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Clarifying the association between psychopathy dimensions and internalizing symptoms in two community samples: The role of general personality

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ABSTRACT

Research suggests that the Boldness and Disinhibition traits of psychopathy are negatively and positively related to internalizing, respectively. Although the associations between psychopathy and internalizing are relatively well-demonstrated, few studies have examined the specificity of these associations with psychopathy as opposed to general personality. We sought to replicate and extend existing research by examining the relationships between multiple conceptualizations of psychopathy and internalizing (depression, generalized anxiety, social anxiety, anger) in two community samples (N_1 = 430; N_2 = 441). We also investigated (a) the contributions of general personality, (b) the possibility that Boldness traits are statistically protective against internalizing, and (c) gender differences in these relations. Consistent with prior research, boldness traits were negatively associated with internalizing, whereas Disinhibition traits were positively associated; Meanness traits were largely unrelated. General personality traits accounted for the majority of the relationships between psychopathy and internalizing, although Disinhibition traits were unique correlates of internalizing above-and-beyond general personality. We did not find robust evidence that Boldness buffers Disinhibition's relationships with internalizing, nor that gender moderated the relationships between psychopathy and internalizing. These results may bear meaningful implications regarding the conceptualization and assessment of internalizing disorders and psychopathy.

1. Background

Traditionally, psychopathy and internalizing disorders have been regarded as negatively correlated, or even "mutually exclusive" (Lovelace & Gannon, 1999, p. 171). Nevertheless, burrowing down to psychopathy's separable subdimensions, which comprise Boldness, Meanness, and Disinhibition, reveals a more complex picture that challenges this assumption. Specifically, psychopathy's subdimensions appear to be differentially related to internalizing features. Boldness traits appear to be negatively related to internalizing symptoms, including depression (Latzman et al., 2018), anxiety (Pennington, Cramer, Miller, & Anastasi, 2015), and suicidality (Anestis et al., 2016), whereas Disinhibition traits appear to be positively related to these same outcomes. Although the associations between psychopathy subdimensions and internalizing are relatively well-demonstrated (e.g., Latzman et al., 2018), potentially noteworthy aspects of these relations are underexplored. With these gaps in the literature in mind, we aimed to clarify the nature of psychopathic traits' relationships with multiple measures of internalizing in two community samples. Specifically, we examined (a) the contributions of general personality traits, (b) the possibility that Boldness traits are protective against symptoms of internalizing in the presence of Disinhibition, and (c) potential gender differences in these relations.

1.1. Psychopathy

In his influential account of psychopathy, Cleckley (1941) described psychopathic individuals as seemingly intelligent, sociable, and charming, at least on one's initial encounters with them. Nonetheless, according to Cleckley, this deceptively polished exterior masks an array of affective and behavioral shortcomings, including remorselessness, dishonesty, egocentricity, and poor impulse control. Early factor

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analyses of widely used psychopathy measures, such as the *Psychopathy Checklist* and, later, the *Psychopathy Checklist-Revised* (PCL-R; Hare, 2003), typically yielded two major, moderately to highly correlated, higher-order factors (Harpur, Hakstian, & Hare, 1988). Factor analyses of later psychopathy measures, such as the *Psychopathic Personality Inventory* and its revised version (PPI-R; Lilienfeld & Widows, 2005), suggested that psychopathy can be parsed into at least two, and probably three, underlying dimensions (Benning, Patrick, Hicks, & Blonigen, 2003), although the nature and magnitude of the correlations among these dimensions typically only partly overlap with those of the PCL-R (see Benning et al., 2003). Although there is no consensual model of psychopathy, an influential framework for this disorder is the triarchic model (Patrick, Fowles, & Krueger, 2009). This model, which is broadly consistent with aforementioned factor analyses of the PPI-R, posits that psychopathy comprises three higher-order dimensions: Boldness, Disinhibition, and Meanness.

Boldness, which can be measured by the PPI-R dimension of Fearless Dominance, encompasses traits such as threat insensitivity, interpersonal dominance, venturesomeness, physical fearlessness, and resilience to stress (Lilienfeld et al., 2012). Boldness is associated with generally adaptive outcomes, such as psychological well-being (Durand, 2016; Latzman et al., 2018) and inconsistently associated with maladaptive outcomes, including global antisocial behavior (e.g., Miller & Lynam, 2012). In contrast, Disinhibition, which can be measured by PPI-R Self-Centered Impulsivity, comprises impulsivity, recklessness, emotional instability, and nonplanfulness (Patrick et al., 2009), and is in turn generally associated with maladaptive outcomes, including but not limited to externalizing and otherwise antisocial behaviors (Drislane, Patrick, & Arsal, 2014). Finally, Meanness comprises rebelliousness, cruelty, manipulativeness, and lovelessness (Patrick et al., 2009), and is broadly associated with trait antagonism and callous affect (Drislane et al., 2014). Meanness is measured in part by PPI-R Coldheartedness, although the former emphasizes active antagonism whereas the latter emphasizes passive emotional detachment.

1.2. Psychopathy and internalizing symptoms

Negative emotionality, broadly defined, refers to dispositional individual differences in the experience of distressing emotions, such as anxiety, sadness, and anger-hostility (Watson & Clark, 1984). On balance, internalizing disorders, such as depressive and anxiety disorders, are characterized by high levels of negative emotionality, although internalizing disorders are not necessarily construed as stable dispositional constructs (Kotov, Gamez, Schmidt, & Watson, 2010). Conceptual and clinical accounts of psychopathy have traditionally proposed that low negative emotionality is central to the psychopathy construct. For instance, Cleckley (1941) proposed that psychopathic individuals are largely immune to committing suicide, and even their threats of suicide are largely empty promises reflecting their propensity to manipulate others and seek attention. Some research supports the hypothesis that psychopathy is robustly negatively, although not mutually exclusive with, negative emotionality and internalizing symptoms (Lovelace & Gannon, 1999; Willemsen, Vanheule, & Verhaeghe, 2011).

Nonetheless, the associations between psychopathy and internalizing become much more complex when considering the heterogeneity of psychopathy. Most research indicates that Boldness and Disinhibition traits are negatively and positively related to internalizing, respectively (Benning, Patrick, Blonigen, Hicks, & Iacono, 2005; Blonigen et al., 2010; Blonigen, Hicks, Krueger, Patrick, & Iacono, 2005; Brislin, Drislane, Smith, Edens, & Patrick, 2015; Derefinko, 2015; Douglas, Herbozo, Poythress, Belfrage, & Edens, 2006; Edens & McDermott, 2010; Gillespie, Mitchell, Satherley, Beech, & Rotshtein, 2015; Harrop et al., 2017; Hicks & Patrick, 2006; Hunt, Bornovalova, Kimonis, Lilienfeld, & Poythress, 2015; Lantrip, Towns, Roth, & Giancola, 2016; Latzman et al., 2018). In contrast, there is a relative dearth of research on the relationships between Coldheartedness and Meanness, on the one hand, and internalizing, on the other. Preliminary evidence suggests that Coldheartedness is negatively correlated with depression (Berg, Hecht, Latzman, & Lilienfeld, 2015; Edens & McDermott, 2010), whereas Meanness is positively correlated (Brislin et al., 2015; Brislin et al., 2019; Latzman et al., 2018). These results are conceptually consistent with the content of the two constructs. Coldheartedness is marked by features of affective detachment (e.g., guiltlessness, callousness) and passive antagonism (e.g., cynicism), whereas Meanness is marked by certain aspects of negative emotionality (e.g., hostility, irritability) and active antagonism (e.g., manipulativeness). Nevertheless, Latzman et al. (2018) found that Meanness was not statistically significantly associated with indices of internalizing after statistically controlling for Boldness and Disinhibition, suggesting that Meanness' relationships with internalizing may be due to its zero-order overlap with Disinhibition.

