Clinical Psychology Review 71 (2019) 1–26

Contents lists available at ScienceDirect

Clinical Psychology Review

journal homepage: www.elsevier.com/locate/clinpsychrev

Review

An examination of the Triarchic Model of psychopathy's nomological network: A meta-analytic review

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ARTICLE INFO

Keywords:
Triarchic model of psychopathy
Triarchic psychopathy measure
Psychopathy
Boldness

ABSTRACT

Psychopathy is characterized by a constellation of traits including callousness, superficial charm, grandiosity, exploitativeness, irresponsibility, and impulsivity (e.g., Cleckley, 1941/1955; Hare, 2003). Despite longstanding interest, the nature and scope of the construct as well as the centrality and sufficiency of its components remain debated (i.e., Fearless Dominance/Boldness; Miller & Lynam, 2012; Lilienfeld et al., 2012). Recently, the Triarchic Model of Psychopathy (TriPM; Patrick, Fowles, & Krueger, 2009) has garnered considerable interest, positing that psychopathy can be characterized by three partially overlapping, phenotypic domains: Boldness, Meanness, and Disinhibition. The present meta-analysis sought to examine the relations between these domains and other well-validated psychopathy measures and theoretically relevant outcomes in its nomological network. Across outcomes, Meanness and Disinhibition demonstrated robust convergent and criterion validity with other models of psychopathy as well as with pathological traits and externalizing outcomes; however, they manifested limited discriminant validity in relation to one another. In addition, empirical evidence for Boldness in relation to maladaptive outcomes was much weaker. Specifically, Boldness evinced the most robust relations with markers of adaptive functioning and only small relations with central criterion variables (e.g., externalizing behavior).

1. Introduction

Psychopathy is a multidimensional personality disorder associated with deficits in affect (e.g., fearlessness, callousness), interpersonal relations (e.g., grandiosity, deceitfulness), and maladaptive behavior (e.g., antisocial behavior; Hare & Neumann, 2008; Patrick, Fowles, & Krueger, 2009). Cleckley (1941/1955) is often considered the father of modern conceptualizations of psychopathy due to his detailed articulation of the varied behaviors, emotions, and cognitions he believed were associated with the construct based on his clinical observations. Cleckley's description included both the obviously maladaptive traits that comprise the construct (e.g., untruthfulness, pathological egocentricity and incapacity for love, lack of remorse or shame, inadequately motivated antisocial behavior) as well as more adaptive traits, such as superficial charm and good intelligence, absence of delusions, and absence of nervousness. Simultaneous (e.g., Karpman, 1941, 1948) and subsequent (e.g., McCord & McCord, 1964) descriptions focused more specifically on the maladaptive traits; for instance, Karpman described the "true or primary" form of psychopathy as being associated with a "virtual absence of any redeeming social reactions: conscience, guilt, binding and generous emotions" (p. 533).

Hare's theoretical and empirical work, especially the development of the Psychopathy Checklist and its revision (PCL/PCL-R; Hare, 1980, 2003), allowed a robust empirical literature on psychopathy to develop. The PCL-R uses information gained from both file review and interview to rate 20 individual traits or behavioral patterns (e.g., pathological lying, grandiosity, impulsivity), which were substantially influenced by Cleckley's criteria and Hare's work with incarcerated individuals (Hare & Neumann, 2008). The PCL-R comprises two higher order factors (Interpersonal/Affective [Factor 1] and Social Deviance [Factor 2]), which exhibit moderate to strong intercorrelations (Hare, 1991), and can be further divided into four facets: *Interpersonal* and *Affective* (from Factor 1), *Lifestyle* and *Antisocial* (from Factor 2). The popularity of the PCL/PCL-R gave rise to the development of several self-report measures (e.g., the Self-Report Psychopathy Scale [SRP] and its subsequent revisions; Hare, 1985; Levenson Self-Report Scale [LSRP], Levenson, Kiehl, & Fitzpatrick, 1995). The factors/facets within the PCL-R and other inventories that sprang from it (e.g., SRP; LSRP) are substantially related to one another, consistent with the notion of psychopathy as a psychiatric syndrome. Some scholars have been critical of the PCL-R both in

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https://doi.org/10.1016/j.cpr.2019.04.005
Received 28 November 2018; Received in revised form 9 April 2019; Accepted 19 April 2019
Available online 25 April 2019
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terms of the degree to which it became reified in the field, as well as concerns regarding construct drift from Cleckley's original formulation by failing to assess several potentially central traits that may be critical to psychopathy's etiology (e.g., fearlessness; Lykken, 1995) or traits that provide the "mask" that may serve to disguise the more pathological traits (Skeem & Cooke, 2010).

In contrast to the PCL-R and its various derivatives, other psychopathy assessments were developed with alternative guiding frameworks. For instance, the Psychopathic Personality Inventory (PPI/PPI-R; Lilienfeld & Andrews, 1996; Lilienfeld & Widows, 2005) is a self-report inventory of psychopathy which assesses Cleckley's conceptualization in non-incarcerated samples. In this measure, psychopathy is viewed as a multidimensional disorder described by eight subscales, which comprise two largely unrelated higher-order factors made up of 7 of the 8 subscales: Fearless Dominance (FD) and Self-Centered Impulsivity (ScI; Benning, Patrick, Hicks, Blonigen, & Krueger, 2003; Lilienfeld & Widows, 2005; cf., Neumann, Malterer, & Newman, 2008); however, concerns have been raised regarding the validity of this factor structure (see Neumann, Uzieblo, Crombez, & Hare, 2013). Nevertheless, FD appears to be most strongly related to constructs measuring emotional stability, sensation seeking, and extraversion and is related primarily to adaptive behavioral correlates rather than maladaptive ones (see Miller & Lynam, 2012 for a review). Conversely, ScI is strongly related to behavioral disinhibition, aggressiveness, disagreeableness, negative affect, and antisocial behavior (Miller & Lynam, 2012; Skeem, Polaschek, Patrick, & Lilienfeld, 2011). The remaining subscale, *Coldheartedness*, has been found to be largely unrelated to the aforementioned higher-order factors and represents a third orthogonal factor with its own unique correlates (Berg, Hecht, Latzman, & Lilienfeld, 2015; Miller, Maples-Keller, & Lynam, 2016).

Another recently developed self-report inventory, the Elemental Psychopathy Assessment (EPA; Lynam, Gaughan, Miller, Mullins-Sweatt, & Widiger, 2011; Lynam et al., 2013) began with the basic building blocks of personality—the 30 traits present in the Five-Factor Model (FFM) of personality (McCrae & Costa, 2003), whose relations to psychopathy have been widely studied. Eighteen consensual traits were identified (Lynam & Widiger, 2007); items assessing more extreme and psychopathy-specific functioning were written for each trait: Callousness, Coldness, Distrust, Manipulation, Self-Centeredness, Disobliged, Impersistence, Opposition, Rashness, Thrill-Seeking, Urgency, Anger, Arrogance Dominance, Self-Assurance, Invulnerability, Self-Contentment, and Unconcern. Four factors underlie these 18 scales (Few, Miller, & Lynam, 2013): Antagonism (i.e., Callousness to Self-Centeredness in the above list), Disinhibition (i.e., Disobliged through Urgency), Narcissism (i.e., Anger through Self-Assurance), and Emotional Stability (i.e., Invulnerability through Unconcern). The EPA and its subscales demonstrate hypothesized relations to ratings of self-reported personality and thin-slice ratings of personality, social-cognition variables, game-playing and infidelity in romantic relationships, other psychopathy measures, substance use, aggression, and antisocial behavior (e.g., Lynam et al., 2011; Miller, Watts, & Jones, 2011; Wilson, Miller, Zeichner, Lynam, & Widiger, 2011). Emotional Stability, the aspect closest to PPI FD, is related primarily to adaptive outcomes.

2. The Triarchic Model of Psychopathy

Recently, the Triarchic Model of Psychopathy (TriPM; Patrick et al., 2009) was developed in hopes of integrating current and historic accounts of psychopathy as well as to connect various conceptualizations of psychopathy to other broad dimensional models of general personality and psychopathology (Patrick & Drislane, 2014). The TriPM conceptualizes psychopathy as three partially overlapping, but distinct domains: *Boldness* (e.g., social dominance, low stress reactivity, and thrill-adventure seeking), *Meanness* (e.g., callousness, coldheartedness, and antagonism), and *Disinhibition* (e.g., impulsivity and negative affectivity; Patrick, Drislane, & Strickland, 2012). Although the domains manifest some overlap (i.e., Meanness and Disinhibition $r = 0.40$ to 0.60; Meanness and Boldness $r = 0.20$ to 0.30; Boldness and Disinhibition $r = 0.00$ to -0.20; Patrick & Drislane, 2014), it has been argued that they have distinct developmental pathways (e.g., difficult and fearless temperaments, failure of secure attachment) and neurobiological substrates (e.g., orbitofrontal cortex, limbic system; Patrick & Drislane, 2014; Patrick et al., 2009). Rather than indicators of a higher-order, unitary construct, the TriPM domains are used as building blocks to capture various conceptions of psychopathy (Patrick et al., 2012).

There has been considerable empirical work linking the TriPM, most commonly measured by the 58-items self-report Triarchic Measure of Psychopathy (Patrick, 2010), to general traits (e.g., Miller, Lamkin, Maples-Keller, & Lynam, 2016; Poy, Segarra, Esteller, López, & Moltó, 2014), other models of psychopathy and pathological traits (e.g., Drislane, Patrick, & Arsal, 2014), and externalizing behaviors (e.g., Gatner, Douglas, & Hart, 2016). The TriPM has been studied in a variety of populations including undergraduate (e.g., Strickland, Drislane, Lucy, Krueger, & Patrick, 2013), community (e.g., Drislane et al., 2014), correctional (Stanley, Wygant, & Sellbom, 2013), and clinical samples (e.g., Venables, Hall, & Patrick, 2014), and has been translated into several different languages (e.g., Italian [Sica et al., 2015], Chinese [Shou, Sellbom, & Han, 2016], and Greek [Fanti, Kyranides, Drislane, Colins, & Andershed, 2016]). Although it is most commonly assessed with the Triarchic Psychopathy Measure (Patrick, 2010), a number of alternative measures have been created such that the TriPM can be scored in archival datasets using a variety of measures of personality (e.g., Multidimensional Personality Questionnaire [MPQ], Brislin, Drislane, Smith, Edens, & Patrick, 2015; HEXACO, Ruchensky, Donnellan, & Edens, 2018; Minnesota Multiphasic Personality Inventory-2-Restructured Form [MMPI-2-RF], Sellbom et al., 2016, and Revised NEO Personality Inventory [NEO PI-R]; Drislane, Brislin, Jones, & Patrick, 2018) and psychopathy (e.g., Psychopathic Personality Inventory [PPI/PPI-R], Hall et al., 2014; Youth Psychopathic Traits Inventory [YPI], Drislane et al., 2015).

2.1. Boldness

Boldness purportedly represents the ability to tolerate unfamiliarity, remain calm in stressful or threatening situations, and quickly recover from these situations. Interpersonally, Patrick et al. (2009) suggest that Boldness is characterized by a self-assured and socially efficacious nature. Behaviorally, it is exhibited through "imperturbability, social poise, assertiveness and persuasiveness, bravery, and venturesomeness" (Patrick et al., 2009, p. 926). Theoretically, it maps onto Cleckley's conception of the mask of sanity and Lykken's low fear (Lykken, 1957). Empirically, Boldness evinces its most robust relations with markers of adaptive functioning (e.g., PPI FD, FFM Extraversion, and FFM (low) Neuroticism; Crego & Widiger, 2014; Patrick et al., 2009). However, some have found that Boldness/FD exhibits positive empirical relations with narcissism, sensation seeking, and decreased empathy (Benning, Patrick, Blonigen, Hicks, & Iacono, 2005; Miller et al., 2011). Due to its theoretical and empirical overlap with PPI FD (r range: 0.70 to 0.85, see Anderson, Sellbom, Wygant, Salekin, & Krueger, 2014; Sellbom & Phillips, 2013), it has been argued that Boldness and FD can be used interchangeably (Lilienfeld et al., 2016).

2.2. Meanness

Meanness is characterized by a lack of empathy, detachment from others, exploitativeness, and cruelty and was developed, assessment-wise, from the Externalizing Spectrum Inventory (ESI; Krueger, Markon, Patrick, Benning, & Kramer, 2007), based on scales related to its Callous Aggression factor (i.e., Empathy, Relational Aggression, Destructive Aggression, Physical Aggression, Excitement Seeking and Honesty; Patrick & Drislane, 2014). Behaviorally, prototypic indicators of Meanness include a lack of close attachments, cruelty toward people and

animals, predatory aggression and exploitation of others, destructiveness, and rebelliousness/defiance of authority (Patrick et al., 2009). Theoretically, Meanness has been a central feature of psychopathy across all conceptions including Cleckley's, McCord and McCord's (1964), and Karpman's (1941) as well as Hare's two-factor model of psychopathy, and it manifests the most robust empirical relations with FFM (low) Agreeableness.

2.3. Disinhibition

Disinhibition is most notably marked by substantial difficulty regulating one's affect, urges, and impulses. Individuals high in Disinhibition exhibit a lack of planfulness or foresight and insist upon immediate gratification. From a conceptual and assessment-based perspective, Disinhibition is also based on the ESI's general Externalizing Proneness factor and contains scales from the "Problematic Impulsivity, Planful Control, Irresponsibility, Dependability, Impatient Urgency, Boredom Proneness, Theft, Fraud, and Alienation scales" (Patrick & Drislane, 2014). Due to their conceptual overlap, Meanness and Disinhibition exhibit the highest interrelations. Behaviorally, it is evident through difficulties with substance use, impatience, impulsiveness, ASB, and irresponsibility (Krueger et al., 2007). Theoretically, Disinhibition has been considered a central component in psychopathy's conceptualization, and thus, has been featured in historic and contemporary conceptualizations of psychopathy. Empirically, it exhibits the most robust relations with the FFM (low) Conscientiousness, as well as large to moderate relations with PPI ScI, PCL-R Factor 2, FFM Neuroticism, substance use, and ASPD (Patrick & Drislane, 2014).

3. Current controversies and debates

Although psychopathy is a topic of substantial interest among lay persons and scientists alike, debate remains regarding its conceptualization, particularly the centrality of its various components (e.g., Lilienfeld et al., 2012; Lynam & Miller, 2012; Miller & Lynam, 2012). There is general consensus across models and measures that psychopathy is characterized by interpersonal antagonism and behavioral disinhibition, which are associated with an array of externalizing behaviors, however, the degree to which these outcomes are central to psychopathy is itself contested (Hare & Neumann, 2008; Skeem et al., 2011). A point of substantial debate is how FD/Boldness should be conceived of – as equally important/central pieces of psychopathy (e.g., Lilienfeld et al., 2012, 2016; Patrick, 2010) or a peripheral trait that may serve to draw attention when present but is neither necessary nor sufficient for psychopathy (Lynam & Miller, 2012; Miller et al., 2016; Miller & Lynam, 2012). Significant concerns have been raised regarding the limited relations exhibited by FD/Boldness with well-established correlates of psychopathy (e.g., externalizing behavior, aggression). As such, scholars have disagreed about whether this component fits conceptually and empirically with psychopathy as a whole (Hare & Neumann, 2010; Lilienfeld et al., 2012; Miller & Lynam, 2012; Miller & Lynam, 2015). Indeed, numerous empirical investigations have found strong associations between Boldness/FD and various adaptive outcomes (e.g., heroism; leadership; Smith, Lilienfeld, Coffey, & Dabbs, 2013; psychological health; Bleidorn et al., 2019), as well as weak or null associations with externalizing behaviors, which are considered by many central to psychopathy (Miller & Lynam, 2012). Conversely, other theorists contend that adaptive features are found in classic accounts of psychopathy, most notably in *The Mask of Sanity* (Cleckley, 1941/1955). Proponents argue that Boldness/FD masks the psychopathic individuals' maladaptive features and may relate more strongly to externalizing outcomes at high levels (Blonigen, 2013) or may accentuate the relation between other psychopathic features and externalizing outcomes (Lilienfeld et al., 2012); therefore, it is regarded as essential by some (Lilienfeld et al., 2012; Lilienfeld et al., 2016).

