

Psychopathy, *DSM-5*, and a Caution

Cristina Crego and Thomas A. Widiger
University of Kentucky

Recently developed models of psychopathy include such traits as fearlessness, boldness, and invulnerability. Section III of *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)* includes as well a psychopathy specifier that is modeled after these traits. The purpose of the current study was to test empirically the convergent and discriminant validity of the Psychopathic Personality Inventory–Revised (PPI-R), the Triarchic Psychopathy Measure (TriPM), the Elemental Psychopathy Assessment (EPA), and the Personality Inventory for *DSM-5* (PID-5) with respect to their relationship to one another, with traditional measures of psychopathy and antisocial personality disorder, and with a measure of the 5-factor model. Participants were 2 samples of community adults (280 and 196) who indicated that they have engaged in criminal activities. The results indicated good convergent and discriminant validity for the PPI-R, TriPM, EPA, and the PID-5 psychopathy specifiers, as well as relationships with a measure of the 5 factor model that were quite distinct from the relationships obtained for traditional measures of antisocial personality disorder and psychopathy. However, concerns are raised with respect to a reliance on reverse-coded items for the assessment of components of psychopathy.

Keywords: 5-factor model, *DSM-5*, psychopathy, reverse-keyed

The Psychopathy Checklist (PCL; Hare, 1980), and its subsequent revision (i.e., PCL-R; Hare, 2003), has provided the predominant measure and model of psychopathy (Hare, Neumann, & Widiger, 2012). Alternative models and measures of psychopathy though have recently been developed that have broadened the conceptualization and assessment of psychopathy beyond the PCL-R to include, or at least place greater emphasis on, such constructs as fearlessness (Lilienfeld & Andrews, 1996), boldness (Patrick, Fowles, & Krueger, 2009), and invulnerability (Lynam et al., 2011). In fact, Section III of the fifth edition of the American Psychiatric Association's (APA) *Diagnostic and Statistical Manual of Mental Disorders (DSM-5; APA, 2013)* includes a psychopathy specifier for the diagnosis of antisocial personality disorder (ASPD) that is modeled after these more recently developed conceptualizations of psychopathy. The purpose of the current study was fourfold: (a) to test empirically the convergence of three more recently developed conceptualizations of psychopathy; (b) to compare them with more traditional or historical measures; (c) to compare all of the models with respect to their relationship to the five-factor model; and (d) to suggest a caution or concern with respect to the use of reverse-keyed constructs, scales, and/or items for the assessment of components of psychopathy.

Perhaps the first significant example of a revised conceptualization of psychopathy was provided by the Psychopathy Personality Inventory (PPI; Lilienfeld & Andrews, 1996) and its subsequent revision, the Psychopathic Personality Inventory–Revised

(PPI-R; Lilienfeld & Widows, 2005). Lilienfeld and Andrews (1996) had suggested that additional personality traits, beyond those assessed by the PCL-R, may warrant inclusion, such as fearlessness. Factor analyses of the PPI and/or PPI-R scales have consistently identified two factors: fearless-dominance and impulsivity-antisociality (Lilienfeld & Widows, 2005). It was initially suggested that the two factors of the PPI-R aligned with the two factors commonly obtained for the PCL-R (Benning et al., 2003, 2005; although see an alternative factor structure by Neumann et al., 2008), but it eventually became apparent that although PPI-R impulsive-antisociality aligns well with the second factor of the PCL-R, PPI-R fearless-dominance is not so strongly aligned with the first factor. In fact, as indicated by Malterer, Lilienfeld, Neumann, and Newman (2010), across three independent data collections, the correlations between the respective PCL-R and PPI-R factors “ranged from .15 to .24, accounting for only 2% to 5% of shared variance” (p. 11).

However, finding that PPI-R fearless-dominance does not align closely with the first factor of the PCL-R does not necessarily mean the PPI-R is providing an inaccurate or invalid assessment of psychopathy (Malterer et al., 2010). It simply means that it is providing a different assessment of psychopathy, as originally intended by Lilienfeld and Andrews (1996). A longstanding concern with respect to the PCL-R has been the lack of a representation of additional constructs, such as low anxiousness (Brinkley, Newman, Widiger, & Lynam, 2004). A potential strength of the PPI-R is perhaps then its deviation from the PCL-R through the inclusion of (for instance) the Fearlessness scale.

More recently, additional new self-report measures and models of psychopathy have also been developed that converge in important respects with the PPI-R. One is the Triarchic Psychopathy Measure (TriPM; Patrick et al., 2009) that assesses three constructs considered to be essential to the understanding of psychopathy: boldness, meanness, and disinhibition. Boldness captures the traits

This article was published Online First June 16, 2014.

Cristina Crego and Thomas A. Widiger, Department of Psychology, University of Kentucky.

Correspondence concerning this article should be addressed to Cristina Crego, Psychology Department, University of Kentucky, 115 Kastle Hall, Lexington, KY 40506-0044. E-mail: cmpi222@g.uky.edu

of charm, dominance, self-assurance, and persuasiveness (Patrick et al., 2009) and relates strongly to PPI-R fearless-dominance, conceptually and empirically (Sellbom & Phillips, 2013; Stanley, Wygant, & Sellbom, 2013).

Another recently developed measure and model of psychopathy is provided by the Elemental Psychopathy Assessment (EPA; Lynam et al., 2011). The EPA includes 18 scales, each conceptualized as a psychopathic variant of a five-factor model (FFM) facet (obtained from the FFM structure developed by McCrae & Costa, 2003). Few, Miller, and Lynam (2013) factor analyzed the 18 EPA scales in a sample of college students to yield four higher order factors of antagonism, narcissism, disinhibition, and emotional stability. Of particular importance to the current study is the emotional stability factor, which includes such EPA scales as Invulnerability, Unconcern, Self-Contentment, and Self-Assurance. Few et al. reported that the emotional stability converged strongly with PPI-R fearless-dominance.

As noted earlier, included within Section III of *DSM-5* for “emerging measures and models” (APA, 2013, p. 729) is a 5-domain, 25-trait model, the assessment of which is provided by the Personality Inventory for *DSM-5* (PID-5; Krueger, Derringer, Markon, Watson, & Skodol, 2012). Six traits from the PID-5 were initially selected for ASPD (APA, 2012): manipulateness, callousness, and hostility (from the domain of antagonism) and risk taking, impulsivity, and irresponsibility (from disinhibition). This set of traits appears to cover well the *Diagnostic and Statistical Manual of Mental Disorders*, fourth edition, text revision (*DSM-IV-TR*) criteria for ASPD but it does not represent well the additional traits of fearlessness, dominance, boldness, invulnerability, unconcern, and self-assurance included within the PPI-R, TriPM, and EPA models. Three additional PID-5 traits though were subsequently provided as potential specifiers for psychopathy; more specifically, low anxiousness, low social withdrawal, and high attention-seeking (APA, 2013). “High attention-seeking and low withdrawal capture the social potency (assertive/dominant) component of psychopathy, whereas low anxiousness captures the stress immunity (emotional stability/resilience) component” (APA, 2013, p. 765).

A potential concern, however, with respect to the PID-5 assessment of fearless-dominance and boldness, is the reliance in large part on scales assessing traits that are opposite to these respective psychopathy constructs. Strickland, Drislane, Lucy, Krueger, and Patrick (2013) reported significant negative correlations of TriPM boldness with PID-5 social withdrawal in a sample of students and community residents. However, it is unclear whether the optimal approach for the assessment of boldness (or fearlessness) would be to infer their presence on the basis of low scores on social withdrawal (or anxiousness). Persons who are relatively high in social withdrawal will have low scores in boldness, but persons with low scores on social withdrawal will not necessarily obtain high scores on boldness.

This concern relates more generally to a potential limitation with the use of reverse-keyed items in personality assessment. The inclusion of reverse-keyed items has been a longstanding tradition in personality assessment, in large part to address a potential response style of acquiescence and counteracquiescence (Podsakoff, MacKenzie, & Podsakoff, 2012). However, there is a growing literature to suggest that reverse-worded (or reverse-keyed) items perform consistently worse, if not poorly, relative to posi-

tively worded items (Woods, 2006). This finding has been demonstrated for measures of loneliness (Ebesutani et al., 2012), depression (Stansbury, Ried, & Velozo, 2006), worry (Muris, Meesters, and Gobel (2001), phobia (Olatunji et al., 2009), self-esteem (Lindwall et al., 2012), and social anxiety (Rodebaugh, Woods, & Heimberg, 2007). The reasons are not yet entirely clear, but one common explanation is that not endorsing the presence of a trait (e.g., responding negatively to the item, *I am a socially confident person*) does not necessarily indicate the presence of the opposite trait (*I am a socially anxious person*).

