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Components of the Triarchic Model of Psychopathy are nested within the Five-Factor Model

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Abstract

The Triarchic Model of Psychopathy (TPM; Patrick, Krueger, & Fowles, 2009) is a recently developed measure of psychopathy that identifies three primary domains: Boldness, Meanness, and Disinhibition. These traits overlap substantially with general and pathological five-factor models (FFM) of personality (Boldness = low Neuroticism, high Extraversion; Meanness = low Agreeableness; Disinhibition = low Conscientiousness). In the current study, (total N = 702) we compare TPM and FFM domains in relation to self- and informant-report of external criteria (i.e., pathological traits, antisocial behavior), and quantified their absolute similarity using a profile matching approach. The corresponding traits from these models share large interrelations and very similar convergent and divergent relations, suggesting that unaltered traits from one can be considered excellent proxies for the other. Results are discussed in terms of the benefits of using a unifying trait-based model to study psychopathy, as well as personality disorders more broadly.

Keywords: personality assessment; triarchic model of psychopathy; five-factor model; personality disorder; externalizing behavior

Components of the Triarchic Model of Psychopathy are nested within the Five-Factor Model

Psychopathy is a personality disorder associated with egocentricity, callousness, manipulativeness, egocentricity, impulsivity, risk-taking, and antisocial behavior (e.g., Hare, 1980). Since early theoretical work by Cleckley (1941), a range of models and measures have been developed to capture psychopathic personality traits (e.g., Hare's Psychopathy Checklist; Hare, 1980). One of the most recent models is the triarchic model of psychopathy (TPM; Patrick, Fowles, & Krueger, 2009), comprising the components of Boldness, Meanness, and Disinhibition, which can be measured with the Triarchic Psychopathy Measure (TriPM; Patrick, 2010). The TPM was developed to capture distinct neurobehavioral tendencies, and the components of the TPM have been differentially linked to various forms of event-related potential reactivity, as well as startle potential and facial processing (Brislin et al., 2014; Brislin, Yancey, Venables, & Patrick, 2015; Brislin et al., 2018; Vaidyanathan, Patrick, & Bernat, 2009).

Overlap between the TPM and Other Conceptualizations of Psychopathy

Other models of psychopathy have their roots in structural models of personality derived from basic personality research. Consistent with robust evidence that the Five-Factor Model (FFM) of personality can adequately capture psychopathy as a configuration of general traits (e.g., Lynam & Miller, 2015; Miller & Lynam, 2003; Miller, Lynam, Widiger, & Leukefeld, 2001), trait-based assessments of psychopathy have also been created (e.g., Elemental Psychopathy Assessment [EPA]; Lynam et al., 2011). For example, the EPA contains Antagonism and Disinhibition factors, which can be conceived as maladaptive variants of FFM traits Agreeableness and Conscientiousness. Using a basic personality framework has substantial benefits, which include parsimony (i.e., the ability to speak about a wide range of personality disorders and related constructs in a concise set of terms) and a linkage to a wide, robust, and

multifaceted body of research (e.g., Vachon et al., 2013).

Numerous studies suggest a strong correspondence between the TriPM components and FFM traits. Across four recent studies (Donnellan & Burt, 2016; Miller, Lamkin, Maples-Keller, & Lynam, 2016; Poy, Segarra, Esteller, López, & Moltó, 2014; Shou, Sellbom, & Han, 2016), Boldness was strongly linked to Neuroticism (weighted mean $r = -.62$; range: $-.43$ to $-.73$) and Extraversion (weighted mean $r = .58$; range: $.36$ to $.70$), Meanness was strongly linked to Agreeableness (weighted mean $r = -.67$; range: $-.45$ to $-.82$) and moderately related to Conscientiousness (weighted mean $r = -.36$; range: $-.28$ to $-.41$) and Disinhibition was strongly related to Conscientiousness (weighted mean $r = -.56$; range: $-.39$ to $-.64$) and Agreeableness (weighted mean $r = -.42$; range: $-.33$ to $-.51$).

In the past several years, the creators of the TriPM have begun developing proxy measures of the TriPM domains that can be derived from other prominent psychopathy scales (e.g., Multidimensional Personality Questionnaire; Brislin, Drislane, Smith, Edens, & Patrick, 2014; Psychopathic Personality Inventory; Hall et al., 2013; Youth Psychopathic Traits Inventory; Drislane et al., 2015) in an effort to clarify how various scales can be integrated under a TriPM framework and so that research using these other assessments can be used to inform a TPM-based study of psychopathy. In general, these proxies show moderate to good convergent validity with their full scale counterparts, with correlations ranging from $.57$ to $.80$ for Boldness, $.49$ to $.73$ for Meanness, and $.62$ to $.71$ for Disinhibition (see Table 1).