4. The current study

Given the substantial interest in the TriPM, we meta-analytically aggregated existing findings regarding the TriPM domains' relation to a variety of constructs and outcomes. First, we examine the relations between the TriPM domains and several alternative measures of psychopathy (e.g., Psychopathy Checklist [PCL-R], Self-Report Psychopathy Scale [SRP], Self-Report Psychopathy Scale [PPI], Levenson Self-Report Scale [LSRP], Elemental Psychopathy Assessment [EPA]). Next, we examine the TriPM domains' relations to general (i.e., FFM) and pathological traits, as well as more "traditional" personality disorder (PD) constructs (e.g., antisocial, narcissistic PDs). Third, the relations between the TriPM domains and externalizing behaviors and internalizing symptoms are reviewed. The relations between the TriPM domains and individual traits (e.g., sensation seeking, impulsivity, empathetic concern) are also examined. We also examine heterogeneity and the degree to which moderating variables (e.g., sex, age) explain heterogeneity among effect sizes. Finally, we quantify the absolute similarity of the empirical relations manifested by the TriPM domains using intraclass correlations across all criteria examined in this review.

5. Methods

5.1. Data search, study selection, and moderator selection

Consistent with the Preferred Reporting Items for Systematic Review and Meta-Analysis guidelines (PRISMA; Moher, Liberati, Tetzlaff, & Altman, 2009), a comprehensive search of articles published from 2009 (i.e., the year of the publication of the TriPM) to September 2018 was conducted. Articles were considered eligible for inclusion in the present meta-analysis if they included any measure of the TriPM and relevant criterion variables (i.e., other models of psychopathy, general and pathological traits, externalizing behavior, internalizing symptoms, and individual traits); however, if four or more effects were not available for a relevant criterion variable, it was not included. Additionally, studies were excluded if they were not written in English or were based on animal models. For the present meta-analysis, several data collection strategies were employed. First, a preliminary search was conducted on PsycINFO and Google Scholar using the following terms: *Triarchic Model, Triarchic Psychopathy Model, Triarchic psychopathy, TriPM,* and *Triarchic Psychopathy Measure*. The Tests & Measures advanced search function on PsycINFO was also used to search for studies that included the TriPM domains in their methods. A second preliminary search was conducted on ProQuest, a psychology specific search engine for dissertations, and PsychArticles using the same terms. Additionally, the references of these studies as well as the CV's of prominent researchers in this area of study were reviewed to identify potential missed publications. Lastly, unpublished data were solicited through relevant listservs (i.e., Society for the Scientific Study of Psychopathy [SSSP]) and directed emails to scholars who regularly publish on the TriPM. Of note, we did not ask scholars to transform existing data from general measures of personality or alternative measures of psychopathy into the TriPM so as to examine the TriPM in relation to other outcomes given the enormous amount of work and outreach that would involve and the fact that results from these alternative measures of the TriPM would then "swamp" findings from the measure most commonly used to measure these domains.

Studies that reported relations between the TriPM domains and multiple relevant criterion variables were treated as independent, and thus, were each included in all relevant meta-analyses. In cases in which several effects sizes fell into the same category (e.g., different measures of substance use), an average effect size was calculated. To reduce the problem of criterion contamination, where proxy measures of the TriPM were used, correlations from the same measure were not included (i.e., PPI proxy Boldness and PPI FD). Across studies, several relevant moderators were identified and coded. Specifically, measurement type (i.e.,

TriPM, TriPM proxy [e.g., NEO-Tri], Non-English TriPM), age, race (i.e., percent of participants who were Caucasian), sex (i.e., percent of male participants), and sample type (i.e., college, community, forensic/correctional) were coded as potential sources of variance.

5.2. Statistical analyses and estimation of publication Bias

Random-effects models were used to estimate the population mean Pearson's *r* between the TriPM domains and the various criterion variables (Lipsey & Wilson, 2001). In accordance with standards for meta-analysis of *r*, all bivariate relations were transformed to Fisher's *z*s prior to aggregation and regression moderator analysis, and then were back-transformed to reflect the population correlation (Hedges & Olkin, 1985; Rosenthal, 1991). Of note, two of the broader outcomes, internalizing and externalizing psychopathology, represent averages of multiple effects. Specifically, the broad internalizing effect size represents the average of anxiety and depression, whereas broad externalizing represents the average of ASB, aggression, and substance use. Aggregated effects and *Q*, a measure of heterogeneity in the distribution of effect sizes (Higgins & Thompson, 2002), were calculated using the Metafor package (Viechtbauer, 2010) for R. If significant heterogeneity was observed, moderation analyses were conducted using mixed-effects maximum likelihood estimation, in which several regression models are generated to examine the unique effects of potential moderators (Rosenthal, 1991).[1]

To assess for publication bias, funnel plots of effect sizes by standard errors were visually inspected for indicators of publication bias, and Egger's test was conducted. In cases where publication bias was indicated, Duval and Tweedie's (2000) trim and fill method was conducted.

6. Results

6.1. Effect size retrieval

The comprehensive search resulted in 623 potential manuscripts. After duplicate and irrelevant studies were removed, 354 manuscripts were evaluated for possible inclusion. See Appendix B for a visual representation of the full search results. Of these studies, 84 were included from which 1418 usable effects were identified (see Appendix A for data references and Appendix C for descriptive statistics). Across studies, effect sizes for six general categories of effects were retrieved (i.e., relation between TriPM domains and other models of psychopathy, general traits, pathological traits and PDs, externalizing behaviors, internalizing symptoms, and individual traits). Within these categories, 130 specific outcomes were examined (i.e., 384 total effects across all outcomes). Weighted effect sizes were computed for each outcome category for which at least four effect sizes were available.

6.2. Publication bias

To investigate the effect of possible publication bias, three tests were employed. First, Egger's test (Egger, Smith, Schneider, & Minder, 1997) was conducted to assess the presence of skew and asymmetry in the relation between effect size and sample size (or standard error) for each sample type, separately. Statistical significance was determined using an alpha of $p < .05$. Second, funnel plots characterizing study effect size estimates for each effect type were visually examined. Visual identification of funnel plot asymmetry was only conducted in cases of effects for which 10 or more effect size estimates were available (Sedgwick, 2013) because Type I error in visually identified asymmetry in funnel plots is more likely to occur in cases involving a lower number of effect size estimates and empirical tests have shown visual identification of funnel plot asymmetry to be unreliable (Terrin, Schmid, & Lau, 2005), Third, Duval and Tweedie's (2000) trim and fill method was conducted to compare the random-effects weighted mean effect size obtained normally to an effect size adjusted for asymmetry.

Results of Egger's test ($p < .05$) indicated evidence of possible publication bias for 56 out of 375 effects (15%; see Appendix H for summary of specific relations). Visual inspection of funnel plots associated with relations between Boldness and outcomes related to ASB and Aggression failed to show a clear pattern of under or overestimation; and publication bias was not evident in the most robust meta-analytic examination of this relation, namely between Boldness and general ASB. However, visual inspection of funnel plots suggested that the relation between Boldness and Grandiose Narcissism may be overestimated in the present meta-analysis (see Appendix I, Fig. I2). Upon visual examination, evidence of funnel plot asymmetry was observed for 8 of 99 effects examined (see Appendix I, Figs. I1–I8). These effects included relations between TriPM domains and Narcissism and PPI-Total. The trim and fill method indicated 124 cases of 375 in which a difference was observed between the original mean effect size and the mean effect size following the trim and fill method adjustment (see Appendix H for summary). No discernible pattern of results was evident.

6.3. Main effects

6.3.1. Domain interrelations

Boldness evinced a small, but significantly positive relation with Meanness ($r = 0.16$) and a negative relation with Disinhibition ($r = -0.05$), whereas Meanness and Disinhibition evinced a significant strong, positive relation ($r = 0.53$).[2]

6.3.2. Relations with psychopathy measures

Relations between TriPM domains and alternative psychopathy scales, as well as the total number of participants, standard errors and 95% confidence intervals are presented in Table 1. Apart from Boldness, the TriPM domains generally exhibited moderate to large positive relations with scales from various measures of psychopathy. As expected, given their strong theoretical overlap, Boldness exhibited its largest relations with PPI Fearless Dominance ($r = 0.79$), EPA Emotional Stability ($r = 0.72$) and the PPI total scores ($r = 0.54$). Correlations for TriPM Boldness with total scores from other measures of psychopathy were smaller in magnitude and ranged from moderate to small (*r*s ranged from 0.05 [LSRP] to 0.37 [EPA]). Boldness also exhibited large relations with EPA Narcissism ($r = 0.52$), as well as small to moderate positive relations with YPI Grandiose Manipulation ($r = 0.41$), interpersonal features of the PCL-R and SRP (*r*s = 0.27), YPI Callous Unemotional ($r = 0.28$), and impulsive and affective features of the SRP (*r*s = 0.30 and 0.26, respectively).

Conversely, Meanness and Disinhibition demonstrated moderate to strong positive relations with the total scores from the other psychopathy measures (Meanness *r*s ranged from 0.30 [PCL-R] to 0.75 [EPA]; Disinhibition *r*s ranged from 0.31 [PCL-R] to 0.61 [EPA and APSD-SR]). Generally, Meanness evinced the largest relations with antagonistic, callous features (i.e., EPA Antagonism [$r = 0.79$], SRP Callous Affect [$r = 0.69$], LSRP Callousness [$r = 0.56$], PPI Coldheartedness [$r = 0.53$], and APSD-SR Callous Unemotional [$r = 0.47$]); however, large, positive relations were also observed for interpersonal features of the SRP ($r = 0.61$), and impulsive, antisocial behavior (e.g., PPI ScI [$r = 0.62$], EPA Disinhibition [$r = 0.55$]). TriPM Disinhibition similarly

[1] For this step, because the Metafor function in R drops study effect size estimates for which incomplete moderator data exists (e.g., if age is included as a moderator, the effect size estimate would be dropped that does not include data for age), only moderators were included for which moderator data was present for all study effect size estimates.

[2] Statistical significance is indicated given that zero is not included in the confidence interval.

Table 1
Meta-analytically derived relations between the Triarchic domains and models of psychopathy.

	K	N	Boldness			Meanness			Disinhibition		
			SE	W. Avg ES	95% CI	SE	W. Avg ES	95% CI	SE	W. Avg ES	95% CI
PCL-R	10	2894	0.02	0.17	0.13 to 0.21	0.02	0.30	0.26 to 0.35	0.03	0.31	0.25 to 0.36
Interpersonal	10	2894	0.02	0.27	0.22 to 0.31	0.02	0.13	0.10 to 0.17	0.03	0.10	0.04 to 0.16
Affective	10	2894	0.02	0.11	0.07 to 0.15	0.02	0.24	0.19 to 0.28	0.02	0.12	0.07 to 0.17
Lifestyle	10	2894	0.02	0.06	0.02 to 0.10	0.03	0.26	0.21 to 0.31	0.03	0.35	0.29 to 0.40
Antisocial	9	2737	0.02	0.09	0.05 to 0.13	0.04	0.30	0.23 to 0.36	0.06	0.39	0.29 to 0.48
SRP	9	2892	0.03	0.31	0.25 to 0.37	0.08	0.62	0.52 to 0.71	0.06	0.54	0.45 to 0.61
Interpersonal M.	9	2999	0.02	0.27	0.22 to 0.31	0.08	0.61	0.50 to 0.71	0.06	0.46	0.37 to 0.54
Callous Affect	9	2999	0.03	0.26	0.20 to 0.31	0.10	0.69	0.57 to 0.78	0.05	0.36	0.27 to 0.44
Erratic Lifestyle	9	2999	0.03	0.30	0.24 to 0.36	0.07	0.50	0.39 to 0.59	0.07	0.58	0.48 to 0.66
Antisocial behavior	9	2999	0.02	0.11	0.06 to 0.15	0.06	0.44	0.33 to 0.53	0.08	0.52	0.40 to 0.62
PPI	11	3205	0.03	0.54	0.50 to 0.57	0.04	0.67	0.62 to 0.71	0.05	0.52	0.44 to 0.58
Fearless Dominance	17	5682	0.03	0.79	0.77 to 0.81	0.02	0.29	0.26 to 0.32	0.02	0.07	0.03 to 0.11
Self-Centered Imp.	17	5682	0.02	0.07	0.03 to 0.11	0.03	0.62	0.59 to 0.66	0.04	0.69	0.64 to 0.73
Coldheartedness	17	5682	0.02	0.19	0.16 to 0.22	0.04	0.53	0.47 to 0.63	0.03	0.17	0.11 to 0.24
LSRP	8	2913	0.05	0.05	−0.04 to 0.13	0.07	0.65	0.56 to 0.73	0.06	0.57	0.47 to 0.65
Egocentricity	8	2283	0.03	0.10	0.04 to 0.16	0.06	0.61	0.54 to 0.68	0.05	0.41	0.32 to 0.49
Callousness	8	2283	0.04	0.09	0.02 to 0.16	0.06	0.56	0.46 to 0.64	0.05	0.37	0.27 to 0.45
Antisocial	8	2283	0.07	−0.09	−0.22 to 0.05	0.05	0.45	0.37 to 0.53	0.07	0.57	0.46 to 0.66
EPA	4	1418	0.06	0.37	0.27 to 0.46	0.05	0.75	0.71 to 0.79	0.04	0.62	0.57 to 0.66
Antagonism	8	3350	0.02	0.03	−0.01 to 0.08	0.04	0.79	0.76 to 0.82	0.04	0.57	0.52 to 0.62
Emotional Stability	8	3350	0.04	0.72	0.68 to 0.75	0.04	0.10	0.03 to 0.17	0.04	−0.23	−0.30 to −0.15
Disinhibition	8	3350	0.04	−0.02	−0.09 to 0.06	0.08	0.55	0.43 to 0.66	0.05	0.76	0.72 to 0.80
Narcissism	7	2944	0.04	0.52	0.47 to 0.57	0.02	0.44	0.40 to 0.46	0.03	0.32	0.27 to 0.36
YPI	5	2146	0.06	0.33	0.23 to 0.43	0.07	0.56	0.47 to 0.65	0.05	0.50	0.41 to 0.57
Grandiose Manip.	4	2052	0.05	0.41	0.33 to 0.48	0.05	0.45	0.36 to 0.53	0.05	0.33	0.24 to 0.42
Callous Unemot.	4	2052	0.10	0.28	0.10 to 0.44	0.09	0.51	0.37 to 0.63	0.05	0.28	0.19 to 0.37
Impulsive/Irrespon.	4	2052	0.09	0.09	−0.08 to 0.25	0.06	0.42	0.33 to 0.51	0.04	0.62	0.57 to 0.67
ICU	4	1915	0.02	0.12	0.08 to 0.17	0.08	0.54	0.41 to 0.64	0.05	0.33	0.23 to 0.42
APSD-SR	4	1915	0.10	0.26	0.07 to 0.42	0.05	0.60	0.54 to 0.65	0.06	0.62	0.55 to 0.68
Narcissism	4	1915	0.06	0.15	0.04 to 0.25	0.04	0.45	0.39 to 0.51	0.03	0.40	0.34 to 0.45
Callous Unemot.	4	1915	0.04	0.08	0.01 to 0.15	0.06	0.47	0.37 to 0.55	0.03	0.36	0.31 to 0.41
Impulsive	4	1915	0.08	0.17	0.02 to 0.31	0.02	0.36	0.32 to 0.39	0.10	0.53	0.37 to 0.65

Note. K = number of studies; N = sample size; SE = standard error; W. Avg ES = weighted average effect size; 95% CI = 95% confidence interval; Interpersonal M. = Interpersonal Manipulation; Self- Centered Imp. = Self-Centered Impulsivity; Grandiose Manip. = Grandiose Manipulation; Callous Unemot. = Callous Unemotional; Impulsive/Irrespon. = Impulsive/Irresponsible.

evinced the most robust relations with theoretically overlapping markers of psychopathy (i.e., EPA Disinhibition [$r = 0.76$], PPI ScI [$r = 0.69$], YPI Impulsive/Irresponsible [$r = 0.62$], SRP Erratic Lifestyle [$r = 0.58$], and APSD Impulsivity [$r = 0.53$]) as well as moderate to large relations with markers of antagonistic, antisocial behavior (e.g., EPA Antagonism [$r = 0.57$], LSRP Antisociality [$r = 0.57$]). Meanness and Disinhibition also demonstrated divergence from indicators of Boldness, such that they exhibited small to moderate relations with PPI FD ($rs = 0.29$ and 0.07, respectively), and EPA Emotional Stability ($rs = 0.10$ and -0.23, respectively).

