

# Is Boldness Relevant to Psychopathic Personality? Meta-Analytic Relations With Non-Psychopathy Checklist-Based Measures of Psychopathy

Scott O. Lilienfeld and Sarah Francis Smith  
Emory University

Katheryn C. Sauvigné  
Georgia State University

Christopher J. Patrick and Laura E. Drislane  
Florida State University

Robert D. Lutzman  
Georgia State University

Robert F. Krueger  
University of Minnesota Twin Cities

Two recent meta-analyses have suggested that boldness, as assessed by the Psychopathic Personality Inventory (PPI) Fearless Dominance dimension, is largely unrelated to total or factor scores on the Psychopathy Checklist—Revised (PCL-R), raising questions concerning the relevance of largely adaptive features to psychopathy. Nevertheless, given that the PCL was developed and validated among prisoners, it may place less emphasis than do other psychopathy measures on adaptive traits, such as fearlessness, social poise, and emotional resilience. We conducted a meta-analysis ( $N = 10,693$ ) of the relations between (a) boldness, as assessed by the PPI and its derivatives or measures of the triarchic model of psychopathy, and (b) non-PCL-based psychopathy measures across 32 samples. The average weighted correlation between boldness and psychopathy was medium to large ( $r = .39$ ) and considerably higher than reported in prior meta-analyses; when analyses were restricted to well-validated psychopathy measures, the correlation rose to  $r = .44$ . We did not find support for the position that boldness is significantly less related to psychopathy than are the other 2 dimensions of the triarchic model. Our findings strongly suggest that boldness is relevant to at least some well-validated measures of psychopathy, and raise further questions regarding the boundaries of this condition.

*Keywords:* psychopathy, boldness, antisocial behavior, disinhibition, personality

What is psychopathy? The answer to this deceptively complex question bears crucial implications for the assessment of this enigmatic condition, as well as for research on its correlates, etiology, treatment, and prevention. Although research on psychopathy has grown exponentially over the past three decades (Patrick, *in press*), the question of the boundaries of this disorder continues to be a flashpoint of scientific controversy (Lewis, 1974; Lilienfeld, 1994; Lilienfeld et al., 2012). Indeed, although total

scores on widely used self-report measures of psychopathy tend to be highly correlated (Lilienfeld & Fowler, 2006), these global associations conceal certain pronounced discrepancies among psychopathy measures when psychopathy lower order factors are considered. For example, the first major dimensions of the (a) Psychopathy Checklist—Revised (PCL-R; Hare, 1991/2003), a semistructured interview that incorporates corroborative (e.g., file) information, and (b) Psychopathic Personality Inventory (PPI; Lilienfeld & Widows, 2005), a self-report measure, are only weakly or at best moderately correlated (Malterer, Lilienfeld, Neumann, & Newman, 2009), even though these counterpart dimensions each ostensibly assess the core affective and interpersonal features of psychopathy. Although the low observed associations between the two dimensions may in part reflect differences in method (interview-based vs. self-report), Lilienfeld and Fowler (2006) noted a similar lack of convergence between dimensions of the PPI and counterpart dimensions of another widely used self-report psychopathy measure, the Levenson Primary and Secondary Psychopathy scales (Levenson, Kiehl, & Fitzpatrick, 1995).

To an important degree, these striking divergences at the broad dimension (factor) level reflect deeper conceptual disputes regarding the nature of the psychopathy construct itself. On the one hand, there is a general consensus that certain personality traits, such as guiltlessness, callousness, narcissism, and poor impulse control,

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Scott O. Lilienfeld and Sarah Francis Smith, Department of Psychology, Emory University; Katheryn C. Sauvigné, Department of Psychology, Georgia State University; Christopher J. Patrick and Laura E. Drislane, Department of Psychology, Florida State University; Robert D. Lutzman, Department of Psychology, Georgia State University; Robert F. Krueger, Department of Psychology, University of Minnesota Twin Cities.

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Correspondence concerning this article should be addressed to Scott O. Lilienfeld, Department of Psychology, Emory University, 36 Eagle Row, Atlanta, GA 30322. E-mail: [slilien@emory.edu](mailto:slilien@emory.edu)

are pertinent to psychopathy (Gray & Hutchinson, 1964; Hare, 1996; Lilienfeld, Watts, Smith, Berg, & Latzman, 2014). On the other hand, over the past several years in particular, sharp disagreement has emerged regarding the place of potentially adaptive traits, such as charisma, social poise, venturesomeness, emotional resilience, and immunity to stress, within the construct of psychopathy. This broad amalgam of traits has come to be known as Fearless Dominance (Benning, Patrick, Blonigen, Hicks, & Iacono, 2005; Lilienfeld & Widows, 2005), or more recently, boldness (Lilienfeld et al., 2012; Patrick, Fowles, & Krueger, 2009). Some authors (e.g., Lilienfeld et al., 2012; Patrick, Venables, & Drislane, 2013) contend that boldness traits are essential to the conceptualization and assessment of psychopathy, whereas others (e.g., Crego & Widiger, 2014; Neumann, Uzieblo, Crombez, & Hare, 2013; Lynam & Miller, 2012; Miller & Lynam, 2012) contend that they are peripheral or perhaps even irrelevant to psychopathy. In this article, we quantitatively synthesize much of the research literature on boldness to shed light on this theoretically and pragmatically important question.

This contemporary debate can be situated within an historical perspective. In his classic book, *The Mask of Sanity* (1941), psychiatrist Hervey Cleckley described psychopaths as hybrid creatures. Interpersonally, they present with a poised, charming, and self-confident exterior characterized by low levels of anxiety, reflecting the “mask” in the title of Cleckley’s monograph. At the same time, psychopaths are marked by profound affective deficits, including lack of empathy and guilt, conjoined with behavioral deficits, such as poor impulse control and seemingly inexplicable antisocial behavior. Given this paradoxical configuration of traits, prototypical Cleckley psychopaths appear as con artists *par excellence*, beguiling others into swallowing their false promises. In one of his lesser known writings, Cleckley (1946) similarly described the modal psychopath as “polite, affable, and impressive,” noting that “usually he will have succeeded better than the average for days, weeks, and months” (p. 22). Cleckley further observed that when imprisoned, psychopaths are “often so persuasive, given such excellent verbal evidence of penitence and reform . . . that they are more likely than others to be pardoned and paroled” (p. 24).

The boldness construct owes its empirical origins largely to research on the PPI (Lilienfeld & Andrews, 1996), now the Psychopathic Personality Inventory—Revised (PPI-R; Lilienfeld & Widows, 2005). The PPI, a widely used self-report measure designed to index the core personality features of psychopathy in nonincarcerated samples (but which also exhibits construct validity in prison samples; e.g., Patrick, 2006; Poythress, Edens, & Lilienfeld, 1998; Poythress et al., 2010), yields scores on eight lower order content scales that can be summed to provide a total score indicative of global psychopathy. In unpublished factor analyses reported in his dissertation, Lilienfeld (1990) identified a higher order dimension, provisionally labeled “Low Anxiety,” on which the PPI’s Social Potency, Fearlessness, and Stress Immunity scales loaded strongly (with appreciable loadings also for the Impulsive Nonconformity and Machiavellian Egocentricity scales), and a second higher order dimension, provisionally labeled “Negative Emotionality,” on which the PPI Blame Externalization scale loaded strongly, along with the Machiavellian Egocentricity and (reversed) Stress Immunity scales.