In a recent effort to develop FFM proxies of the TriPM, Drislane and colleagues (2017) used a construct rating and scale refinement approach, wherein trained graduate students in clinical psychology rated each item of the NEO PI-R (Costa & McCrae, 1992) for degree of fit with each of the TriPM domains. After selecting items based on high interrater convergence, the

authors culled the remaining items based on poor convergent validity or redundancy (see Drislane et al., 2017 for complete scale construction information). This resulted in the creation of “NEO-Tri” scales for Boldness, Meanness, and Disinhibition, which were 23, 21, and 25 items long, respectively. The NEO-Tri scales demonstrated good psychometric properties, including large correlations (.71 to .79) with their TriPM counterparts, convergent and discriminant validity with external criteria, and the expected three-factor model showed good fit in a confirmatory factor analysis. The authors conclude that the NEO-Tri scales can be used as proxies for TriPM traits, which allow the items from a language-based FFM measure to be transformed to comport with the putatively more neurobehavioral measures from the TriPM.

However, this transformation comes at a cost. The authors noted that “the current work shows that effectively quantifying the triarchic dimensions requires considerable reconfiguration of the standard FFM domains” (Drislane et al., 2017, p. 6). For instance, of the 23 NEO PI-R items used to assess Boldness, 11 come from Neuroticism (48%), 10 from Extraversion (43%), and 2 from Agreeableness (9%). Of the 25 items used to assess Meanness, 17 come from Agreeableness (68%), 4 from Extraversion (16%), 3 from Openness (12%), and 1 from Neuroticism (4%). Finally, of the 21 items used to assess Disinhibition, 11 come from Conscientiousness (52%), 7 from Neuroticism (33%), and 3 from Agreeableness (14%). An unfortunate side effect of this alternate scoring approach, in which items from multiple domains are used to capture the TPM domains (Boldness – 3 FFM domains; Meanness – 4 FFM domains; Disinhibition – 3 FFM domains) is that one cannot use results from the FFM to generalize to the TPM or vice versa. Such an approach may not even be necessary, however, given that a more straightforward approach may be feasible such that Meanness is simply represented by reversed scored FFM Agreeableness, Disinhibition as reverse scored FFM Conscientiousness, and

Boldness as the sum of FFM Extraversion and reverse scored Neuroticism.

In the current study we examine the empirical overlap between TriPM components and their FFM counterparts with the hypothesis that one can use the FFM domains in an un-reconfigured manner to capture the TriPM domains; that is, FFM domains themselves serve as adequate proxies for the TriPM domains. Across two samples, we first examine the convergence between TriPM domains and their FFM counterparts using long (Sample 1) and short (Sample 2) versions of an FFM measure, and compare this to the convergence observed in previous proxy studies. Next, we examine the relations between the FFM scores and relevant external criteria including basic personality traits, pathological traits, developmental experiences, externalizing behavior, and an alternate measure of psychopathy. Moving beyond previous proxy studies, we formally quantify the *absolute similarity* of correlational profiles generated by the FFM domains versus the TriPM domains themselves using a profile-matching approach (see McCrae, 2008).

Methods

Participants and Procedure

Sample 1. Participants in Sample 1 were 362 adults recruited from Amazon's Mechanical Turk and were compensated \$1.50 for their participation. The mean age in this sample was 38.9 years ($SD = 12.5$), and the sample was predominantly women (55.5% female). 85% of this sample identified as white, with 8% identifying as African-American, 5% as Asian, and 2% as American Indian. Data from this sample have been published previously (BLINDED FOR SUBMISSION).

Sample 2. Participants in Sample 2 were 340 undergraduates recruited from a large, public southeastern university who received research credit for their participation. The mean age in this sample was 19.6 years ($SD = 1.9$), and the sample had approximately equal proportions of

men and women (50% male). 74% of the sample identified as white, 13% as Asian, 10% as African-American, and 4% as Hispanic. Data from this sample have been published previously (BLINDED FOR SUBMISSION).

Materials in Samples 1 and 2

TriPM. The TriPM (Patrick, Fowles, & Krueger, 2009) is a 58-item self-report measure of psychopathy. It assesses the subscales Boldness (Study 1 $\alpha = .87$; Study 2 $\alpha = .80$), Meanness (Study 1 $\alpha = .87$, Study 2 $\alpha = .92$), and Disinhibition (Study 1 $\alpha = .91$; Study 2 $\alpha = .89$).

Crime and Analogous Behavior Scale-Short Form. The Crime and Analogous Behavior Scale-Short Form (CAB; Miller & Lynam, 2003) is a 25-item self-report measure of various externalizing behaviors. In study 1, all three subscales were log-transformed to reduce problems with non-normality. In study 2, only the antisocial subscale was log-transformed.

Materials in Sample 1 Only

IPIP-120. The IPIP-120 (Maples, Guan, Carter, & Miller, 2014) is a 120-item self-report measure of the Five Factor Model trait domains, as well as the 6 facets that comprise each domain. Domain α s ranged from .84 to .94.