In sum, significant differences were observed between Boldness and the other two TriPM domains in their relations to the total scores of other psychopathy measures, such that it did not exhibit any overlapping confidence intervals with Meanness and only 2 of 8 overlapping confidence intervals with Disinhibition. Meanness and Disinhibition exhibited overlapping relations in most cases (i.e., 6 out of 8 overlapping confidence intervals).

6.3.3. Relations with personality traits and PDs

In relation to the FFM, Boldness exhibited its strongest relations to FFM Neuroticism ($r = -0.60$) and Extraversion ($r = 0.58$), whereas Meanness and Disinhibition were found to be most strongly related to FFM Agreeableness ($rs = -0.66$ and -0.42, respectively) and Conscientiousness ($rs = -0.32$ and -0.56, respectively; See Table 2). Boldness evinced a similar result for pathological traits and PDs such that it was most notably related to PID-5 Negative Affectivity ($r = -0.43$) and Detachment ($r = -0.32$), whereas Meanness and Disinhibition were most robustly related to PID- 5 Antagonism ($rs = 0.63$ and 0.51, respectively) and Disinhibition ($rs = 0.46$ and 0.65, respectively). Significant differences were observed between Boldness and the other two TriPM domains in their relations to general and pathological trait domains, such that nonoverlapping confidence intervals were observed for each of the outcomes examined, whereas Meanness and Disinhibition exhibited some overlapping relations with trait domains (i.e., 4 out of 10 overlapping confidence intervals).

With respect to "traditional" DSM-based PD constructs, Boldness exhibited large, positive relations with grandiose narcissism and the Leadership Authority subscale of the Narcissistic Personality Inventory (NPI LA = 0.56), and small to moderate, positive relations with NPI subscales of Grandiose Exhibitionism and Entitlement/Exploitativeness ($rs = 0.35$ and 0.26, respectively). Boldness evinced limited relations with other traditional PD constructs (rs ranging from -0.18 [borderline PD] to 0.01 [Machiavellianism]). TriPM Meanness and Disinhibition displayed small to moderate, positive relations with each "traditional" DSM-based PD construct. For Meanness, the largest relations were observed with Antisocial PD ($r = 0.43$), Machiavellianism ($r = 0.41$), NPI Entitlement-Exploitativeness ($r = 0.36$), and narcissistic PD ($r = 0.35$). TriPM Disinhibition similarly evinced moderate, positive relations with antisocial PD ($r = 0.46$); however, moderate relations were also observed for vulnerable narcissism ($r = 0.45$) and borderline PD ($r = 0.43$). Apart from its relations to aspects of grandiose narcissism, as assessed with the NPI, Boldness exhibited significantly smaller relations with "traditional" *DSM*-based PD constructs than those observed for the other TriPM domains, as evidenced by their nonoverlapping confidence internals (7 out of 9 and 8 out of 9 outcomes for Meanness and Disinhibition, respectively), whereas Meanness and Disinhibition exhibited largely overlapping relations (8 out of 9 outcomes).

Table 2
Meta-analytically derived relations between the Triarchic domains and personality traits and personality disorder constructs.

	K	N	Boldness			Meanness			Disinhibition		
			SE	W. Avg ES	95% CI	SE	W. Avg ES	95% CI	SE	W. Avg ES	95% CI
General traits, Five Factor Model											
Neuroticism	25	8672	0.03	−0.60	−0.63 to −0.56	0.02	0.08	0.04 to 0.12	0.03	0.37	0.32 to 0.43
Extraversion	25	8672	0.03	0.58	0.54 to 0.62	0.02	−0.09	−0.13 to −0.05	0.02	−0.08	−0.11 to −0.04
Openness	25	8672	0.03	0.20	0.15 to 0.25	0.03	−0.18	−0.22 to −0.13	0.03	−0.07	−0.12 to −0.01
Agreeableness	25	8672	0.03	−0.07	−0.13 to −0.01	0.05	−0.66	−0.70 to −0.60	0.03	−0.42	−0.46 to −0.37
Conscientiousness	25	8672	0.03	0.22	0.18 to 0.27	0.03	−0.32	−0.37 to −0.27	0.04	−0.56	−0.61 to −0.51
DSM-5 pathological traits & PDs											
Negative Affect.	10	3044	0.04	−0.43	−0.49 to −0.36	0.05	0.13	0.04 to 0.23	0.04	0.39	0.33 to 0.45
Detachment	10	3044	0.03	−0.32	−0.37 to −0.26	0.04	0.38	0.31 to 0.43	0.04	0.37	0.30 to 0.44
Antagonism	12	3523	0.04	0.19	0.13 to 0.26	0.07	0.63	0.53 to 0.71	0.05	0.51	0.43 to 0.58
Disinhibition	12	3523	0.06	0.10	−0.03 to 0.21	0.07	0.46	0.35 to 0.56	0.05	0.65	0.59 to 0.70
Psychoticism	10	3044	0.03	−0.04	−0.11 to 0.03	0.04	0.35	0.27 to 0.42	0.04	0.45	0.39 to 0.50
Antisocial PD	13	4058	0.03	0.12	0.06 to 0.17	0.04	0.43	0.37 to 0.49	0.04	0.46	0.39 to 0.53
Narcissistic PD	7	2202	0.02	0.11	0.06 to 0.15	0.05	0.35	0.26 to 0.44	0.05	0.29	0.20 to 0.37
Borderline PD	5	1372	0.03	−0.18	−0.23 to −0.13	0.08	0.28	0.14 to 0.42	0.09	0.43	0.28 to 0.56
Grandiose Narc.	14	6005	0.04	0.56	0.51 to 0.62	0.05	0.27	0.18 to 0.37	0.02	0.18	0.14 to 0.22
NPI LA	8	4106	0.07	0.56	0.46 to 0.64	0.04	0.23	0.16 to 0.30	0.04	0.11	0.02 to 0.19
NPI GE	8	4106	0.02	0.35	0.30 to 0.38	0.05	0.22	0.12 to 0.31	0.03	0.19	0.13 to 0.23
NPI EE	8	4106	0.06	0.26	0.14 to 0.36	0.05	0.36	0.28 to 0.44	0.04	0.24	0.17 to 0.31
Vulnerable Narc.	4	2009	0.17	−0.17	−0.46 to 0.16	0.02	0.28	0.24 to 0.32	0.04	0.45	0.39 to 0.50
Machiavellianism	5	2464	0.05	0.01	−0.10 to 0.11	0.02	0.41	0.38 to 0.44	0.03	0.25	0.19 to 0.30

Note. K = number of studies; N = sample size; SE = standard error; W. Avg ES = weighted average effect size; 95% CI = 95% confidence interval; Grandiose Narc. = grandiose narcissism; NPI LA = NPI Leadership/Authority; NPI GE = NPI Grandiose Exhibitionism; NPI EE = NPI Entitlement/Exploitativeness; Vulnerable Narc. = vulnerable narcissism.

6.3.4. Relations with psychopathology

Boldness manifested null to small relations with externalizing behaviors (*r*s ranged from 0.05 [reactive aggression] to 0.14 [proactive aggression], with a median of 0.11), whereas the other TriPM domains exhibited significant, positive relations to each (*r*s ranged from 0.16 [substance use] to 0.51 [proactive aggression], with a median of 0.39 for Meanness, and 0.30 [substance use] to 0.47 [proactive aggression], with a median of 0.44, for Disinhibition; See Table 3). Regarding internalizing symptoms, significant moderate, negative relations were observed for Boldness with correlations of −0.37 and − 0.35 for anxiety and depression. Conversely, significant small to moderate positive relations were observed for Meanness (*r*s = 0.18 and 0.15) and Disinhibition (*r*s = 0.38 and 0.26) for anxiety and depression, respectively. Broadly, findings for Meanness and Disinhibition were highly overlapping (overlapping confidence intervals observed for 6 out of 9 outcomes), whereas significant divergences were observed between Boldness and the other TriPM domains in their relations to externalizing behaviors and internalizing symptoms, such that non-overlapping confidence intervals were observed in all cases for Boldness and Disinhibition and in most cases for Boldness and Meanness (8 out of 9 outcomes).

6.3.5. Relations with individual traits

Regarding individual traits, each TriPM domain exhibited significant positive relations with sensation seeking (*r*s = 0.30, 0.32, and 0.24, for Boldness, Meanness, and Disinhibition, respectively) and entitlement (*r*s = 0.12, 0.32, and 0.23, for Boldness, Meanness, and Disinhibition, respectively), whereas negative relations were observed for empathic concern with average correlations of −0.09, −0.62 and − 0.19, for Boldness, Meanness, and Disinhibition, respectively (See Table 3). Moderate to large, positive relations were observed for Boldness and self-esteem (*r* = 0.54) and social potency (*r* = 0.55). Moderate to large, positive relations were also observed for Meanness and Disinhibition with impulsivity (*r*s = 0.30 and 0.51, respectively), whereas small to moderate, negative relations were observed for self-esteem (*r*s = −0.18 and − 0.39, for Meanness and Disinhibition, respectively). Significant negative relations were observed for Boldness and Meanness with personal distress (*r*s = −0.49 and − 0.07, respectively) and fantasy (*r*s = −0.11 and − 0.22, respectively) and for Meanness and Disinhibition with perspective taking (*r*s = −0.44 and − 0.27, respectively). Conversely, a significant small, positive relation was found for personal distress and Disinhibition (*r* = 0.21). Overall, the TriPM domains generally exhibited significant differences with individual traits, such that non-overlapping confidence intervals were observed for 8 out of 9 outcomes for Boldness and Meanness, 5 out of 9 outcomes for Boldness and Disinhibition, and 6 out of 9 outcomes for Meanness and Disinhibition (Table 3).

6.4. Moderation analyses

Examination of the *Q*-statistics revealed that in general, there was significant heterogeneity among the effect sizes (see Appendix D). Across the 384 tests, 99 failed to reach statistical significance; effect sizes were homogeneous for 38 Boldness relations (30% of outcomes), for 32 Meanness relations (25% of outcomes), and for 29 Disinhibition relations (23% of outcomes). When heterogeneity was present, moderator analyses were undertaken. Given that not all moderators are present for each study and not all moderators show sufficient variability for each set of effect sizes, moderators were examined individually using weighted regression analyses. Due to the large number of analyses conducted, alpha was set at $p < .01$.

Because positive findings for moderation were numerous, five criteria were employed to identify the most meaningful instances of moderation. These criteria included presence of (a) significant moderation across multiple relations between each psychopathic trait and similar outcomes (e.g., between Meanness and Negative Affectivity as well as Anxiety); (b) significant moderation across multiple relations in the same direction (e.g., the coefficients for the relations were both positive or both negative; (c) moderation effects of substantive magnitude (i.e., B ≥ 0.01 for continuous moderators; B ≥ 0.10 for categorical moderators); (d) a sufficient number of effect size estimates within moderator analyses (i.e., six effect size estimates for continuous moderators; three effect size estimates in each level for categorical moderators; Pigott, 2012); and (e) at least three effect size estimates at each

Table 3
Meta-analytically derived relations between the Triarchic domains and externalizing behaviors, internalizing symptoms, and individual traits.

	K	N	Boldness			Meanness			Disinhibition		
			SE	W. Avg ES	95% CI	SE	W. Avg ES	95% CI	SE	W. Avg ES	95% CI
Externalizing behaviors											
Broad External.	41	15,301	0.02	0.10	0.06 to 0.14	0.03	0.38	0.33 to 0.43	0.03	0.44	0.39 to 0.48
Antisocial behavior	16	5177	0.02	0.11	0.07 to 0.15	0.06	0.30	0.19 to 0.40	0.07	0.41	0.29 to 0.52
Aggression	20	9334	0.04	0.12	0.05 to 0.19	0.02	0.48	0.45 to 0.51	0.03	0.45	0.40 to 0.48
Reactive	8	2688	0.06	0.05	−0.06 to 0.16	0.05	0.39	0.30 to 0.47	0.05	0.43	0.35 to 0.51
Proactive	8	2688	0.04	0.14	0.06 to 0.22	0.05	0.51	0.43 to 0.57	0.06	0.47	0.38 to 0.56
Substance Use	12	4358	0.02	0.10	0.07 to 0.13	0.02	0.16	0.11 to 0.21	0.02	0.30	0.27 to 0.33
Internalizing symptoms											
Broad Internal.	21	9092	0.04	−0.36	−0.42 to −0.30	0.03	0.17	0.12 to 0.21	0.03	0.33	0.28 to 0.37
Anxiety	16	4210	0.04	−0.37	−0.43 to −0.29	0.03	0.18	0.12 to 0.24	0.03	0.38	0.33 to 0.44
Depression	16	4048	0.04	−0.35	−0.41 to −0.28	0.03	0.15	0.09 to 0.22	0.04	0.26	0.18 to 0.33
Individual traits											
Sensation seeking	6	1415	0.12	0.30	0.08 to 0.49	0.06	0.32	0.21 to 0.41	0.04	0.24	0.17 to 0.31
Impulsivity	7	1830	0.06	−0.02	−0.14 to 0.10	0.03	0.30	0.26 to 0.35	0.06	0.51	0.42 to 0.60
Entitlement	4	2742	0.05	0.12	0.02 to 0.22	0.03	0.32	0.27 to 0.36	0.03	0.23	0.17 to 0.28
Self-esteem	5	3287	0.04	0.54	0.48 to 0.60	0.02	−0.18	−0.22 to −0.15	0.05	−0.39	−0.47 to −0.31
Social potency	4	1774	0.05	0.55	0.48 to 0.62	0.03	0.10	0.05 to 0.16	0.02	0.04	−0.01 to 0.08
Empathic concern	11	3222	0.02	−0.09	−0.13 to −0.04	0.03	−0.62	−0.66 to −0.58	0.04	−0.19	−0.26 to −0.11
Perspective taking	10	2677	0.03	0.06	0.00 to 0.11	0.04	−0.44	−0.50 to −0.38	0.03	−0.27	−0.33 to −0.21
Personal distress	8	1974	0.02	−0.49	−0.52 to −0.45	0.03	−0.07	−0.13 to −0.01	0.03	0.21	0.15 to 0.26
Fantasy	8	1974	0.03	−0.11	−0.16 to −0.06	0.03	−0.22	−0.27 to −0.18	0.04	0.00	−0.08 to 0.08

Note. K = number of studies; N = sample size; SE = standard error; W. Avg ES = weighted average effect size; 95% CI = 95% confidence interval; Broad External. = Broad Externalizing; Reactive = Reactive Aggression; Proactive = Proactive Aggression; Broad Internal. = Broad Internalizing.

level of categorical moderators (e.g., estimates within the Prison level of the *Prison* versus *other sample types* moderator) (Pigott, 2012; Valentine, Pigott, & Rothstein, 2010). The results of the moderator analyses are presented in Appendix E, F, and G. In cases of continuous moderators (e.g., % Male), coefficients indicate the predicted change in effect size associated with an increase of one unit of the moderator. Even a small coefficient of 0.01 entails an elevation of 0.10 in a positive average effect size (or a decrement of 0.10 in a negative average effect size) among samples 10 units higher in the moderator (e.g., 10 years for *Age*; 10% for *% Male*). In cases of categorical moderators (e.g., *Prison* versus *College/Community*), coefficients indicate the predicted difference between each level of the moderator category.