Later, in exploratory factor analyses of the PPI subscales in a large male twin sample, Benning, Patrick, Hicks, Blonigen, and Krueger (2003) found two broad and largely uncorrelated dimensions, which they termed Fearless Dominance and Impulsive Antisociality (the latter now called Self-Centered Impulsivity in the PPI-R; Lilienfeld & Widows, 2005). The Fearless Dominance higher order factor was marked by salient loadings for the PPI’s Social Potency, Fearlessness, and Stress Immunity scales, whereas the Impulsive Antisociality (or Self-Centered Impulsivity) higher order factor was marked by salient loadings for the PPI’s Machiavellian Egocentricity, Blame Externalization, Impulsive Nonconformity, and Carefree Nonplanfulness scales. The eighth PPI scale, Coldheartedness, did not load highly on either higher order factor and is now frequently treated as a stand-alone dimension in analyses (but see Neumann, Malterer, & Newman, 2008, for an alternative higher order factor structure, derived from PPI data in a male prisoner sample). According to Patrick (2006), PPI Fearless Dominance maps largely onto Cleckley’s “mask” of seemingly adaptive functioning (see Miller & Lynam, 2012, for a differing perspective), accounting for psychopaths’ outward appearance of healthy adjustment, interpersonal poise, low anxiety, and surprising resilience in the face of life stressors.

Low levels of trait fear have long been accorded a pivotal role in influential etiological models of psychopathy (Fowles & Dindo, 2009; Hare, 1965; Lykken, 1995). In his early laboratory research, Lykken (1957) found that, compared with nonpsychopaths, psychopaths demonstrated weaker electrodermal (skin conductance) classical conditioning to electric shocks (see also, Hare, 1965) and poorer passive-avoidance learning on a “mental maze” task in which certain choices (lever presses) were surreptitiously “baited” with electric shock. These mental maze findings were independently replicated and extended in several laboratories (e.g., Schachter & Latane, 1964; Schmauk, 1970). In Lykken’s study, psychopaths also displayed diminished levels of both physical and social fear on the Activity Preference Questionnaire, a questionnaire measure of the propensity to avoid harmful stimuli (Lykken, Tellegen, & Katzenmeyer, 1973). This finding dovetails broadly with contemporary views of fearless dominance, which comprises a paucity of both physical and interpersonal fear (Lilienfeld & Widows, 2005). Subsequent research revealed that compared with low-psychopathy participants, high-psychopathic participants also tend to exhibit weaker fear-potentiated startle responses when asked to view aversive photographs (Lopez, Poy, Patrick, & Molto, 2013; Patrick, Bradley, & Lang, 1993).

More recently, within the framework of the *triarchic model* of psychopathy (Patrick et al., 2009), the construct of boldness is posited to be a key feature of psychopathy along with two other dimensions, namely, disinhibition (which overlaps highly at the measurement level with PPI Self-Centered Impulsivity) and meanness (which overlaps moderately to highly at the measurement level with PPI Coldheartedness (see also Drislane, Patrick, & Aarsal, 2014; Fowles & Dindo, 2009; Lilienfeld, Watts, & Smith, *in press*). According to the triarchic model, boldness is a largely adaptive phenotypic manifestation of a latent disposition toward fearlessness (Patrick et al., 2009; Patrick & Drislane, 2014). Boldness, which is well operationalized by the Fearless Dominance dimension of the PPI/PPI-R, is marked by attributes of emotional resilience, calmness in the face of stressors, interpersonal effectiveness, and comfort with threatening stimuli or unfamiliar situ-

ations. As such, boldness may bear important implications for the controversial construct of successful psychopathy (Lilienfeld, Watts, & Smith, in press). According to the triarchic model, boldness reflects individual differences in the sensitivity of the brain's defensive motivational system to cues for threat, with bolder individuals possessing a higher threshold for activation of this system (see Lykken, 1995, for a similar view).

The relevance of boldness to psychopathy also bears important implications for the diagnosis of personality disorders. The alternative model of personality disorders provided in Section III of the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association [APA], 2013)* introduced a novel "psychopathy specifier" for the diagnosis of antisocial personality disorder (ASPD), a condition that overlaps moderately to highly with psychopathy (Lilienfeld, 1994). Inspection of the content of this specifier, which encompasses low anxiety-proneness, low withdrawal, and high attention seeking, suggests substantial overlap with boldness. Recent data support this contention, demonstrating that scores on the *DSM-5* psychopathy specifier are highly correlated with scores on the Fearless Dominance dimension of the PPI-R and scores on the Boldness scale of the Triarchic Psychopathy Measure (TriPM), a self-report operationalization of the triarchic model (Anderson, Sellbom, Wygant, Salekin, & Krueger, 2014).

Nevertheless, the place of boldness within the nomological network of psychopathy has recently been challenged. In two influential meta-analyses, Miller and Lynam (2012) and Marcus, Fulton, and Edens (2013) reported that PPI Fearless Dominance, a key referent for the concept of boldness as discussed earlier, was only modestly associated with PCL-R total and factor scores. For example, Miller and Lynam found that the mean weighted correlation ( $r$ ) between PPI Fearless Dominance and PCL-R total scores was only .16; the mean weighted  $r$  with PCL-R Factor I was .23, and the  $r$  with PCL-R Factor II was .07. Although Marcus et al. did not analyze PCL-R total scores, they similarly found only modest weighted correlations for PPI Fearless Dominance with PCL-R Factors I ( $r = .21$ ) and II ( $r = .15$ ). Given that the PCL-R is the most extensively validated measure of psychopathy, these findings raise questions concerning the importance of boldness in psychopathy. Moreover, Miller and Lynam found that PPI Fearless Dominance was weakly associated with most measures of antisocial and other externalizing behaviors, which are regarded by some scholars as essential to the psychopathy construct (e.g., Neumann, Hare, & Pardini, 2014).

Furthermore, the finding of only modest associations between boldness and scores on PCL-based measures is not limited to interview-based indices. In their meta-analysis, Marcus et al. (2013) found modest and low correlations, respectively, for PPI Fearless Dominance with scores on the Primary ( $r = .17$ ) and Secondary ( $r = .06$ ) psychopathy scales of the Levenson Self-Report Psychopathy Scale (LSRP), a widely used self-report measure that was modeled explicitly after the PCL-R (Levenson et al., 1995, p. 152). Similarly weak correlations (Vaughn, Newhill, DeLisi, Beaver, & Howard, 2008) have been reported between PPI Fearless Dominance and scores on the self-report version of the Antisocial Process Screening Device (APSD; Frick & Hare, 2001), a downward extension of the PCL-R developed for use with children and adolescents. The one notable exception to the findings of low correlations with other psychopathy inventories in the

Miller and Lynam and Marcus et al. meta-analyses was the Self-Report Psychopathy Scale (SRP; Paulhus, Neumann, & Hare, in press), another widely used questionnaire. Marcus et al. reported (2013) that PPI Fearless Dominance highly with scores on Factor I of the SRP ( $r = .53$ ) and moderately to highly with scores on SRP Factor II ( $r = .40$ ). Although the initial version of the SRP was developed by selecting items that correlated highly with PCL scores (Lilienfeld & Fowler, 2006), the SRP has undergone numerous revisions over time to boost its internal consistency and revise its content coverage (Neal & Sellbom, 2012).

In sum, the bulk of available evidence strongly suggests that boldness is not appreciably associated with the PCL-R or, with the possible (and notable) exception of the SRP, measures derived directly from it. These findings have been interpreted as indicating that boldness is largely irrelevant to psychopathy, or at best either a moderator of its phenotypic expression or a dimensional marker of a largely successful subtype of psychopathy (e.g., Lynam & Miller, 2012).