In sum, the purpose of the current study was to compare and contrast the PPI-R, TriPM, EPA, and PID-5 models and assessments of psychopathy in four respects. First, the PPI-R, TriPM, EPA, and PID-5 assessments of psychopathy are related directly to one another, determining empirically the convergence and divergence of their various components. The current study also includes the Personality Diagnostic Questionnaire-4 (Bagby & Farvolden, 2004), a measure of *DSM-IV-TR* ASPD, and the Self-Report Psychopathy Scale-III (SRP-III; Paulhus, Neumann, & Hare, in press). The SRP was developed to assess psychopathy as it was conceptualized by the PCL (Hare, 1985). The inclusion of the PDQ-4 and SRP-III allows for an empirical test of the extent to which the components of psychopathy assessed by the PPI-R, TriPM, EPA, and PID-5 are not only shared among these four measures but are also relatively unique to them.

The current study also includes a measure of the FFM. The FFM has long been useful in comparing and contrasting different traits (Goldberg, 1993), different personality disorders (Lynam & Widiger, 2001), and even different measures of the same personality disorder (Widiger, Costa, Gore, & Crego, 2013). Poy, Seggara, Esteller, López, and Moltó (2014), for instance, compared effectively subscales of the TriPM with respect to their relationship to FFM domains. A comparison of the PPI-R, TriPM, EPA, PID-5, PDQ-4, and SRP-III with respect to their relationship to the FFM might be particularly useful, as *DSM-IV-TR* ASPD and SRP-III are predicted to be confined largely to the domains of antagonism and low conscientiousness (Lynam & Widiger, 2007), whereas PPI-R fearless-dominance, TriPM boldness, and EPA emotional stability are predicted to be confined specifically to low neuroticism and/or high extraversion (Lynam et al., 2011; Patrick et al., 2009; Poy et al., 2014), representing quite distinct domains of personality. This would also help explain why the *DSM-5* dimensional trait model has difficulty representing these components of psychopathy because it does not include any scales assessing maladaptive or extreme variants of low neuroticism or high extraversion, being confined to traits concerning high neuroticism (i.e., high negative affectivity) and low extraversion (i.e., detachment).

Finally, the current study also explores the relative validity of assessing psychopathic constructs using reverse-worded scales and items. The current study focuses in particular on PID-5 because two of its three psychopathy specifiers are reverse-keyed scales. Attention is also given though to reverse-keyed items within the PPI-R, TriPM, and EPA, indicating that the issue is not unique to the PID-5.

Method

Participants

In Sample 1, participants were first deleted if they had not adequately completed at least 80% of each of the administered questionnaires (i.e., 66 potential participants). In addition, 18 participants with elevated scores on the validity scale were also removed. After these deletions, sample 1 consisted of 280 community adults with 175 females and 105 males. Participants had a mean age of 33 with a standard deviation of 11.3. For ethnicity, 79% were White/Caucasian, 8% Black/African American, 5% were Asian, 4% were Hispanic/Latino, 1.1% were American Indian or Alaskan Native, .7% were Native Hawaiian or Pacific Islander, and 3% were other (1 person did not respond). For marital status, 45% were single, 34% were married, 14% were cohabiting, 5% were divorced, and less than 1.0% were widowed (4 individuals did not respond). Almost one third (31%) of the participants in this sample were currently or had received mental health treatment and 9% were currently receiving psychotropic medication.

In Sample 2, participants were also first deleted if they had not adequately completed at least 80% of each of the administered questionnaires (i.e., 41 potential participants). In addition, 15 participants with elevated scores on the validity scale were also removed. After these deletions, Sample 2 consisted of 199 community adults with 124 females and 73 males (2 individuals did not respond). Participants had a mean age of 35.3 with a standard deviation of 12.4. For ethnicity, 76% were White/Caucasian, 8% Black/African American, 7% Asian, 6% Hispanic/Latino, 0.5% were American Indian or Alaskan Native, 0.5% Native Hawaiian or Pacific Islander, and 2.0% were other. For marital status, 35% were single, 34% were married, 16% were cohabiting, 14% were divorced, and 1.5% were widowed. In Sample 2, 35% of the participants were currently receiving or had received mental health treatment and 10% were taking psychotropic medication at the time of the data collection.

For both data collections, some participants failed to respond to a few scattered items. These missing data were imputed using the expectation maximization (EM) procedure, which has been shown to produce more accurate estimates of population parameters than other methods, such as deletion of missing cases or mean substitution (Enders, 2006).

Materials

Elemental Psychopathy Assessment (EPA; Lynam et al., 2011). Samples 1 and 2: The EPA is a 178-item self-report questionnaire designed to assess psychopathy from the perspective of the FFM. The EPA has 18 nine item subscales which can be used to compute four higher order scales (Antagonism, Emotional Stability, Disinhibition, and Narcissism). Each of these scales contains 45, 27, 54, and 36-items respectively. All items are answered on a 5-point scale ranging from *strongly disagree* to *strongly agree*. Cronbach's alpha for the four higher order scales were .95, .94, .95, and .88, respectively.

Personality Inventory for DSM-5 (PID-5; Krueger et al., 2012). Samples 1 and 2: The PID-5 is a 200-item questionnaire designed to assess the DSM-5 dimensional trait model. Using a

4-point Likert scale (from *very false or often false* to *very true or often true*) participants rate how well the statements describe them. Sample 1 and 2 included the 59 PID-5 items pertaining to the assessment of manipulateness (5 items), deceitfulness (10 items), hostility (10 items), callousness (14 items), irresponsibility (7 items), impulsivity (6 items), and risk taking (14 items). In the current study, these scales were summed to yield higher order scales of Antagonism and Disinhibition. Study 2 included the scales listed above with the addition of Anxiousness (9 items), Withdrawal (10 items) and Attention-Seeking (8 items). Cronbach's alpha was .96 for Antagonism, .94 for Disinhibition, and .90 for the Psychopathy Specifier total score. Cronbach's alpha for the three scales within the Psychopathy Specifier were .94 for Anxiousness, .95 for Withdrawal, and .95 for Attention Seeking.

Triarchic Psychopathy Measure (TriPM; Patrick et al., 2009). Samples 1 and 2: The TriPM is a 58-item self-report questionnaire of the Triarchic conceptualization of psychopathy. It consists of three scales: Boldness (19 items), Meanness (19 items), and Disinhibition (20 items) and is scored using a 4-point Likert scale ranging from *mostly false to true*. Cronbach's alpha for these three scales were .87, .93, and .91, respectively.

Psychopathic Personality Inventory-Short Form (PPI-SF; Lilienfeld & Widows, 2005). Samples 1 and 2: The PPI-SF is a 56-item self-report questionnaire. This measure is a subset of items from the full PPI-R measure. The PPI-SF consists of 8 subscales, each of which consists of 7 items. These 8 subscales can be used to compute the three higher order scales of the PPI: Impulsive-Antisociality (28 items), Fearless-Dominance (21 items), and Cold-heartedness (7 items). The PPI-SF items are scored using a 4-point Likert scale ranging from *mostly false to true*. Cronbach's alpha for these three scales were .91, .87, and .83, respectively.

Self-Report Psychopathy Scale: Version III (SRP-III; Paulhus et al., in press). Samples 1 and 2: The SRP-III is a 64-item self-report questionnaire designed to assess psychopathy. This measure can also be broken into four 16-item subscales: Interpersonal Manipulation, Callous Affect, Erratic Life Style, and Antisocial Behavior. Items are answered on a 5-point scale ranging from *strongly disagree* to *strongly agree*. Cronbach's alpha for these four scales were .89, .87, .85, and .85, respectively.

Personality Diagnostic Questionnaire for DSM-IV (PDQ-4; Bagby & Farvolden, 2004). Sample 2: The PDQ-4 is a 99-item, self-report, forced-choice (yes or no) questionnaire designed to assess the 10 PDs in DSM-IV. This study included only the 9 items designed to assess ASPD. Cronbach's alpha in the current study was .75.

Five Factor Form (FFF; Rojas & Widiger, 2014). Samples 1 and 2: The FFF is a one-page rating form, consisting of 30 items, with six items for each domain and one item for each facet of the five factor model. FFF items are coded on a 5-point scale, where scores of 1 and 5 indicate a maladaptively extreme variant of each respective pole, scores of 2 and 4 are within the more normal range (albeit in some cases still problematic), and a score of 3 indicates that the person is neither high nor low. Scores of 1, 2, 4, and 5 are provided explicit anchors for each facet. For example, for the facet of trust, 1 = *cynical, suspicious*, 2 = *cautious, skeptical*, 3 = *neutral*, 4 = *trusting*, and 5 = *gullible*. Cronbach's alpha for the five domain scales were .79 for Neuroticism, .72 for Extraversion, .64 for Openness, .74 for Agreeableness, and .75 for Conscientiousness.