Self-Report Materials in Sample 2 Only

Experiences in Close Relationships–Revised (ECR-R). The ECR–R (Fraley, Waller, & Brennan, 2000) is a 36-item self-report measure of two adult attachment styles: Avoidance (18 items; $\alpha = .94$) and Anxiety (19 items; $\alpha = .94$).

Child Abuse and Trauma Scale (CATS). The CATS (Sanders & Giolas, 1991) is a 38-item self-report measure of physical, verbal, emotional, and sexual abuse. In the current study, we used only the items included in the revised scales described by Poythress, Skeem, and Lilienfeld (2006). Those 14 items were used to create subscales assessing Physical ($\alpha = .79$),

Verbal ($\alpha = .75$), Sexual ($\alpha = .88$), and Emotional Abuse ($\alpha = .84$). The physical and sexual abuse scores were log-transformed to reduce problems with nonnormality.

IPIP-NEO-60. Participants rated their own personality on a 60-item International Personality Item Pool measure of the FFM (Maples-Keller et al., in press). Internal consistency for the domains ranged from .71 to .87.

Personality Inventory for DSM–5 (PID-5). The PID-5 (Krueger et al., 2012) is a 220-item self-report inventory developed to assess traits included in the *DSM–5* alternative dimensional model. Alphas ranged from $\alpha = .72$ (Suspiciousness) to .91 (Anxiousness).

Positive Affect Negative Affect Schedule (PANAS). The PANAS (Watson, Clark, & Tellegen, 1988) is a 60-item measure that can be scored to assess positive and negative affect as well as more narrow affective experiences. In the current study, only the positive and negative affect dimensions were used (α s = .88 and .87, respectively).

Reactive–Proactive Aggression Questionnaire (RPAQ). The RPAQ (Raine et al., 2006) consists of 23 items assessing proactive ($\alpha = .91$) and reactive aggression ($\alpha = .85$). The proactive aggression score was log-transformed prior to use due to problems with non-normality.

Alcohol Use Disorders Identification Test (AUDIT). The AUDIT (Saunders, Aasland, Babor, de la Fuente, & Grant, 1993) is a 10-item screening questionnaire used to identify alcohol use disorders ($\alpha = .84$). Each item is rated on a 0–4 Likert scale, with a higher score reflecting more problematic drinking behaviors.

Self-Report Psychopathy Scale–Version III (SRP-III). The SRP-III (Paulhus, Neumann, & Hare, 2009) is a 64-item measure of psychopathy with the subscales Interpersonal Manipulation ($\alpha = .85$), Callous Affect ($\alpha = .62$), Erratic Lifestyle ($\alpha = .83$), and Antisocial Behavior ($\alpha = .87$).

World Health Organization Disability Schedule-II (WHODAS-II; Üstün et al., 2010). The WHODAS-II is a 36-item measure of functional impairment that assesses six domains. The total score was used in the current study ($\alpha = .96$).

Informant Report in Sample 2

World Health Organization Disability Schedule-II (WHODAS-II; Üstün et al., 2010). Informant-report WHODAS scores ($\alpha = .88$) were log-transformed prior to use due to a nonnormal distribution.

Crime and Analogous Behavior Scale-Short Form. For informant report in Sample 2, the antisocial behavior subscale was log-transformed to address problems with non-normality.

Reactive–Proactive Aggression Questionnaire (RPAQ). For informant report, the proactive ($\alpha = .72$) and reactive ($\alpha = .87$) subscales were used, and only the proactive aggression score was log-transformed prior to use due to problems with non-normality.

Results

Trait Rescoring

For ease of interpretation, we reverse-coded FFM Agreeableness and Conscientiousness such that high, positive relations with these domains could be compared with high, positive relations with TriPM Meanness and Disinhibition, respectively. As such, we subsequently refer to these reverse-coded traits as FFM_A and FFM_C, respectively. Considering that FFM Extraversion and (low) Neuroticism have comparable, strong links to TriPM Boldness, we created a composite that comprised the sum of participants' score on the domains of Extraversion and reverse-coded Neuroticism, hereafter referred to as the FFM N/E composite.

Bivariate Relations

TriPM and FFM traits. In Sample 1, relations between the TriPM traits and their FFM

counterparts were generally large in magnitude, ranging in absolute strength from .62 (TriPM Disinhibition – FFM Conscientiousness) to .82 (TriPM Meanness – FFM Agreeableness), with a median of .72 (see Table 1). In Sample 2, relations ranged in absolute strength from .50 (TriPM Boldness – FFM Extraversion) to .64 (TriPM Meanness – FFM Agreeableness and TriPM Disinhibition – FFM Conscientiousness), with a median of .60. In general, the relations across models were larger when using the full-length measure of the FFM used in Sample 1. The exception was the TriPM Disinhibition – FFM_C relation, such that tests of independent correlations indicate that the Sample 1 and Sample 2 relations did not significantly vary.

