by the 17 *DSM-IV* PTSD symptoms in the past month. These ratings were summed to calculate a total score reflecting the overall severity of PTSD symptoms ( $M = 35.63$ ,  $SD = 15.21$ , range = 17–75). Previous studies using the PCL-C have reported good internal consistency ( $\alpha = .94$ ), and when using a cutoff score of 44, strong diagnostic specificity (86%) and sensitivity (94%) in relation to total scores on the Clinician Administered PTSD Scale (Blanchard, Jones-Alexander, Buckley, & Forneris, 1996). In the current study, the PCL-C demonstrated strong internal consistency ( $\alpha = .93$ ), with 25% of par-

ticipants ( $n = 56$ ) achieving a score of 44 or higher on this scale.

**Borderline personality disorder traits.** BPD traits were measured with the self-report Minnesota Borderline Personality Disorder (MBPD; Bornovalova, Hicks, Patrick, Iacono, & McGue, 2011) scale, which consists of the sum of responses to 19 true/false items from the Multidimensional Personality Questionnaire–Brief Form (Patrick, Curtin, & Tellegen, 2002). For details on the development and validation of this scale and an appendix of the items, see Bornovalova et al. (2011). Briefly, items were identified using three large, diverse samples (undergraduates, community adolescents, and urban substance users) and validated in two prisoner samples. Across these samples, the construct validity of this scale was established per robust associations with BPD symptoms and diagnoses, scores on established self-report measures, and several clinical correlates of BPD (e.g., suicidality, internalizing distress, substance abuse). In the present sample, the internal consistency of the MBPD scale was .85 with a mean of 8.03 ( $SD = 4.24$ ).

## Analyses

Pearson product–moment correlations were computed to examine the zero-order associations among the variables. Next, multiple regression models were run in *SPSS 18.0* to identify the unique associations across the PCL-R factor and facet scores with PTE and PTSD (models were run separately for these outcomes). Model 1 examined the unique contributions of F1 and F2 in the prediction of PTE and PTSD. Model 2 examined the unique contributions of the PCL-R facets in the prediction of the outcomes. In the second step of each model, MBPD scores were included as predictors, along with either the PCL-R factor or facet scores, to examine the extent to which they accounted for significant associations between PCL-R scores and outcomes from Step 1.

## Results

### Intercorrelations Among Study Variables

Intercorrelations among the study variables are presented in Table 1. Scores on the PTE composite and PTSD were moderately and pos-

Table 1

*Zero-Order Correlations Between PCL-R Total, Factor, and Facet Scores, PTE and PTSD, and MBPD Scale Scores*

	1	2	3	4	5	6	7	8	9	10
1. PCL-R Total	—									
2. PCL-R F1	.82**	—								
3. PCL-R F2	.88**	.50**	—							
4. PCL-R Interpersonal	.75**	.91**	.45**	—						
5. PCL-R Affective	.75**	.92**	.46**	.68**	—					
6. PCL-R Lifestyle	.85**	.52**	.93**	.47**	.48**	—				
7. PCL-R Antisocial	.74**	.39**	.85**	.35**	.35**	.66**	—			
8. PTE	.29**	.07	.34**	.06	.07	.30**	.29**	—		
9. PTSD	.20**	.04	.28**	.02	.05	.22**	.31**	.44**	—	
10. MBPD	.40**	.21**	.48**	.14*	.24**	.41**	.51**	.28**	.56**	—

*Note.* PCL-R = Psychopathy Checklist-Revised, F1 = Factor 1, F2 = Factor 2; PTE = potentially traumatic events. MBPD = Minnesota Borderline Personality Disorder scale. Sample sizes range from 215–226.

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

itively correlated. Scores on the PTE composite and PTSD were unrelated to scores on either F1 or the interpersonal and affective facets. Scores on the PTE composite and PTSD evinced moderate positive associations with PCL-R total scores, as well as scores on F2 and the Lifestyle and Antisocial facets. Scores on the MBPD scale exhibited significant, positive associations with all study variables, with particularly strong associations with scores on F2, the Lifestyle and Antisocial facets, and PTSD.<sup>2</sup>

### PCL-R Factor and Facet Scores and MBPD Scores in the Prediction of PTE and PTSD

In Model 1 (Step 1), F1 and F2 scores were entered together to predict PTE and PTSD. Only F2 demonstrated a significant, positive association with both outcomes. Negative associations emerged between scores on F1 with PTE and PTSD, but were nonsignificant. Cross-over suppressor effects emerged for F1 in relation to both PTE and PTSD, that is, relative to the zero-order coefficients, the partial regression coefficients reversed direction and increased in magnitude. However, Sobel tests, which provide an index of change in the predictive strength of F1 when entered concurrently with F2, were trend-level (PTE:  $z = -1.84$ ,  $p = .07$ ; PTSD:  $z = -1.76$ ,  $p = .08$ ). For PTE (Step 2), MBPD scores provided a small but significant increase in the prediction of this outcome above and beyond the PCL-R factors, while the effect for F2 scores de-

creased, but remained significant,  $F(1, 211) = 4.20$ ,  $p < .05$ . For PTSD (Step 2), MBPD scores provided a significant and substantial increase in the prediction of this outcome above and beyond the PCL-R factors, and the effect for F2 dropped to nonsignificance,  $F(1, 212) = 70.83$ ,  $p < .001$ .<sup>3</sup>