Across moderation analyses, several findings were notable. First, moderation by proportion of male subjects was found, such that, in samples made up of a larger proportion of males, relations between Boldness and Neuroticism-related outcomes were less strongly negative; relations between Meanness and Negative Affectivity-related outcomes were more strongly positive; and relations between Disinhibition and Reactive/Proactive Aggression and youth psychopathic traits were more strongly positive.[3] Second, moderation by proportion of Caucasian participants was found, such that, in samples composed of a larger proportion of Caucasian (versus other racial groups) participants, relations between Boldness and Neuroticism-related outcomes were more strongly negative; relations between Boldness and Reactive/Proactive Aggression were less strongly positive; and relations between Disinhibition and Reactive/Proactive Aggression were more strongly positive.[4] Third, moderation by age was found, such that, in older samples, relations between Boldness and Extraversion and Conscientiousness were more strongly positive; the relation between Boldness and Disinhibition was more negative; relations between Meanness and Neuroticism-related outcomes were more strongly negative or less strongly positive; relations between Disinhibition and Neuroticism-related outcomes were more strongly positive. Fourth, moderation by sample type was found, such that, in undergraduate samples (versus other sample types), the relations between Boldness and grandiose narcissism and Conscientiousness were less strongly positive; relations between Boldness and Neuroticism-related outcomes were more strongly negative; relations between Meanness and Disinhibition, on the one hand, and youth psychopathic traits, on the other were less strongly positive ($r > 0.25$); and relations between Disinhibition and LSRP antisocial behavior ($r > 0.25$) and Neuroticism-related outcomes were less strongly positive. In incarcerated samples, relations between Meanness and Disinhibition with Anxiety was more strongly positive. Fifth, moderation by measure type was found, such that, in studies in which the TriPM was used, the relation between Boldness and Disinhibition was more strongly negative; relations between Meanness and antagonistic and disinhibited traits ($r > 0.25$) were more strongly positive; relations between Meanness and Broad Internalizing ($r > 0.25$) were less strongly positive; and relations between Disinhibition and PID Antagonism and Psychoticism were more strongly positive.[5] Finally, moderation by sample population language was found, such that in non-English speaking samples, the relation between Boldness and Meanness was more strongly positive; relations between Boldness and Reactive/Proactive Aggression were more strongly positive; relations between Meanness and Openness and Agreeableness were less strongly negative; and the relation between Disinhibition and Agreeableness was less strongly negative.[6] Moderation effects generally indicated small to moderate differences in effect sizes.

[3] It bears noting that a different model examining the relation between Disinhibition and Aggression, as operationalized by a broader array of aggression types (e.g., reactive, proactive, social, physical, verbal), in which a greater number of effect size estimates were included, yielded nonsignificant moderation.

[4] It bears noting that two other models examining the relation between Disinhibition and Aggression, as operationalized by a broader array of aggression types (e.g., reactive, proactive, social, physical, verbal), in which a greater number of effect size estimates were included, yielded nonsignificant moderation.

[5] Original TriPM N = 63, Non-English TriPM N = 24, TriPM Proxy N = 19.

[6] It bears noting that a different model examining the relation between Boldness and Aggression, as operationalized by a broader array of aggression types (e.g., reactive, proactive, social, physical, verbal), in which a greater number of effect size estimates were included, yielded nonsignificant moderation.

7. Discussion

Psychopathy has long been a construct of significant interest (see Koch, 1891; Kraepelin, 1915; Pinel, 1801; Pritchard, 1835) and remains one of the most frequently examined personality disorders (Crego & Widiger, 2015). Indeed, throughout the years, several prominent models and assessments have been developed, all of which highlight disinhibition/impulsivity and interpersonal antagonism (e.g., manipulativeness; callousness; egocentricity) as central traits. However, existing models and measures differ in regard to the degree to which they include more adaptive features—emotional resilience, fearlessness, social potency, and gregariousness. Most notably, the centrality of Boldness continues to be actively debated (see Lilienfeld et al., 2012; Lilienfeld et al., 2016; Miller & Lynam, 2012; Miller & Lynam, 2015). The goal of the present meta-analysis was to examine the TriPM, which highlights Boldness as one of three equally central components of psychopathy, so as to describe in detail the empirical profiles associated with these three dimensions.

7.1. Boldness

Unsurprisingly, Boldness evinced the largest relations with the conceptually similar PPI FD (Lilienfeld et al., 2016) and EPA Emotional Stability. The correlation between TriPM Boldness and PPI FD is so strong as to suggest fungibility. In fact, Boldness and PPI FD correlate as strongly with one another as does TriPM Boldness with non-TriPM alternative measures of Boldness developed by the creators of the TriPM (Drislane et al., 2015; Drislane et al., 2018). Boldness generally displayed substantially smaller relations with other psychopathy measures (*r*s ranged from 0.05 [LSRP] to 0.54 [PPI]; see Table 4 for a summary). Indeed, the present analyses yielded a weighted average correlation of 0.28 for the total scores on these well-validated measures of psychopathy, which was somewhat smaller in magnitude than the effect observed between Boldness and non-PCL-R based measures of psychopathy by Lilienfeld and colleagues ($r = 0.39$; Lilienfeld et al., 2016). Consistent with previous findings (Miller & Lynam, 2012), Boldness was found to be most strongly negatively related to FFM Neuroticism, personal distress, PID-5 Negative Affectivity, internalizing symptoms, and PID-5 Detachment, and most strongly positively related to FFM Extraversion, PPI Social Potency, grandiose narcissism, NPI Leadership/Authority, and self-esteem. With the exception of the aspects of narcissism that capture positive self-evaluations and positive affectivity, interpersonal agency, and behavioral activation, Boldness displayed limited evidence of relations with maladaptive constructs. In fact, like its counterpart – PPI Fearless Dominance (Miller & Lynam, 2012) – Boldness manifested limited to small relations with externalizing behaviors (*mean* $r = 0.10$) and "traditional" *DSM-5* PD constructs (e.g., antisocial and narcissistic PDs), and small to moderate relations with traits related to entitlement, interpersonal antagonism (e.g., SRP Callous Affect), and impulsivity (i.e., SRP Erratic Lifestyle). Unlike other components of psychopathy, Boldness displayed limited relations with individual traits related to impulsivity, empathetic concern, and perspective taking.

7.2. Meanness

Meanness evinced a pattern of relations consistent with the broad theoretical and empirical nomological network surrounding psychopathy (see Table 4 for a summary). Indeed, Meanness was strongly related to other models of psychopathy (*r*s ranged from 0.30 [PCL-R] to 0.75 [EPA]), such that the present analyses yielded a weighted average correlation of 0.60 for the total scores on these well-validated measures of psychopathy.[7] Additionally, it displayed good convergent validity with scales purported to assess a lack of empathy, detachment, and cruelty (e.g., EPA Antagonism, SRP Callous Affect), and, somewhat surprisingly, it converged almost as highly with subscales assessing poor impulse control (e.g., SRP Erratic Lifestyle, PPI Self-centered Impulsivity); thus, suggesting a lack of divergence from Disinhibition. As expected, it also manifested substantial positive relations with features of aggression and externalizing behavior (e.g., FFM [low] Agreeableness/PID-5 Antagonism, [low] empathic concern, EPA Disinhibition, proactive aggression, antisocial PD). Meanness appears to be a central feature of psychopathy, as indicated by its strong, positive relations with other prominent models of psychopathy as well as external criteria consistent with longstanding accounts of psychopathy. This is consistent with historical (e.g., Cleckley, 1941/1955; Karpman, 1941; McCord & McCord, 1964) and contemporary models of psychopathy (e.g., Lynam & Miller, 2015; Miller & Lynam, 2015) that place antagonism-related traits at the center of the construct (see also Preszler, Marcus, Edens, & McDermott, 2018; Verschuere et al., 2018). In fact, Miller and Lynam have argued that these traits may be necessary and sufficient for psychopathy – an argument supported by expert ratings of the trait-profile associated with the TriPM domains (Miller, Lynam, et al., 2016

7.3. Disinhibition

Disinhibition similarly displayed a pattern of robust relations with various external criteria regarded as well-established outcomes and constructs in psychopathy's theoretical and empirical network (see Table 4 for a summary). Disinhibition generally manifested robust relations with other measures of total psychopathy (*r*s ranged from 0.31 [PCL-R] to 0.62 [EPA and APSD-SR]), and with markers of behavioral disinhibition and, again somewhat surprisingly, with measures of interpersonal antagonism (e.g., PPI ScI, PCL-R Lifestyle, SRP ELS and ASB, LSRP antisocial). Indeed, the present analyses yielded a weighted average correlation of 0.51 for the total scores on these well-validated measures of psychopathy. As expected, Disinhibition displayed good convergent validity, as evidenced by its strong, positive relations with general and pathological traits related to impulsivity (e.g., PID-5 Disinhibition/FFM [low] Conscientiousness), personality psychopathology (e.g., antisocial PD, vulnerable narcissism, borderline PD), externalizing behavior (e.g., proactive/reactive aggression), and related individual traits (e.g., impulsivity, sensation seeking). However, evidence for relatively poor divergent validity was found, such that it also exhibited strong relations with general and pathological traits related to interpersonal antagonism (e.g., PID-5 Antagonism/FFM [low] Agreeableness). Nevertheless, consistent with theoretical underpinnings (e.g., Hare, 2003; McCord & McCord, 1964) and empirical findings (Miller & Lynam, 2012), Disinhibition appears to be reasonably central to psychopathy's conceptualization as it persistently manifests robust relations with important external criteria and other prominent psychopathy measures.

7.4. Issues of discriminant validity among the TriPM domains

When comparing the size of relations across the TriPM domains, Boldness exhibits the greatest degree of discriminant validity. In contrast to Meanness and Disinhibition, Boldness showed its most robust correlations with markers of adaptive functioning and limited to small relations with outcomes indicative of maladjustment. Indeed, in relation to the other TriPM domains, significant differences were observed between the broad pattern of relations that Boldness exhibited with most outcomes (non-overlapping confidence intervals were observed for 64

[7] Given that the PCL-R uses a different source (i.e., clinician ratings versus self-report) as well as method (i.e., interview-based versus self-report questionnaire), it is unsurprising that a lower correlation would be observed for the PCL-R than for the other self-report psychopathy measures, which enjoy the benefit of shared method variance.

Table 4
Summary of meta-analytic effect sizes for the Triarchic domains.

Mean ES	Boldness	Meanness	Disinhibition
≥ |0.50|	PPI Fearless Dominance (+) EPA Emotional Stability (+) Neuroticism (−) Extraversion (+) Grandiose Narcissism (+) NPI Leadership/Authority (+) Social Potency (+) PPI (+) Self-Esteem (+) EPA Narcissism (+)	EPA Antagonism (+) EPA (+) SRP Callous Affect (+) PPI (+) Agreeableness (−) LSRP (+) PID-5 Antagonism (+) SRP (+) PPI Self-Centered Impulsivity (+) Empathic Concern (−) SRP Interpersonal Manipulation (+) LSRP Egocentricity (+) APSD-SR (+) YPI (+) LSRP Callousness (+) EPA Disinhibition (+) Triarchic Disinhibition (+) PPI Coldheartedness (+) YPI Callous Unemotional (+) Proactive Aggression (+) SRP Erratic Lifestyle (+)	EPA Disinhibition (+) PPI Self-Centered Impulsivity (+) PID-5 Disinhibition (+) EPA (+) APSD-SR (+) YPI Impulsive/Irresponsible (+) SRP Erratic Lifestyle (+) EPA Antagonism (+) LSRP (+) LSRP Antisocial (+) Conscientiousness (−) SRP (+) Triarchic Meanness (+) APSD-SR Impulsivity (+) PPI (+) SRP Antisocial Behavior (+) PID-5 Antagonism (+) Impulsivity (+) YPI (+)
0.40 to 0.49	Personal Distress (−) PID-5 Negative Affectivity (−) YPI Grandiose Manipulation (+)	Aggression (+) APSD-SR Callous Unemotional (+) PID-5 Disinhibition (+) YPI Grandiose Manipulation (+) APSD-SR Narcissism (+) LSRP Antisocial (+) EPA Narcissism (+) SRP Antisocial Behavior (+) Perspective Taking (−) Antisocial PD (+) YPI Impulsive/Irresponsible (+) Machiavellianism (+)	Proactive (+) SRP Interpersonal Manipulation (+) Antisocial PD (+) Aggression (+) PID-5 Psychoticism (+) Vulnerable Narcissism (+) Broad Externalizing (+) Reactive Aggression (+) Borderline PD (+) Agreeableness (−) LSRP Egocentricity (+) Antisocial Behavior (+) APSD-SR Narcissism (+)
0.30 to 0.39	EPA (+) Anxiety (−) Broad Internalizing (−) NPI Grandiose Exhibitionism Depression (−) YPI (+) PID-5 Detachment (−) SRP (+) SRP Erratic Lifestyle (+) Sensation Seeking (+)	Reactive Aggression (+) PID-5 Detachment (+) Broad Externalizing (+) NPI Entitlement/Exploitativeness (+) APSD-SR Impulsivity (+) Narcissistic PD (+) PID-5 Psychoticism (+) Sensation Seeking (+) Conscientiousness (−) Entitlement (+) PCL-R (+) Antisocial Behavior (+) PCL-R Antisocial (+) Impulsivity (+)	PCL-R Antisocial (+) Self-Esteem (−) PID-5 Negative Affectivity (+) Anxiety (+) LSRP Callousness (+) PID-5 Detachment (+) Neuroticism (+) SRP Callous Affect (+) APSD-SR Callous Unemotional (+) PCL-R Lifestyle (+) Callous Unemotional (+) YPI Grandiose Manipulation (+) Broad Internalizing (+) EPA Narcissism (+) PCL-R (+) Substance Use (+)

Note. ES = Effect size.

out of 69 and 58 out of 69 main outcomes examined for Boldness and Meanness and Boldness and Disinhibition, respectively). When comparing its meta-analytic profile with the profiles for the other two TriPM domains via a double-entry correlation (an index of absolute similiarity), Boldness displayed a dissimilar pattern of results across the primary outcomes examined (*rICCs* = 0.07 and − 0.29 for Meanness and Disinhibition, respectively).