Nevertheless, these results for the PCL-R and its derivatives are open to an alternative explanation. As Patrick (2006) observed, items assessing low anxiety and other positive adjustment tendencies were apparently excluded from the PCL (the progenitor of the PCL-R) in its initial construction because they did not correlate sufficiently with the total score to merit inclusion (see also Schmitt & Newman, 1999; Visser, Ashton, & Pozzebon, 2012). Although this decision may have been defensible on the grounds of maximizing internal consistency, it could have resulted in the premature exclusion of content relevant to boldness (but see Neumann, Johansson, & Hare, 2013, for a different view). If psychopathy is conceptualized as a compound trait, that is, a *configuration* of largely uncorrelated attributes that combine to forge an interpersonally malignant condition (Lilienfeld, Watts, Smith, Berg, & Latzman, 2014; Lilienfeld, 2013), rather than a classical syndrome, that is, a constellation of signs and symptoms that covary across individuals, then efforts to maximize internal consistency by eliminating largely uncorrelated items may be ill-advised. Specifically, psychopathy may be a compound condition that reflects the conjunction of both adaptive and maladaptive attributes that are themselves weakly intercorrelated, with the former attributes characterized primarily by boldness (Fowles & Dindo, 2009). Furthermore, in the development of the PCL, some of Cleckley's (1941/1988) positive adjustment indicators may have been subtly reworded to highlight maladjustment. For example, Cleckley's criterion of "superficial charm and good intelligence" became "glibness and superficial charm" in the PCL, where this item now emphasizes slickness, insincerity, and a propensity to be a "smooth operator" (Patrick, 2006).

Moreover, because the PCL-R was initially constructed and validated with prisoners, who tend to be largely unsuccessful in their life pursuits, it may not be ideally suited for detecting potentially adaptive traits linked to psychopathy. In a similar vein, some critics have maintained that the PCL-R and its progeny are heavily saturated with content assessing antisocial behavior, including criminality, rendering this measure suboptimal for detecting personality features predisposing to successful psychopathy (Skeem & Cooke, 2010; but see Hare & Neumann, 2010, for a response), especially boldness.

## Current Study

Our objective in the current work was to extend the important meta-analytic findings of Miller and Lynam (2012) and Marcus et al. (2013) by addressing a key question they did not explicitly examine, namely: How does boldness relate to *non-PCL-based* measures of psychopathy? We hypothesized that this aggregate association would be substantially higher in magnitude than that found by either Miller–Lynam or Marcus et al. because the PCL, PCL-R, and measures modeled directly after them (a) excluded items explicitly measuring low anxiety and low fear (but see Neumann, Johansson, & Hare, 2013, for an alternative view) and (b) underemphasize potentially adaptive features of psychopathy owing to their initial construction and validation in prison samples (see Skeem & Cooke, 2010). Hence, we ascertained whether psychopathy measures derived from theoretical and methodological approaches other than those of the PCL and its variants would yield a different pattern of results than found in the two prior meta-analyses.

To do so, we meta-analytically synthesized data pertaining to the relations of PPI and TriPM measures of boldness with total (and when available, factor) scores on a variety of non-PCL-based measures of psychopathy, that is, measures that were not developed by using the PCL or its derivatives as a starting point. Most of these non-PCL measures were developed using either an expert-rating prototype approach or a deductive approach (Burisch, 1984) in which the Cleckley (1941/1988) model or allied conceptualizations of psychopathy were used to derive items. To explore the sources of potential heterogeneity in effect sizes, we examined a variety of candidate moderators: demographic features of the sample (e.g., number of females in the sample), composition of the sample (i.e., forensic vs. nonforensic), origin of the boldness measure (i.e., PPI-based measure vs. the TriPM model), whether the non-PCL-based psychopathy measure had received validation support in multiple published studies, allegiance to the boldness construct, and publication status (published vs. unpublished). Finally, to permit comparisons with PPI Fearless Dominance/TriPM Boldness, we examined the psychopathy correlates of the two other major PPI/TriPM dimensions: (a) PPI Self-Centered Impulsivity and the corresponding dimension of TriPM Disinhibition, and (b) Coldheartedness and the corresponding dimension of TriPM Meanness. These latter analyses addressed the question, for which we offered no specific a priori hypothesis, of whether boldness is equally or less relevant to psychopathy than the other two dimensions of the triarchic model. This question is important in view of the suggestion that boldness, at least as operationalized by PPI/PPI-R Fearless Dominance, “is less central to the description of psychopathy” (Miller & Lynam, 2012; p. 321) relative to other psychopathy higher order dimensions. For example, Miller, Lamkin, Maples-Keller, and Lynam (2015) reported that expert raters regarded boldness as less central to the psychopathy construct than meanness and perhaps disinhibition.

## Method

### Inclusion Criteria and Study Selection

The inclusion criteria for the meta-analysis encompassed all studies using both (a) the PPI or its variants (PPI, PPI-R, or PPI-R

Short Form, PPI dimensions estimated from the Multidimensional Personality Questionnaire [MPQ] or Minnesota Multiphasic Personality Inventory (MMPI-2) or the TriPM, all of which contain measures of boldness, and (b) a measure of psychopathy based on a model other than the PCL or PCL-R. The correlations between Fearless Dominance derived from the PPI (and its variants) and TriPM Boldness are typically on the order of between  $r = .70$  or and  $.85$  (e.g., Anderson et al., 2014; Sellbom & Phillips, 2013), justifying their inclusion as alternative measures of the boldness construct.

Published studies were identified by searching electronic databases (Google Scholar, PsycInfo, Proquest Dissertations and Theses), scanning the reference lists of articles that contained correlations between measures of boldness and psychopathy measures, and through consultation with experts in the field. No restrictions on initial publication date were applied to the search, and the search concluded in March 2015.

Unpublished data were acquired from an email call for data using the Society for the Scientific Study of Psychopathy (SSSP) listserv and from emails to authors who had collected data on the relation between boldness indices and non-PCL-based psychopathy measures that were (a) not reported (or not fully reported) in the original published articles or (b) data from studies that have not been published. Further unpublished data that met the inclusion criteria were obtained from an inspection of master’s and dissertation theses obtained from publicly available electronic databases.

In total, 28 studies incorporating 32 independent samples, with a total sample size of 10,693 participants, were included in the meta-analysis. Some of the samples reported data from more than one non-PCL-based psychopathy measure; in these cases, correlations were averaged meta-analytically by converting the correlations to standard scores, averaging them, and converting them back to a mean weighted  $r$ . A full list of the included studies, along with the major variables coded in each study, is provided in Table 1.

### Measures of Boldness

Measures of boldness were derived from either the (a) PPI (Lilienfeld & Andrews, 1996) or its close variants, including the PPI-R (Lilienfeld & Widows, 2005) or MPQ-based or MMPI-2-based PPI factor estimates (Benning et al., 2005) or the (b) TriPM (Patrick et al., 2009) or the PPI-R-based Triarchic Scales, which consist of PPI-R items that are well-suited for assessing the three triarchic constructs (Hall et al., 2014).

### Non-PCL-Based Measures of Psychopathy

For the central analyses, we relied primarily on the total scores of 11 non-PCL-based psychopathy measures. With the possible exception of the PID-5 Psychopathy Scale (see “Data analytic plan”), none of these measures was explicitly designed to include content relevant to boldness. The boldness correlates of the four higher order dimensions of one psychopathy measure, namely, the Elemental Psychopathy Assessment (EPA), were examined in multiple studies. As a consequence, we conducted analyses separately by each EPA higher order dimension in addition to EPA total scores.