1.3. Current studies

In the present studies, we sought to replicate existing findings and address gaps in the literature by examining the differential associations between psychopathy subdimensions and internalizing in two mixed-gender community samples. A potential advantage of our sampling approach is that community samples tend to be less marked than clinical and forensic samples by a variety of functional impairments, such as co-occurring (comorbid) psychological disorders, that can sometimes methodologically complicate the interpretation of general trait and clinically-relevant measures (see Newman, Moffitt, Caspi, & Silva, 1998). In addition, we used multiple indices of psychopathy and internalizing (e.g., depression, generalized anxiety, social anxiety, anger) to minimize mono-operation bias and build in conceptual (or "constructive," see Lykken, 1968) replication within each sample. In addition, we included measures of both Coldheartedness and Meanness, allowing us to clarify the nature of these constructs' potentially divergent relationships with internalizing. Including multiple measures of both psychopathy and internalizing also allowed us to examine the generalizability of psychopathy's associations with internalizing across a range of internalizing features. The manuscript is organized by four broad aims.

First, consistent with existing research, we hypothesized that Boldness and Disinhibition traits would be moderately negatively and positively related to internalizing, respectively. We predicted that Meanness would be positively associated with internalizing, whereas Coldheartedness would be slightly negatively associated. We advanced no hypotheses regarding the psychopathy subdimensions' differential relationships with differing forms of internalizing (e.g., depression, anxiety).

Second, we aimed to clarify the extent to which psychopathy subdimensions' relationships with internalizing can be accounted for by *Big Five* personality traits (e.g., McCrae & Costa, 1987), which heretofore will be referred to as general personality traits. Regarding the associations between psychopathy dimensions and general personality traits, research indicates that Boldness often manifests moderate negative associations with neuroticism and moderate positive associations with extraversion, and Disinhibition tends to be moderately negatively associated with agreeableness and conscientiousness and moderately positively associated with neuroticism. Meanness traits tend to manifest moderate negative associations with extraversion, conscientiousness, and agreeableness; Coldheartedness tends to manifest small to medium negative associations with all Big Five dimensions (see Lilienfeld, Watts, Francis Smith, Berg, & Latzman, 2015). Incremental validity analyses suggest that general personality traits statistically account in part for psychopathy's relationships with external criteria, including history of suicide attempts and features of post-traumatic stress disorder (Sellbom, 2015; Verona, Patrick, & Joiner, 2001). Such findings raise the possibility that psychopathy subdimensions are associated with internalizing due largely in part to their overlap with general

personality.

Brislin et al. (2019) examined the incremental validity of the triarchic psychopathy scales above-and-beyond general personality traits in predicting a wide range of psychopathological constructs, including measures of self-harm behaviors, which are often conceptualized as reflecting emotion dysregulation and poor impulse control (see Gratz, 2003), and hopelessness, which comprises affective, motivational, and cognitive internalizing symptoms (Beck, Weissman, Lester, & Trexler, 1974). Their results indicated that Disinhibition significantly incremented general personality traits in statistically predicting self-harm behaviors, but that none of the triarchic subdimensions (e.g., Boldness, Disinhibition, Meanness) significantly incremented general personality traits in statistically predicting hopelessness. Thus, we hypothesized that psychopathy subdimensions will predict little or no unique variance in internalizing after controlling for general personality traits. Additional research is warranted to examine the robustness of these preliminary results and to clarify whether other measures of psychopathy statistically increment general personality traits in statistically predicting internalizing.

Third, we examined the statistical interactions between Boldness traits, on the one hand, and Disinhibition and Meanness traits, on the other, in statistically predicting internalizing. Boldness comprises features such as emotional resilience (Patrick et al., 2009), and as such, may buffer against the experience of negative emotionality and emotion dysregulation associated with, and perhaps even generated by, Disinhibition and Meanness traits. Only one study has examined the statistical interactions among the triarchic dimensions of psychopathy in statistically predicting internalizing (Latzman et al., 2018). Although none of the analyzed interactions were statistically significant, there was a trend for Boldness to protect against internalizing in the presence of Disinhibition. In accordance with this preliminary evidence, we provisionally predicted that Boldness traits would protect against internalizing in the presence of Disinhibition and/or Meanness traits, such that the relation between Disinhibition or Meanness traits and internalizing would decrease as levels of Boldness traits increase.

Fourth, the role of gender in the relationships between psychopathy and internalizing warrants further investigation. The existing literature is decidedly mixed in this regard. In general, there are well-replicated mean-level differences in internalizing, such that women are more susceptible to internalizing than men (e.g., Daughters et al., 2009). At the same time, some research indicates that the relationships between psychopathy and internalizing disorders, such as general anxiety, social anxiety, and depression (Benning et al., 2005; Chabrol, Labeyrie, Rodgers, & Levenson, 2010; Eisenbarth et al., 2019; Gillespie et al., 2015), are consistent across gender, suggesting that gender may not moderate the relationships between psychopathy subdimensions and internalizing. Nevertheless, other research indicates that the relationships between psychopathic traits, on the one hand, and non-suicidal self-injury, suicidal ideation, depression, and general distress, on the other (Blonigen et al., 2005; Međedović, Wertag, & Sokić, 2018; Miller, Watts, & Jones, 2011; Verona, Sprague, & Javdani, 2012) may be moderated by gender, raising the possibility that psychopathic traits are expressed differently in males and females (see Verona & Vitale, 2006). By and large, these studies indicate that psychopathic traits are more closely related to internalizing in women than in men. Given the mixed literature, our hypotheses regarding gender differences in the relationships between psychopathy and internalizing were exploratory.

2. Methods

2.1. Participants

Participants were recruited from Amazon's Mechanical Turk (MTurk), which is an online platform that allows participants to complete research surveys for compensation. Samples recruited from MTurk often capture a wide range of scores for an array of psychological measures, such as depression and anxiety, similar to those found in clinical and community samples (see Miller, Crowe, Weiss, Maples-Keller, & Lynam, 2017). MTurk participants tend to be more neurotic and less agreeable compared with undergraduate populations (see Miller et al., 2017). We recruited American participants in both MTurk samples. Both studies were approved by our university's Institutional Review Board.

Participants from Sample 1 (n_1 = 430) were between the ages of 18 and 78 (M_{age} = 36.53, SD = 12.03). We removed 3 participants from the sample due to scores that were greater than three standard deviations above the sample mean on the PPI-R Inconsistent Responding Scale (INC; see Measures). Participants were excluded from the dataset on a listwise as opposed to pairwise basis to minimize the likelihood of including careless responders in our analyses. The final sample was predominately female (54%), and Caucasian (81%), African-American (7%), Asian (7%), or Hispanic (6%). Most participants from Sample One had Bachelor's degrees (39%) and reported a personal annual income of $30,000–39,000 (16%). Participants from Sample One were compensated $4.00 to complete the survey.