The pattern of correlations exhibited by Meanness and Disinhibition, however, were not particularly differentiable. When comparing the size of relations, Meanness and Disinhibition exhibited overlapping relations with 40 of the primary 69 outcomes examined, respectively. Additionally, when comparing their respective profiles, Meanness and Disinhibition display a highly similar pattern of relations with criterion measures (*rICC* = 0.83). The relatively limited discriminant validity is likely due to their substantial covariance at the trait level which is likely driven, in part, by inclusion of explicitly antisocial items (i.e., 5 out of 20 items) on the Disinhibition measure (i.e., “I have conned people to get money from them.” “I have taken money from someone's purse or wallet without asking.” “I have taken items from a store without paying for them.” “I have robbed someone.” “I have stolen something out of a vehicle.”). Although Disinhibition-related personality domains (i.e., Conscientiousness) show consistent small to moderate relations to antisocial behaviors, the relations for Meanness-related domains (i.e., Agreeableness) are stronger (Jones, Miller, & Lynam, 2011; Miller & Lynam, 2001; Vize, Collison, Miller, & Lynam, 2019). Ultimately, the inclusion of explicitly antisocial items on the TriPM Disinhibition scale is problematic as these behaviors are multiply-determined and related to both meanness and disinhibition-related traits. Therefore, despite some conceptual overlap between the two constructs, the high correlation between Meanness and Disinhibition as well as the high degree of overlap between their empirical profiles is suggestive of a measurement problem.

Indeed, the high degree of overlap between Meanness and Disinhibition raises concerns regarding the suitability of the TriPM's present specification of items and model structure. As noted above, the overlap between Meanness and Disinhibition may be driven by the

inclusion of items with antisocial content as indicators of Disinhibition. Surprisingly, just one previous study has examined the model fit of the three-factor TriPM model (Somma, Borroni, Drislane, Patrick, & Fossati, 2018). Evidence was found for adequate model fit, but a number of questionable analytic decisions raise concerns about the robustness of the model. First, Somma et al. (2018) analyzed the three domains of TPM items separately in order to identify subfactors, an approach that assumes rather than demonstrates that the three-factor structure of the TriPM is valid. Second, Somma et al. (2018) relied extensively on the bifactor model which, besides posing problems of interpretability (Bonifay, Lane, & Reise, 2017), enjoys an advantage over other modeling approaches in that it tends to overfit data even when these data follow random or nonsensical patterns (Bonifay & Cai, 2017). Finally, Somma et al. likely overfit the model by including 121 residual error correlations (53 for Boldness, 10 for Meanness, and 58 for Disinhibition).[8] Given the wide utilization of the TriPM and the considerable overlap between Disinhibition and Meanness factors, it behooves researchers to further evaluate the overall model fit of the TriPM as presently operationalized, with openness toward optimizing intra-factor homogeneity and inter-factor distinctiveness.

7.5. Summary of moderation findings and publication bias

Substantial variability in the magnitude of effect size estimates was observed across most effect types, and mixed-effect analyses demonstrated meaningful instances of moderation by proportion of Caucasian participants, age, sample type, and measure type. There were three main findings that may warrant future attention from researchers given the associated number of effect size estimates contained in the model, the representation of effect size estimates at each level of the moderator, the magnitude of effect sizes, and the convergence of differences across multiple similar outcomes, but we offer little discussion of them as it would be largely speculative in nature. First, samples with a higher proportion of Caucasian participants (versus other racial and ethnic groups) exhibited a weaker relation between Disinhibition and broad internalizing (i.e., a 10% increase in proportion of Caucasian participants was associated with a predicted 0.20 unit decrement in effect size [W. Avg ES = 0.33]). Similarly, a weaker relation between Disinhibition and neuroticism (as well as antisocial behavior) was found in undergraduate samples versus community and prison samples. Second, age was associated with a stronger relation between both Meanness and Disinhibition, on the one hand, and neuroticism (or negative affectivity), on the other. The processes underlying these changes are not clear but may be worth of research attention. Third, our results suggested meaningful differences in relations between the original TriPM measure and adapted measures and non-English TriPM measures, in view of which, researchers would do well to be cautious when using proxy measures of the TriPM. Moderation was concentrated within TriPM Meanness, which exhibited meaningfully greater convergence with similar constructs (e.g., FFM Agreeableness, LSRP Egocentricity) when using the original TriPM versus proxy or non-English versions. Effect sizes of differences between groups ranged from small to large.

Examinations of publication bias resulted in numerous signs that may be indicative of publication bias, though these instances may also reflect the low number of effect size estimates included in many analyses. According to Egger's test, approximately 15% of effects showed signs of publication bias, while Duval and Tweedie's Trim and Fill test showed that 33% of effects exhibited a significant difference between their random-effects weighted average mean effect size and Trim and Fill adjusted effect size. Visual examinations of funnel plot asymmetry for a subset of eligible effects resulted in 8% of effects showing signs of possible publication bias. In most cases, inspection of affected relations showed no clear pattern of publication bias, and inspection of funnel plots did not reveal clear evidence of over or underestimation. However, across all three tests, the relation between Boldness and Grandiose Narcissism showed evidence of publication bias and signs of overestimation (see Appendix I, Fig. I2). Researchers should accordingly use caution in interpreting meta-analytic results involving this relation. Collectively, although some of these signs of publication bias may be attributable to other factors (e.g., low number of extant study effect sizes), it will be important for the field to prioritize greater open access to unpublished "file drawer" studies. Further empirical work in this area is needed especially using newer, three-factor models of narcissism (Krizan & Herlache, 2018; Miller, Lynam, Hyatt, & Campbell, 2017) that further parse narcissism into more unidimensional components (e.g., Crowe, Lynam, & Miller, 2019).

7.6. The role of boldness in psychopathy

Despite their inclusion in certain descriptions of psychopathy (e.g., Cleckley, 1941/1955) and measures of psychopathy (Lilienfeld et al., 2016), traits related to Boldness have not been well-represented in many prominent modern conceptualizations (e.g., Hare, 1980/2003), mostly because personality psychopathology is defined in terms of maladjustment, rather than adaptivity (Hare & Neumann, 2008).

7.6.1. Boldness in relation to other aspects of psychopathy

Boldness bears limited relations with well-validated psychopathic features and theoretically-relevant constructs and outcomes present in psychopathy's nomological net (Crowe et al., 2018; Miller & Lynam, 2012). When considering the relation with other largely consensual components of psychopathy, Boldness bears little relation to other well-validated traits like Antagonism/Meanness and Disinhibition. In fact, the inclusion of Boldness as a central feature of psychopathy in some models mandates a non-syndrome based model of psychopathy given that it is largely orthogonal with the other components and instead requires a more configural approach (e.g., Lilienfeld et al., 2016). Nevertheless, this view is consistent with some theorists' view that "there is no requirement that PPI-FD [or Boldness] *by itself* should be associated with maladaptive functioning" (p. 332, Lilienfeld et al., 2012).

Although Cleckley included features of adaptive functioning in his conceptualization, it was considered to be a thin veneer masking darker central features (e.g., lack of remorse, impulsivity, antisocial behavior). However, Boldness' relations with interpersonal affective features of psychopathy are relatively weak in nature (*mean rs* of facet 1 and 2 of the PCL-R and SRP = 0.19 and 0.27, respectively). Others have argued that these traits, namely fearlessness or low anxiety, served as the bedrock that gave rise to all other psychopathic features (Lykken, 1995). Contrary to the notion that Boldness may underlie other psychopathic traits, meta-analytic findings from the present investigation and others (e.g., Marcus, Fulton, & Edens, 2013; Miller & Lynam, 2012) demonstrate that FD/Boldness evinces limited to small relations with other psychopathic traits (Boldness – Meanness $r = 0.16$; Boldness – Disinhibition $r = -0.05$). The lack of relation between Boldness and antisocial behavior further suggest that either Boldness is not equivalent to Lykken's fearlessness or that Lykken was mistaken in his belief that fearlessness was the cause of primary psychopathy (Lykken, 1995).[9]

7.6.2. Boldness as psychological health

Boldness displays the largest relations with constructs indicative of

[8] If the authors used loadings greater than |0.20| rather than 0.20 as their criterion, the final model might even have specified 174 error correlations (83 for Boldness, 21 for Meanness, and 70 for Disinhibition).

[9] It has also been suggested that Boldness may be related to related to externalizing outcomes – either via interaction with meanness and/or disinhibition-related traits (Lilienfeld et al., 2012) or at particularly high levels of the construct (i.e., curvilinear relations; Blonigen, 2013); however, to date studies have found little support for either hypothesis (Crowe et al., 2018; Gatner et al., 2016; Maples et al., 2014; Vize, Lynam, Lamkin, Miller, & Pardini, 2016; cf., Rock, Sellbom, Ben-Porath, & Salekin, 2013; Smith, Edens, & McDermott, 2013).

adaptive functioning. Indeed, in the present meta-analysis, Boldness was found to be most strongly related to FD, emotional stability, low Neuroticism, Extraversion, social potency, and self-esteem. Interestingly, a recent study in which personality researchers developed an expert-based prototype of "healthy personality" found that TriPM Boldness was similar ($r = 0.48$) to prototypical ratings of a "healthy personality;" in fact, it was one of the strongest correlates of healthy personality examined across an array of constructs (Bleidorn et al., 2019). Proponents of Boldness' inclusion would likely argue that this is an unsurprising finding and supports the notion that Boldness is linked to stress immunity (Lilienfeld et al., 2012). However, in our view, findings like this one and the results from the current meta-analysis are difficult to reconcile with longstanding notions of psychopathy being one of the most impairing personality disorders in that 1/3 of psychopathy in models like the TriPM are synonymous with exemplary psychological health. Unlike Meanness or Disinhibition, Boldness seems to bear little resemblance to psychopathy unless paired with high scores on other psychopathic traits.

7.6.3. Boldness and narcissism

Boldness did display substantial relations with grandiose narcissism, particularly those components that emphasize leadership, assertiveness, gregariousness, and emotional stability. These findings are generally consistent with the fact that grandiose narcissism, high self-esteem, and Boldness all include elements of high Extraversion and low Neuroticism (e.g., Hyatt et al., 2018; Vize, Lynam, Collison, & Miller, 2018). These findings can be interpreted, in part, through the lens of newly developed, three-factor models of narcissism (Krizan & Herlache, 2018; Miller et al., 2017; Miller, Lynam, et al., 2016) that parse pathological narcissism into three components that roughly correspond with antagonism (entitlement, exploitativeness, callousness; arrogance), neuroticism/reactivity, and agency/extraversion. Antagonism is the piece that ties more grandiose versus vulnerable presentations together whereas the latter two components serve to distinguish them. Although Boldness evinces positive relations with narcissism's more maladaptive, antagonism-based features (e.g., entitlement, exploitation), the magnitude of these relations is substantially smaller than was observed for its more adaptive, extraversion-related features. Additionally, even putatively adaptive measures of grandiose narcissism, such as the NPI (which has been criticized for being overly adaptive; e.g., Pincus & Lukowitsky, 2010; Rosenthal & Hooley, 2010), capture more interpersonal antagonism than does FD/Boldness (e.g., Maples et al., 2014). Back's and colleagues (Back et al., 2013) rivalry vs. admiration model of grandiose narcissism is helpful here too in suggesting that bold individuals gratify their ego needs via a more interpersonally adaptive approach that prioritizes behavior that leads to admiration and appreciation (e.g., acting heroically) versus engaging in rivalry-based behavior that seeks to demonstrate superiority primarily via a denigration of others and an interpretation of interpersonal interactions via a zero-sum lens (e.g., Hyatt, Sleep, et al., 2018).

When considered in tandem with extant literature (e.g., Miller & Lynam, 2012), we believe the present findings support the idea that Boldness is not a central component of psychopathy as suggested by some theorists (Lilienfeld et al., 2012; Patrick et al., 2009), but rather is best conceived of as a diagnostic specifier (Miller & Lynam, 2012) as these traits are neither necessary nor sufficient. Even here, we are not sure if these traits are unique in mitigating the aversiveness of these other, more consensual psychopathic traits. That is, while it is possible that Boldness may allow for more social penetrance, and thus, be beneficial for certain antisocial behaviors (e.g., parasitic behavior; fraud), we believe other psychological constructs might operate similarly, including physical attractiveness, intelligence, humor, and financial status, suggesting little reason to give Boldness primacy other than its inclusion in certain historical accounts.

8. Limitations

Despite the comprehensive nature of the present meta-analysis, the present findings should be viewed in light of several limitations. First, as is common with meta-analytic investigations, the number of effect sizes included in the analyses varied from relatively large for certain outcomes (e.g., PPI, FFM) to small for other important outcomes (e.g., entitlement, vulnerable narcissism, social potency). As such, these differences lead to some limitations in the precision of conclusions that can be drawn, which are subsequently reflected in each outcomes' respective confidence interval. In this same vein, outcomes that had fewer than four effect sizes were not included. Although this cut-off is conservative in nature, other constructs and outcomes which may be related to psychopathy (e.g., trauma, heroism) were not included. Lastly, given the limited number of studies, we were unable to examine relations between developmental pathways and neurobiological substrates and TriPM domains.

9. Conclusions and future directions

Despite these limitations, the present meta-analysis offers the broadest examination to date of the TriPM in relation to various constructs and outcomes commonly found in psychopathy's theoretical underpinnings and empirical investigations. The findings from the present meta-analyses support the use and centrality of Meanness and Disinhibition in the study of psychopathy, as each evinced robust convergent relations with other prominent conceptualizations of psychopathy as well as with other important outcomes and constructs that are well-validated components of its nomological network (e.g., ASB, aggression, substance use, antagonism, ASPD). In our opinion, the same cannot be concluded for Boldness. Instead, findings from the present meta-analytic investigation provide little evidence that Boldness can be considered equally as important as Meanness and Disinhibition, due to the small to moderate relations it manifests with other measures of psychopathy as well as other important, well-validated constructs and outcomes in psychopathy's nomological network. Additionally, given the issues of discriminant validity demonstrated between Meanness and Disinhibition, the TriPM likely requires some revision such that explicitly antisocial behaviors that are linked to both antagonism/meanness and disinhibition are removed from the TriPM Disinhibition scale. Another benefit of removing these explicitly antisocial items is that it removes the interpretative difficulties that are currently found when examining correlations between certain TriPM dimensions with antisocial outcomes given the inherent tautology.