Crime and Analogous Behavior Scale (CAB). Samples 1 and 2: The CAB is a 25-item self-report inventory consisting of items assessing a variety of externalizing behaviors, including substance use and antisocial behavior. Included in this study were the items assessing for marijuana use, theft, driving under the influence, arrests, and fights. These items were included to document the criminal history of the participants.

Validity Scale. Samples 1 and 2: A five-item validity scale was administered. Each item describes a behavior that was very unlikely to be true (e.g., *I am currently in the Guinness Book of World Records* and, reverse coded, *I have used a computer in the past 2 years*), thus an endorsement suggests the individual is not attending to the item's content. The items are rated on a 5-point Likert scale whose values range from *strongly disagree* to *strongly agree*. These items were dispersed among the items within the other measures.

Procedure

The self-report measures were administered on MTurk, an online service whereby requesters recruit persons to complete tasks for financial compensation (Paolacci, Chandler, & Ipeirotis, 2010). Recent research has indicated that MTurk provides more demographically diverse samples than is obtained through traditional college samples. Despite the rapid recruitment and less costly compensation, studies have also found that the data quality is equal to (if not more valid) than the data obtained through traditional methods (Buhrmester, Kwang, & Gosling, 2011; Paolacci et al., 2010; Shapiro, Chandler, & Mueller, 2013). This is attributable in part to the fact that one can confine data collection to persons who have previously received high scores for quality of participation. Consistent with other studies on MTurk, Sample 1 participants received \$2.00 for their time; Sample 2 received \$2.50 (the second data collection included additional measures).

Potential participants were informed that this study was seeking persons who had "broken the law." Persons with a criminal history were sampled in order to obtain participants more likely to meet criteria for ASPD and/or have psychopathic personality traits. Consistent with the instruction, 74% of the sample stated that they had been arrested, 75% had been in a physical fight since they were 18 years old, 89% indicated an arrest history for driving under the influence, and 76% indicated stealing an item worth more than 50 dollars (see Table 1). Only 34% of the participants indicated that they had used marijuana. Sample 1 was administered the demographics questionnaire, EPA, PID-5 ASPD trait items, TriPM, PPI-SF, SRP, FFF, and CAB, in that order. Sample 2 included the demographics questionnaire, EPA, PID-5 ASPD and psychopathy specifier trait items, TriPM, PPI-SF, SRP, PDQ-4 ASPD scale, FFF, and CAB, in that order. Participants did not need to complete the entire set of measures at one time, but it was estimated that study completion took about two hours for each data collection.

Results

Convergent and Discriminant Validity Among Measures of Psychopathy and ASPD

Table 2 provides the correlations among the PPI-R, TriPM, EPA, SRP-III, and PID-5 ASPD scales from Sample 1. Because

Table 1
Prevalence of Criminal Acts

Item description	Number who endorsed item	Percent of participants
Have you ever smoked marijuana?		
Yes	162	33.8%
No	314	65.6%
Have you ever been arrested for driving under the influence?		
Yes	425	89.5%
No	50	10.5%
Have you ever taken something not belonging to you worth more than \$50?		
Yes	362	75.6%
No	114	23.8%
Have you ever been in a physical fight since the age of 18?		
Yes	360	75.2%
No	116	24.2%
Have you ever been arrested (other than DUI)?		
Yes	353	73.7%
No	122	25.5%

Note. DUI = driving under the influence.

of the sample size, correlations as low as .25 were statistically significant at alpha less than .001. Therefore, a conservative threshold for interpretation was used. Large effect size correlations are bolded (.50 or greater) and moderate effect size relationships are italicized (.30 to .49; Cohen, 1992). Statistically significant but weak effect size relationships are not identified.

Antagonism scales. It is evident from Table 2 that there is considerable convergence among the PPI-R Cold-heartedness, TriPM Meanness, EPA Antagonism, SRP-III Callous Affect, SRP-III Interpersonal Manipulation, and PID-5 Antagonism scales. All but two of these scales obtained large effect size relationships with each one of the other respective scales (the two exceptions were the moderate effect size relationships of PPI-R Cold-heartedness with PID-5 Antagonism and SRP-III Interpersonal Manipulation). Averaged convergent validity ranged from .60 (for PPI-R Cold-heartedness) to .77 (TriPM Meanness); averaged discriminant validity ranged from .27 (PPI-R Cold-heartedness) to .47 (PID-5 Antagonism). With respect to the relatively weaker discriminant validity obtained for the PID-5, it may be worth noting that PID-5 Antagonism converged as highly with the impulsivity and disinhibition scales from the PPI-R, TriPM, EPA, SRP-III, and even with the PID-5 (ranging from .63 to .77) as it did with the other antagonism scales.

Table 3 provides the same convergent coefficients from Sample 2. It is evident that all of the convergent relationships among the PPI-R Cold-heartedness, TriPM Meanness, EPA Antagonism, SRP-III Callous Affect, SRP-III Interpersonal Manipulation, and PID-5 Antagonism scales were replicated within the second sample, including now as well a moderate to strong convergence with PDQ-4 ASPD. The correlations reported in Table 3 were correlated with the correlations in Table 2 (after *z* transformation). These correlations ranged from .97 (for

Table 2
Covariation of PPI-R, TriPM, EPA, SRP-III, and PID-5 Scales From Sample 1

	PPI-R scales			TriPM scales			EPA scales			SRP-III scales			PID-5		
	Impulsive antisociality	Fearless-Dominance	Cold-heartedness	Boldness	Meanness	Disinhibit	Antag	Emotional stability	Disinhibit	Narcissism	Interpers manip	Callous affect	Erratic lifestyle	Crim	Antag
PPI-R															
Fearless-Dominance	.20														
Cold-heartedness	.36	.16													
TriPM scales															
Boldness	.09	.84	.12												
Meanness	.75	.21	.65	.12											
Disinhibition	.80	.06	.26	−.06	.64										
EPA															
Antagonism	.73	.09	.63	.03	.84	.62									
Emotional stability	−.14	.74	.13	.77	.01	−.25	−.09								
Disinhibition	.83	.12	.32	.01	.64	.82	.64	−.27							
Narcissism	.48	.59	.15	.63	.43	.35	.39	.34	.39						
SRP-III															
Interpers manip	.75	.26	.42	.25	.72	.63	.77	.02	.62	.56					
Callous affect	.69	.26	.65	.17	.86	.54	.81	.11	.54	.42	.68				
Erratic lifestyle	.80	.46	.33	.33	.65	.71	.57	.06	.78	.53	.67	.64			
Criminal tendency	.61	.23	.33	.12	.61	.65	.52	.05	.55	.33	.55	.55	.58		
PID-5															
Antagonism	.78	.14	.47	.11	.83	.68	.81	−.12	.67	.55	.84	.73	.63	.54	
Disinhibition	.81	.26	.36	.13	.69	.81	.59	−.09	.80	.42	.62	.60	.77	.60	.72

Note. Bold = Large effect size; Italics = medium effect size (Cohen, 1992); $n = 280$. PID-5 Antagonism correlated .72 with PID-5 Disinhibition. PPI-R = Psychopathic Personality Inventory-Revised (PPI-R; Lilienfeld & Widows, 2005); TriPM = Triarchic Psychopathy Measure (Patrick et al., 2009); EPA = Elemental Psychopathy Assessment (Lynam et al., 2011); SRP-III = Self-Report Psychopathy Scale-III (Paulhus et al., in press); PID-5 = Personality Inventory for DSM-5 (Krueger et al., 2012); Antag = Antagonism; Disinhibit = Disinhibition; Interpers manip = Interpersonal manipulation; Crim = Criminal Tendencies.