Participants from Sample 2 (n_2 = 441) were recruited from Amazon's Mechanical Turk (MTurk). They were between the ages of 19 and 77 (M_{age} = 35.05, SD = 10.68). We removed data for 1 participant due to a score that was greater than three standard deviations above the sample mean on PPI-R INC. Participants were again excluded from the dataset on a listwise basis. The sample was predominately female (58%), Caucasian (78%), African-American (10%), Asian (8%), or Hispanic (6%). Most participants from Sample Two had Bachelor's degrees (38%) and reported a personal annual income of $20,000–29,000 (16%). Participants from Sample Two were compensated $2.50 to complete the survey. We used Unique Turker (uniqueturker.myleott.com) to prevent participants from completing the survey battery more than once both within (e.g., the same individual could not complete the survey more than once) and between (e.g., participants from Sample One could not complete the Sample Two battery) samples.

2.2. Measures

Internal consistencies (i.e., Cronbach's alphas) for each measure are presented in Tables 1 and 2.

2.2.1. Psychopathy

Participants in Sample 1 completed two well-validated self-report inventories of psychopathy, the *Psychopathic Personality Inventory-Revised* (PPI-R; Lilienfeld & Widows, 2005) and the *Levenson Self-Report Psychopathy Scale* (LSRP; Levenson, Kiehl, & Fitzpatrick, 1995). Participants in Sample 2 also completed these two measures in addition to another well-validated measure of psychopathy, the *Triarchic Psychopathy Measure* (TriPM; Patrick, 2010).

The PPI-R assesses personality traits associated with psychopathy and does not assess overt antisocial behaviors. The measure yields 8 subscale scores, with 7 of these subscales coalescing into two largely independent higher-order factors, Fearless Dominance and Self-Centered Impulsivity (but see Neumann, Malterer, & Newman, 2008, for a somewhat different factor solution). The standalone dimension of Coldheartedness, reflecting guiltlessness and callousness, does not load highly on either higher-order factor and is often used as a standalone dimension in analyses. The PPI-R also contains a validity scale, INC, that was designed to detect careless or random response patterns, with higher scores reflecting greater response inconsistency on highly correlated and conceptually similar items.

The LSRP, which was modeled after the PCL-R, was constructed to detect two major dimensions underpinning psychopathy. Factor 1 comprises interpersonal and affective psychopathy features, whereas Factor 2 comprises antisocial and lifestyle features (Levenson et al., 1995). A more recent factor structure provides greater resolution of psychopathy dimensions, yielding scores on three higher-order factors:

Table 1
Descriptive statistics and intercorrelations for personality and internalizing measures in Sample 1.

	M (SD)	Intercorrelations															
Psychopathy		**1.**	**2.**	**3.**	**4.**	**5.**	**6.**	**7.**	**8.**	**9.**	**10.**	**11.**	**12.**	**13.**	**14.**	**15.**	**16.**	**17.**
1. PPI-R Fearless Dominance	103.72 (21.58)	(0.94)	*0.15*	**0.37**	**0.97**	−0.05	**0.37**	**0.27**	**0.24**	−0.10*	**−0.42**	**−0.66**	**−0.29**	**−0.66**	**0.73**	0.10*	**0.19**	**0.18**
2. PPI-R Self-Centered Impulsivity	142.59 (26.09)		(0.94)	**0.35**	0.10	**0.89**	**0.55**	**0.56**	**0.51**	**0.59**	**0.27**	**0.30**	**−0.59**	−0.08	**−0.23**	**−0.55**	**−0.54**	−0.08
3. PPI-R Coldheartedness	34.85 (8.02)			(0.88)	**0.33**	**0.27**	**0.94**	**0.47**	**0.51**	*0.16*	*−0.15*	−0.08	**−0.44**	**−0.60**	0.03	**−0.27**	**−0.19**	**−0.24**
4. TriPM Boldness	53.68 (11.79)				(0.82)	−0.08	**0.31**	**0.22**	**0.19**	*−0.13*	**−0.40**	**−0.65**	**−0.23**	**−0.65**	**0.70**	0.11*	**0.22**	**0.21**
5. TriPM Disinhibition	35.99 (7.35)					(0.89)	**0.41**	**0.21**	**0.40**	**0.60**	**0.33**	**0.41**	**−0.39**	0.02	**−0.38**	**−0.45**	**−0.67**	*−0.15*
6. TriPM Meanness	38.31 (8.46)						(0.87)	**0.59**	**0.58**	**0.28**	−0.07	0.03	**−0.57**	**−0.52**	−0.02	**−0.41**	**−0.26**	**−0.27**
7. LSRP Egocentricity	18.67 (6.52)							(0.90)	**0.65**	**0.60**	−0.06	0.06	**−0.58**	**−0.23**	0.01	**−0.34**	**−0.22**	**−0.25**
8. LSRP Callousness	7.03 (2.67)								(0.74)	**0.42**	−0.01	0.06	**−0.50**	**−0.23**	−0.02	**−0.29**	**−0.29**	**−0.21**
9. LSRP Antisociality	9.67 (3.22)									(0.77)	**0.28**	**0.35**	**−0.34**	0.09	**−0.35**	**−0.48**	**−0.49**	*−0.16*
Internalizing																		
10. CESD-R	48.07 (28.16)										(0.96)	**0.50**	−0.03	**0.31**	**−0.56**	**−0.27**	**−0.23**	0.01
11. SIAS	50.85 (19.68)											(0.97)	−0.05	**0.36**	**−0.76**	**−0.31**	**−0.36**	**−0.21**
HEXACO PI-R																		
12. Honesty-humility	55.05 (11.46)												(0.87)	*0.12*	−0.06	**0.47**	**0.23**	*0.14*
13. Emotionality	50.91 (10.45)													(0.85)	**−0.32**	−0.07	−0.12*	−0.07
14. Extraversion	50.32 (11.61)														(0.89)	**0.35**	**0.38**	**0.21**
15. Agreeableness	50.47 (10.24)															(0.87)	**0.31**	*0.16*
16. Conscientiousness	58.08 (9.55)																(0.85)	**0.30**
17. Openness to Experience	56.02 (10.10)																	(0.86)

Note. Bolded is $p < .001$, italicized is $p < .01$, and * is $p < .05$. Cronbach's alpha coefficients are reported in parentheses along the diagonal. The TriPM scales were derived from the PPI-R in Sample 1. PPI-R = Psychopathic Personality Inventory Revised; TriPM = Triarchic Psychopathy Measure; LSRP = Levenson Self-Report Psychopathy Scale; CESD-R = Center for Epidemiologic Studies Depression Scale – Revised; SIAS = Social Interaction Anxiety Scale.

Table 2
Descriptive statistics and intercorrelations for personality and internalizing measures in Sample 2.