The non-PCL-based psychopathy measures used are listed below in descending order of the number of effect sizes included in

Table 1  
Studies and Key Variables Examined in Analyses

<i>k</i>	Study	Sample size	Percentage female	Percentage African American	Forensic sample?	PPI, triarchic, or both	PPI-estimated?	Non-PCL measure(s)	Well validated?	Allegiance to the boldness construct	Published?
1	Anderson et al. (2014)	397	45.57%	15%	No	Both	No	PID-5	Yes	Yes	Yes
2	Anderson et al. (2014)	128	43.92%	36%	No	Both	No	PID-5	Yes	Yes	Yes
3	Cale & Lilienfeld (2002)	69	48.00%	7%	No	PPI	No	MTI	No	Yes	No
4	Campbell et al. (2009)	217	74.50%	—	No	PPI	No	YPI	Yes	No	Yes
5	Crego & Widiger (2014)	280	62.50%	8%	No	Both	No	EPA	Yes	No	Yes
6	Crego & Widiger (2014)	196	62.31%	8%	No	Both	No	EPA, PID-5	Yes	No	Yes
7	Derefinko & Lynam (2006)	346	60.12%	—	No	PPI	No	PRI	Yes	No	Yes
8	DeShong et al. (2015)	191	70.20%	6.3%	No	PPI	Yes	EPA	Yes	No	No
9	Egan (2014)	394	75.00%	11%	No	PPI	No	YPI	Yes	No	No
10	Few et al. (2015)	106	71.00%	6%	No	PPI	Yes	PID-5	Yes	No	Yes
11	Fowler & Lilienfeld (2007)	65	75.00%	7.8%	No	PPI	No	PQS	No	Yes	Yes
12	Krueger (2015)	435	0.00%	—	No	PPI	Yes	MTI	No	Yes	No
13	Krueger (2015)	1001	0.00%	—	No	PPI	Yes	MTI	No	Yes	No
14	Laitznan (2014)	749	75.00%	50%	No	PPI	No	PID-5	Yes	Yes	No
15	Lilienfeld (1990)	102	64.70%	—	No	PPI	No	Levenson Cleckley	No	Yes	No
16	Lilienfeld (1995)	110	58.18%	—	No	PPI	No	Nichols	No	Yes	No
17	Lilienfeld et al. (1996)	101	60.40%	12.87%	No	PPI	No	Nichols, Levenson Cleckley	No	Yes	No
18	Lynam et al. (2013)	907	55.00%	—	No	PPI	No	EPA	Yes	No	Yes
19	Lynam et al. (2013)	787	47.00%	6%	No	PPI	No	EPA	Yes	No	Yes
20	Maples et al. (2014)	287	48.00%	—	No	TriPM	—	DD	Yes	No	Yes
21	Miller et al. (2012)	789	46.00%	6%	No	PPI	No	DD	Yes	No	Yes
22	Nikolova (2009)	70	49.50%	3%	Yes	PPI	No	CAPP-IRS	Yes	No	No
23	Patrick (2015a)	141	79.00%	8.30%	No	TriPM	—	EPA	Yes	Yes	No
24	Patrick (2015a)	611	58.60%	6.90%	No	TriPM	—	PRI	Yes	Yes	No
25	Patrick (2015b)	537	55.50%	10.90%	No	Both	No	YPI	Yes	Yes	No
26	Patrick (2010)	94	—	—	No	TriPM	—	YPI	Yes	Yes	No
27	Poy et al. (2014)	253	100.00%	—	No	TriPM	—	PRI	Yes	No	Yes
28	Poy et al. (2014)	93	0.00%	—	No	TriPM	—	PRI	Yes	No	Yes
29	Ross et al. (2008)	293	57.00%	16.89%	Yes	PPI	No	PRI	Yes	Yes	Yes
30	Uzieblo et al. (2010)	675	37.50%	—	No	PPI	No	YPI	Yes	No	Yes
31	Wilson et al. (2011)	116	43.10%	—	No	PPI	No	EPA	Yes	No	Yes
32	Zolondek et al. (2006)	93	0.00%	49.50%	Yes	PPI	Yes	IM-P	Yes	Yes	Yes

Note. Total *N* = 10,693. PCL = Psychopathy Checklist; PPI = Psychopathic Personality Inventory (Lilienfeld & Widows, 2005); TriPM = Triarchic Psychopathy Measure (Anderson, Sellbom, Wuyant, Salekin, & Krueger, 2014); CAPP-IRS = Comprehensive Assessment of Psychopathic Personality Disorder-Institutional Rating Scale (Cooke et al., 2004); DD = Dirty Dozen (Jonason & Webster, 2010); EPA = Elemental Psychopathy Assessment (Lynam et al., 2011; Lynam et al., 2013); IM-P = Interpersonal Measure of Psychopathy (Kosson et al., 1997); Levenson Cleckley = Levenson Cleckley Scale (Levenson, 1990); MTI = Minnesota Temperament Inventory (Lilienfeld & Andrews, 1996; Loney et al., 2007); Nichols = Nichols Psychopathy Scale (Nichols, 1989); PID-5 = Personality Inventory for the DSM-5 (Krueger et al., 2012); PQS = Psychopathy Q-Sort (Reise & Wink, 1995); PRI = Psychopathy Resemblance Index (Miller et al., 2011); YPI = Youth Psychopathic Traits Inventory (Andershed et al., 2002). Dashes in the Table refer to cases in which data were unavailable.

the meta-analysis (for reviews of the psychometric properties of these measures, see Kotler & McMahon, 2010; Lilienfeld, 1998; Lilienfeld & Fowler, 2006; Sellbom, Lilienfeld, & Fowler, in press).

**EPA.** The EPA is a 178 item self-report measure that was constructed to detect the core “building blocks” of psychopathy using the five factor model (FFM) of personality (Lynam et al., 2011; Lynam et al., 2013). It yields a total score and 18 subscales that in turn load on four higher order dimensions: Antagonism, Emotional Stability, Narcissism, and Disinhibition.

**Personality Inventory for DSM-5 Psychopathy Scale (PID-5 Psychopathy Scale).** This self-report scale consists of 3 items (assessing attention seeking, low anxiousness, and low withdrawal), drawn from the larger 220 item PID-5 (Krueger, Derringer, Markon, Watson, & Skodol, 2012), which are intended to assess the new psychopathy specifier for ASPD in the newly formulated alternative model for personality disorders in *DSM-5* Section III (APA, 2013).

**Youth Psychopathic Traits Inventory (YPI).** The YPI is a 50-item self-report measure designed to detect the core personality features of psychopathy in adolescents (Andershed, Kerr, Stattin, & Levander, 2002). Nevertheless, it has also been administered to older (e.g., college) samples, as in the studies included here. The YPI yields a total score and 10 subscales that load into three higher order dimensions of Grandiose/Manipulative, Callous/Unemotional, and Impulsive/Irresponsible.

**Psychopathy Resemblance Index (PRI).** The PRI was developed by Miller, Lynam, Widiger, and Leukefeld (2001) by asking experts to rate the prototypical manifestations of psychopathy on a 1–5 scale using the 30 facets of the Neuroticism–Extraversion–Openness Personality Inventory—Revised, a well-validated measure of the FFM. FFM facets with a mean score of lower than 2 or higher than 4 were retained to construct a psychopathy prototype measure. In the studies reported here, the PRI was administered in self-report format.