Table 3
Covariation of PPI-R, TriPM, EPA, PDQ-4, and PID-5 Scales From Sample 2

	PPI-R scales			TriPM scales			EPA scales			SRP-III scales			PID-5 scales		
	Impulsive antisoc	Fearless dom	Cold heart	Boldness	Meanness	Disinhib	Antag	Emotional stability	Disinhib	Narcissism	Interpers manip	Callous affect	Erratic lifestyle	Crim	Antag
PPI-R															
Fearless-Dominance	.15														
Cold-heartedness	.37	.30													
TriPM															
Boldness	-.01	.82	.24												
Meanness	.72	.31	.61	.20											
Disinhibition	.85	-.04	.27	-.16	.68										
EPA															
Antagonism	.76	.16	.62	.04	.85	.69									
Emotional stability	-.19	.75	.23	.75	.08	-.32	-.03								
Disinhibition	.86	.07	.35	-.09	.70	.86	.72	-.29							
Narcissism	.43	.51	.24	.58	.48	.32	.43	.28	.41						
SRP-III															
Interpers manip	.76	.27	.50	.22	.77	.65	.82	.01	.68	.58					
Callous affect	.62	.38	.69	.26	.81	.51	.84	.20	.57	.44	.72				
Erratic lifestyle	.81	.34	.42	.20	.71	.73	.71	-.01	.83	.48	.77	.71			
Criminal tendency	.70	.24	.35	.12	.65	.74	.59	-.01	.66	.41	.61	.55	.65		
PID-5															
Antagonism	.77	.18	.48	.10	.81	.72	.84	-.05	.75	.60	.85	.72	.72	.63	
Disinhibition	.81	.36	.47	.18	.77	.72	.71	-.01	.84	.47	.68	.70	.84	.64	.75
Psychopathy specifiers	.20	-.65	.02	-.61	.08	.29	.27	.62	.21	-.36	.10	.10	.07	.05	-.02
PDQ-4	.68	.12	.31	.04	.54	.68	.58	-.11	.69	.29	.60	.50	.70	.58	.61

Note. Bold = Large effect size; Italics = medium effect size (Cohen, 1992); $n = 196$. PID-5 Antagonism correlated .75 with PID-5 Disinhibition. PPI-R = Psychopathic Personality Inventory-Revised (PPI-R; Lilienfeld & Widows, 2005); TriPM = Triarchic Psychopathy Measure (Patrick et al., 2009); EPA = Elemental Psychopathy Assessment (Lynam et al., 2011); SRP-III = Self-Report Psychopathy Scale-III (Paulhus et al., in press); PID-5 = Personality Inventory for DSM-5 (Krueger et al., 2012); Cold heart = Cold-heartedness; Impulsive antisoc = Impulsive antisociality; Fearless dom = Fearless-Dominance; Antag = Antagonism; Disinhib = Disinhibition; Interpers manip = Interpersonal manipulation; Crim = Criminal tendencies; Psych spec = Psychopathy specifiers.

PPI-R Cold-heartedness) to .99 for PID-5 Antagonism. The findings from Sample 2 also replicated the large effect size relationship of PID-5 Antagonism with the impulsivity and disinhibition scales from the PPI-R, TriPM, EPA, SRP-III, and PID-5 (ranging from .72 to .77).

Disinhibition scales. It is also evident from Table 2 that there is a comparably high convergence among the PPI-R Impulsive Antisociality, TriPM Disinhibition, EPA Disinhibition, SRP-III Erratic Lifestyle, and PID-5 Disinhibition scales, with all of them achieving large effect size relationships (ranging from .71 to .82). Averaged convergent validity ranged from .76 (for PPI-R Impulsive Antisociality) to .81 (EPA Disinhibition); averaged discriminant validity ranged from .21 (PPI-R Impulsive Antisociality) to .48 (PID-5 Disinhibition). With respect to the relatively weaker discriminant validity obtained for the PID-5, it is again worth noting that PID-5 Disinhibition obtained comparably high correlations of .59 to .69 with the PPI-R, TriPM, EPA SRP-III, and PID-5 antagonism scales. These findings were all replicated in Sample 2, with the correlations of correlations ranging from .94 (for TriPM Disinhibition) to .99 (PPI-R Impulsive Antisociality).

Fearless-Dominance, boldness, and emotional stability scales. Of most importance for the current study, it is further evident from Table 2 that there was a comparably strong convergence among the PPI-R Fearless-Dominance, TriPM Boldness, and EPA Emotional Stability scales in Sample 1, all of whom obtained large effect size relationships with one another. Averaged convergent validity ranged from .79 (PPI-R Fearless-Dominance) to .81 (EPA Emotional Stability), with averaged discriminant validity ranging from .13 (EPA Emotional Stability) to .24 (PPI-R Fearless-Dominance). All three of these scales typically obtained nonexistent to weak effect size relationships with the SRP-III scales. Neither PID-5 Antagonism nor PID-5 Disinhibition correlated with PPI-R Fearless-Dominance, TriPM Boldness, or EPA Emotional Stability. These findings were all well replicated in Sample 2, including an absence of a relationship of PPI-R Fearless-Dominance, TriPM Boldness, and EPA Emotional Stability with PDQ-4 ASPD, PID-5 Antagonism, and PID-5 Disinhibition.

Psychopathy specifier scales. Sample 2 included the PID-5 Psychopathy Specifier scales. It is evident from Table 3 that the PID-5 Psychopathy Specifier total score obtained good convergent validity with the PPI-R Fearless-Dominance, TriPM Boldness, and EPA Emotional Stability scales, and good discriminant validity with respect to its relationship with the other components of psychopathy and ASPD.

Table 4, however, provides the correlations for the three PID-5 Psychopathy Specifier subscales with the measures of psychopathy and ASPD. It is evident from this table that the strong results obtained by the PID-5 Psychopathy Specifier total score was driven largely by PID-5 Anxiousness. PID-5 Social Withdrawal correlated only $-.27$ with PPI-R Fearless-Dominance and only $-.35$ with TriPM Boldness. These correlations are appreciably lower than the correlation of .82 between PPI-R Fearless-Dominance and TriPM Boldness. PID-5 Social Withdrawal also correlated as highly with PPI-R Self-Centered Impulsivity and TriPM Disinhibition. PID-5 Social Withdrawal correlated only $-.30$ with EPA Emotional Stability, much lower than it correlated with EPA Antagonism. The

Table 4

Covariation of Psychopathy Specifiers With Psychopathy and Antisocial Personality Disorder

PID-5 psychopathy specifiers	Anxiousness	Withdrawal	Attention seeking
PPI-R			
Impulsive antisociality	.25	.44	.40
Fearless-Dominance	-.65	-.27	.41
Cold-heartedness	-.20	.28	.08
TriPM			
Boldness	-.57	-.35	.31
Meanness	.02	.43	.39
Disinhibition	.35	.47	.33
EPA			
Antagonism	.15	.60	.30
Emotional stability	-.81	-.30	.12
Disinhibition	.27	.41	.36
Narcissism	-.09	-.09	.65
SRP-III			
Interpersonal manipulation	.13	.38	.41
Callous affect	-.06	.45	.27
Erratic lifestyle	.06	.35	.35
Criminal tendency	.05	.29	.31
PID-5			
Antagonism	.18	.41	.47
Disinhibition	.04	.27	.45
PDQ-4	.10	.32	.18

Note. Bold = Large effect size; Italics = medium effect size (Cohen, 1992); $n = 196$. PPI-R = Psychopathic Personality Inventory-Revised (PPI-R; Lilienfeld & Widows, 2005); TriPM = Triarchic Psychopathy Measure (Patrick et al., 2009); EPA = Elemental Psychopathy Assessment (Lynam et al., 2011); SRP-III = Self-Report Psychopathy Scale-III (Paulhus et al., in press); PID-5 = Personality Inventory for DSM-5 (Krueger et al., 2012); PDQ-4 = Personality Diagnostic Questionnaire (Bagby & Farvolden, 2004).

lower correlations obtained for PID-5 Social Withdrawal could reflect in part its lower number of items but, as noted below, this potential handicap does not hinder the convergence obtained for PID-5 Anxiousness.

PID-5 Attention-Seeking correlated .41 with PPI-R Fearless-Dominance, but this is again appreciably lower than the correlation of .82 for PPI-R Fearless-Dominance with TriPM Boldness. In addition, PID-5 Attention-Seeking correlated just as highly with PPI-R Self-Centered Impulsivity (.40). PID Attention-Seeking correlated only .31 with TriPM Boldness, and just as highly as it did with TriPM Meanness (.39) and Disinhibition (.33). PID Attention-Seeking correlated only .12 with EPA Emotional Stability, and correlated substantially with EPA Narcissism. The lower correlations obtained for PID-5 Attention-Seeking could reflect in part its lower number of items but, as noted below, this potential handicap does not hinder the convergence obtained for PID-5 Anxiousness.

PID-5 Anxiousness did obtain large effect size relationships of $-.65$ and $-.57$ with PPI-R Fearless-Dominance and TriPM Boldness (respectively). Nevertheless, these correlations were still significantly lower than the .82 correlation of PPI-R Fearless-Dominance with TriPM Boldness ($t = 4.83$ and 7.11 , respectively, $df = 195$, $p < .05$). PID-5 Anxiousness, however, correlated very highly with EPA Emotional Stability ($-.82$), and as highly as Emotional Stability correlated with PPI-R Fearless-Dominance (.75) and TriPM Boldness (.75).