	M (SD)	Intercorrelations																
Psychopathy		**1.**	**2.**	**3.**	**4.**	**5.**	**6.**	**7.**	**8.**	**9.**	**10.**	**11.**	**12.**	**13.**	**14.**	**15.**	**16.**	**17.**	**18.**
1. PPI-R Fearless Dominance	103.64 (21.34)	(0.93)	**0.20**	**0.31**	**0.82**	0.09	**0.28**	**0.29**	**0.29**	−0.06	**−0.22**	**−0.28**	**−0.20**	**−0.35**	**−0.54**	**0.62**	0.03	0.11*	**0.28**
2. PPI-R Self-Centered Impulsivity	135.99 (27.84)		(0.94)	**0.33**	−0.04	**0.79**	**0.68**	**0.70**	**0.44**	**0.71**	**0.45**	**0.46**	**0.37**	**0.41**	**0.39**	0.01	**−0.59**	**−0.61**	0.08
3. PPI-R Coldheartedness	32.46 (8.29)			(0.88)	**0.21**	**0.22**	**0.71**	**0.49**	**0.61**	*0.17*	−0.04	−0.04	−0.08	*−0.14*	*−0.15*	0.12*	**−0.44**	−0.07	*−0.15*
4. TriPM Boldness	48.48 (9.62)				(0.87)	**−0.17**	0.05	0.07	0.12*	**−0.21**	**−0.38**	**−0.46**	**−0.28**	**−0.45**	0.12*	0.11*	**−0.54**	**−0.32**	−0.08
5. TriPM Disinhibition	35.99 (7.35)					(0.88)	**0.64**	**0.59**	**0.31**	**0.72**	**0.53**	**0.52**	**0.41**	**0.46**	−0.03	*0.16*	**−0.34**	*−0.16*	−0.10*
6. TriPM Meanness	30.70 (9.33)						(0.91)	**0.74**	**0.56**	**0.55**	**0.30**	**0.28**	**0.24**	**0.19**	**0.54**	−0.12*	**−0.62**	**−0.64**	−0.09*
7. LSRP Egocentricity	17.56 (6.04)							(0.89)	**0.51**	**0.53**	**0.27**	**0.25**	**0.26**	**0.17**	**−0.60**	**0.63**	**0.18**	**0.29**	**0.34**
8. LSRP Callousness	6.89 (2.65)								(0.72)	**0.23**	0.08	0.10*	0.04	0.01	**0.41**	−0.04	**−0.53**	**−0.63**	−0.01
9. LSRP Antisociality	9.46 (3.21)									(0.74)	**0.50**	**0.51**	**0.52**	**0.48**	*0.16*	0.03	**−0.66**	**−0.40**	−0.12*
Internalizing																			
10. CESD-R	33.71 (14.99)										(0.95)	**0.88**	**0.80**	**0.66**	**0.62**	**−0.24**	**−0.41**	**−0.45**	−0.03
11. PROMIS Depression	14.68 (7.78)											(0.96)	**0.84**	**0.67**	**0.66**	**−0.28**	**−0.42**	**−0.44**	−0.06
12. PROMIS Anxiety	15.60 (7.92)												(0.96)	**0.65**	**0.73**	**−0.27**	**−0.36**	**−0.44**	0.01
13. PROMIS Anger	11.71 (4.34)													(0.92)	**0.58**	**−0.17**	**−0.39**	**−0.32**	−0.05
BFI-44																			
14. Neuroticism	23.70 (7.57)														(0.90)	**−0.39**	**−0.47**	**−0.51**	−0.07
15. Extraversion	34.89 (6.59)															(0.89)	**0.21**	**0.22**	**0.31**
16. Agreeableness	35.60 (6.57)																(0.84)	**0.46**	0.11*
17. Conscientiousness	21.46 (7.86)																	(0.86)	0.10*
18. Openness to Experience	35.90 (7.21)																		(0.80)

Note. Bolded is $p < .001$, italicized is $p < .01$, and * is $p < .05$. Cronbach's alpha coefficients are reported in parentheses along the diagonal. PPI-R = Psychopathic Personality Inventory Revised; TriPM = Triarchic Psychopathy Measure; LSRP = Levenson Self-Report Psychopathy Scale; CESD-R = Center for Epidemiologic Studies Depression Scale – Revised; PROMIS = Patient-Reported Outcomes Measurement Information System Scales; BFI-44 = Big Five Inventory-44.

Table 3
Univariate relationships between personality traits and the (a) CESD-R and (b) SIAS.

	CESD-R								SIAS			
	b (β)		IRR		SE		95% CI		*b (β)*	IRR	SE	95% CI
(Sample)	(S1)	(S2)	(S1)	(S2)	(S1)	(S2)	(S1)	(S2)	(S1)	(S1)	(S1)	(S1)
PPI-R Fearless Dominance	**−0.011** (−0.009)	**−0.004** (−0.006)	1.094%	0.399%	0.001	0.001	−0.013, −0.009	−0.001, −0.003	**−0.012** (−0.013)	1.193%	0.001	−0.013, −0.011
PPI-R Self-Centered Impulsivity	**0.006** (0.006)	**0.007** (0.013)	0.602%	0.682%	0.001	0.001	0.004, 0.009	0.006, 0.008	**0.005** (0.006)	0.501%	0.001	0.003, 0.006
PPI-R Coldheartedness	−0.011* (−0.003)	−0.002 (−0.001)	0.995%	0.199%	0.003	0.002	−0.017, −0.004	−0.006, 0.003	−0.003 (−0.001)	0.300%	0.002	−0.008, 0.001
TriPM Boldness	**−0.019** (−0.008)	**−0.017** (−0.011)	1.882%	1.666%	0.002	0.002	−0.023, −0.015	−0.020, −0.013	**−0.022** (−0.013)	2.183%	0.001	−0.025, −0.019
TriPM Disinhibition	**0.027** (0.007)	**0.022** (0.014)	2.737%	2.245%	0.003	0.002	0.020, 0.034	0.019, 0.026	**0.022** (0.008)	2.264%	0.002	0.017, 0.027
TRiPM Meanness	−0.005 (−0.001)	**0.013** (0.008)	0.499%	1.329%	0.003	0.002	−0.011, 0.002	0.009, 0.017	0.001 (0.001)	0.100%	0.002	−0.003, 0.006
LSRP Egocentricity	−0.006 (−0.001)	**0.018** (0.007)	0.598%	1.837%	0.004	0.003	−0.015, 0.002	0.012, 0.024	0.004 (0.001)	0.401%	0.003	−0.002, 0.010
LSRP Callousness	−0.001 (−0.000)	0.012 (0.002)	0.100%	1.197%	0.010	0.007	−0.021, 0.019	−0.002, 0.026	0.010 (0.001)	1.005%	0.007	−0.004, 0.025
LSRP Antisociality	**0.057** (0.006)	**0.067** (0.014)	5.866%	6.908%	0.008	0.005	0.040, 0.073	0.057, 0.077	**0.045** (0.007)	4.603%	0.006	0.034, 0.060
HEXACO Honesty-Humility	−0.002 (−0.001)	–	0.120%	–	0.002	–	−0.007, 0.003	–	−0.002 (−0.001)	0.179%	0.002	−0.005, 0.002
HEXACO Emotionality	**0.018** (0.007)	–	1.857%	–	0.002	–	0.014, 0.023	–	**0.014** (0.008)	1.423%	0.002	0.011, 0.018
HEXACO eXtraversion	**−0.027** (−0.011)	–	2.671%	–	0.002	–	−0.031, −0.023	–	**−0.027** (−0.016)	2.634%	0.001	−0.029, −0.024
HEXACO Agreeableness	**−0.016** (−0.006)	–	1.558%	–	0.003	–	−0.021, −0.011	–	**−0.012** (−0.006)	1.215%	0.003	−0.016, −0.009
HEXACO Conscientiousness	**−0.014** (−0.005)	–	1.372%	–	0.003	–	−0.019, −0.009	–	**−0.015** (−0.007)	1.447%	0.003	−0.018, −0.011
HEXACO Openness	0.000 (0.000)	–	0.040%	–	0.002	–	−0.004, 0.005	–	*−0.007* (−0.004)	0.752%	0.002	−0.011, −0.004
BFI Neuroticism	–	**0.035** (0.018)	–	3.531%	–	0.002	–	0.031, 0.038	–	–	–	–
BFI Extraversion	–	**−0.015** (−0.007)	–	1.449%	–	0.002	–	−0.020, −0.010	–	–	–	–
BFI Agreeableness	–	**−0.027** (−0.012)	–	2.674%	–	0.003	–	−0.032, −0.022	–	–	–	–
BFI Conscientiousness	–	**−0.030** (−0.013)	–	2.946%	–	0.003	–	−0.035, −0.025	–	–	–	–
BFI Openness	–	−0.002 (−0.001)	–	0.201%	–	0.003	–	−0.007, 0.003	–	–	–	–