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Appendix B

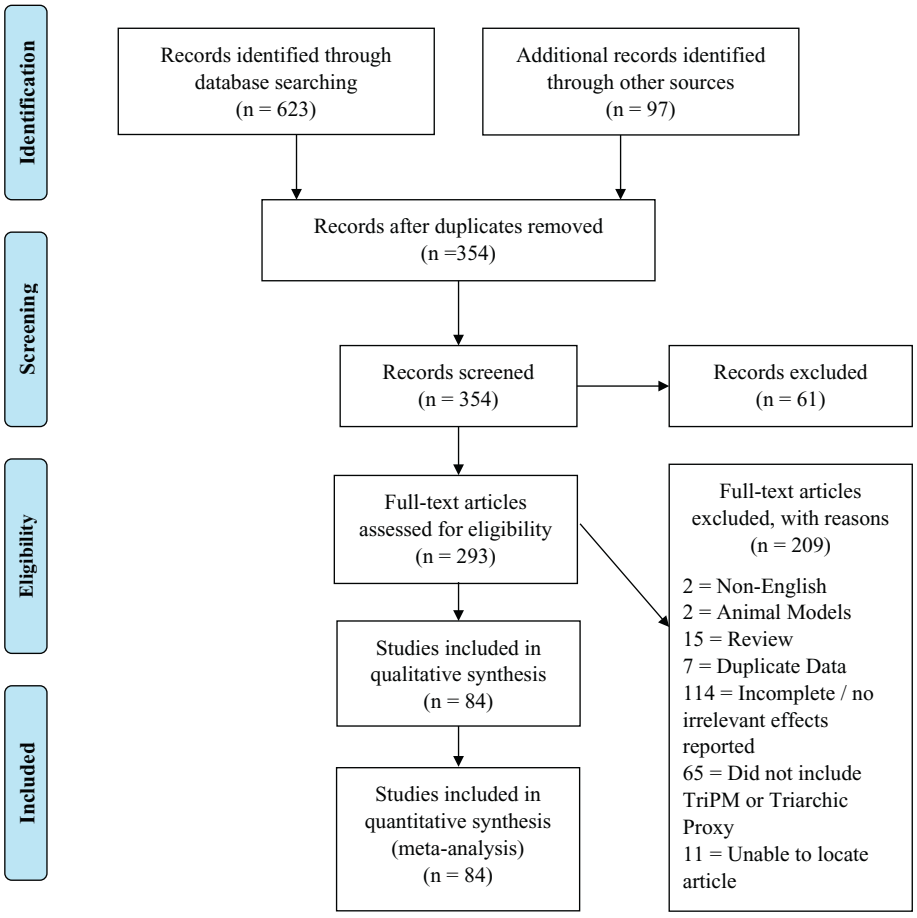

Fig. B1. PRISMA 2009 flow diagram.

Appendix C

Table C1
Study characteristics.

Study	N (range)	Sample type	Triarchic measure	Outcome(s)
Almeida et al. (2015)	374	Community	Portugese TriPM	34, 20, 33
Anderson et al. (2014)	463	College	TriPM	34, 3, 11, 12, 13, 17, 19
Anestis, Anestis, & Preston (2018)	300	Mturk	TriPM	34
Balash & Falkenbach (2018)	316	College	TriPM	34, 3, 20, 22, 33
Batalla et al. (2018), unpublished	163	Correctional	Spanish TriPM	34
Blagov et al. (2016)	120	College	TriPM	34, 9
Blickle, Schütte, & Genau (2018)	154	Community	German TriPM	34
Brislin et al. (2015a)	176	Community	MPQ-estimated	34, 11, 20, 24, 25, 26, 27
Brislin et al. (2015b)	242 (74–242)	Correctional	MPQ-estimated	1, 9, 13, 14, 20, 24, 25, 26, 27, 28, 29
Brislin et al. (2017a)	346	College	MPQ-estimated	34, 14, 25, 26, 28, 29
Brislin et al. (2017b)	190 (151–190)	Correctional	MPQ-estimated	34, 1, 13, 14, 15, 17, 19, 20, 24, 25, 26, 27
Brislin et al. (2017c)	216	Correctional	MPQ-estimated	34, 1
Brislin et al. (2018)	66	College	TriPM & MPQ-estimated	34
Brislin (2015)	64	College	TriPM	33
Brislin, Buchman-Schmitt, Joiner, & Patrick (2016)	100	College	TriPM	34
Christian & Sellbom (2016)	249	Community	TriPM	34, 4, 16
Christian, Sellbom, & Wilkinson (2017)	249	Community	TriPM	34
Craig, Gray, & Snowden (2013)	214 (208–214)	College	TriPM	34
Crego & Widiger (2014a)	280	Mturk	TriPM	34, 2, 3, 5, 11, 12
Crego & Widiger (2014b)	199	Mturk	TriPM	34, 2, 3, 5, 11, 12, 13
Crowe, Lynam, Campbell, & Miller (2018), unpublished	590	Mturk	TriPM	34, 9, 10, 14, 15, 16, 17, 20, 23, 24, 25, 26, 27, 30, 31
Donahue & Caraballo (2015)	301	College	PPI-estimated	34
Donnellan & Burt (2016)	637	College	TriPM	34, 9, 10, 14, 20, 22, 23, 30, 31
Dotterer et al. (2017)	559	Community	NEO-estimated	34
Drislane & Patrick (2017)	567	College	TriPM	34, 2, 4, 7, 8

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Table C1 (*continued*)

Study	N (range)	Sample type	Triarchic measure	Outcome(s)
Drislane et al. (2014)	4030	Community	TriPM	34, 20, 22, 25
Drislane (2018)	212	Community	TriPM	34, 9, 11, 12, 13, 17, 19, 20, 21, 22, 25, 27, 32
Drislane Brislin, Jones, & Patrick (2018)	769	College	NEO-estimated	34, 20, 21, 24
Drislane, Patrick, & Arsal (2014)	618	College	TriPM	34, 2, 3, 4, 6, 7, 8, 20, 22, 32
Durand, Plata, & Arbone (2017)	116	Community	TriPM	34
Esteller, Poy, & Moltó (2016)	180	College	Spanish TriPM	34, 3, 9, 20, 25, 26, 29
Fanti et al. (2016)	419	College	Greek TriPM	6, 18, 20, 22, 25, 26
Fossati et al. (2017a)	457	Community	Italian TriPM	34, 9
Fossati et al. (2017b)	609	Community	Italian TriPM	34
Gatner Douglas, & Hart (2016)	439	College	TriPM	34, 20, 21, 22, 29
Gillespie, Rotshein, Beech, & Mitchell (2017)	30	Correctional	TriPM	34, 25, 26, 27
Goodwin (2016)	244	Community	TriPM	3, 4, 13, 17, 20, 21, 22, 25, 26, 27, 33
Guelker (2013)	135	Adolescent	TriPM	34, 20
Gummelt (2015)	229	College	TriPM	34, 33
Hall et al. (2014b)	1341	Correctional	PPI-estimated	1, 13, 21
Harrop et al. (2017)	174	College	TriPM	34, 4, 16
Hyatt, Lynam, & Miller (2018), unpublished	335	Mturk	TriPM	34, 5, 9, 10, 11, 12, 20, 21, 24
Kastner (2012)	127	College	TriPM	34, 20, 22, 23
Kelley et al. (2017)	67	College	TriPM	34, 20, 22
Kemp (2016)	127	College	TriPM	34, 9, 14, 16
Kjærgaard, Leon, Venables, & Fink (2013)	11	Community	Dutch TriPM	34
Kutchen et al. (2017a)	203	Correctional	MMPI-2-RF-estimated	34, 1, 3, 11, 12, 13
Kutchen et al. (2017b)	280	College	MMPI-2-RF-estimated	34, 20, 22, 24, 25, 26, 27
Kutchen et al. (2017c)	580	Correctional	MMPI-2-RF-estimated	34, 9
Kyranides, Fanti, Sikki, & Patrick (2017)	99	Community	Greek TriPM	34, 13, 20, 22, 25, 26
LaDuke (2016)	87	?	TriPM	34
Lynam (2018), unpublished	431	College	TriPM	34, 9, 10, 20, 21, 22
Maes, Woyke, & Brazil (2018)	200	Community	Dutch TriPM	34
Marcus, Church, O'Connell, & Lilienfeld (2018a)	572	College	TriPM	34, 3
Marcus, Church, O'Connell, & Lilienfeld (2018b)	452	?	TriPM	34, 3
Marion et al. (2013)	465	College	TriPM	34, 20, 21, 25, 26, 27
Miller et al. (2018)	340	College	TriPM	34, 2, 5, 9, 11, 12, 13, 14, 18, 20, 21, 22, 23, 24, 25, 26, 27
Miller, Lamkin, Maples-Keller, & Lynam (2016)	335	Mturk	TriPM	34, 9, 10
Miller, Weiss, & Lynam (2018), unpublished	335	College	TriPM	34, 9, 10, 14, 15
Pasion, Cruz, & Barbosa (2016)	32	Community	Portugese TriPM	34
Patrick (2010a)	142	Correctional	TriPM	1
Patrick (2010b)	94	College	TriPM	2, 3, 4, 6
Pechorro, Simões, Alberto, & Ray (2018)	103	Correctional	YPI-estimated	34, 7, 8, 20, 22, 23
Phillips, Sellbom, Ben-Porath, & Patrick (2014)	209	Correctional	TriPM	34, 9, 14, 15, 20, 21, 22, 25, 26, 27, 28
Pilch & Górnik-Durose (2016)	378	Community	Polish TriPM	34, 14, 18
Pilch et al. (2018)	270	College	Polish TriPM	34, 14, 15
Pilch, Irena, Smolorz, & Klaudia (2018)	1292	Community	Polish TriPM	14, 15
Poy et al. (2014)	349	College	TriPM	34, 9, 10
Preston & Anestis (2018)	304	Mturk	TriPM	34, 33
Preston, Harrop, & Anestis (2018)	299	College	TriPM	34, 33
Ruchensky & Donnellan (2017)	545	College	TriPM	34, 11, 28, 29, 31, 32, 33
Ruchensky, Donnellan, & Edens (2018a)	399	College	HEXACO-estimated	34, 9, 11, 20, 22, 30, 31, 32, 33
Ruchensky, Donnellan, & Edens (2018b)	391	Mturk	HEXACO-estimated	34, 9
Ruchensky, Donnellan, Edens (2018c)	1118	College	TriPM	34, 5, 14, 15, 16, 18, 30, 31
Rundle (2017)	?	?	TriPM	3
Sellbom & Phillips (2013a)	627	College	TriPM	3, 4, 7, 8
Sellbom & Phillips (2013b)	209	Correctional	TriPM	3, 4, 18
Sellbom (2018a), unpublished	365	College	TriPM	5, 9, 10, 20, 21, 22, 24
Sellbom (2018b), unpublished	406	Community	TriPM	5, 6, 11
Sellbom, Wygant, & Drislane (2015)	240	Community	PPI-estimated	11, 20, 24
Sellbom,Laurinavičius, Ustinavičiūtė, & Laurinaitytė (2018)	157	Correctional	Lithuanian TriPM	34, 1, 20, 22, 25, 26, 27
Shou et al. (2017a)	193	Clinical	Chinese TriPM	34, 4
Shou et al. (2017b)	311	College	Chinese TriPM	34, 20, 21, 33
Shou, Sellbom, & Han (2016)	226	College	Chinese TriPM	4, 9, 25, 26, 27
Sica et al. (2015)	286	Community	Italian TriPM	34, 3, 9, 25, 26, 27
Sleep & Wygant (unpublished-a)	200	Correctional	TriPM	34, 2, 13, 17, 19, 20, 21, 25, 27
Sleep & Wygant (unpublished-b)	346	College	TriPM	34, 2, 13, 17, 19, 20, 21, 25, 27
Smith (2016)	84	Correctional	TriPM	34, 1, 2, 13, 20, 25
Snowden, Smith, & Gray (2017)	81	College	TriPM	34
Somma, Borroni, Drislane, & Fossati (2016a)	614	Adolescent	Italian TriPM	34, 6
Somma, Borroni, Drislane, & Fossati (2016b)	618	Adolescent	Italian TriPM	34
Somma, Borroni, Drislane, & Fossati (2016c)	1142	Adolescent	Italian TriPM	34, 9, 10
Stanley, Wygant, & Sellbom (2013)	141	Correctional	TriPM	34, 3, 9, 14, 15, 33
Strickland et al. (2013)	188	College	TriPM	34, 11, 12
van Dongen et al. (2017a)	217 (132–217)	Correctional	Dutch TriPM	34, 3, 20, 22, 23
van Dongen et al. (2017b)	496 (93–496)	Community	Dutch TriPM	34, 3, 20, 22, 23
Venables, Hall, & Patrick (2014a)	169	Clinical	TriPM & ESI-estimated	34, 1, 20, 21
Venables, Hall, & Patrick (2014b)	157	Correctional	TriPM & ESI-estimated	34, 1, 20, 21

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Table C1 (*continued*)

Study	N (range)	Sample type	Triarchic measure	Outcome(s)
Vieira et al. (2015)	35	College	TriPM	3
Watts, Bowes, Latzman, & Lilienfeld (2017)	608	College	TriPM	34, 3
Weidacker et al. (2017a)	68	Correctional	TriPM	28, 29
Weidacker et al. (2017b)	81	Community	TriPM	28, 29
Weiss, Lynam, & Miller (2018)	307	Mturk	TriPM	34, 5, 9, 20, 21, 24

Note. Lower-case letters in brackets refer to different studies or samples that were presented within the same citation. 1 = PCL-R; 2 = SRP-III; 3 = PPI-R; 4 = LSRP; 5 = EPA; 6 = YPI; 7 = ICU; 8 = APSD-SR; 9 = FFM; 10 = FFM Facets; 11 = PID-5; 12 = PID-5 Facets; 13 = ASPD; 14 = Grandiose Narcissism; 15 = NPI Factors; 16 = Vulnerable Narcissism; 17 = NPD; 18 = Machiavellianism; 19 = BPD; 20 = Broad Externalizing; 21 = ASB; 22 = Aggression; 23 = RPAQ Factors; 24 = Substance Use; 25 = Broad Internalizing; 26 = Anxiety; 27 = Depression; 28 = Sensation Seeking; 29 = Impulsivity; 30 = Entitlement; 31 = Self-Esteem; 32 = Social Potency; 33 = IRI; 34 = Intercorrelations.

Appendix D

Table D1
Q statistics for the Triarchic domains.