We then compared the relations between the hypothesized TriPM/FFM relations with the TriPM/TriPM proxy correlations that have been found in previous studies. In every case, the FFM domains matched or outperformed the TriPM proxies, such that the TriPM/FFM relations were as large if not larger than the corresponding TriPM/TriPM proxy relations.

FFM domains/facets. Boldness and the N/E composite showed medium-to-large relations to Neuroticism and Extraversion as well as their facets, respectively (Table 2). Relations with facets from the other FFM traits were generally small, but Boldness and the N/E composite bore large, positive relations to the facets Achievement-Striving and Self Discipline (C), and large, negative relations to Modesty (A). Antagonism and FFM_A showed comparable medium-to-large, negative relations to Agreeableness and underlying facets, with particularly large relations to Altruism and Sympathy, as well as small-to-medium relations with the facets of Conscientiousness, especially Dutifulness. TriPM Antagonism and FFM_A also demonstrated positive relations of medium magnitude with Excitement-Seeking (E) and Anger (N). Disinhibition and FFM_C generally evinced medium-to-large, negative relations to the facets of Conscientiousness, as well as medium, positive relations with Neuroticism and its facets.

PID-5 facets. Boldness and the N/E composite displayed generally negative relations to the pathological PID-5 facets with large negative correlations with Anxiousness, Anhedonia, Depressivity, and Emotional Lability. Additionally, Boldness and the N/E composite demonstrated small, but positive relations to Attention-Seeking and Grandiosity (Table 3). Boldness but not N/E was also positively related to manipulateness and risk taking. In contrast, Meanness and FFM_A displayed almost exclusively positive relations to PID-5 facets, mostly from the domain of Antagonism (e.g., Callousness, Deceitfulness, Manipulateness, and Grandiosity). Disinhibition and FFM_C evinced almost exclusively positive relations with the PID-5 facets, with notably large relations with Impulsivity, Irresponsibleness, Risk-Taking, and Perseveration.

Developmental Experiences. Boldness and the N/E composite displayed medium, negative relations to Anxious and Avoidant attachment styles, and bore small, negative relations to childhood abuse experiences (Table 4). Meanness, FFM_A, Disinhibition, and FFM_C each bore small-to-medium, positive relations to Anxious and Avoidant attachment styles, and abuse experiences.

Externalizing behavior. Boldness and the N/E composite showed null-to-small relations to externalizing behavior, and each of the traits examined herein bore null-to-small relations with intimate partner violence (Table 5). Meanness and FFM_A each generally displayed medium, positive relations to antisocial behavior, reactive aggression, and problematic drinking, with large, positive relations to proactive aggression. Meanness and FFM_A also showed small-to-medium, positive relations with informant-report of antisocial behavior, substance abuse, as well as proactive and reactive aggression. Meanness and Disinhibition bore small, positive relations to self- and informant-report of substance abuse. Disinhibition and FFM_C also generally exhibited

medium-to-large, positive relations to self- and informant-report of antisocial behavior, proactive aggression, reactive aggression, and problematic drinking.

Affect and Functional Impairment. Boldness and the N/E composite demonstrated large, positive relations to positive affect, and medium, negative relations to negative affect (Table 5). Similarly, both self- and informant-report suggest that these traits are either unrelated or negatively related to functional impairment, particularly for the N/E composite. Alternately, Meanness, FFM_A, Disinhibition, and FFM_C showed medium, negative relations to positive affect, and medium, positive relations to negative affect. Additionally, each of these traits were positively related to self- and informant-report of functional impairment, although the self-report relations were stronger in every case.

Psychopathy. Each of the TriPM traits and their FFM counterparts bore medium-to-large, positive relations to SRP Erratic Lifestyle, with the exception of the N/E composite (Table 5). Meanness, FFM_A, Disinhibition, and FFM_C displayed medium-to-large, positive relations to SRP Interpersonal Manipulation, Callous Affect, and Antisocial Behavior.

Profile Matching across TriPM and FFM Correlates

To quantify the degree of absolute similarity manifested by the TriPM domains and their FFM counterparts, we calculated intraclass correlations among their correlations manifested in Tables 2 through 6 using 90 criteria for Boldness and FFM N/E and 91 criteria each for Meanness/FFM_A and Disinhibition/FFM_C. The former had one fewer criteria as we did not include either FFM N or FFM E (whereas in the latter we only removed FFM A or FFM C, respectively), given they are both nearly redundant with the FFM N/E composite. Overall, the profiles were nearly perfectly correlated – Boldness and FFM N/E ($r_{ICC} = .88$), Meanness and FFM_A ($r_{ICC} = .96$), and Disinhibition and FFM_C ($r_{ICC} = .89$).