Note. Bolded is $p < .001$, italicized is $p < .01$, and * is $p < .05$. The TriPM scales in Sample 1 were derived from the PPI-R. BFI = Big Five Inventory-44; CESD-R = Center for Epidemiologic Studies Depression Scale – Revised; HEXACO = HEXACO PI-R; LSRP = Levenson Self-Report Psychopathy Scale; PPI-R = Psychopathic Personality Inventory Revised; SIAS = Social Interaction Anxiety Scale; TriPM = Triarchic Psychopathy.

Table 4
Univariate relationships between personality traits and the PROMIS scales in Sample 2.

	PROMIS depression				PROMIS anxiety				PROMIS anger			
	b (*β*)	IRR	SE	95% CI	*b* (*β*)	IRR	SE	95% CI	*b* (*β*)	IRR	SE	95% CI
PPI-R Fearless Dominance	**−0.007** (−0.018)	0.657%	0.001	−0.009, −0.005	**−0.010** (−0.021)	0.777%	0.001	−0.010, −0.006	*−0.003* (−0.016)	0.329%	0.001	−0.005, −0.002
PPI-R Self-Centered Impulsivity	**0.008** (0.030)	0.844%	0.001	0.007, 0.010	**0.007** (0.025)	0.723%	0.001	0.006, 0.009	**0.005** (0.031)	0.491%	0.001	0.004, 0.006
PPI-R Coldheartedness	−0.003 (−0.003)	0.280%	0.003	−0.008, 0.003	-.008[a] (−0.009)	0.832%	0.003	−0.013, −0.003	−0.003 (−0.007)	0.339%	0.002	−0.008, 0.001
TriPM Boldness	**−0.024** (−0.030)	2.381%	0.002	−0.028, −0.020	**−0.023** (−0.028)	2.244%	0.002	−0.027, −0.019	**−0.011** (−0.023)	1.045%	0.002	−0.014, −0.007
TriPM Disinhibition	**0.027** (0.033)	2.706%	0.003	0.023, 0.031	**0.024** (0.028)	2.378%	0.002	0.019, 0.028	**0.015** (0.033)	1.521%	0.002	0.012, 0.018
TRiPM Meanness	**0.015** (0.018)	1.521%	0.003	0.011, 0.020	*0.010* (0.012)	1.006%	0.002	0.005, 0.015	**0.010** (0.021)	0.955%	0.002	0.006, 0.013
LSRP Egocentricity	**0.020** (0.016)	2.041%	0.004	0.013, 0.027	0.013* (0.010)	1.329%	0.004	0.006, 0.020	**0.015** (0.021)	1.521%	0.003	0.010, 0.020
LSRP Callousness	.018[a] (0.006)	1.786%	0.006	0.000, 0.035	−0.000 (−0.000)	0.009%	0.009	−0.018, 0.017	0.005 (0.003)	0.521%	0.007	−0.008, 0.018
LSRP Antisociality	**0.082** (0.034)	8.546%	0.01	0.070, 0.095	**0.076** (0.031)	7.896%	0.006	0.063, 0.089	**0.059** (0.043)	6.045%	0.005	0.050, 0.068
BFI Neuroticism	**0.044** (0.045)	4.530%	0.003	0.040, 0.049	**0.047** (0.047)	4.812%	0.002	0.043, 0.051	**0.027** (0.049)	2.768%	0.002	0.024, 0.031
BFI Extraversion	**−0.021** (−0.020)	2.029%	0.002	−0.026, −0.015	**−0.019** (−0.180)	1.843%	0.003	−0.024, −0.013	**−0.008** (−0.015)	0.836%	0.002	−0.013, −0.004
BFI Agreeableness	**−0.033** (−0.028)	3.236%	0.003	−0.039, −0.026	**−0.029** (−0.024)	2.810%	0.003	−0.035, −0.022	**−0.021** (−0.033)	2.117%	0.002	−0.026, −0.017
BFI Conscientiousness	**−0.035** (−0.029)	3.401%	0.003	−0.041, −0.028	**−0.034** (−0.028)	3.372%	0.003	−0.041, −0.028	**−0.018** (−0.027)	1.745%	0.003	−0.023, −0.013
BFI Openness	−0.005 (−0.004)	0.459%	0.003	−0.011, 0.002	0.001 (0.001)	0.093%	0.003	−0.006, 0.007	−0.002 (−0.004)	0.240%	0.002	−0.007, 0.002

Note: Bolded is $p < .001$, italicized is $p < .01$, and * is $p < .05$. BFI = Big Five Inventory-44; LSRP = Levenson Self-Report Psychopathy Scale; PPI-R = Psychopathic Personality Inventory Revised; PROMIS = Patient-Reported Outcomes Measurement Information System Scales; TriPM = Triarchic Psychopathy Measure.

[a] Denotes results that were statistically significant at the $p < .05$ level before employing Hommel's (1988) correction that were not statistically significant post-correction.

Egocentricity, Callousness, and Antisociality (Christian & Sellbom, 2016). Egocentricity and Callousness encompass Factor 1 features, with Egocentricity comprising traits such as manipulativeness and self-ishness and Callousness comprising traits such as guiltlessness and de-ceitfulness. Antisociality encompasses Factor 2 features, such as aim-lessness and antagonism. Callousness and Egocentricity correspond broadly to Meanness, and Antisociality corresponds broadly to Disin-hibition (Sellbom & Phillips, 2013). Boldness exhibits weak or negli-gible relationships with the affective facets of psychopathy, such as Callousness (Drislane et al., 2014; Sellbom & Phillips, 2013).

The TriPM assesses the constructs of Boldness, Disinhibition, and Meanness. Because the TriPM was not included in Sample 1, we ex-tracted composites for the triarchic psychopathy dimensions from the PPI-R based on published formulas (Hall et al., 2014).