**Minnesota Temperament Inventory (MTI).** This 20 item measure of Cleckley psychopathy, which can be used in either self-report or rater formats, was developed by Lilienfeld (see Lilienfeld & Andrews, 1996) based on the work of Harkness (1992; see also Loney, Taylor, Butler, & Iacono, 2007). In the samples reported here, the MTI was administered as a self-report measure.

**Levenson Cleckley Scale.** This self-report measure, which has received little use in the published literature and should not be confused with the much better known LSRP (Levenson et al., 1995), consists of 13 items intended to assess the most important Cleckley (1941/1988) criteria for psychopathy (Levenson, 1990).

**Dirty Dozen Psychopathy Scale.** The Dirty Dozen is a 12 item self-report measure designed to detect the three members of the “dark triad” of personality, namely, psychopathy, narcissism, and Machiavellianism (Jonason & Webster, 2010; but see Miller et al., 2012, for a critique of this measure). Hence, the Dirty Dozen psychopathy subscale consists of 4 items.

**Nichols Psychopathy Scale.** This self-report psychopathy measure, which is not extensively used, was constructed by Nichols (1989; see also Lilienfeld, 1996) by selecting MMPI items that loaded highly on a Delinquency factor in both White and African American samples; several items that appeared to reflect psychop-

athy or ASPD were then added. There appear to be no published data on the reliability or construct validity of this scale.

**Comprehensive Assessment of Psychopathic Personality (CAPP).** The CAPP is a recently developed 33 item measure, comprising an interview and staff rating scale, which is designed to detect the core personality features of psychopathy (Cooke, Hart, Logan, & Michie, 2004). It yields a total score and scores in six content domains: Attachment, Behavioral, Cognitive, Dominance, Emotional, and Self.

**Interpersonal Measure of Psychopathy (IM-P).** The IM-P is a 21-item rater-based measure designed to be completed in conjunction with interviews (e.g., the PCL-R). This measure assesses interpersonal and nonverbal behaviors, such as ignoring personal or professional boundaries and making repeated requests of the interviewer, that are presumed to be prevalent among psychopathic individuals (Kosson, Steuerwald, Forth, & Kirkhart, 1997).

**Psychopathy Q-sort (PQS).** The PQS uses the 100 items of the California Q-Set (Block, 1961) to detect psychopathy; it can be used in either a self-report or observer-rated format (Reise & Wink, 1995). The PQS was constructed by asking experts to rate each item on the California Q-Set (Block, 1961) for its relevance to prototypical psychopathy. In the one study included here that used the PQS (Fowler & Lilienfeld, 2007), this measure was administered in both self-report and rater formats, and the results were averaged.

## Moderation Analyses

Several pieces of information were extracted from each study when available and coded for use in moderation analyses. These were (a) the proportion of females in each sample, (b) the proportion of African Americans in each sample (insufficient data were available on other minority populations), (c) the origin of the sample (i.e., prison/forensic sample vs. college/community sample), (d) whether the boldness measure was based on the PPI model as opposed to the TriPM model, (e) for PPI-based measures, whether the measure was based on the original PPI/PPI-R as opposed to being estimated from other measures (i.e., MPQ, MMPI-2), (f) validation status of the non-PCL-based psychopathy measure, and (g) allegiance effects.

For criterion (f), validation status of the non-PCL-based psychopathy measure was coded as either (1) well-validated (5 or more published studies providing supportive evidence for the measure’s construct validity, as operationalized by consistent positive correlations of large magnitude with established indices of psychopathy) or (2) not well-validated (fewer than 5 published studies providing supportive evidence for the measure’s construct validity). Measures regarded as well-validated were the EPA, PID-5 Psychopathy Scale, YPI, PRI, Dirty Dozen, CAPP, and IM-P; the remaining 4 measures were regarded as not well-validated, as they had not been demonstrated in 5 or more published studies to be highly associated with established indices of psychopathy.

For criterion (g), allegiance effects were coded by examining whether the principal authors of each study had published one or more articles supporting the relevance of boldness to psychopathy. Some authors (e.g., Lilienfeld, Patrick, Sellbom) had published articles supporting the boldness hypothesis, whereas others (e.g.,

Lynam, Miller, Widger) had not done so, or had argued against this hypothesis in print. Accordingly, allegiance to the hypothesis that boldness is relevant to psychopathy was coded as a categorical moderator.

### Data Analytic Plan

Because we anticipated significant heterogeneity in effect sizes across studies attributable to sources other than sampling error, we used a random effects model to estimate overall effect sizes. To examine categorical moderators (e.g., presence vs. absence of allegiance effects), we used a mixed effects model to examine the sources of heterogeneity in effect sizes. For continuous moderators (e.g., proportion of females in each sample), we used mixed effect model meta-regression techniques.

In focal analyses, we examined the zero-order relations between boldness and total scores on each non-PCL-based psychopathy measure; for the EPA only, we also examined subscales. For comparative purposes, we also examined the correlations between both (a) PPI Self-Centered Impulsivity (and the broadly corresponding TriPM measure of Disinhibition) and PPI Coldheartedness (and the broadly corresponding TriPM measure of Meanness) and (b) non-PCL-based scores (see Sellbom & Phillips, 2013, for data demonstrating moderate to high correlations between both PPI Self-Centered Impulsivity and TriPM Disinhibition and between PPI Coldheartedness and TriPM Meanness).

Given that the PID-5 psychopathy scale, and the new *DSM-5* psychopathy specifier for ASPD on which it was based, was influenced by research on boldness (see APA, 2013, p. 765), it could be argued that the inclusion of the PID-5 psychopathy scale in the analyses might contribute to an inflated overall effect size for boldness. As a consequence, in a sensitivity analysis, we repeated the overall analyses excluding this scale.

### Publication Bias

Potential publication bias was examined by comparing the magnitude of effects derived from published versus unpublished studies by using published versus unpublished status as a dummy-coded moderator. As another indicator of publication bias, we conducted an inspection of the funnel plot of effect sizes by standard errors, Egger's test of intercept bias, and Duval and Tweedie's (2000) trim and fill method.

## Results

### Overall Effect Sizes

The overall results, presented in Table 2, revealed a medium to large average weighted correlation between boldness and non-PCL-based measures of psychopathy,  $r = .39$ ,  $k = 53$ ,  $p < .001$ .<sup>1</sup> The 95% confidence interval (CI) for this association ranged from  $r = .38$  to  $.41$ . The distribution of these effect sizes was significantly heterogeneous:  $Q(52) = 1077.60$ ,  $p < .001$ ;  $I^2 = 95.17$ , highlighting the need for moderation analyses to examine the sources of variability in effect sizes. The lowest correlation was for the MTI ( $r = .09$ ; 95% CI [.04, .14]), which was small in magnitude using Cohen's (1988) suggested criteria, whereas the highest was for PID-5 Psychopathy ( $r = .57$ ; 95% CI [.52, .61]), which was

Table 2

Average Weighted Correlation Between Boldness and Non-PCL-Based Measures of Psychopathy

Psychopathy measure	<i>M</i> weighted <i>r</i>	Number of effect sizes
EPA	.42***	21
PID-5 Psychopathy	.57**	8
YPI	.38***	7
PRI	.52***	5
MTI	.09*	3
Levenson Cleckley Scale	.22	2
Dirty Dozen Psychopathy Scale	.12*	2
Nichols Psychopathy Scale	.27*	2
CAPP	.38**	1
IM-P	.20	1
PQS	.27**	1

Note. PCL = Psychopathy Checklist; EPA = Elemental Psychopathy Assessment; PID-5 = Personality Inventory for *DSM-5*; YPI = Youth Psychopathic Traits Inventory; PRI = Psychopathy Resemblance Index; MTI = Minnesota Temperament Inventory; CAPP = Comprehensive Assessment of Psychopathic Personality; IM-P = Interpersonal Measure of Psychopathy; PQS = Psychopathy Q-sort.