Discussion

Psychopathy has intrigued both scholars and laypersons for decades due, in part, to its ties to violence and other costly externalizing behaviors. Numerous models and related measures of psychopathy have been developed. The goal of the current study was to compare the TPM conception of psychopathy with an FFM operationalization of psychopathy (i.e., low N/high E, low A, low C). We believe the current study offers multiple lines of evidence suggesting the components of the TriPM are nested within the FFM and that the FFM domains can be used without any reconfiguration to study psychopathy from the TPM perspective.

First, the interrelations between TriPM traits and their FFM trait counterparts are large, particularly when the latter is measured using a longer, faceted measure such as the NEO PI-R (Costa & McCrae, 1992) or IPIP-NEO-120 (Maples et al., 2014). In fact, the FFM traits' relations with the TriPM traits were as strong, if not stronger, than published relations between the TriPM and the TriPM proxies—scales designed explicitly to capture the TriPM dimensions (Brislin, Drislane, Smith, Edens, & Patrick, 2014; Drislane et al., 2015; Drislane et al., 2017; Hall et al., 2013). Second, the TriPM and relevant FFM domains manifested almost identical nomological networks across measures of general and pathological traits, developmental experiences, externalizing behavior, affect, psychopathy, and functional impairment. At the personality facet level, the TriPM and FFM traits shared almost all of their strongest and weakest correlates. Boldness and the N/E composite appear to be related to generally adaptive developmental experiences (i.e., lack of anxious attachment style; absence of abuse), while the Meanness, FFM_A, Disinhibition, and FFM_C were each generally related to more maladaptive developmental experiences. Similarly, Boldness and the N/E composite appear to be generally unrelated to externalizing behavior – consistent with a large body of research on the general lack

of maladaptivity associated with this construct (e.g., Miller & Lynam, 2012). On the other hand, Meanness, FFM_A, Disinhibition, and FFM_C were strongly related to antisocial behavior, proactive, and reactive aggression, as well as an alternative measure of psychopathy. In terms of absolute similarities of empirical correlates, the intraclass correlations across the two approaches suggested that the FFM markers yielded results nearly identical to their TriPM counterparts.

Despite this overlap, two patterns of slight discrepancy emerged. First, although the TriPM and corresponding FFM traits demonstrated very similar patterns of results, TriPM Disinhibition displayed stronger relations to Antagonism and associated constructs. For example, TriPM Disinhibition bore stronger relations to Meanness, 4/6 Agreeableness facets, each of the PID Antagonism facets, antisocial behavior, aggression, and SRP Callous Affect and Interpersonal Manipulation than did FFM_C. This is likely due to the fact that TriPM Disinhibition includes explicitly antisocial items (e.g., “I have taken money from someone's purse or wallet without asking”; “I have robbed someone”; “I have conned people to get money from them”; “I have taken items from a store without paying for them”; “I have stolen something out of a vehicle”; Patrick, 2010) and thus “pulls” for more antagonism, which is the strongest trait correlate of antisocial behavior (Jones, Miller, & Lynam, 2011; Miller & Lynam, 2001).

Second, the N/E composite appeared to be generally more strongly related to adaptive outcomes than was Boldness. For example, the N/E composite demonstrated either stronger negative relations or weaker positive relations to 24/25 (96%) of PID-5 pathological traits, as well as stronger negative relations to all maladaptive developmental experiences. Moreover, the N/E composite showed stronger relations to positive and negative affect (positive and negative, respectively), generally weaker relations to antisocial behavior, and stronger, negative relations to self- and informant reported functional impairment than did Boldness. So, while their

nomological networks are similar, the N/E composite captures an even more adaptive construct than Boldness. Boldness has already been criticized by some psychopathy researchers (e.g., Gatner, Douglas & Hart, 2016; Miller & Lynam, 2012; Miller et al., 2016) for being more tangential to psychopathy given its general lack of maladaptivity (cf. Lilienfeld et al., 2016).

An additional issue related to Boldness is that it is multidimensional in nature, comprise very high level of emotional stability (low Neuroticism) and very high levels of extraversion. Although a composite of FFM Neuroticism and Extraversion did a good job approximating Boldness from an FFM perspective, we believe that studying Boldness or the N/E composite as a singular construct has substantial limitations, just as studying psychopathy as a singular construct does (e.g., Miller et al., 2012; Watts et al., 2017). First, it significantly limits the potential for translation between Boldness and FFM Neuroticism and Extraversion. In other words, if a study links Boldness to construct X, it is impossible to know if this effect is being “driven” by Neuroticism or Extraversion or both. Second, Neuroticism and Extraversion may appear to be opposite ends of a continuum (i.e., negative to positive emotionality), but this is an inaccurate characterization; in the current samples, Neuroticism and Extraversion were correlated at mean $r = -.34$. This suggests that these traits are related (especially when using a shorter measure of the FFM), but that there is a large amount of important variance in each trait that is not accounted for by the other. As such, we believe that if important questions are to be answered regarding the developmental origins, inter/intra-personal consequences, and psychophysiological underpinnings of personality traits, it is crucial to study them at the basic level as homogeneous constructs (Smith, McCarthy, & Zapolski, 2009).