2.2.2. Internalizing symptoms

Participants in Sample 1 completed two self-report measures of in-ternalizing, the *Center for Epidemiologic Studies Depression Scale-Revised* (CESD-R; Eaton, Smith, Ybarra, Muntaner, & Tien, 2004) and the *Social Interaction Anxiety Scale* (SIAS; Mattick & Clarke, 1998). Participants in Sample 2 completed the CESD-R in addition to short-form versions of the *Patient-Reported Outcomes Measurement Information System Scales* for Depression, Anxiety, and Anger (PROMIS; Pilkonis et al., 2011).

The CESD-R is a widely used index of depression symptoms ex-perienced in the past two weeks. The SIAS assesses fears of general social interactions, and it yields a composite score of social anxiety symptoms. The PROMIS scales are a publicly available item pool as-sessing physical, mental, and social health developed by the National Institutes of Health. The Depression scale comprises 8 items assessing negative mood, decreased positive affect, information-processing defi-cits, and feelings of worthlessness and loneliness. The Anxiety scale comprises 8 items assessing fear, anxiety, and somatic symptoms re-lated to arousal. The Anger scale comprises 5 items assessing angry mood, irritability, and hostility. Although behaviors related to anger, such as aggression and vengefulness, are often associated with ex-ternalizing traits and symptoms, features of angry mood, including hostility and irritability, are potent markers of negative emotionality and internalizing symptoms (e.g., Tellegen & Waller, 2008). PROMIS scales were substantially positively interrelated (*rs* ranged from 0.65 to 0.84), supporting our inclusion of the PROMIS Anger scale as an in-dicator of internalizing symptoms.

2.2.3. General personality traits

Participants in Sample 1 completed the *HEXACO Personality Inventory-Revised* (HEXACO PI-R; Lee & Ashton, 2004), and participants in Sample 2 completed the *Big Five Inventory-44* (BFI-44; John & Srivastava, 1999). The HEXACO PI-R assesses 24 facet-level personality trait scales that coalesce into six broad domains comprising the well-established Big Five in addition to the dimension of honesty/humility: Honesty-Humility, Emotionality, Extraversion, Agreeableness, Con-scientiousness, and Openness. The BFI-44 assesses Neuroticism, Extra-version, Agreeableness, Conscientiousness, and Openness.

2.3. Data analytic plan

Most individuals in both samples endorsed few internalizing symptoms. Hence, to test for overdispersion in the distribution of in-ternalizing symptoms, we used the AER package (Kleiber & Zeileis, 2008) in R, which uses a maximum-likelihood method to test the null hypothesis of equidispersion against the alternative hypothesis of overdispersion. In both samples, there was significant overdispersion for all internalizing measures, such that dispersion estimates were sta-tistically significantly > 1 (Sample 1 ranged from 4.57 to 16.46; Sample 2 ranged from 1.35 to 6.60; *ps* < 0.05) and heterogeneity estimates were statistically significantly > 0 (Sample 1 ranged from 0.06 to 0.32; Sample 2 ranged from 0.03 to 0.21; *ps* < 0.05).

To account for overdispersion, all analyses were conducted using negative binomial regression with the MASS package (Venables & Ripley, 2002) in R. Regression coefficients here represent the multiplicative change in the expected value of internalizing associated with every one-unit change in psychopathy. We also report the incidence rate ratios (IRR) to facilitate interpretation, which are calculated using the exponentiated regression coefficients, the beta weights (standardized regression coefficients), and the 95% confidence intervals (see Tables 3 and 4). We employed Hommel's (1988) correction within measure given that it is the most statistically powerful Bonferroni-class correction (Blakesley et al., 2009).[1] Given the number of tests conducted, we focus our exposition of the results on effect size rather than statistical significance, although statistical significance thresholds are denoted in each table.

3. Results

3.1. Psychopathy's relationships with internalizing

Descriptive statistics and intercorrelations for the personality and internalizing measures are displayed in Tables 1 and 2.[2]

There were striking similarities in the relationships between psychopathy subdimensions and internalizing across sample and measure (Tables 3 and 4). Boldness traits were consistently negatively related to internalizing (*bs* ranged from −0.00 to −0.02). Every one-unit increase in Boldness traits was associated with a 0.33% (PROMIS Anger) to 2.26% (SIAS) decrease in internalizing. In contrast, Disinhibition traits were consistently positively related to internalizing (*bs* ranged from 0.00 to 0.03). Every one-unit increase in Disinhibition was associated with a 0.48% (SIAS) to 2.74% (CESD-R Sample 1) increase in internalizing. LSRP Antisociality was also a robust positive predictor of internalizing (*bs* ranged from 0.05 to 0.08). Every one-unit increase in Antisociality was associated with a 4.60% (SIAS) to 7.90% (PROMIS Anxiety) increase in internalizing. By and large, PPI-R Coldheartedness and LSRP Callousness were not significantly related to indices of internalizing (*bs* ranged from −0.00 to 0.02). Coldheartedness was significantly associated, although weakly, with CESD-R depression only in Sample 1 ($b = -0.01$), and every one-unit increase in Coldheartedness was associated with a 1.00% decrease in depression symptoms.

Although there were many consistencies across sample and measure, there were a few noteworthy differences. TriPM Meanness was positively, albeit weakly, related to internalizing in Sample 2 (*bs* ranged from 0.01 to 0.02). Every one-unit increase in Meanness was associated with a 1.01% (PROMIS Anxiety) to 1.52% (PROMIS Depression) increase in internalizing for these indices. Consistent with past research, Meanness was no longer significantly associated with internalizing after controlling for both Boldness and Disinhibition, and the associations were small (*bs* ranged from −0.01 to 0.00; Latzman et al., 2018; Supplemental Tables 1 and 2).[3] Neither Meanness nor LSRP Egocentricity was significantly related to internalizing in Sample 1 (*bs* ranged from −0.00 to 0.00). In Sample 2, however, Egocentricity was significantly and positively related to internalizing (*bs* ranged from 0.01 to 0.02), and every one-unit increase in Egocentricity was associated with a 1.33% (PROMIS Anxiety) to 2.04% (PROMIS Depression) increase in internalizing.

3.2. Specificity of psychopathy's relationships with internalizing

We next examined the relationships between general personality traits and internalizing (Tables 3 and 4). Across measure and sample, neuroticism was positively associated with internalizing (*bs* ranged from 0.01 to 0.04) whereas extraversion, agreeableness, and conscientiousness were negatively related (*bs* ranged from −0.01 to −0.04). Every one-unit increase in neuroticism was associated with a 1.42% (SIAS) to 4.53% (PROMIS Depression) increase in internalizing. Every one-unit increase in extraversion, agreeableness, and conscientiousness was associated with an average 0.84% (PROMIS Anger) to 3.40% (PROMIS Depression and Anxiety) decrease in internalizing. By and large, openness was not related to internalizing (*bs* ranged from −0.01 to 0.00). Openness was negatively related only to the SIAS in Sample 1 ($b = -0.01$), and every one-unit increase in openness was associated with a 0.75% decrease in social anxiety.