	Boldness	Meanness	Disinhibition
	Q	*Q*	*Q*
Intercorrelations			
Meanness	942.31*		
Disinhibition	1208.76*	1371.13*	
Models of psychopathy			
PCL-R	13.45	10.77	24.12*
Interpersonal	11.39	12.70	19.74
Affective	10.48	9.85	11.14
Lifestyle	14.04	17.68	20.34
Antisocial	10.43	26.04*	85.85*
SRP	26.59	152.48*	75.78*
Interpersonal Manipulation	11.84	168.66*	70.56*
Callous Affect	26.02*	246.79*	56.18*
Erratic Lifestyle	26.58*	97.34*	111.58*
Antisocial Behavior	14.96	89.79*	118.34*
PPI	24.36*	55.96*	62.38*
Fearless Dominance	226.02*	689.67*	36.62*
Self-Centered Impulsivity	37.00*	93.28*	273.21*
Coldheartedness	26.53	356.31*	194.04*
LSRP	37.23*	97.69*	55.28*
Egocentricity	16.10	45.53*	35.73*
Callousness	23.30*	78.50*	39.86*
Antisocial	80.08*	43.86*	95.17*
EPA	18.20*	13.33*	6.99
Antagonism	12.25	59.76*	29.69*
Emotional Stability	42.83*	36.14*	46.81*
Disinhibition	29.52*	157.14*	69.17*
Narcissism	21.48*	1.84	11.16*
YPI	37.80*	51.85*	28.83*
Grandiose Manipulation	18.95*	23.33*	22.68*
Callous Unemotional	74.49*	63.29*	20.27*
Impulsive/Irresponsible	58.47*	26.26*	14.85*
ICU	2.81	31.99*	21.62*
APSD-SR	25.32*	14.48*	20.55*
Narcissism	12.48*	11.90*	7.93
Callous Unemotional	8.94	19.64*	6.87
Impulsivity	18.33*	5.20	42.59*
General traits, Five Factor Model			
Neuroticism	184.61*	82.87*	231.89*
Extraversion	232.34*	86.72*	78.05*
Openness	128.19*	135.19*	142.22*
Agreeableness	200.24*	466.50*	152.57*
Conscientiousness	132.15*	155.18*	364.64*
DSM-5 Pathological traits & personality disorders			
Negative Affectivity	42.79*	72.64*	41.23*
Detachment	30.03*	33.18*	43.67*
Antagonism	51.79*	222.34*	107.57*
Disinhibition	144.38*	169.06*	96.46*
Psychoticism	33.59*	52.50*	36.78*
Antisocial personality disorder	33.64*	46.35*	64.42*
Narcissistic personality disorder	5.77	53.23*	33.44*
Borderline personality disorder	1.14	29.62*	41.30*

(*continued on next page*)

Table D1 (*continued*)

	Boldness	Meanness	Disinhibition
	Q	*Q*	*Q*
Grandiose Narcissism	128.71*	149.86*	33.83*
NPI Leadership/Authority	95.79*	32.35*	45.24*
NPI Grandiose Exhibitionism	15.30	77.41*	20.80*
NPI Entitlement/Exploitativeness	115.06*	70.74*	44.21*
Vulnerable Narcissism	77.28*	1.64	7.69
Machiavellianism	23.78*	6.51	9.28
Externalizing behaviors			
Broad Externalizing	310.14*	461.71*	426.95*
Antisocial Behavior	28.99*	326.99*	489.16*
Aggression	272.90*	54.34*	89.32*
Reactive Aggression	49.14*	55.40*	35.93*
Proactive Aggression	34.17*	52.23*	64.89*
Substance Use	13.75	29.55*	13.09
Internalizing symptoms			
Broad Internalizing	164.78*	63.47*	65.38*
Anxiety	95.92*	60.28*	67.40*
Depression	95.96*	70.87*	114.94*
Individual traits			
Sensation Seeking	52.24*	18.54*	11.18
Impulsivity	45.39*	6.78	49.12*
Entitlement	22.61*	6.48	9.34
Self-Esteem	21.48*	4.29	27.67*
Social Potency	17.34*	5.90	5.09
Empathic Concern	18.26*	38.53*	50.18*
Perspective Taking	21.51*	39.50*	27.71*
Personal Distress	4.03	15.22	12.17
Fantasy	9.92	9.10	23.01*

Note. $^{*}p \leq .01$.

Appendix E

Table E1
Results for boldness moderator analyses.

	% Male	% White	Age	College	Community	Prison	TriPM	Proxy	Non-Eng.
Meanness	ns	ns	ns	ns	ns	ns	ns	−0.12	0.14
Disinhibition	ns	ns	−0.01	ns	ns	ns	−0.11	ns	ns
SRP Callous Affect	ns	ns	ns	ns	–	ns	ns	ns	–
SRP Erratic Lifestyle	ns	ns	ns	ns	–	ns	ns	ns	–
PPI	ns	ns	ns	ns	ns	ns	ns	ns	ns
PPI Fearless Dominance	ns	ns	ns	ns	ns	ns	ns	ns	ns
PPI Self-Centered Impulsivity	ns	ns	ns	ns	ns	ns	ns	ns	ns
LSRP	ns	ns	ns	ns	–	–	–	–	−0.31
LSRP Callousness	ns	ns	ns	0.15	ns	ns	ns	–	ns
LSRP Antisocial	ns	ns	ns	ns	ns	ns	0.37	–	−0.37
EPA	−0.01	ns	ns	ns	ns	–	–	–	–
EPA Emotional Stability	ns	ns	0.01	−0.19	ns	–	–	–	–
EPA Disinhibition	ns	ns	ns	ns	ns	–	–	–	–
EPA Narcissism	ns	ns	ns	ns	ns	–	–	–	–
YPI	ns	ns	ns	ns	ns	–	ns	–	ns
YPI Grandiose Manipulation	ns	ns	ns	ns	ns	–	−15	–	0.15
YPI Callous Unemotional	ns	ns	ns	ns	ns	–	ns	–	ns
YPI Impulsive/Irresponsible	ns	ns	ns	ns	ns	–	ns	–	ns
APSD-SR	−0.01	−0.02	−0.18	−0.49	–	0.49	ns	ns	0.49
APSD-SR Narcissism	−0.01	−0.01	−0.14	−0.35	–	0.35	ns	ns	0.35
APSD-SR Impulsivity	−0.01	−0.02	−0.16	−0.42	–	0.42	ns	ns	0.42
FFM Neuroticism	ns	ns	ns	ns	ns	ns	−0.16	ns	0.18
FFM Extraversion	ns	ns	0.01	ns	ns	ns	ns	ns	−0.18
FFM Openness	ns	ns	ns	ns	ns	ns	ns	ns	ns
FFM Agreeableness	ns	ns	ns	ns	ns	ns	ns	ns	ns
PID Negative Affectivity	0.00	−0.01	ns	ns	ns	ns	ns	ns	–
PID Detachment	ns	ns	ns	ns	ns	ns	−0.13	0.13	–
PID Antagonism	0.00	ns	−0.01	ns	ns	ns	ns	ns	–
PID Disinhibition	ns	ns	−0.02	ns	ns	ns	ns	ns	–
PID Psychoticism	ns	ns	−0.01	ns	ns	ns	ns	ns	–
Antisocial Personality Disorder	ns	ns	ns	–	0.17	ns	ns	ns	0.35
Grandiose Narcissism	ns	ns	ns	−0.10	ns	ns	ns	ns	ns
NPI Leadership/Authority	ns	ns	0.02	ns	ns	ns	ns	ns	ns

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Table E1 (*continued*)

	% Male	% White	Age	College	Community	Prison	TriPM	Proxy	Non-Eng.
NPI Entitlement/Exploitative	ns	ns	ns	ns	ns	ns	ns	ns	ns
Vulnerable Narcissism	ns	ns	ns	ns	–	–	–	–	–
Machiavellianism	ns	–	−0.01	0.21	ns	ns	ns	ns	ns
Broad Externalizing	ns	ns	ns	ns	ns	ns	ns	ns	ns
Antisocial Behavior	ns	ns	ns	ns	ns	ns	ns	ns	ns
Aggression	ns	ns	ns	ns	ns	ns	ns	ns	ns
Reactive Aggression	ns	−0.02	ns	ns	ns	ns	ns	ns	0.23
Proactive Aggression	ns	−0.01	ns	ns	0.25	ns	−0.18	ns	0.24
Broad Internalizing	ns	ns	ns	ns	ns	ns	ns	ns	ns
Anxiety	0.00	−0.01	ns	−0.14	ns	ns	ns	ns	ns
Depression	ns	ns	ns	ns	ns	ns	ns	ns	ns
Sensation Seeking	ns	ns	−0.03	ns	ns	ns	ns	ns	–
Impulsivity	ns	ns	ns	ns	ns	ns	−0.30	0.25	ns
Entitlement	ns	0.03	ns	ns	–	–	0.22	−0.22	–
Self-esteem	ns	ns	ns	ns	–	–	0.21	−0.21	–
Social Potency	ns	ns	ns	ns	ns	ns	ns	ns	–
Empathic Concern	ns	ns	ns	ns	ns	ns	0.10	ns	ns
Perspective Taking	ns	ns	ns	0.13	ns	ns	ns	ns	ns

Note. Variables not appearing in the table were not significantly heterogeneous in their effect sizes and thus moderators were not examined; Dashes indicate that there was insufficient variability to examine moderators in these cases; ns = not significant at 0.01.

Appendix F

Table F1
Results for meanness moderator analyses.

	% Male	% White	Age	College	Community	Prison	TriPM	Proxy	Non-Eng.
Disinhibition	ns	ns	ns	ns	ns	ns	0.13	ns	ns
PCL Antisocial	0.00	ns	ns	–	–	ns	ns	ns	–
SRP	ns	ns	ns	ns	–	ns	ns	ns	–
SRP Interpersonal Manipulation	ns	ns	ns	ns	–	ns	ns	ns	–
SRP Callous Affect	ns	ns	ns	ns	–	ns	ns	ns	–
SRP Erratic Lifestyle	ns	ns	ns	ns	–	ns	ns	ns	–
SRP Antisocial Behavior	ns	ns	ns	ns	–	ns	ns	ns	–
PPI	ns	ns	ns	ns	ns	ns	0.16	ns	ns
PPI Fearless Dominance	ns	ns	ns	ns	ns	ns	ns	ns	ns
PPI Self-Centered Impulsivity	ns	ns	ns	ns	ns	ns	ns	ns	ns
PPI Coldheartedness	ns	ns	ns	ns	ns	ns	ns	−0.40	ns
LSRP	ns	ns	ns	ns	ns	ns	ns	–	ns
LSRP Egocentricity	ns	ns	ns	ns	ns	ns	0.33	–	−0.33
LSRP Callousness	ns	ns	ns	ns	ns	ns	ns	–	ns
LSRP Antisocial	ns	ns	ns	ns	ns	ns	0.24	–	ns
EPA	ns	ns	ns	ns	−0.20	–	–	–	–
EPA Antagonism	ns	ns	ns	ns	ns	–	–	–	–
EPA Emotional Stability	−0.01	ns	−0.01	0.15	ns	–	–	–	–
EPA Disinhibition	ns	0.03	ns	ns	−0.64	–	–	–	–
YPI	ns	ns	ns	−0.28	ns	–	ns	–	ns
YPI Grandiose Manipulation	ns	ns	ns	−0.18	ns	–	ns	–	ns
YPI Callous Unemotional	0.03	ns	ns	ns	ns	–	ns	–	ns
YPI Impulsive/Irresponsible	ns	ns	ns	−0.19	ns	–	ns	–	ns
ICU	ns	0.02	0.15	0.36	–	−0.36	ns	ns	−0.36
ASPD-SR	ns	ns	ns	ns	–	ns	ns	ns	ns
ASPD-SR Narcissism	ns	ns	ns	ns	–	ns	ns	ns	ns
FFM Neuroticism	ns	ns	0.01	ns	ns	ns	ns	ns	ns
FFM Extraversion	ns	ns	ns	ns	ns	ns	ns	ns	ns
FFM Openness	ns	ns	ns	ns	ns	ns	ns	ns	0.13
FFM Agreeableness	ns	ns	ns	ns	ns	ns	−0.33	ns	0.24
FFM Conscientiousness	ns	ns	ns	ns	ns	ns	−0.19	0.18	ns
PID Negative Affectivity	0.01	ns	ns	ns	ns	0.36	ns	ns	ns
PID Detachment	ns	ns	ns	ns	ns	ns	ns	ns	ns
PID Antagonism	ns	ns	ns	ns	ns	ns	0.33	−0.33	ns
PID Disinhibition	ns	ns	ns	ns	ns	ns	0.29	−0.29	ns
PID Psychoticism	ns	ns	ns	ns	ns	ns	ns	ns	ns
Antisocial Personality Disorder	ns	ns	ns	ns	ns	ns	ns	ns	0.41
Narcissistic Personality Disorder	ns	ns	0.02	ns	ns	ns	ns	ns	–
Borderline Personality Disorder	ns	ns	ns	ns	ns	0.27	−0.46	0.46	–
Grandiose Narcissism	ns	ns	ns	ns	ns	ns	0.28	ns	ns
NPI Leadership/Authority	ns	ns	ns	ns	ns	ns	ns	ns	ns
NPI Grandiose Exhibitionism	ns	ns	ns	ns	ns	ns	0.24	ns	−0.25
NPI Entitlement/Exploitativeness	ns	ns	ns	ns	ns	ns	ns	ns	ns
Broad Externalizing	ns	ns	ns	ns	ns	ns	ns	ns	ns
Antisocial Behavior	ns	ns	ns	ns	ns	ns	ns	ns	ns

(*continued on next page*)

Table F1 (*continued*)

	% Male	% White	Age	College	Community	Prison	TriPM	Proxy	Non-Eng.
Aggression	ns	ns	ns	ns	ns	ns	ns	ns	ns
Reactive Aggression	ns	ns	ns	ns	0.37	ns	ns	ns	0.22
Proactive Aggression	ns	ns	ns	ns	ns	ns	ns	−0.30	ns
Substance use	ns	ns	ns	ns	ns	ns	ns	ns	–
Broad Internalizing	ns	ns	ns	ns	ns	ns	−0.11	0.15	ns
Anxiety	ns	ns	ns	ns	ns	0.19	ns	0.17	ns
Depression	ns	ns	ns	ns	ns	ns	−0.15	0.20	ns
Sensation Seeking	ns	ns	ns	ns	ns	ns	0.20	−0.20	–
Empathic Concern	ns	ns	ns	ns	ns	ns	ns	ns	ns
Perspective Taking	ns	ns	ns	ns	ns	ns	−0.20	ns	0.19

Note. Variables not appearing in the table were not significantly heterogeneous in their effect sizes and thus moderators were not examined; Dashes indicate that there was insufficient variability to examine moderators in these cases; ns = not significant at 0.01.

Appendix G

Table G1
Results for disinhibition moderator analyses.