Limitations and Conclusions

Limitations of this study include a reliance on undergraduate and MTurk samples, as well

as primary reliance on self-report ratings. As such, generalizability to other populations is uncertain. Of note, these sampling and methodological approaches are consistent with the work done to date comparing the TriPM and FFM and work creating FFM proxies of the TriPM.

Although the traits were derived from different theoretical orientations, the current data provide further evidence that the trait components of the TriPM can be considered variants of basic personality domains. We agree with the general theme of the proxy scale development approach: to unify the TriPM and trait-based approaches to the study of psychopathy, which we believe to be an important bridge between separate research initiatives that are often characterized by unique methodological approaches. However, we argue there is little reason to discuss psychopathic traits in terms of Boldness, Meanness, and Disinhibition when, as demonstrated herein, these traits are essentially redundant with low Neuroticism/high Extraversion, low Agreeableness, and low Conscientiousness, respectively. We believe parsimony an important attribute to theory, and that conceiving of TriPM and FFM traits as unique is a likely example of the “jangle” fallacy, wherein extremely similar constructs are erroneously given different names and studied as separate entities (Block, 1995).

As such, we believe there are several major benefits to studying psychopathy from the perspective of the FFM. First, the FFM was derived from the natural language which should ensure that important aspects of personality are represented (John & Srivastava, 1999). Second, the FFM offers a comprehensive lexicon of 30 facets which provides excellent articulation for describing complex constructs. Third, the FFM, both at the domain and facet levels, has much empirical support in the form of convergent and discriminant validity across self, peer, and spouse ratings (Costa & McCrae, 1988), temporal stability (Roberts & DelVecchio, 2000), cross-cultural support (Church, 2001), and behavior genetics (Yamagata et al., 2006). Fourth, the

relations between the FFM and psychopathy are well known. The FFM has been examined in relation to all major psychopathy instruments (see meta-analyses by Decuyper, De Pauw, De Fruyt, De Bolle, & De Clerq, 2009; Lilienfeld, Watts, Smith, Berg, & Latzman, 2015; Lynam & Derefinko, 2006). In their recent meta-analysis, O’Boyle, Forsyth, Banks, Story, and White (2015) identified between 76 and 86 studies that reported on relations between one or more of the Big Five dimensions and one or more psychopathy instruments.

Fifth, in addition to the research base supporting the FFM, there is a substantial research base emanating from this model. Researchers have used the FFM to study personality across development (Tackett et al., 2012), as well as the levels of these traits as a function of gender, age, and culture (Soto & John, 2012). The FFM framework has also been used to study the processes underlying and outcomes attributable to specific personality domains, such as the basic processes underlying Agreeableness (e.g., Meier, Robinson, & Wilkowski, 2006). Through the FFM, all of this information can be brought to bear on the study of psychopathy. The advantages of the FFM in conceptualizing, assessing, and diagnosing psychopathy and other PDs are such that this approach has been included in the two most prominent psychiatric nosologies, the Diagnostic and Statistical Manual of Mental Disorders -5th edition (DSM-5; APA, 2013) and the International Classification of Diseases-11 edition (ICD-11; see Tyrer, 2013).

In addition to the unfortunate “de-linking” from the basic personality literature base that is inherent in the TriPM proxy construction approach, there are also practical issues to consider such as measure length. For example, the NEO PI-R proxies developed to approximate Boldness, Meanness, and Disinhibition were 23, 25, and 21 items respectively (Drislane et al., 2017). This length is similar to that of other reconfigurations, such as the Multidimensional Personality Questionnaire (20, 16, 18 items respectively), the Psychopathic Personality Inventory (26, 20,

and 20 items, respectively), and the Youth Psychopathic Traits Inventory (9, 10, 14 items respectively). When number of items is a limiting factor, we encourage researchers to make use of trait-based measures such as the 60 item IPIP-NEO (Maples-Keller et al., 2017), which provides both domain and facet-level data for all FFM traits with a reduced number of items.

As a final note, although the TriPM is referred to as a “biobehavioral” model and has been used to study the link between traits and physiological indices, it is unclear why this designation makes the TriPM intrinsically more amenable to predictions about the biological underpinnings of personality traits than other models like the FFM. Indeed, many researchers have used the FFM to study genetic variation (Yamagata et al., 2006), electrodermal activity (Norris, Larsen, & Cacioppo, 2007), patterns of EEG activation (Schmidtke & Heller, 2004), hormonal differences (Alvergne, Jokela, Faurie, & Lummaa, 2010), eye tracking (Rauthmann, Seubert, Sachse, & Furtner, 2012), as well as cortical (Owens et al., 2018) and sub-cortical (Gray, Owens, Hyatt, & Miller, 2018) morphometry. Given the substantial overlap between the TriPM and FFM, there is reason to suspect that physiological correlates of traits within one model would translate to the corresponding traits in the other model.