To address the extent to which these associations were specific to psychopathic traits, we examined whether psychopathic subdimensions statistically predicted internalizing after accounting for their shared variance with general personality traits. We conducted these analyses in an iterative fashion to explore different combinations of personality traits that have been found in previous work to significantly predict internalizing (Allen et al., 2018; Kotov et al., 2010; Vasey et al., 2013; Watson, Clark, & Carey, 1988). First, we examined whether psychopathic subdimensions statistically predicted internalizing after accounting for neuroticism and extraversion. Second, we included neuroticism, extraversion, and conscientiousness (see also Allen et al., 2018; Vasey et al., 2013). Third and finally, we included all general personality dimensions. Given the number of tests conducted, we focus our discussion on the broad pattern of results.[4]

By and large, the relationships between psychopathy subdimensions and indices of internalizing were not statistically significant after accounting for general personality traits. In addition, when psychopathy subdimensions were significant predictors of internalizing above-and-beyond general personality traits, most of these results did not replicate across sample or measure, raising the possibility that such findings were not robust.

Across sample and measure, PPI-R SCI consistently significantly predicted internalizing after accounting for its shared variance with all combinations of general personality traits. Nonetheless, after controlling for general personality, every one-unit increase in PPI-R SCI was associated with a mere 0.27% (PROMIS Anger) to 0.61% (CESD-R Sample 1) increase in internalizing. There was also some evidence that LSRP Antisociality and TriPM Disinhibition significantly predicted internalizing after controlling for general personality. Every one-unit increase in Antisociality was associated with a 1.02% (SIAS) to 3.88% (PROMIS Anger) increase in internalizing, and every one-unit increase in Disinhibition was associated with a 1.10% (SIAS) to 1.76% (CESD-R Sample 1) increase in internalizing, after controlling for general personality. In aggregate, these findings are broadly consistent with growing suggestions that psychopathy, rather than being *sui generis*, is best conceptualized as a constellation or configuration of personality

[1] Approximately 15% of the results in each sample that were originally statistically significant at the $p < .05$ level were not statistically significant post-correction. These results are denoted by the superscript "a" in all tables.

[2] In subsidiary analyses, we statistically controlled for age in the associations between psychopathy and internalizing. Model fit was examined using log-likelihood ratio tests. In Sample One, 44% of the log-likelihood ratio tests indicated that including age in the model provided superior fit compared with the psychopathy dimensions in isolation; in Sample Two, it was 50%. Nevertheless, upon examining the *b*-coefficients from each model, there were no meaningful changes in effect size between the two models. The largest difference between the *b*-coefficients was < 0.01 in both samples. In addition, the change in chi-squared statistics were small (Sample One average was 14.1; Sample Two average was 5.5). Taken together, controlling for age did not substantially alter the associations between psychopathy dimensions and internalizing. Thus, all analyses reported in the main text were conducted without statistically controlling for age. The results from models including age and the log-likelihood fit statistics are available from the first-author upon request.

[3] We also examined the relationships between personality traits and internalizing when controlling for the shared variance among the personality dimensions within measure. See Supplemental Tables 1 and 2 for the full results.

[4] The full results are available in Supplemental Tables 9–14.

traits drawn from the general personality domain (Lilienfeld et al., 2015; Lynam & Widiger, 2007).

3.3. Potential protective effects of boldness traits against internalizing

To examine the potential protective effects of Boldness traits against internalizing, we examined the statistical interactions between Boldness traits, on the one hand, and Disinhibition and Meanness traits, on the other, in statistically predicting internalizing. There was little evidence that Boldness traits exerted a statistically significant protective effect against internalizing. Out of 12 statistical interactions examined, only 1 indicated a significant protective effect of Boldness traits against internalizing (Supplemental Tables 5 and 6). In Sample 1, TriPM Boldness statistically interacted with Disinhibition, such that the relationship between Disinhibition and the SIAS decreased as levels of Boldness increased. Nonetheless, the interaction term contributed to a mere 0.05% decrease in social anxiety. Given that only one interaction was statistically significant and that it did not replicate across either sample or measure, it is possible, if not likely, that this result reflects chance (e.g., Type I error).[5] Potentially consistent with our hypotheses, 83% of the interaction terms (out of 12 tests total) indicated that the relationships between Disinhibition traits and internalizing were weaker at higher levels of Boldness traits compared with lower levels of Boldness traits, although the bulk of these results were not statistically significant (Supplemental Tables 5 and 6; see also Latzman et al., 2018, and Sellbom, 2015, for related findings).

3.4. Gender differences in the relationships between psychopathy and internalizing

Regarding mean-level gender differences (Supplemental Tables 3 and 4), males scored significantly higher on psychopathy subdimensions than did females in both samples (*ds* ranged from 0.21 to 0.80); the magnitudes of these differences were medium to large (Cohen, 1988). In Sample 1, females scored significantly higher on depression and social anxiety measures than did males (*ds* were 0.21 and 0.22, respectively), and the magnitudes of these differences were medium. There were no significant mean-level gender differences in internalizing in Sample 2 (*ds* ranged from 0.02 to 0.09). We next examined the statistical interaction between gender and psychopathy subdimensions in predicting internalizing. Out of 54 statistical interactions examined, none were statistically significant across sample or measure (Supplemental Tables 7 and 8). These results suggest that the relationships between psychopathy subdimensions and internalizing manifest similarly in males and females.

4. Discussion

To clarify the relationships between psychopathy traits and internalizing, we adopted a multi-measure approach using two community samples to investigate the generalizability of these relations across different operationalizations of both constructs. Taken together, our results indicate that psychopathy subdimensions were significantly associated with internalizing, but often in opposite directions, across multiple indices of psychopathy and internalizing. Although considerable research has examined the relationships between psychopathic traits and internalizing, far less research has examined the specificity of these associations with psychopathy as opposed to broadband personality traits, the potential protective effect of Boldness traits against internalizing in the presence of Disinhibition or Meanness traits, and gender differences in these relations. These poorly understood but potentially noteworthy gaps in the literature warrant further research attention.

Boldness and Disinhibition traits markedly diverged in their associations with internalizing, as Boldness traits were consistently negatively associated with multiple measures of internalizing, whereas Disinhibition traits were consistently positively associated. By and large, Coldheartedness traits were not significantly related to internalizing, whereas Meanness was positively related. After controlling for its shared variance with Disinhibition and Boldness, however, Meanness was no longer significantly related to internalizing. Taken together, our findings are consistent with the existing literature (e.g., Brislin et al., 2015; Latzman et al., 2018), in which Boldness and Disinhibition traits were robustly negatively and positively associated with internalizing, respectively, whereas Coldheartedness and Meanness traits were not robustly associated with internalizing.

In addition, our findings suggest a notable lack of specificity in the relationships between psychopathy and internalizing. First, psychopathy subdimensions were related to multiple indices of internalizing. Although considerable research suggests that psychopathic traits are associated with a lack of anxiety or distress (e.g., Crego & Widiger, 2016), less research has examined the associations between psychopathy and other indices of internalizing, such as anger and depression, in community samples. Taken together, our results suggest that psychopathy is associated with broad internalizing liability as opposed to specific internalizing symptoms (e.g., anxiety but not depression). Second, we examined the extent to which general personality traits statistically account for the relationships between psychopathy and internalizing. By and large, psychopathy subdimensions did not significantly statistically predict internalizing after accounting for their shared variance with general personality traits, suggesting that broadband traits primarily accounted for psychopathy's relationships with internalizing across differing conceptualizations of psychopathy. These results are broadly consistent with the view that psychopathy is an amalgam of general personality traits, such as high antagonism and low conscientiousness (Lilienfeld et al., 2015; Lynam & Widiger, 2007).