	% Male	% White	Age	College	Community	Prison	TriPM	Proxy	Non-Eng.
PCL	ns	−0.01	ns	–	–	ns	ns	ns	ns
PCL Antisocial	ns	ns	ns	–	–	ns	ns	ns	ns
SRP	ns	ns	ns	ns	–	ns	ns	ns	–
SRP Interpersonal Manipulation	ns	ns	ns	ns	–	ns	ns	ns	–
SRP Callous Affect	ns	ns	ns	ns	–	ns	ns	ns	–
SRP Erratic Lifestyle	ns	ns	ns	ns	–	ns	ns	ns	–
SRP Antisocial Behavior	ns	ns	ns	−0.29	–	ns	ns	ns	–
PPI	ns	ns	ns	ns	ns	ns	ns	ns	ns
PPI Fearless Dominance	ns	ns	ns	ns	ns	ns	ns	ns	ns
PPI Self-Centered Impulsivity	ns	ns	ns	ns	ns	−0.27	ns	ns	ns
PPI Coldheartedness	ns	ns	ns	ns	ns	ns	ns	ns	ns
LSRP	ns	ns	−0.02	ns	ns	ns	ns	–	ns
LSRP Egocentricity	ns	ns	ns	ns	ns	ns	0.26	–	−0.26
LSRP Callousness	ns	ns	ns	ns	ns	ns	ns	–	ns
LSRP Antisocial	ns	ns	ns	ns	ns	ns	ns	–	ns
EPA	ns	ns	ns	ns	ns	–	–	–	–
EPA Antagonism	ns	ns	ns	ns	ns	–	–	–	–
EPA Emotional Stability	ns	ns	−0.01	0.23	ns	–	–	–	–
EPA Disinhibition	ns	ns	ns	ns	ns	–	–	–	–
EPA Narcissism	ns	ns	ns	ns	–	–	ns	–	–
YPI	0.02	ns	ns	−0.23	ns	–	ns	–	ns
YPI Grandiose Manipulation	0.02	ns	ns	ns	ns	–	ns	–	ns
YPI Callous Unemotional	0.02	ns	ns	−0.20	ns	–	ns	–	ns
YPI Impulsive/Irresponsible	0.02	ns	ns	−0.14	ns	–	ns	–	ns
ICU	ns	ns	ns	ns	–	ns	ns	ns	ns
ASPD-SR	ns	ns	ns	ns	–	ns	ns	ns	ns
ASPD-SR Impulsivity	0.01	0.02	ns	0.43	–	−0.43	ns	ns	−0.43
FFM Neuroticism	0.00	ns	0.01	−0.16	ns	ns	ns	ns	ns
FFM Extraversion	ns	ns	ns	ns	ns	ns	ns	ns	ns
FFM Openness	ns	ns	ns	ns	ns	ns	ns	ns	ns
FFM Agreeableness	ns	ns	ns	ns	ns	ns	ns	ns	0.14
FFM Conscientiousness	ns	ns	ns	ns	ns	ns	ns	ns	ns
PID Negative Affectivity	ns	ns	ns	ns	0.18	ns	ns	ns	–
PID Detachment	ns	ns	ns	ns	ns	ns	ns	ns	–
PID Antagonism	ns	ns	ns	ns	ns	ns	0.23	−0.23	–
PID Disinhibition	ns	ns	ns	ns	ns	ns	ns	ns	–
PID Psychoticism	ns	ns	ns	ns	ns	ns	0.14	−0.14	–
Antisocial Personality Disorder	ns	ns	ns	ns	ns	ns	ns	ns	0.44
Narcissistic Personality Disorder	ns	ns	0.01	ns	ns	ns	ns	ns	–
Borderline Personality Disorder	ns	−0.03	ns	ns	ns	ns	−0.47	0.47	–
Grandiose Narcissism	ns	ns	ns	ns	ns	ns	ns	ns	ns
NPI Leadership/Authority	ns	ns	ns	ns	ns	ns	ns	ns	ns
NPI Grandiose Exhibitionism	ns	ns	ns	0.1	−0.12	ns	0.11	ns	ns
NPI Entitlement/Exploitativeness	ns	ns	ns	ns	ns	ns	ns	ns	ns
Broad Externalizing	ns	ns	ns	ns	ns	ns	ns	ns	ns
Antisocial Behavior	ns	0.01	ns	ns	ns	ns	ns	ns	ns
Aggression	ns	ns	ns	ns	ns	ns	ns	ns	ns
Reactive Aggression	0.01	0.02	ns	ns	ns	ns	ns	ns	ns
Proactive Aggression	0.01	0.02	ns	ns	ns	ns	ns	−0.29	ns
Broad Internalizing	ns	−0.01	ns	ns	ns	ns	ns	ns	ns
Anxiety	ns	ns	ns	ns	ns	0.20	ns	ns	ns
Depression	ns	ns	ns	ns	ns	ns	ns	0.22	ns
Impulsivity	ns	ns	ns	ns	ns	ns	ns	ns	ns

(*continued on next page*)

Table G1 (*continued*)

	% Male	% White	Age	College	Community	Prison	TriPM	Proxy	Non-Eng.
Self-Esteem	ns	ns	ns	ns	–	–	−0.28	0.28	–
Empathic Concern	ns	ns	ns	ns	ns	ns	ns	ns	ns
Perspective Taking	ns	ns	ns	ns	ns	ns	ns	ns	ns
Fantasy	ns	ns	ns	ns	ns	ns	ns	ns	ns

Note. Variables not appearing in the table were not significantly heterogeneous in their effect sizes and thus moderators were not examined; Dashes indicate that there was insufficient variability to examine moderators in these cases; ns = not significant at 0.01.

Appendix H

Table H1
Results for eggers and trim and fill tests of publication bias.

	Boldness		Meanness		Disinhibition	
	Eggers Test Violation	Trim and Fill Test Violation	Eggers Test Violation	Trim and Fill Test Violation	Eggers Test Violation	Trim and Fill Test Violation
Meanness		x				
Disinhibition				x		
PCL-R Total		x	x	x	x	x
PCL-R Interpersonal		x		x	x	x
PCL-R Affective				x		x
PCL-R Impulsive/Irresponsibility				x		x
PCL-R Antisocial		x			x	x
SRP-III Total						x
SRP-III Interpersonal Manipulat				x		
SRP-III Callous Affectivity						
SRP-III Erratic Lifestyle	x	x				x
SRP-III Antisocial Behavior	x				x	
PPI-R Total						
PPI-R Fearless Dominance						
PPI-R Self-Centered Impulsivity		x		x	x	
PPI-R Coldheartedness						x
LSRP Total				x	x	
LSRP Egocentricity	x					
LSRP Callousness	x	x		x		
LSRP Antisocial						
EPA Total		x	x		x	
EPA Antagonism			x			
EPA Emotional Stability	x	x		x	x	
EPA Disinhibition				x	x	
EPA Narcissism		x				
YPI Total		x				
YPI Grandiose Manipulation		x			x	
YPI Callous Unemotional	x					
YPI Impulsive Irresponsible	x					
ICU Total			x			x
ASPD-SR Total	x			x		x
ASPD-SR Narcissism	x			x		x
ASPD-SR Callous Unemotional		x	x			x
ASPD-SR Impulsivity	x		x	x	x	
Neuroticism				x		x
Extraversion						x
Openness					x	x
Agreeableness						x
Conscientiousness				x		x
N1: Anxiety				x		
N2: Anger	x					
N3: Depression		x				x
N4: Self-Consciousness			x	x	x	x
N5: Immoderation		x				
N6: Vulnerability						
E1: Friendliness	x	x				
E2: Gregariousness						
E3: Assertiveness						
E4: Activity Level				x		
E5: Excitement Seeking		x				
E6: Cheerfulness		x		x		
O1: Imagination						
O2: Artistic Interest		x				
O3: Emotionality		x				

(*continued on next page*)

Table H1 (*continued*)

	Boldness		Meanness		Disinhibition	
	Eggers Test Violation	Trim and Fill Test Violation	Eggers Test Violation	Trim and Fill Test Violation	Eggers Test Violation	Trim and Fill Test Violation
O4: Adventurousness		x		x	x	x
O5: Intellect					x	
O6: Liberalism						
A1: Trust		x				
A2: Morality		x				x
A3: Alturism						
A4: Cooperation						
A5: Modesty						x
A6: Sympathy						x
C1: Self-Efficacy		x				
C2: Orderliness						
C3: Dutifulness		x	x	x		x
C4: Achievement Striving						x
C5: Self-Discipline			x			
C6: Cautiousness					x	x
PID-5 Negative Affectivity	x		x			
PID-5 Detachment						
PID-5 Antagonism	x					
PID-5 Disinhibition	x					
PID-5 Psychoticism	x	x				x
PID-5 Anhedonia				x		
PID-5 Anxiousness				x		x
PID-5 Attention Seeking				x		
PID-5 Callousness				x		
PID-5 Decietfulness						
PID-5 Depressivity				x		
PID-5 Distractibility						
PID-5 Eccentricity						x
PID-5 Emotional Lability		x				
PID-5 Grandiosity	x			x		
PID-5 Hostility					x	
PID-5 Impulsivity						
PID-5 Intimacy Avoidance		x		x		
PID-5 Irresponsibility		x				
PID-5 Manipulativeness						x
PID-5 Perceptual Dysregulation						
PID-5 Perseveration	x					
PID-5 Restricted Affectivity		x	x			
PID-5 Rigid Perfectionism						
PID-5 Risk Taking						
PID-5 Separation Insecurity						
PID-5 Submissiveness			x	x		
PID-5 Suspiciousness				x		
PID-5 Unusual Beliefs & Exp		x				
PID-5 Withdrawal						
ASPD	x					
Grandiose Narcissism	x	x				x
NPI Leadership Authority		x				x
NPI Grandiose Exhibitionism						x
NPI Exploitation Entitlement				x		
Vulnerable Narcissism	x			x		x
NPD				x		
Machiavellianism						
BPD			x			
Broad Externalizing				x		
ASB				x		x
Aggression	x					
Reactive	x					
Proactive				x		
Substance Use		x		x		
Broad Internalizing		x		x		
Anxiety		x	x			x
Depression		x		x		
Sensation Seeking	x			x		
Impulsivity		x		x		
Entitlement					x	x
Self-Esteem				x		
Social Potency						x
Empathic Concern		x		x		
Perspective Taking		x		x		
Personal Distress		x		x		
Fantasy				x		

(*continued on next page*)

Table H1 (*continued*)

	Boldness		Meanness		Disinhibition	
	Eggers Test Violation	Trim and Fill Test Violation	Eggers Test Violation	Trim and Fill Test Violation	Eggers Test Violation	Trim and Fill Test Violation

Notes. x for Egger's Violation indicates effect was significant $p < .05$; x for Trim & Fill Violation indicates a difference between the random-effects weighted mean effect size and the weighted mean effect size adjusted for asymmetry; SRP-III Interpersonal Manipulat = SRP-III Interpersonal Manipulation; ASPD-SR Callous Unemotional = ASPD-SR Callous Unemotionality; ASB = Antisocial Behavior; PID-5 Unusual Beliefs & Exp = PID-5 Unusual Beliefs & Experiences.

Appendix I

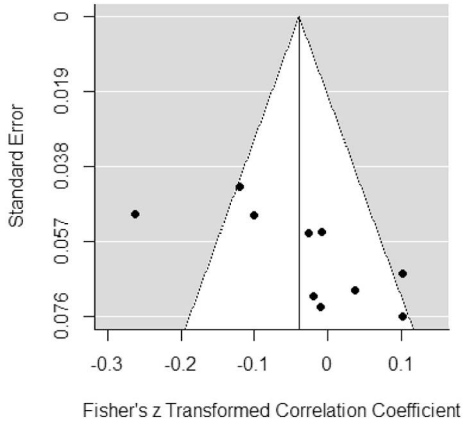

Fig. I1. Funnel plot for TriPM Boldness and PID-5 Psychoticism.

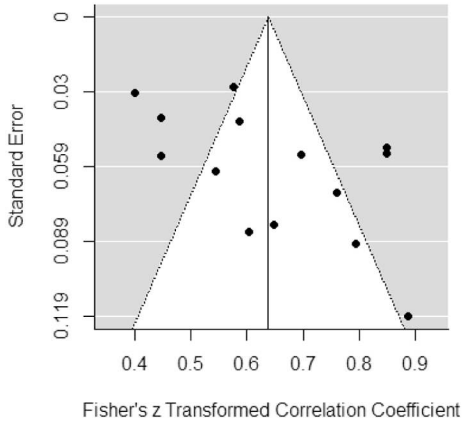

Fig. I2. Funnel plot for TriPM Boldness and Grandiose Narcissism.

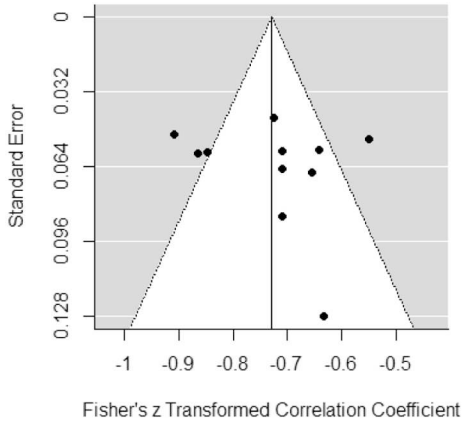

Fig. I3. Funnel plot for TriPM meanness and IRI Empathic Concern.

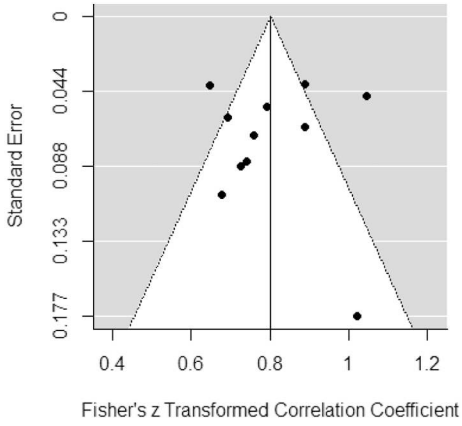

Fig. I4. Funnel plot for TriPM meanness and PPI-R Total.

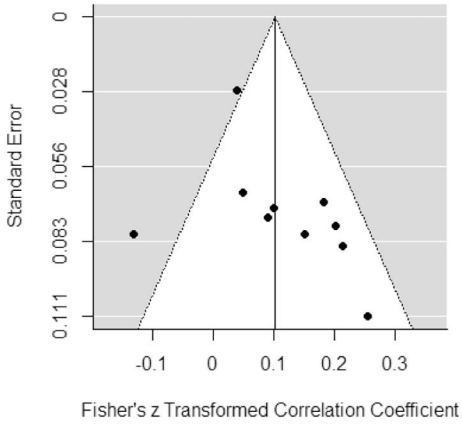

Fig. I5. Funnel plot for TriPM Disinhibition and PCL-R Interpersonal.

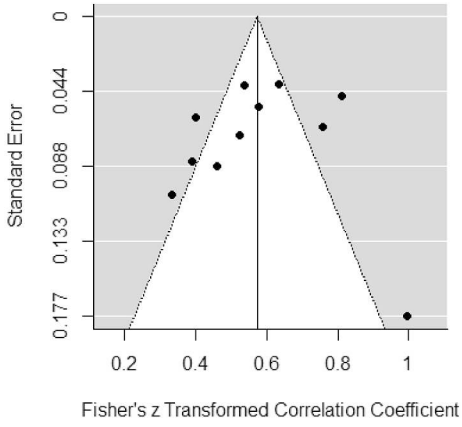

Fig. I6. Funnel plot for TriPM Disinhibition and PPI-R Total.

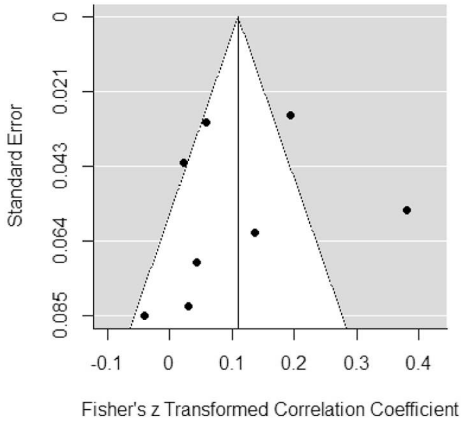

Fig. I7. Funnel plot for TriPM Disinhibition and NPI Leadership Authority.

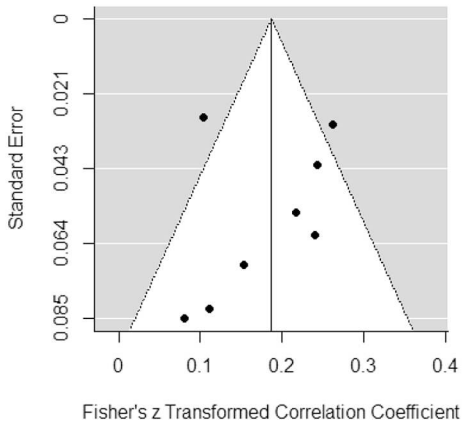

Fig. I8. Funnel plot for TriPM Disinhibition and NPI Grandiose Exhibitionism.

Appendix J. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.cpr.2019.04.005.

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