In Model 2 (Step 1), PCL-R facet scores were entered together to predict PTE and PTSD. Both the Lifestyle and Antisocial facets were uniquely and comparably associated with PTE. However, only the Antisocial facet was uniquely associated with PTSD. For PTE (Step 2), MBPD scores provided a small but significant increase in the prediction of this outcome above and beyond the PCL-R facets;  $F(1, 208) = 5.22$ ,  $p < .05$ . The effect for Antisocial facet scores declined to nonsignificance, whereas the effect for Lifestyle facet scores

<sup>2</sup> When controlling for variance associated with the complementary PCL-R factor (F1 or F2), associations between PCL-R facet scores with MBPD scores were as follows: Interpersonal ( $r = -.11$ , *ns*), Affective ( $r = .02$ , *ns*), Lifestyle ( $r = .36$ ,  $p < .01$ ), Antisocial ( $r = .47$ ,  $p < .01$ ).

<sup>3</sup> We also examined whether links between BPD traits in relation to the PTE composite and PTSD were mediated by scores on F2. F2 scores provided a significant increase in the prediction of PTE above and beyond MBPD scores ( $\Delta R^2 = .06$ ,  $p < .001$ ), and the effect ( $\beta$ ) of MBPD scores was reduced by roughly half (from .30 to .17), but remained significant,  $F(1, 212) = 13.79$ ,  $p < .001$ . F2 scores did not provide a significant increase in the prediction of PTSD symptoms, above and beyond MBPD scores,  $F(1, 213) = 0.14$ ,  $p = .71$ .

Table 2  
*Regression Models of PCL-R Factor and Facet Scores and MBPD Scale Scores in the Prediction of PTE and PTSD*

Predictors	PTE			PTSD		
	$\beta$	$R^2$	$\Delta R^2$	$\beta$	$R^2$	$\Delta R^2$
Model 1						
Step 1		.12	—		.09	—
PCL-R F1	-.11			-.10		
PCL-R F2	.39**			.34**		
Step 2		.14	.02*		.32	.23**
PCL-R F1	-.10			-.08		
PCL-R F2	.31**			.07		
MBPD	.15*			.55**		
Model 2						
Step 1		.11	—		.11	—
PCL-R Interpersonal	-.07			-.12		
PCL-R Affective	-.05			.01		
PCL-R Lifestyle	.24*			.09		
PCL-R Antisocial	.18*			.30**		
Step 2		.13	.02*		.32	.21**
PCL-R Interpersonal	-.04			-.03		
PCL-R Affective	-.07			-.06		
PCL-R Lifestyle	.21*			.01		
PCL-R Antisocial	.11			.07		
MBPD	.17*			.55**		

Note. PCL-R = Psychopathy Checklist-Revised, F1 = Factor 1, F2 = Factor 2; PTE = potentially traumatic events. MBPD = Minnesota Borderline Personality Disorder scale. Sample sizes range from 215–226.  
 \*  $p < .05$ . \*\*  $p < .01$ .

remained significant and largely unchanged. For PTSD (Step 2), MBPD scores provided a significant and substantial increase in the prediction of this outcome above and beyond the PCL-R facets, and the effect for Antisocial facet scores dropped to nonsignificance,  $F(1, 209) = 65.75, p < .001$ .

As a supplemental analysis, separate models were run to examine prediction of child and adult abuse, measured via interview/file-review. To provide a comparison with the primary analyses, each outcome was measured on a continuous scale (0 = no abuse, 1 = physical or sexual abuse, 2 = physical and sexual abuse). For child abuse, only the Antisocial facet ( $\beta = .27, p < .01$ ) was a significant predictor (betas for the Interpersonal, Affective, and Lifestyle facets were  $-.09, .12,$  and  $.01,$  respectively), with MBPD scores providing modest incremental prediction,  $\beta = .13; F(1, 209) = 3.00, ps = .08$ . For adult abuse (Step 1), only the Lifestyle facet ( $\beta = .28, p < .01$ ) was a significant predictor (betas for the Interpersonal, Affective, and Antisocial facets were  $-.09, -.08,$  and  $.00,$

respectively), with MBPD scores providing no incremental prediction,  $\beta = .02; F(1, 209) = 0.09, ns$ .

### Discussion

Using a sample of female prisoners, we tested if there are differential associations across the PCL-R facets with PTE and PTSD, and if BPD traits account for interrelations among these variables. Findings revealed that the Interpersonal and Affective facets were unrelated to PTE and PTSD, both the Lifestyle and Antisocial facets were associated with PTE, and the Antisocial facet was uniquely associated with PTSD. Moreover, BPD traits fully accounted for associations between the Antisocial facet and both PTE and PTSD, while the Lifestyle facet contributed incrementally to the prediction PTE. The findings extend knowledge of the clinical presentation of psychopathy in women by revealing divergent associations across facets of psychopathy with two disorders that are

highly prevalent among incarcerated women (i.e., PTSD and BPD).