In sum, we believe that although psychopathy has been operationalized in many ways, a trait-based approach is the most parsimonious way of studying psychopathy because it allows researchers and clinicians to link psychopathy to the much larger personality and personality disorder literatures. Although the use of FFM proxies is less than optimal, we agree with the initiative underlying the proxy creation approach - the unification of ostensibly distinct measures of psychopathy. We believe this would be beneficial to all personality researchers, and a migration to a trait-based approach is consistent with the tide of personality disorder nosology more broadly (e.g., DSM-5 Section III Alternative Model; APA, 2013).

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Table 1

Relations between TriPM components and FFM trait counterparts

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Boldness	-	.07	-.04	.70	.12	-.10	.57 to .80	.14 to .25	-.13 to .05
2. Meanness	.12	-	.75	-.25	.64	.54	.21 to .39	.49 to .73	.29 to .38
3. Disinhibition	-.20	.55	-	-.26	.49	.64	-.05 to .22	.19 to .40	.62 to .71
4. N/E composite	.81	-.08	-.35	-	-.16	-.34			
5. FFM Antagonism	.14	.82	.40	-.11	-	.64			
6. FFM Disinhibition	-.40	.36	.62	-.57	.28	-			
7. Boldness proxies	.57 to .80	.21 to .39	-.05 to .22						
8. Meanness proxies	.14 to .25	.49 to .73	.19 to .40						
9. Disinhibition proxies	-.13 to .05	.29 to .38	.62 to .71						

Note: N/E composite = composite of reverse-coded FFM Neuroticism and FFM Extraversion; the hypothesized TriPM-FFM relations are **bolded**; values below the diagonal indicate r values from Study 1, values above the diagonal indicate Study 2 r values; values in rows/columns 7, 8, and 9 are the range of correlations from studies that derived TriPM proxies from extant measures: the Psychopathic Personality Inventory (Hall et al., 2014), Multidimensional Personality Questionnaire (Brislin, Drislane, Smith, Edens, & Patrick, 2015), Youth Psychopathic Traits Inventory (Drislane et al., 2015), NEO Personality Inventory-Revised (Drislane, Brislin, Jones, & Patrick, in press).

Table 2

TriPM components and FFM trait relations to FFM facets

	Boldness	FFM_N/E	Meanness	FFM_A	Disinhibit.	FFM_C
<i>Neuroticism</i>	-.73/-.55	-.89/-.75	.15/.07	.18/-.02	.49/.20	.59/.06
Anxiety	-.68	-.75	.03	.08	.31	.39
Anger	-.42	-.61	.27	.35	.47	.38
Depression	-.57	-.76	.07	.05	.36	.49
Self-Consciousness	-.73	-.79	.02	.03	.30	.42
Immoderation	-.31	-.51	.21	.23	.50	.53
Vulnerability	-.70	-.76	.09	.10	.38	.56
<i>Extraversion</i>	.70/.50	.87/.74	.02/-.32	-.01/-.37	-.09/-.19	-.41/-.45
Friendliness	.56	.77	-.19	-.26	-.19	-.37
Gregariousness	.51	.66	.01	-.05	-.03	-.18
Assertiveness	.68	.64	.10	.18	-.12	-.39
Activity Level	.43	.62	-.10	-.08	-.19	-.56
Excitement Seeking	.43	.42	.40	.35	.29	.04
Cheerfulness	.51	.73	-.12	-.14	-.17	-.42
<i>Openness</i>	.03/.14	.04/.11	-.13/-.22	-.11/-.43	.03/-.15	.01/-.30
Imagination	.03	-.09	.15	.16	.27	.20
Artistic Interests	.00	.10	-.26	-.29	-.07	-.17
Emotionality	-.41	-.36	-.20	-.15	.19	.14
Adventurousness	.40	.37	.07	.04	-.06	-.03
Intellect	.23	.26	-.23	-.22	-.23	-.27
Liberalism	-.09	-.13	.01	.06	.00	.14
<i>Agreeableness</i>	-.14/-.11	.11/.16	-.82/-.64	-	-.40/-.49	-.28/-.64
Trust	.18	.35	-.32	-.55	-.18	-.11
Morality	-.20	.01	-.66	-.72	-.50	-.33
Altruism	.15	.34	-.67	-.76	-.35	-.45
Cooperation	.02	.19	-.67	-.67	-.48	-.29
Modesty	-.53	-.46	-.33	-.46	-.05	.12
Sympathy	-.17	.00	-.65	-.77	-.10	-.12
<i>Conscientiousness</i>	.40/.10	.57/.34	-.36/-.54	-.28/-.64	-.62/-.64	-
Self Efficacy	.49	.56	-.18	-.11	-.38	-.78
Orderliness	.18	.36	-.20	-.17	-.37	-.71
Dutifulness	.12	.30	-.50	-.50	-.56	-.69
Achievement Striving	.40	.52	-.21	-.13	-.36	-.78
Self Discipline	.42	.57	-.21	-.14	-.42	-.84
Cautiousness	.17	.25	-.34	-.26	-.64	-.65