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

large in magnitude according to Cohen's criteria. The second and third highest correlations were for the PRI ( $r = .52$ ; 95% CI [.47, .57]) and EPA ( $r = .42$ ; 95% CI [.29, .53]), which were large and medium-to-large in magnitude, respectively.

For comparative purposes, the associations between non-PCL-based measures and Self-Centered Impulsivity/Disinhibition ( $r = .45$ ,  $k = 48$ ,  $p < .001$ ; 95% CI [.38, .52]) and Coldheartedness/Meanness ( $r = .38$ ,  $k = 47$ ,  $p < .001$ ; 95% CI [.32, .43]) were slightly larger but similar to those for Boldness/Fearless Dominance. The difference in effect sizes across the boldness, disinhibition, and meanness dimensions (as operationalized by either the PPI or its variants, or by the TriPM) was not statistically significant, suggesting that the three triarchic dimensions are of approximately equal relevance to psychopathy as assessed by non-PCL-based measures.

### Results for EPA Subscales

Table 3 displays the correlations between boldness and the higher-order dimensions of the one psychopathy measure for which sufficient data were available, namely, the EPA. Boldness was highly associated with the EPA Emotional Stability and Narcissism higher order dimensions, but negligibly associated with the EPA Antagonism and Disinhibition higher order dimensions.

### Moderation Analyses

Given our focus on the psychopathy correlates of boldness, we focused our moderation analyses on this dimension. Invariance analyses comparing measures derived from the PPI versus the TriPM revealed no significant differences in the correlations for either (a) PPI Fearless Dominance ( $r = .38$ ) versus TriPM Boldness ( $r = .39$ ) or (b) PPI Self-Centered Impulsivity ( $r = .47$ )

<sup>1</sup> The *ks* exceed the total number of studies because some studies included more than one measure of boldness, more than one non-PCL-based measure of psychopathy, or both.

Table 3  
Average Weighted Correlation Between Boldness and EPA Subscales

EPA subscale	<i>M</i> weighted <i>r</i>	Number of effect sizes
Antagonism	.08*	4
Emotional Stability	.73***	4
Narcissism	.58***	4
Disinhibition	.03	4

Note. EPA = Elemental Psychopathy Assessment.  
\*  $p < .05$ . \*\*\*  $p < .001$ .

versus TriPM Disinhibition ( $r = .41$ ). In contrast, the effect size for TriPM Meanness ( $r = .47$ ) was significantly higher than that of PPI Coldheartedness ( $r = .32$ ;  $Q = 1449.93$ ,  $p < .001$ ).

Moderation analyses within PPI measures revealed no significant differences in the correlation between boldness and non-PCL-based psychopathy measures as a function of whether PPI scores were obtained directly from the PPI or its variants as opposed to estimated from the MPQ or MMPI-2 ( $p = .22$ ). The nature of the sample (forensic vs. nonforensic) was not a significant moderator ( $p = .95$ ), nor was the percentage of African Americans in each sample ( $p = .59$ ).

Other moderator analyses identified potential sources of effect size heterogeneity. Specifically, analyses revealed marginally significant differences in the correlation between boldness and non-PCL-based psychopathy measures across (a) gender composition of sample, with effect size increasing as percentage of females increased,  $Q(1) = 3.79$ ,  $p = .05$ ; (b) allegiance to the boldness construct (no allegiance:  $r = .44$ ; allegiance:  $r = .32$ ),  $Q(1) = 3.73$ ,  $p = .05$ . The direction of the allegiance effects was unexpected; higher effect sizes were associated with lower levels of allegiance to the position that boldness is relevant to psychopathy. Finally, we found a significant difference between (c) well-validated ( $r = .44$ ) versus non well-validated non-PCL-based psychopathy measures ( $r = .17$ ;  $p < .001$ ).

### Sensitivity Analyses Excluding the PID-5 Psychopathy Subscale

After excluding the PID-5 Psychopathy Subscale, the overall effect size for the relation between boldness and non-PCL-based psychopathy diminished only slightly to  $r = .36$  ( $p < .001$ ).

### Publication Bias

A comparison of published versus unpublished studies yielded evidence for potential publication bias, with the effect size for boldness in published studies being significantly higher ( $r = .44$ ) than in unpublished studies,  $r = .29$ ,  $Q(1) = 5.34$ ,  $p < .05$ . In contrast, no evidence for publication bias emerged based on inspection of the funnel plot (see Figure 1), which appeared to be symmetrical. This impression was confirmed by Egger's test of the regression intercept, which was nonsignificant,  $t(31) = .47$ ,  $p = .32$ . Duval and Tweedie's trim and fill method yielded an adjusted value ( $r = .37$ ) that was virtually identical to the initial correlation, similarly providing no evidence for publication bias. It is worth noting that the funnel plot was not classically "funnel-shaped": It was not characterized by a tighter clustering of effect sizes in

studies with smaller standard errors. Hence, the plot in Figure 1 is consistent with the substantial heterogeneity of effect sizes across studies.

## Discussion

The boundaries of psychopathy continue to be a focus of lively scholarly debate. In this meta-analysis, we examined the increasingly contentious question of whether boldness, a broad dispositional construct that encompasses physical fearlessness, charisma, interpersonal dominance, immunity to anxiety, and emotional resilience, has a legitimate place within the nomological network of psychopathy. More generally, this controversy bears on the issue of whether at least some prominent features of psychopathy can be psychologically adaptive. Questions regarding the importance of boldness within psychopathy were sparked largely by two recent meta-analyses (Marcus et al., 2013; Miller & Lynam, 2012), which revealed that boldness as operationalized by the Fearless Dominance dimension of the PPI/PPI-R correlates at best modestly with total and factor scores on the PCL-R. We hypothesized that these meta-analytic findings, although providing valuable information concerning the correlates of boldness, omit a key piece of the puzzle. Specifically, we predicted that because the PCL-R was developed and validated in prison samples, in which low levels of successful functioning are normative, and because the PCL-R devotes relatively little emphasis to low anxiety and other boldness-related traits (see also Patrick, 2006; but see Neumann, Johansson, & Hare, 2013 for a differing perspective), the relation between boldness and psychopathy measures developed from a non-PCL-based perspective would be considerably higher in magnitude than the associations reported in the two previous meta-analyses.

To address this issue, we conducted a meta-analysis of the relation between boldness, as operationalized by either (a) the PPI Fearless Dominance dimension and its variants or (b) measures of boldness as operationalized by the triarchic model (e.g., the TriPM), on the one hand, and (c) measures of psychopathy that had been developed from a perspective other than the PCL/PCL-R, on

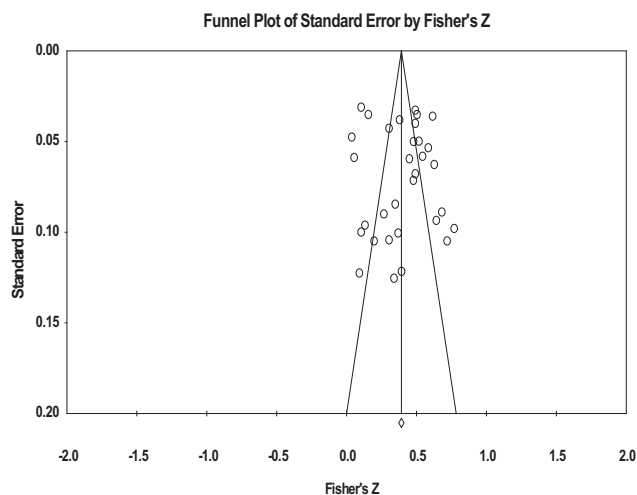


Figure 1. Funnel plot of effect sizes in meta-analysis.



the other. We elected not to revisit the question of how boldness relates to PCL-based measures of psychopathy given that the two recent meta-analyses (Marcus et al., 2013; Miller & Lynam, 2012) yielded clear and consistent results concerning the association between PPI Fearless Dominance and the PCL-R.