### **Facets of Psychopathy: Divergent Relations With PTE and PTSD**

A key contribution of the present work was the use of the PCL-R four-facet model to delineate relations across components of psychopathy with PTE and PTSD. At the factor level, PTE and PTSD were preferentially linked to F2, which is synonymous with the externalizing spectrum of psychopathology (Patrick, Hicks, Krueger, & Lang, 2005). This finding is consistent with prospective research, which indicates high pretrauma rates of externalizing disorders (e.g., conduct disorder, substance abuse) in the developmental histories of individuals with PTSD (Koenen et al., 2008), and consistent evidence of an externalizing subtype of PTSD characterized by premilitary delinquency and antisocial behavior (Miller, Greif, & Smith, 2003).

At the facet-level of the PCL-R, a notable finding was the divergence across the Lifestyle and Antisocial facets in their associations with PTE and PTSD, respectively. This result is consistent with prior research linking the unique variance in the Lifestyle facet to risk factors for trauma exposure in the form of drug abuse and disinhibitory traits, and the unique variance in the Antisocial facet to emotional distress (Kennealy et al., 2007). Collectively, these findings suggest that the Lifestyle and Antisocial facets may confer differential liabilities with the former a risk factor for exposure to PTE, and the latter a risk factor for emotional distress following a traumatic event. Further, our supplemental analyses suggest that the Lifestyle facet may be preferentially linked to abuse in adulthood and the Antisocial facet to abuse in childhood. Although the cross-sectional nature of this study renders these developmental perspectives and causal interpretations speculative, external support for this interpretation exists in the form of evidence for "active" gene-environment correlations between disinhibitory traits and trauma (Jang, Stein, Taylor, Asmundson, & Livesley, 2003), and prospective research revealing antisocial behavior as a premorbid risk factor for PTSD (Koenen et al., 2008).

Contrary to expectations, associations for F1 and the Interpersonal and Affective facets with

PTSD were nonsignificant. Although these findings may seem inconsistent with past research on links between psychopathy and negative affect, it should be borne in mind that PTSD may not be a pure indicator of negative affect or internalizing psychopathology, but may in fact span internalizing and externalizing spectra (Miller et al., 2003). Moreover, F1 is known to be associated not just with traits that reduce risk for emotional distress (e.g., low anxiety), but also with traits that increase the probability of exposure to traumatic events (e.g., high thrill-seeking; Harpur et al., 1989). Consequently, these contrasting F1-related propensities may effectively mitigate one another, yielding an overall null association between F1 and PTSD.

### **Implications for the Clinical Presentation of Psychopathy in Women: The Role of BPD Traits**

The present findings suggest that BPD traits contribute substantially to the prediction of PTSD above and beyond the effects of psychopathy, and may account entirely for associations between the Antisocial facet with PTE and PTSD. Such findings align with evidence of high comorbidity between BPD and PTSD in women (Johnson et al., 2003), as well as the notion of BPD as a female-specific expression of antisociality (Beauchaine et al., 2009). Notably, a distinguishing feature between BPD and APD is that the former is more strongly characterized by high negative affect (Paris, 1997). Thus, relative to men, the clinical presentation of psychopathy in women may be marked by a stronger loading of negative affect and greater overlap with internalizing psychopathology. This perspective is supported by molecular genetic research, which has found a functional polymorphism for monoamine oxidase-A to be linked to antisocial behavior in men and mood disorders in women (Hauser et al., 2002), and by personality research indicating that traits related to F2 are more strongly linked to internalizing disorders in women than men (Blonigen, Hicks, Krueger, Patrick, & Iacono, 2005).

### **Limitations and Future Directions**

Limitations of the current work and directions for future research warrant discussion. First, the associations reported in this study

were estimated on the basis of cross-sectional data and retrospective reports of PTE. Consequently, causal inferences are limited and require replication with prospective data. Second, given that the LEC does not provide a formal assessment of *DSM-IV* Criterion A events, and items on the PCL-C do not require symptoms to be linked to such events, it cannot be determined whether scores on the PCL-C correspond to PTSD symptoms per se or some other related condition (e.g., depression). Consequently, findings should be considered preliminary until replicated using direct diagnostic measures of PTSD. Third, although the self-report MBPD scale was developed and validated across diverse samples and found to be highly correlated with BPD diagnoses and symptoms (Bornovalova et al., 2011), the findings need to be replicated with interview-based measures that can provide formal diagnoses. Finally, we could not provide more rigorous tests of our theories regarding the clinical presentation of psychopathy in women due to the lack of (1) a comparison sample of male offenders, and (2) specific indicators of internalizing (mood and anxiety disorders). Future research should ascertain whether similar links between psychopathy, PTE, PTSD, and BPD can be observed in male offenders, or whether an index of internalizing mediates the relations among these constructs in women but not men. These limitations aside, the present findings provide novel insights regarding linkages among psychopathy, PTE, PTSD, and BPD traits, and suggest a number of promising directions for future research on the clinical presentation of psychopathy in women.

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