Convergence of Psychopathy and ASPD Scales With FFM Domains

Table 5 provides the correlations of the psychopathy and ASPD scales with the five domains of the FFM. The correlations obtained from Sample 1 were correlated with the correlations obtained from Sample 2 (after *z* transformation). These correlations ranged from .91 (for the correlations with FFF Openness) to .99 (for the correlations with FFF Neuroticism). To conserve space, the data from Samples 1 and 2 were collapsed when both instruments were administered.

It is evident from Table 5 that PPI-R Cold-heartedness, TriPM Meanness, EPA Antagonism, SRP-II Callous Affect, SRP-II Interpersonal Manipulation, and PID-5 Antagonism all converged primarily with FFM antagonism. PDQ-4 ASPD correlated about equally with antagonism and low conscientiousness. Most importantly with respect to the focus of the current study, their correlations with FFM neuroticism and extraversion were nonexistent to weak. If there was a statistically significant correlation it was in the direction of high neuroticism and low extraversion.

It is also evident from Table 5 that PPI-R Impulsive Antisociality, TriPM Disinhibition, EPA Disinhibition, SRP-II Erratic Lifestyle, and PID-5 Disinhibition scales converged with FFM low conscientiousness, but often as well with FFM antagonism. Most importantly with respect to the focus of the current study, the correlations with FFM neuroticism and extraversion were again relatively modest. PPI-R Impulsive Antisociality, TriPM Disinhibition, and EPA Disinhibition obtained moderate effect size relationships with neuroticism, but the correlations were positive.

There were no significant correlations of any one of these scales with extraversion.

In stark contrast to the above findings, PPI-R Fearless-Dominance, TriPM Boldness, and EPA Emotional Stability all correlated negatively with neuroticism and positively with extraversion, consistent with expectations. PPI-R Fearless-Dominance, TriPM Boldness, and EPA Emotional Stability failed to obtain any meaningful relationship with either antagonism or conscientiousness.

Consistent with PPI-R Fearless-Dominance, TriPM Boldness, and EPA Emotional Stability, the PID-5 Psychopathy Specifier total score correlated with both neuroticism and extraversion, and not with any other FFM domain. However, these results are not consistent across its subscales. PID-5 Anxiousness correlated substantially and specifically with FFM neuroticism. PID-5 Social Withdrawal correlated significantly negatively with FFM extraversion, but it also correlated with low conscientiousness. PID-5 Attention-Seeking also correlated with extraversion, but as highly as it did with antagonism.

Reverse-Keyed Scales and Items

PID-5 Anxiousness obtained large effect size relationships with PPI-R Fearless-Dominance, TriPM Boldness, and EPA Emotional Stability. Nevertheless, an additional focus of the current study is a potential limitation of reverse-keyed scales and items.

To assess the relative validity of the negatively keyed assessment of fearlessness by PID-5 anxiousness, it is important to recognize that the PPI-R, TriPM, and EPA also include reverse-

Table 5
Convergence of Psychopathy and ASPD Scales With FFM Domains

	Five Factor Domains				
	Neuroticism	Extraversion	Openness	Agreeableness	Conscientiousness
PPI-R – Impulsive antisociality ^a	.31	.05	.18	–.43	–.41
PPI-R – Fearless-Dominance ^a	–.45	.44	.25	–.19	.03
PPI-R – Cold-heartedness ^a	–.07	–.13	–.10	–.49	–.20
TriPM – Boldness ^a	–.47	.45	.25	–.18	.13
TriPM – Meanness ^a	.12	–.02	.01	–.55	–.30
TriPM – Disinhibition ^a	.37	–.02	.12	–.35	–.49
EPA – Antagonism ^a	.19	–.17	–.03	–.61	–.33
EPA – Emotional stability ^a	–.64	.31	.13	–.11	.20
EPA – Disinhibition ^a	.36	.01	.17	–.41	–.54
EPA – Narcissism ^a	–.08	.38	.26	–.36	–.03
SRP-III – Interpersonal manipulation ^a	.15	.03	.14	–.57	–.29
SRP-III – Callous affect ^a	.05	–.09	–.05	–.55	–.25
SRP-III – Erratic lifestyle ^a	.18	.13	.25	–.43	–.42
SRP-III – Criminal tendencies ^a	.16	.09	.04	–.33	–.28
PDQ-4 ASPD ^b	.27	.03	.10	–.44	–.49
PID-5 – Antagonism ^a	.21	–.02	.06	–.57	–.33
PID-5 – Disinhibition ^a	.13	.08	.18	–.34	–.38
PID-5 Psychopathy specifier ^b	.53	–.49	–.20	.02	–.24
Anxiousness ^b	.62	–.15	–.05	.06	–.19
Withdrawal ^b	.32	–.46	–.11	–.27	–.35
Attention seeking ^b	–.09	.39	.28	–.31	–.11

Note. Bold = Large effect size; Italics = medium effect size (Cohen, 1992). PPI-R = Psychopathic Personality Inventory-Revised (PPI-R; Lilienfeld & Widows, 2005); TriPM = Triarchic Psychopathy Measure (Patrick et al., 2009); EPA = Elemental Psychopathy Assessment (Lynam et al., 2011); SRP-III = Self-Report Psychopathy Scale-III (Paulhus et al., in press); PDQ-4 ASPD = Personality Diagnostic Questionnaire-4 Antisocial Personality Disorder (Bagby & Farvolden, 2004); PID-5 = Personality Inventory for DSM-5 (Krueger et al., 2012).

^a *n* = 476. ^b *n* = 196.

keyed items (PID-5 Anxiousness itself includes one reverse-keyed item). Table 6 provides the correlations of PID-5 Anxiousness (with the reverse-keyed item removed) with PPI-R Fearless-Dominance, TriPM Boldness, and EPA Emotional Stability, the latter three scales in two versions: (a) including only the positively keyed items (e.g., from the EPA: *It takes a lot to make me nervous and anxious*) and (b) including only the negative-keyed items (e.g., from the EPA: *I frequently feel tense and jittery*). PID-5 Anxiousness correlated more significantly with the versions of the PPI-R ($t = 9.25$) and EPA ($t = 5.67$, $df = 193$, $p < .05$) that were confined to the reverse-keyed items (no difference was found with respect to the TriPM Boldness). The finding was particularly strong for PPI-R Fearless-Dominance. PID-5 Anxiousness correlated $-.75$ with the PPI-R Fearless-Dominance when the latter was confined to items keyed in the same direction as the PID-5, and only $-.33$ when it was confined to Fearless-Dominance items keyed in the opposite direction.

PPI-R Fearless-Dominance and TriPM Boldness are not simply reverse-keyed anxiousness. PPI-R Fearless-Dominance and TriPM Boldness also includes aspects of extraversion (see Table 5). The effect of reverse-keyed versus positively keyed items are more difficult to interpret when the constructs are not truly opposite to one another. TriPM Boldness though does not include subscales. The subscales of the PPI-R and EPA that are closest to being direct opposites of anxiousness are PPI-R Fearlessness and EPA Invulnerability. It was not possible in this case to compare alternative versions of these scales (i.e., positively and negative keyed) because of the very limited number of items (e.g., a negatively keyed version could correlate more highly with PID-5 Anxiousness due largely to having more items). Therefore, for these analyses a comparison was made with respect to the average of the respective item correlations.

The average correlation of the two negatively keyed PPI-R Fearlessness items with PID-5 Anxiousness was .30; the average

correlation for the 5 items not keyed negatively was not nearly as large: .15. The average correlation of the three negatively keyed EPA Invulnerability items with PID-5 Anxiousness was .55; the average correlation with the 6 items not keyed negatively was .38.

A further demonstration of the relatively weaker psychometric properties of reverse-keyed items can be made irrespective of the PID-5. For example, as indicated in Table 6, PPI-R Fearless-Dominance positively keyed items correlated more highly with TriPM Boldness positively keyed items (.70) than it did with TriPM Boldness negatively keyed items ($-.53$; $t = 3.70$, $df = 193$, $p < .05$). Similarly, PPI-R Fearless-Dominance positively keyed items correlated more highly with the EPA Emotional Stability positively keyed items (.56), than it did with EPA Emotional Stability negatively keyed items ($-.38$; $t = 3.25$, $df = 195$, $p < .05$). Finally, EPA Emotional Stability positively keyed items correlated more highly with TriPM Boldness positively keyed items (.77) than they did with the TriPM Boldness negatively keyed items (.56; $t = 5.50$, $p < .05$). This pattern of covariation was not always found (e.g., EPA Emotional Stability items keyed negatively did not correlate more highly with TriPM Boldness items keyed negatively than they did with the TriPM Boldness items keyed positively), which may reflect in part that the constructs are not entirely congruent. However, it is evident that subscales keyed in the same direction were typically more highly correlated.