### Summary of Findings

We found an overall weighted effect size of  $r = .39$  between boldness and non-PCL-based measures of psychopathy. This association is medium to large in magnitude by Cohen's (1988) standards and is both statistically and practically significant. As a rough gauge for comparison, this correlation is similar in magnitude to several robust measurement findings in the psychological literature, including the meta-analytically estimated association between past and future behavior, and the effectiveness of MMPI validity scales in detecting positive impression management (see Meyer et al., 2001). When our analyses were limited to well-validated psychopathy measures, the weighted correlation rose to  $r = .44$ . The meaning of this finding requires clarification, but it raises the possibility that some of the low correlations in Table 2 are attributable to the questionable validities of several non-PCL-based measures of psychopathy. If so, our mean weighted correlation of  $r = .39$  may underestimate the relevance of boldness to psychopathy. We further found that the correlation for boldness did not differ significantly from associations for measures of the other two dimensions of the triarchic model (Patrick et al., 2009), indicating that boldness may be of approximately equal importance to psychopathy as other dimensions (cf., Miller & Lynam, 2012; Miller et al., 2015), at least when psychopathy is (a) operationalized by non-PCL-based indices and (b) conceptualized within the prism of the triarchic model.

Our results suggest that previous assertions that boldness is largely or perhaps even entirely irrelevant to psychopathy (e.g., Grego & Widiger, 2014; Miller & Lynam, 2012; Miller et al., 2015) warrant reevaluation. Our findings are instead consistent with theoretical conceptualizations of psychopathy as a hybrid condition marked by superficial charm, poise, and sangfroid on the exterior, contrasted with affective impoverishment and self-centeredness on the interior (Lilienfeld, Watts, Smith, Berg, and Latzman, 2014; Patrick, 2006). More broadly, given that boldness is only modestly associated with other psychopathy subdimensions, our findings are consistent with the possibility that psychopathy is best construed not as a unitary construct, but rather as an amalgam of largely distinct attributes that combine to forge an interpersonally malignant condition (Lilienfeld, Smith, Watts, & Latzman, in press). From this perspective, psychopathy is not a classical syndrome—that is, a constellation of features that covary across individuals—but rather a compound trait—a *configuration* of features that interact statistically to yield the clinical portrait of emotionally detached and disinhibited individuals who are outwardly appealing (see Smith, Fischer, & Fister, 2003, for a discussion of compound traits). Such individuals would be especially troublesome interpersonally, as they are apt to deceive others into believing they are trustworthy, even though they are not.

It is worth noting that our positive findings for boldness were not limited to a single non-PCL-based measure. Using Miller and Lynam's (2012) criterion of five or more effect sizes for inclusion in their meta-analysis, our results yielded average weighted cor-

relations of  $r = .38$  or above for total scores on four well-validated psychopathy measures: the EPA, the PID-5 Psychopathy Scale, the YPI, and the PRI. Moreover, the effect size magnitudes reported in Table 1 were positively correlated ( $r = .48$ ) with the number of effect sizes on which estimates were based, raising the possibility that the lower correlations reflect less stable estimates of association. Even so, several of the correlations in Table 1 were considerably lower than  $r = .38$ , suggesting that boldness is not invariably correlated moderately to highly with psychopathy measures. As a consequence, the heterogeneity in effect sizes that we observed warrants replication and clarification in future studies.

We also found that the variability in effect sizes was potentiated associated with several moderators. Our finding of higher effect sizes for samples with a higher proportion of females was not anticipated, and should be interpreted with caution pending further research, especially given that it was only marginally significant ( $p = .05$ ). If this finding proves to be robust and replicable, it may be consistent with research showing that low levels of trait fear and anxiety are non-normative among females (McLean & Anderson, 2009). If so, high levels of boldness may be more indicative of a diathesis toward extreme behaviors, including psychopathy and other externalizing conditions, in females, although this possibility remains conjectural. Notably, our unexpected finding of marginally significant ( $p = .05$ ) moderation for the variable of 'allegiance' appeared attributable to the fact that many of the highest effect sizes for boldness emerged from data for the EPA and the PRI, two measures developed largely by researchers who have raised questions regarding the relevance of boldness to psychopathy (e.g., Grego & Widiger, 2014; Lynam & Miller, 2014). We also detected potential evidence for publication bias, in that published studies yielded higher effect sizes than did unpublished studies. Nevertheless, because unpublished studies were more likely than published studies to rely on psychopathy measures that were not well-validated (e.g., Levenson Cleckley Scale, Nichols Psychopathy Scale), this difference may reflect the differential use of measures with high versus low validity in published versus unpublished studies; however, because of small cell sizes, systematic tests of these confounded moderators could not be undertaken. Moreover, the funnel plot yielded no evidence for publication bias, suggesting that further clarification of potential publication bias in this literature is needed.

In interpreting our findings, at least one alternative explanation should be acknowledged. Specifically, several of the non-PCL-based measures of psychopathy we examined may contain non-trivial amounts of construct-irrelevant variance (Messick, 1989), some of which may be relevant to the adaptive features of psychopathy. For example, one might contend that the EPA subscales assessing emotional stability/low neuroticism are of questionable relevance to psychopathy given that, in contrast to most EPA subscales, they correlate negligibly or even negatively with externalizing behaviors (e.g., Miller, Gaughan, et al., 2011). Nevertheless, because the Emotional Stability and Narcissism higher-order dimensions, which correlated highly with boldness, comprise over 40% of the EPA's content, one would need to contend that more than two-fifths of the EPA consists of construct-irrelevant variance, an assertion that appears highly implausible. In addition, aggregating across the four studies we located in which data for the subscales of the YPI were reported, boldness was moderately associated with scores on all three subscales (Grandiose/Manipu-

lative, Callous/Unemotional, and Impulsive/Irresponsible), with  $r$ s ranging from .34 to .41. Furthermore, in the one study we identified that used the CAPP (Nikolova, 2009), PPI Fearless Dominance scores were correlated between  $r = .39$  and  $r = .53$  for three of the six subdimensions. Hence, for these three well-validated measures of psychopathy, the correlates of boldness do not appear to be limited to only one subscale.

## Limitations

Our findings should be evaluated in light of several limitations and caveats. First, most of the non-PCL-based measures we examined, such as the PPI and TriPM, relied on a self-report format, raising the possibility that the observed correlations were attributable in part to method covariance. Although this explanation is not easily dismissed, method covariance is unlikely to tell the full story given that self-reported boldness is largely uncorrelated with scores on certain other self-report psychopathy measures, such as the LSRP (Marcus et al., 2013). In the one study that examined the relationship between boldness and a non-PCL-based interview measure (Nikolova, 2009), boldness was correlated moderately to highly with total scores on the CAPP ( $r = .38$ ), suggesting that the relation between boldness and psychopathy may not be limited to self-report measures. Nevertheless, additional research examining the association between boldness and psychopathy using alternative models of assessment, especially interview-based and observer-based measures (see Miller, Jones, & Lynam, 2011) is warranted.