Table 3

TriPM components and FFM trait relations to PID facets

	Boldness	FFM_N/E	Meanness	FFM_A	Disinhibition	FFM_C
Anxiousness	-.59	-.70	.08	.10	.32	.34
Submissiveness	-.31	-.33	.05	-.02	.20	.19
Separation Insecurity	-.26	-.29	.10	.04	.21	.19
Emotional Lability	-.52	-.57	.12	.11	.43	.34
Perseveration	-.45	-.55	.32	.22	.54	.56
Depressivity	-.46	-.62	.19	.08	.40	.46
Suspiciousness	-.23	-.35	.39	.40	.45	.23
Restricted Affect	.11	-.08	.39	.36	.13	.13
Anhedonia	-.49	-.67	.21	.15	.37	.45
Withdrawal	-.39	-.62	.31	.33	.32	.33
Intimacy Avoidance	-.25	-.33	.16	.12	.20	.22
Manipulativeness	.31	.09	.53	.52	.38	.11
Deceitfulness	.02	-.16	.62	.55	.60	.34
Hostility	-.41	-.58	.36	.41	.51	.39
Callousness	.05	-.11	.75	.66	.37	.26
Attention Seeking	.26	.22	.19	.21	.18	.08
Grandiosity	.23	.11	.46	.48	.23	.09
Irresponsibleness	-.18	-.32	.47	.33	.65	.61
Impulsivity	-.13	-.22	.45	.36	.68	.55
Risk-taking	.18	-.52	.56	.21	.53	.61
Rigid Perfectionism	-.04	-.10	.15	.18	.12	-.12
Distractibility	-.36	.01	.31	.44	.56	.35
Eccentricity	-.04	-.27	.35	.31	.37	.34
Unusual Belief	.03	-.17	.26	.27	.40	.31
Perceptual Dysreg.	-.06	-.08	.38	.17	.46	.17

Table 4

TriPM components and FFM trait relations to developmental experiences

	Boldness	FFM N/E	Meanness	FFM_A	Disinhibition	FFM_C
Anxious Attachment	-.33	-.48	.19	.05	.27	.20
Avoidant Attachment	-.14	-.38	.39	.21	.33	.27
Physical Abuse	-.08	-.17	.41	.33	.41	.35
Verbal Abuse	-.01	-.13	.27	.16	.28	.24
Emotion Abuse	-.12	-.29	.31	.22	.30	.26
Sexual Abuse	-.08	-.17	.33	.27	.36	.31

Table 5

TriPM components and FFM trait relations to externalizing behavior, affect, functional impairment, and psychopathy

	Boldness	FFM N/E	Meanness	FFM_A	Disinhibition	FFM_C
ASB	.19/.04	.03/-.06	.32/.18	.24/.14	.30/.34	.22/.10
Peer ASB	.17	.17	.15	.16	.16	-.03
Sub. Abuse	.25/.06	.13/.05	.20/.06	.22/.05	.22/.19	.16/.01
Peer Sub. Abuse	.26	.16	.32	.32	.29	.14
IPV	.00/-.09	-.01/-.13	.00/.04	.09/.06	.09/.18	.03/.01
Peer IPV	-.02	.01	.00	.04	.02	-.01
PA	.08	-.12	.59	.41	.57	.39
Peer PA	.06	.01	.11	.16	.09	.05
RA	.06	-.15	.37	.21	.35	.20
Peer RA	.09	-.02	.17	.16	.21	.07
Problematic Drinking	.21	.08	.34	.24	.32	.23
Positive Affect	.42	.58	-.23	-.18	-.21	-.37
Negative Affect	-.25	-.42	.35	.21	.39	.27
Funct. Impair.	-.19	-.35	.40	.31	.48	.43
Peer Funct. Impair.	.03	-.12	.13	.22	.11	.20
SRP IPM	.26	-.09	.65	.51	.49	.36
SRP CA	.12	-.21	.67	.50	.42	.35
SRP ELS	.31	.01	.58	.39	.59	.45
SRP ASB	-.01	-.16	.57	.41	.62	.45

Note: values before the forward slash are from Study 1, values after the slash are from Study 2; ASB = antisocial behavior; Sub. Abuse = substance abuse; IPV = intimate partner violence; PA = proactive aggression; RA = reactive aggression; Funct. Impair. = functional impairment; SRP = Self-Report Psychopathy Scale – III; IPM = interpersonal manipulation; CA = Callous Affect; ELS = Erratic Lifestyle; ASB = Antisocial Behavior.