It is suggested that PID-5 Anxiousness is able to make distinctions with respect to levels of anxiousness, but not with respect to different levels of fearlessness. This hypothesis can also be explored in the current study through a unique feature of the FFF. The FFF assesses for maladaptive variants of both poles of each item (Rojas & Widiger, 2014). Scores of 4 and 5 on FFF Anxiousness differentiate between being just wary versus being fearful, whereas scores of 2 and 1 differentiate between being relaxed and calm versus oblivious to signs of threat. Participants with

Table 6
Covariation of Positively and Negatively Keyed Subscales

Subscale	Number	PID-5 Anxiousness	PPI-R Fearless- Dominance		TriPM Boldness	
		Pos-keyed 8	Pos-keyed 11	Neg-keyed 10	Pos-keyed 10	Neg-keyed 9
PPI-R						
Fearless-Dominance						
Positively keyed	11	−.33				
Negatively keyed	10	−.75				
TriPM						
Boldness						
Positively keyed	10	−.45	.70	.61		
Negatively keyed	9	−.54	.53	.75		
EPA						
Emotional stability						
Positively keyed	15	−.67	.56	.71	.77	.56
Negatively keyed	12	−.83	.38	.80	.61	.63

Note. $n = 196$. PPI-R = Psychopathic Personality Inventory-Revised (PPI-R; Lilienfeld & Widows, 2005); TriPM = Triarchic Psychopathy Measure (Patrick et al., 2009); EPA = Elemental Psychopathy Assessment (Lynam et al., 2011); SRP-III = Self-Report Psychopathy Scale-III (Paulhus et al., in press); PID-5 = Personality Inventory for DSM-5 (Krueger et al., 2012).

scores of 1 and 2 were deleted from the study, and the remaining participants' scores were correlated with PID-5 Anxiousness ($r = .49, p < .001, df = 122$). Participants with scores of 4 and 5 were deleted, and the remaining participants' scores correlated only .03 with PID-5 Anxiousness (difference between them; $z = 3.15, p < .01, df = 219$). Similarly, scores of 4 and 5 on FFF Vulnerability distinguishes between being vulnerable versus being helpless and overwhelmed; whereas scores of 2 versus 1 distinguishes between being resilient versus feeling invincible or fearless. Participants with scores of 4 and 5 were deleted, and the remaining participants' scores were correlated with PPI-R Fearless-Dominance ($r = -.44, p < .001, df = 122$), when the latter was confined to only the positively keyed items. Participants with scores of 1 or 2 were deleted, and the remaining participants' scores correlated only $-.10$ with PPI-R Fearless-Dominance ($z = 2.80, p < .01, df = 224$).

Discussion

The PCL-R (Hare, 2003) has been the predominant measure of psychopathy for many years (Hare et al., 2012). Alternative models and self-report measures though have also been developed that have broadened the conceptualization and assessment of psychopathy to include such constructs as fearlessness, boldness, and invulnerability. In fact, Section III of *DSM-5* includes a psychopathy specifier for the diagnosis of ASPD that is modeled after one or more of these recently developed conceptualizations of psychopathy (APA, 2013).

The current study demonstrated good to excellent convergent (and discriminant) validity provided by the PPI-R, TriPM, and EPA. Relatively weak discriminant validity though was provided by PID-5 Disinhibition and Antagonism. PPI-R Fearless-Dominance, TriPM Boldness, and EPA Emotional Stability correlated substantially with one another and, most importantly, consistent with the view that these components of psychopathy are not well represented in ASPD (Sellbom & Phillips, 2013) or even traditional conceptualizations of psychopathy (Malterer et al., 2010), they did not correlate with the PDQ-4 ASPD, PID-5 Antagonism, PID-5 Disinhibition, or any scale from the SRP-III.

It is also evident from the current study that, consistent with expectations (Samuel & Widiger, 2008; Decuyper et al., 2009), PDQ-4 ASPD and even the SRP-III involve primarily aspects of antagonism and low conscientiousness. The PCL-R (Hare, 2003) does include a couple of items that are suggestive of low neuroticism and high extraversion (i.e., glib charm suggests low self-consciousness and need for stimulation suggests high excitement-seeking; Lynam & Widiger, 2007), but there is relatively little representation of this within the SRP-III. If there is a relationship with a domain of the FFM other than antagonism or low conscientiousness for either the PDQ-4 or the SRP-III, this relationship is relatively weak and it involves high neuroticism or low extraversion. In stark contrast, PPI-R Fearless-Dominance, TriPM Boldness, and EPA Emotional Stability fall largely outside of the domains of antagonism and low conscientiousness, involving instead a combination of low neuroticism and high extraversion (Lynam et al., 2011; Lynam & Widiger, 2007; Patrick et al., 2009; Poy et al., 2014).

It is then potentially difficult for the PID-5 to represent these components of psychopathy, as the PID-5 is confined to maladapt-

tive variants of high neuroticism (i.e., negative affectivity) and low extraversion (i.e., detachment). One potential way of circumventing the absence of the domains of low neuroticism and high extraversion is to score negatively the scales assessing traits that are high in neuroticism and introversion. For instance, it is proposed in *DSM-5* Section III to have low social withdrawal and low anxiousness (along with attention-seeking) as a means to assess for fearless-dominance and/or boldness.

The results of the current study though suggest that PID-5 Social Withdrawal and Attention-Seeking provide fairly weak proxy measures for the assessment of fearless-dominance, boldness, and/or emotional stability. Their correlations with scales that directly assess these constructs were appreciably lower than the correlations among the scales assessing these constructs, and were no larger than their correlations with quite different components of psychopathy (e.g., impulsive antisociality and disinhibition). PID-5 Attention-Seeking can be understood in part as a maladaptive variant of extraversion (Gore, Tomiatti, & Widiger, 2011) but it also includes aspects of antagonism (e.g., manipulateness, self-interestedness, and self-centeredness; Gore et al., 2011). In fact, it is placed within antagonism within the *DSM-5* dimensional trait model (APA, 2013; Krueger et al., 2012). Attention-seeking is a construct that appears to be more central to a histrionic personality disorder (the PID-5 Attention-Seeking scale was originally titled histrionism; Gore et al., 2011).

Social withdrawal is a trait that is specific to low extraversion and might then be understood as opposite to a social boldness (APA, 2013; McCrae & Costa, 2003). However, it was not related particularly strongly or specifically with fearless-dominance or boldness in the current study. Opposite to social withdrawal would be such traits as gregariousness, sociability, and affability (Pincus & Gurtman, 2006). Low withdrawal (keyed negatively) is said to "capture the social potency (assertive/dominant) of psychopathy" (APA, 2013, p. 265). However, constructs that are more clearly opposite to assertiveness or dominance would be such dependent personality traits as timidity, cowardly, or meekness, rather than social withdrawal (Pincus & Gurtman, 2006). However, the dimensional trait model does not include these traits, having no representation of maladaptive agreeableness (Widiger, Costa, & McCrae, 2013). Future research might also consider though the *DSM-5* trait of submissiveness (Strickland et al., 2013), which might be considered as opposite to dominance (McCrae & Costa, 2003; Pincus & Gurtman, 2006).

Unlike PID-5 Social Withdrawal and Attention-Seeking, PID-5 Anxiousness did correlate substantially with EPA Emotional Stability, PPI-R Fearless-Dominance, and TriPM Boldness, consistent with Strickland et al. (2013). This is not surprising as anxiousness can be understood as being opposite to feelings of fearlessness and invulnerability (Lynam & Widiger, 2007). However, the results of the current study also raise some cautions and concerns with respect to using a scale that is almost entirely reverse-worded for the assessment of a respective trait. Many personality scales, including most of those used in the current study, do include negatively keyed items to assess a respective personality trait. Negatively keyed items will correlate with positively keyed items, but a growing body of research is indicating that negatively keyed items will often perform less well than the positively keyed items (e.g., Ebesutani et al., 2012; Lindwall et al., 2012; Muris et al., 2001; Olatunji et al., 2009; Rodebaugh et al., 2007; Stansbury et

al., 2006). Consistent with this finding reported in other areas of personality assessment, the current study found that PID-5 Anxiousness was more strongly related to the reverse-keyed items from PPI-R Fearless-Dominance and EPA Emotional Stability than to the positively keyed items. This finding was also true when considering the specific scales of PPI-R Fearlessness and EPA Invulnerability. Finally, this was also evident with respect to the relationship among the PPI-R, TriPM, and EPA positively and negatively keyed items.