Nevertheless, Disinhibition traits significantly predicted internalizing after controlling for their shared variance with all combinations of general personality traits. These results are consistent with research suggesting that Disinhibition significantly incremented general personality traits in predicting self-harm behaviors, whereas Boldness and Meanness only weakly did so (Brislin et al., 2019). In addition, Disinhibition has been posited to reflect the nexus of impulsivity and negative emotionality (Krueger, Markon, Patrick, Benning, & Kramer, 2007), both of which are risk factors for internalizing symptoms (Clark & Watson, 1991; Swann, Steinberg, Lijffijt, & Moeller, 2008). Our findings raise the possibility that this intersection may relate uniquely to internalizing symptoms above-and-beyond general personality traits.

Although Boldness traits were negatively related to internalizing, there was little evidence that Boldness traits were protective against internalizing in the presence of Disinhibition and Meanness traits. Because only one statistical interaction demonstrated a protective effect of Boldness, it is likely that the result reflects chance, as it did not replicate across sample or measure. In addition, the interaction term was associated with only a small decrease in social anxiety (< 1%), raising questions regarding its robustness. Nonetheless, there was a trend across analyses for Boldness traits to slightly attenuate the relationships between Disinhibition traits and internalizing, a finding broadly consistent with other research (e.g., Latzman et al., 2018; Sellbom, 2015). There was also no evidence that the relationships between psychopathy subdimensions and internalizing manifested differentially as a function of gender; hence, our results suggest that the expression of

[5] Although not a direct focus of this study, we also examined the statistical interactions between (a) the dimensions of the LSRP, (b) Disinhibition and Meanness, (c) Fearless Dominance and Coldheartedness, and (d) Self-Centered Impulsivity and Coldheartedness, in predicting internalizing. Out of 42 statistical interactions examined, none replicated across samples and most were inconsistent across measures within sample. These statistical interactions were associated with an average. 07% change in internalizing, raising questions regarding their robustness. These results are available in Supplemental Tables 5 and 6.

psychopathic traits in the context of internalizing is largely similar in both men and women recruited from the community. Our findings are consistent with burgeoning evidence that psychopathy subdimensions manifest similar relationships with an array of external criteria across gender (Miller et al., 2011; Sellbom, Donnelly, Rock, Phillips, & Ben-Porath, 2017).

5. Limitations and future directions

This pair of studies was characterized by a number of strengths that distinguishes it from previous research, such as our examination of both psychopathic and general personality traits using multiple indices, and the inclusion of two mixed-gender community samples. Despite these strengths, several limitations warrant consideration in future research. First, personality traits and internalizing were assessed exclusively using self-report measures, rendering our findings partly susceptible to mono-method bias. At the same time, there was marked differentiation across psychopathy subdimensions, pointing to substantive covariance rising above method covariance. There is only limited evidence that self-report measures of internalizing symptoms (Levin-Aspenson & Watson, 2017) or psychopathy (Watts et al., 2016) are unduly impacted by response bias, although additional methodologies, such as informant reports or clinical interviews, should be used to corroborate our findings.

In addition, because we assessed internalizing continuously in community samples, it is not possible to render formal clinical diagnoses in the current study. Nevertheless, studies using forensic samples, which ostensibly comprise more severe levels of psychopathology than do community samples, have yielded similar patterns of results (e.g., Hicks & Patrick, 2006). There is also little evidence that clinical levels of internalizing disorders are qualitatively distinct from subclinical levels, as most taxometric analyses of internalizing disorders (e.g., major depressive disorder, generalized anxiety disorder, social anxiety disorder) support a dimensional rather than taxonic (categorical) structure (e.g., Hankin, Fraley, Lahey, & Waldman, 2005; Ruscio, 2010). Taxometric analyses of psychopathic personality similarly support a dimensional rather than taxonic structure, suggesting that clinical levels of psychopathy are not distinct from subclinical levels (e.g., Edens, Marcus, Lilienfeld, & Poythress, 2006; Guay, Ruscio, Knight, & Hare, 2007).

Our results, in conjunction with research in this domain, may bear intriguing implications for clinical conceptualizations of psychopathy. Traditionally, clinical accounts have proposed that psychopathic individuals are largely immune to anxiety, shame, distress, and other negative emotions (e.g., Cleckley, 1941). Although the present study was variable-centered rather than person-centered, our findings raise the possibility that certain psychopathic individuals, namely those with elevated Disinhibition traits, are not immune to internalizing, and in contrast appear to experience elevated levels of such symptoms. Whether psychopathic individuals experience deep emotional distress, such as “genuine despair” or “solid grief,” (Cleckley, 1941, p. 348), however, remains unclear. For instance, one study, although variable-centered rather than person-centered, revealed that psychopathy scores among individuals who endorsed at least two lifetime symptoms of depression were negatively correlated with their use of sadness words in describing these symptoms (Willemsen et al., 2011). Taken together, future research should examine how psychopathic individuals experience internalizing and whether these experiences predict treatment process or outcome.

Our study was cross-sectional, precluding conclusions regarding temporal precedence, let alone causality, in the relationships between psychopathic traits and internalizing. Despite the volumes of research investigating the causal relationships between personality traits and internalizing disorders, such as depression, there is no consensual etiological model (see Klein, Kotov, & Bufferd, 2011). Some etiological theories, such as the continuum/spectrum model (see Krueger & Tackett, 2006), posit that personality and internalizing stem from at least some overlapping etiological sources, such as emotional reactivity. This shared etiology, in turn, confers risk for the expression of certain traits and internalizing symptoms, not necessarily in a sequential order (Klein et al., 2011).

In accordance with this model, certain psychopathic traits, such as Disinhibition, and internalizing may share common risk factors, such as affective lability, and develop in conjunction along a continuum of functional impairment. On balance, behavior genetic studies lend preliminary support to this developmental possibility. One study demonstrated that psychopathy subdimensions exhibited robust genetic correlations with composites of externalizing and internalizing disorders, suggesting a shared genetic risk (Blonigen et al., 2005). Moreover, Boldness and Disinhibition traits fractionate in terms of their relationships with externalizing and internalizing disorders even at the genetic level of analysis, perhaps suggesting that these two psychopathy dimensions develop via partially separable etiological mechanisms (Blonigen et al., 2005; Fowles & Dindo, 2009). Through examining the putative etiological mechanisms underlying the manifestation of psychopathic traits and internalizing, it may be possible to parse shared risk factors from nonshared (i.e., individual) risk for both constructs.

In sum, our results indicate that psychopathic traits are robustly associated with multiple measures of internalizing across multiple samples. These findings highlight the importance of treating psychopathy as a multidimensional construct, given the divergent pattern of associations among psychopathy subdimensions and internalizing. Although the relevance of Boldness traits in psychopathy is contested (Vize, Lynam, Lamkin, Miller, & Pardini, 2016), it is apparent that exclusive reliance on psychopathy total scores, still a prevalent practice in the literature, can be misleading. Our results are broadly consistent with research suggesting that psychopathy is best conceptualized as a constellation of general personality traits, although psychopathy subdimensions associated with impulsivity may be distinct correlates of internalizing.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.paid.2019.04.024.

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