Second, our analyses focused exclusively on zero-order associations between boldness and psychopathy measures. Few of the studies we examined reported partial correlations for boldness controlling statistically for the other triarchic dimensions, whether assessed by the PPI or its variants or by the TriPM. Nevertheless, because PPI Fearless Dominance tends to be largely orthogonal to both Self-Centered Impulsivity and Coldheartedness (Marcus et al., 2013), our findings provide *prima facie* evidence that boldness possesses incremental validity (Sechrest, 1963) above and beyond other major psychopathy dimensions for non-PCL-based psychopathy. Nevertheless, further research examining the unique correlates of boldness above and beyond other psychopathy dimensions will be important.

Third, our analyses focused on a circumscribed question, namely, the relation between boldness measures and indices of non-PCL psychopathy. These analyses provide only one small, albeit important, source of evidence bearing on the construct validity of boldness within the nomological network of psychopathy. To flesh out this construct validity picture, further research will be needed to examine the implications of boldness for a variety of other external correlates pertinent to psychopathy, including laboratory measures of fearlessness (e.g., aversive startle potentiation, electrodermal countdown procedures) and passive-avoidance learning, as well as biological indicators, such as amygdala activation in anticipation of fear-provoking stimuli. Preliminary evidence points to positive associations between boldness and diminished (a) aversive startle potentiation (e.g., Benning, Patrick, & Iacono, 2005) and (b) skin conductance activity in anticipation of an aversive noise (Dindo & Fowles, 2011), but additional work along these lines will be necessary to elucidate the

psychological meaning of boldness and its place within the broader psychopathy construct.

## Unresolved Issues

Our analyses leave several key questions unanswered. First, our analyses do not resolve ongoing controversies regarding the factorial coherence of PPI or PPI-R Fearless Dominance. Some authors have argued that the currently accepted factor structure, in which the PPI Social Potency, Fearlessness, and Stress Immunity subscales load onto a higher order Fearless Dominance dimension, is inferior to alternative factor structures (Neumann et al., 2008; Neumann, Uzieblo, et al., 2013), in part because some of these subscales (e.g., Stress Immunity) often display hyperplane loadings on more than one PPI higher order dimension. Hence, our findings should not be construed to imply that the extant factor structure of Fearless Dominance is ideal, or that revisions to this structure might not enhance its convergent and discriminant validity.

Second, our analyses leave unaddressed the question of why at least one well-validated measure derived from the PCL, namely the SRP, correlates moderately to highly with boldness (Marcus et al., 2013). Although the SRP may be the lone exception that proves the rule, it is plausible that the numerous revisions undertaken to the SRP since its initial development have brought it closer in line with Cleckley's conception of psychopathy. For example, the initial version of the SRP that resulted in the SRP-II provided increased coverage of the interpersonal and affective dimensions of psychopathy, some of which appear to overlap with boldness (Lester, Salekin, & Sellbom, 2013). This point is important given that later versions of the SRP were used in the studies examined here, as well as in the meta-analysis by Marcus et al. (2013).

Third and finally, in light of the discrepancy between our findings and those of the two previous meta-analyses, readers may justifiably ask, "Which meta-analysis is correct?" We contend this is the wrong question to pose. We strongly suspect that Miller and Lynam (2012) and Marcus et al. (2013) are correct that boldness bears only a weak or at best modest association with the PCL-R and its two primary dimensions, but we also suspect that boldness is tied considerably more strongly to psychopathy measures that accord a greater emphasis to adaptive functioning.

In this respect, our findings bear several implications for clinical assessment in therapeutic and forensic settings. In particular, they suggest that practitioners should not presume that alternative measures of psychopathy are interchangeable (see also Malterer et al., 2009). Specifically, some widely used measures of psychopathy, especially those derived from the PCL model of psychopathy (e.g., the LSRP), are heavily imbued with maladaptive variance associated with risk for antisocial and criminal behaviors, whereas others, such as the PPI, PPI-R, EPA, and YPI, contain substantial amounts of variance relevant to potentially adaptive functioning, such as social potency, immunity to anxiety, and a propensity to seek out novel stimuli. Moreover, practitioners who use the latter indices should not assume that elevated scores on all psychopathy subdimensions are necessarily bellwethers of psychological maladjustment or risk for externalizing behavior. To the contrary, elevated scores on certain psychopathy subdimensions, especially those that are substantially saturated with boldness, may even be protective against certain pathological outcomes. For example,

some evidence suggests that PPI Fearless Dominance exerts protective effects against both depression and suicide attempts among offenders with elevated Self-Centered Impulsivity (Hunt, Boronova, Kimonis, Lilienfeld, & Poythress, 2015; but see Miller, Maples-Keller, & Lynam, 2015, for largely negative findings on PPI factor interactions). Such findings, if replicable, should also caution practitioners against exclusive reliance on total psychopathy scores given that such scores, especially on measures containing subscales imbued with boldness, reflect the summation of largely maladaptive content with largely adaptive content (see Lilienfeld et al., in press). As a consequence, such total scores may be highly heterogeneous and difficult to interpret for clinical purposes.

As we and others have noted elsewhere (Lilienfeld, Smith, Watts, Berg, & Latzman, 2014; Patrick, 2006), the construct of psychopathy (Lewis, 1974) has long been marked by two “faces,” one largely or entirely unsuccessful and the other somewhat successful, at least with regard to short-term interpersonal functioning. These protean polarities have appeared and reappeared in changing names and guises throughout the psychopathy literature, with the latter term in each pair being characterized by more successful functioning: the *impulsive psychopath* versus the *swindler psychopath* (Kraepelin, 1904), *antisocial personality disorder* versus *psychopathy* (Lilienfeld, 1994), *sociopathy* versus *psychopathy* (Partridge, 1930), *secondary psychopathy* versus *primary psychopathy* (Karpman, 1941; see also Skeem, Johansson, Andershed, Kerr, & Loudon, 2007), *simple* versus *complex psychopathy* (Arieti, 1967), *unsuccessful psychopathy* versus *successful psychopathy* (Hall & Benning, 2006), *nonadaptive* versus *adaptive sociopathy* (Sutker & Allain, 1987), and *aggressive* versus *emotionally stable* psychopathy (Hicks, Markon, Patrick, Krueger, & Newman, 2004).

Neither face of psychopathy, we maintain, is more veridical than the other. Specifically, both faces map onto distinctive constellations of traits in multivariate space (Lilienfeld, 2013). Moreover, psychopathy measures almost certainly differ in the extent to which they capture one face as opposed to another. We posit that the PCL and its variants, though featuring some representation of adaptive features (Neumann, Johansson, & Hare, 2013), are primarily operationalizations of the former (less successful) face of psychopathy (see Patrick, 2006). In contrast, we posit that many or most non-PCL-based measures of psychopathy are more geared toward coverage of the latter (more successful) face of psychopathy, perhaps because these measures were constructed largely outside of forensic settings.

If our analysis has merit, the question of which operationalization of psychopathy is inherently more valid may not be resolvable scientifically, because each construct is associated with its own nomological network and corresponding set of hypothesized convergent and discriminant correlates. Investigators who focus exclusively on only one of these two operationalizations of psychopathy, should therefore bear in mind that they are touching only one part of the proverbial elephant. As a consequence, they may be overlooking personality traits needed for a comprehensive understanding of the broad domain of psychopathy. Thus, we offer our meta-analytic findings not with the intention of providing a conclusive answer to lingering questions concerning the boundaries of psychopathy, but rather in the spirit of alerting psy-

chopathy scholars to a crucial but often overlooked part of the elephant.

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