The reasons that negatively worded items may not provide as valid of an assessment as a positively worded item are not entirely clear. However, one potential explanation is simply that an absence of a trait that is opposite to another trait, does not necessarily imply the presence of the opposite trait. Persons who are maladaptively anxious will not be fearless (hence maladaptive anxiousness will correlate negatively with fearlessness) but persons who are not maladaptively anxious may simply be calm or relaxed without necessarily being fearless. Negatively keyed items are not without validity in the assessment of a respective construct and they may serve a useful purpose, such as addressing response style concerns (Podsakoff et al., 2012), but a reliance on reverse-worded items can lack the necessary fidelity to assess a respective construct.

Consider, for example, the Clinician Rating Form (CRF) developed by the DSM-5 Personality Disorders Work Group for the assessment of the dimensional trait model (APA, 2010). It is questionable whether clinicians could use the CRF items for the assessment of anxiousness to meaningfully assess for the presence of psychopathic fearlessness. The clinician is instructed to rate the extent to which the person is maladaptively anxious from 0 to 3, where 0 = *very little or not at all descriptive* (3 = *extremely descriptive*). This is precisely the same scale and instruction used for the PID-5. The trait of anxiousness is described as, "Intense feelings of nervousness, tenseness, or panic in reaction to diverse situations; worry about the negative effects of past unpleasant experiences and future negative possibilities; feeling fearful, apprehensive, or threatened by uncertainty; fears of falling apart, losing control, or embarrassment" (APA, 2010, p. 3). It appears evident that the clinician would not be assessing for the presence of fearlessness when administering this measure. A score of "0" simply indicates an absence of the maladaptive anxiousness. The CRF assessment of anxiousness would correlate well with PPI-R Fearlessness, just as PID-5 Anxiousness correlated well with PPI-R Fearlessness in the current study, but one could not really infer from the CRF the extent to which a person was fearless. If the PID-5 or CRF were administered to a group of psychopathic persons (none of whom were anxious) who varied in the extent to which they were fearless, each person would simply get a score of 0 (ignoring the fact that the PID-5 Anxiousness scale does have one negatively keyed item).

As noted earlier, all of the psychopathy scales used in the current study have at least one item keyed in the negative direction. In fact, one of the scales within the PPI-R consists solely of negatively keyed items: Cold-heartedness. The PPI and PPI-R has a two-factor structure (Benning et al., 2003, 2005). However, a curious finding for the factor analytic structure of the PPI and PPI-R is that the Cold-heartedness scale fails to load on either of the factors. Research, including the current study, continues to include this scale when reporting results in terms of the two factors (e.g., Few et al., 2013; Malterer et al., 2010; Sellbom & Phillips,

2013; Stanley et al., 2013), perhaps because cold-heartedness would seem to be a fairly important trait to consider when studying psychopathy (Hare et al., 2012). Why it failed to load on either factor of the PPI and/or PPI-R is not entirely clear, but studies have indicated that reverse-worded items will at times form a separate methods factor (e.g., Habke, Hewitt, Norton, & Asmundson, 1997; Quilty, Oakman, & Risko, 2006; Woods, 2006). In any case, the scale is perhaps better described as a measure of warm-heartedness that is being reverse-keyed for cold-heartedness.

Limitations and Future Research

The current study sampled 476 community participants who indicated that they engaged in quite a bit of criminal activity. As such, the participants in the current study represent a more relevant population for the study of psychopathy than the student or noncriminal community participants sampled in prior studies. However, it is not known what proportion of the participants would meet diagnostic criteria for psychopathy, as assessed, for instance, by the PCL-R (Hare, 2003). The SRP-III, PPI-R, TriPM, EPA, and PID-5 do not have cutoff scores for the estimation of prevalence rates. It would be useful in future research to administer the PCL-R, along with the measures used in this study.

Another potential limitation of the current study is that the positively and negatively keyed items were not necessarily explicitly opposite to one another with respect to their content. Therefore, it is possible that the lower correlations between negatively and positively keyed items is due to some systematic variation in content. Given the consistency in findings across different scales and items in the current study, the consistency of the findings of the current study with other studies addressing this issue (e.g., Ebesutani et al., 2012; Lindwall et al., 2012; Habke et al., 1997; Muris et al., 2001; Olatunji et al., 2009; Quilty et al., 2006; Rodebaugh et al., 2007; Stansbury et al., 2006; Woods, 2006), and the presence of some items that are clearly opposite in content, this alternative explanation for the findings is debatable. Nevertheless, future research could address the issue more directly by manipulating the content of PID-5, PPI-R, TriPM, and EPA items to ensure that the content is consistent across positively and negatively keyed items. This research might also consider an application of item response theory analysis approach to these items, determining whether the positively and negatively keyed items that assess the same content vary systematically in the level of the trait they assess.

Conclusions

The results of the current study provide empirical support for the convergent and discriminant validity of the PPI-R, TriPM, and EPA assessments of psychopathy, particularly with respect to their inclusion of such constructs as fearless-dominance, boldness, and emotional stability that appear to be variants of low neuroticism and high extraversion. However, PID-5 Attention-Seeking and Social Withdrawal appear to fall short of having strong and/or specific validity with respect to their assessment of fearless-dominance, boldness, or emotional stability. PID-5 Anxiousness does appear to correlate well with measures of fearless-dominance, boldness, and emotional sta-

bility, but its reliance on reverse-keyed items for the assessment of the latter constructs may limit its meaningful usage.

References

- American Psychiatric Association. (2010). *DSM-5 clinicians' personality trait rating form*. Washington, DC: Author.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.
- American Psychiatric Association. (May 1, 2012). Rationale for the proposed changes to the personality disorders classification in DSM-5. Retrieved from <http://www.dsm5.org/Documents/Personality%20Disorders/Rationale%20for%20the%20Proposed%20changes%20to%20the%20Personality%20Disorders%20in%20DSM-5%205-1-12.pdf>
- Bagby, R. M., & Farvolden, P. (2004). The Personality Diagnostic Questionnaire-4 (PDQ-4). In M. J. Hilsenroth, D. L. Segal, & M. Hersen (Eds.), *Comprehensive handbook of psychological assessment, Vol. 2: Personality assessment* (pp. 122–133). New York, NY: Wiley.
- 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. doi:10.1037/1040-3590.15.3.340
- Benning, S. D., Patrick, C. J., Salekin, R. T., & Leistico, A. M. R. (2005). Convergent and discriminant validity of psychopathy factors assessed via self-report. A comparison of three instruments. *Assessment, 12*, 270–289. doi:10.1177/1073191105277110
- Brinkley, C. A., Newman, J. P., Widiger, T. A., & Lynam, D. R. (2004). Two approaches to parsing the heterogeneity of psychopathy. *Clinical Psychology: Science and Practice, 11*, 69–94. doi:10.1093/clipsy.bph054
- Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science, 6*, 3–5. doi:10.1177/1745691610393980
- Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*, 155–159. doi:10.1037/0033-2909.112.1.155
- Decuyper, M., De Pauw, S., De Fruyt, F., De Bolle, M., & De Clercq, B. J. (2009). A meta-analysis of psychopathy-, antisocial PD- and FFM associations. *European Journal of Personality, 23*, 531–565. doi:10.1002/per.729
- Ebesutani, C., Drescher, C. F., Reise, S. P., Heiden, L., Hight, T. L., Damon, J. D., & Young, J. (2012). The Loneliness Questionnaire–Short Version: An evaluation of reverse-worded and non-reverse-worded items via item response theory. *Journal of Personality Assessment, 94*, 427–437. doi:10.1080/00223891.2012.662188
- Enders, C. K. (2006). A primer on the use of modern missing-data methods in psychosomatic medicine research. *Psychosomatic Medicine, 68*, 427–436. doi:10.1097/01.psy.0000221275.75056.d8
- Few, L. R., Miller, J. D., & Lynam, D. R. (2013). An examination of the factor structure of the Elemental Psychopathy Assessment. *Personality Disorders: Theory, Research, and Treatment, 4*, 247–253. doi:10.1037/per0000016
- Goldberg, L. R. (1993). The structure of phenotypic personality traits. *American psychologist, 48*, 26–34. doi:10.1037/0003-066X.48.1.26
- Gore, W. L., Tomiatti, M., & Widiger, T. A. (2011). The home for histrionism. *Personality and Mental Health, 5*, 57–72. doi:10.1002/pmh.151
- Habke, A. M., Hewitt, P. L., Norton, G. R., & Asmundson, G. (1997). The Social Phobia and Social Interaction Anxiety Scales: An exploration of the dimensions of social anxiety and sex differences in structure and relations with pathology. *Journal of Psychopathology and Behavioral Assessment, 19*, 21–39. doi:10.1007/BF02263227
- Hare, R. D. (1980). A research scale for the assessment of psychopathy in criminal populations. *Personality and Individual Differences, 1*, 111–119. doi:10.1016/0191-8869(80)90028-8
- Hare, R. D. (1985). Comparison of the procedures for the assessment of psychopathy. *Journal of Consulting and Clinical Psychology, 53*, 7–16. doi:10.1037/0022-006X.53.1.7
- Hare, R. D. (2003). *Manual for the Psychopathy Checklist-Revisited* (2nd ed.). Toronto, Canada: Multi-Health Systems.
- Hare, R. D., Neumann, C. S., & Widiger, T. A. (2012). Psychopathy. In T. A. Widiger (Ed.), *The Oxford handbook of personality disorders* (pp. 478–504). New York, NY: Oxford University Press.
- Krueger, R. F., Derringer, J., Markon, K. F., Watson, D., & Skodol, A. E. (2012). Initial construction of a maladaptive personality trait model and inventory for DSM-5. *Psychological Medicine, 42*, 1879–1890. doi:10.1017/S0033291711002674
- Lilienfeld, S. O., & Andrews, B. P. (1996). Development and preliminary validation of a self-report measure of psychopathic personality traits in noncriminal populations. *Journal of Personality Assessment, 66*, 488–524. doi:10.1207/s15327752jpa6603_3
- Lilienfeld, S. O., & Fowler, K. A. (2006). The self-report assessment of psychopathy: Problems, pitfalls, and promises. In C. J. Patrick (Ed.), *Handbook of psychopathy* (pp. 107–132). New York, NY: Guilford Press.
- Lilienfeld, S. O., & Widows, M. R. (2005). *Psychopathic personality inventory—Revised professional manual*. Lutz, FL: Psychological Assessment Resources, Inc.
- Lindwall, M., Barkoukis, V., Grano, C., Lucidi, F., Raudsepp, L., Liukkonen, J., & Thøgersen-Ntoumani, C. (2012). Method effects: The problem with negatively versus positively keyed items. *Journal of Personality Assessment, 94*, 196–204. doi:10.1080/00223891.2011.645936
- Lynam, D. R., Gaughan, E., Miller, J. D., Miller, D., Mullins-Sweat, S., & Widiger, T. A. (2011). Assessing the basic traits associated with psychopathy: Development and validation of the Elemental Psychopathy Assessment. *Psychological Assessment, 23*, 108–124. doi:10.1037/a0021146
- Lynam, D. R., & Widiger, T. A. (2001). Using the five factor model to represent the DSM-IV personality disorders: An expert consensus approach. *Journal of Abnormal Psychology, 110*, 401–412. doi:10.1037/0021-843X.110.3.401
- Lynam, D. R., & Widiger, T. A. (2007). Using a general model of personality to identify the basic elements of psychopathy. *Journal of Personality Disorders, 21*, 160–178. doi:10.1521/pedi.2007.21.2.160
- Malterer, M. B., Lilienfeld, S. O., Neumann, C. S., & Newman, J. P. (2010). Concurrent validity of the Psychopathic Personality Inventory with offender and community samples. *Assessment, 17*, 3–15. doi:10.1177/1073191109349743
- McCrae, R. R., & Costa, P. T. (2003). *Personality in adulthood. A five-factor theory perspective* (2nd ed.). New York, NY: Guilford Press. doi:10.4324/9780203428412
- Muris, P., Meesters, C., & Gobel, M. (2001). Reliability, validity, and normative data of the Penn State Worry Questionnaire in 8–12-yr-old children. *Journal of Behavior Therapy and Experimental Psychiatry, 32*, 63–72. doi:10.1016/S0005-7916(01)00022-2
- Neumann, C. S., Malterer, M. B., & Newman, J. P. (2008). Factor structure of the Psychopathic Personality Inventory (PPI): Findings from a large incarcerated sample. *Psychological Assessment, 20*, 169–174. doi:10.1037/1040-3590.20.2.169
- Olatunji, B. O., Woods, C. M., de Jong, P. J., Teachman, B. A., Sawchuk, C. N., & David, B. (2009). Development and initial validation of an abbreviated Spider Phobia Questionnaire using item response theory. *Behavior Therapy, 40*, 114–130. doi:10.1016/j.beth.2008.04.002
- Paolacci, G., Chandler, J., & Ipeirotis, P. (2010). Running experiments on Amazon Mechanical Turk. *Judgment and Decision Making, 5*, 411–419.
- Patrick, C. J., Fowles, D. C., & Krueger, R. F. (2009). Triarchic conceptualization of psychopathy: Developmental origins of disinhibition, boldness, and meanness. *Development and Psychopathology, 21*, 913–938. doi:10.1017/S0954579409000492

- Paulhus, D. L., Neumann, C. S., & Hare, R. D. (in press). *Manual for the Self-report Psychopathy scale*. Toronto, Canada: Multi-Health Systems.
- Pincus, A., & Gurtman, M. B. (2006). Interpersonal theory and the interpersonal circumplex: Evolving perspectives on normal and abnormal personality. In S. Strack (Ed.), *Differentiating normal and abnormal personality* (2nd ed., pp. 83–111). New York, NY: Springer.
- Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology*, 63, 539–569. doi:10.1146/annurev-psych-120710-100452
- Poy, R., Seggara, P., Esteller, À., López, R., & Moltó, J. (2014). FFM description of the Triarchic conceptualization of psychopathy in men and women. *Psychological Assessment*, 26, 69–76. doi:10.1037/a0034642
- Quilty, L. C., Oakman, J. M., & Risko, E. (2006). Correlates of the Rosenberg self-esteem scale method effects. *Structural Equation Modeling*, 13, 99–117. doi:10.1207/s15328007sem1301_5
- Rodebaugh, T. L., Woods, C. M., & Heimberg, R. G. (2007). The reverse of social anxiety is not always the opposite: The reverse-scored items of the social interaction anxiety scale do not belong. *Behavior Therapy*, 38, 192–206. doi:10.1016/j.beth.2006.08.001
- Rojas, S. L., & Widiger, T. A. (2014). Convergent and discriminant validity of the Five Factor Form. *Assessment*, 21, 143–157. doi:10.1177/1073191113517260
- Samuel, D. B., & Widiger, T. A. (2008). A meta-analytic review of the relationships between the five-factor model and *DSM-IV-TR* personality disorders: A facet level analysis. *Clinical Psychology Review*, 28, 1326–1342. doi:10.1016/j.cpr.2008.07.002
- Sellbom, M., & Phillips, T. R. (2013). Examination of the Triarchic conceptualization of psychopathy in incarcerated and nonincarcerated samples. *Journal of Abnormal Psychology*, 122, 208–214. doi:10.1037/a0029306
- Shapiro, D. N., Chandler, J., & Mueller, P. A. (2013). Using Mechanical Turk to study clinical populations. *Clinical Psychological Science*, 1, 213–220. doi:10.1177/2167702612469015
- Stanley, J. H., Wygant, D. B., & Sellbom, M. (2013). Elaborating on the construct validity of the triarchic psychopathy measure in a criminal offender sample. *Journal of Personality Assessment*, 95, 343–350. doi:10.1080/00223891.2012.735302
- Stansbury, J. P., Ried, L. D., & Velozo, C. A. (2006). Unidimensionality and -bandwidth in the Center for Epidemiologic Studies Depression (CES-D) scale. *Journal of Personality Assessment*, 86, 10–22. doi:10.1207/s15327752jpa8601_03
- Strickland, C. M., Drislane, L. E., Lucy, M., Krueger, R. F., & Patrick, C. J. (2013). Characterizing psychopathy using DSM-5 personality traits. *Assessment*, 20, 327–338. doi:10.1177/1073191113486691
- Widiger, T. A., Costa, P. T., Gore, W. L., & Crego, C. (2013). Five factor model personality disorder research. In T. A. Widiger & P. T. Costa (Eds.), *Personality disorders and the Five-Factor Model of personality* (3rd ed., pp. 75–100). Washington, DC: American Psychological Association. doi:10.1037/13939-006
- Widiger, T. A., Costa, P. T., & McCrae, R. R. (2013). Diagnosis of personality disorder using the five-factor model and the proposed DSM-5. In T. A. Widiger & P. T. Costa (Eds.), *Personality disorders and the Five-Factor Model of personality* (3rd ed., pp. 285–310). Washington DC: American Psychological Association. doi:10.1037/13939-019
- Woods, C. M. (2006). Careless responding to reverse-worded items: Implications for confirmatory factor analysis. *Journal of Psychopathology and Behavioral Assessment*, 28, 186–191. doi:10.1007/s10862-005-9004-7

E-Mail Notification of Your Latest Issue Online!

Would you like to know when the next issue of your favorite APA journal will be available online? This service is now available to you. Sign up at <http://notify.apa.org/> and you will be notified by e-mail when issues of interest to you become available!