


# Further Validation of Triarchic Psychopathy Scales From the Multidimensional Personality Questionnaire: Setting the Stage for Large-Sample Etiological Studies

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## Abstract

Psychopathy as conceptualized by the triarchic model encompasses three distinct dispositional constructs: boldness, meanness, and disinhibition. The current study sought to further validate triarchic (Tri) construct scales composed of items from the Multidimensional Personality Questionnaire (MPQ) as a foundation for advancing research on the etiology of psychopathy using existing large-scale longitudinal studies. MPQ-Tri scales were examined in three samples: mixed-gender undergraduate students ( $N = 346$ ), male offenders from a residential substance abuse treatment facility ( $N = 190$ ), and incarcerated female offenders ( $N = 216$ ). Across these three samples, the MPQ-Tri scales demonstrated high internal consistency and clear convergent and discriminant associations with criterion measures of psychopathy and other psychopathology outcomes. Gender comparisons revealed relatively few differences in relationships with criterion measures. Findings are discussed in terms of their implications for further investigation of the causal bases of psychopathy and other forms of psychopathology utilizing data from large etiologically informative studies.

## Keywords

psychopathy, triarchic model, personality, trait dispositions, Multidimensional Personality Questionnaire

Psychopathy (or psychopathic personality) is a condition characterized by abnormalities in interpersonal functioning, affective processing, and behavioral control. The triarchic model (Patrick, Fowles, & Krueger, 2009) was proposed to reconcile alternative historical and contemporary conceptions of this condition. It views variants of psychopathy as configurations of three distinct dispositional tendencies: boldness, meanness, and disinhibition. Boldness encompasses high social efficacy, stress tolerance, and venturesomeness; it can be operationalized as Fearless Dominance using the Psychopathic Personality Inventory (PPI; Lilienfeld & Andrews, 1996), and corresponds to low threat sensitivity in the National Institute of Mental Health's Research Domain Criteria (RDoC; Insel et al., 2010) framework. Meanness, the second triarchic model construct, entails callousness, emotional insensitivity, and an exploitative interpersonal style; its operational referents include the Affective facet of the Psychopathy Checklist–Revised (PCL-R; Hare 2003), the callous–unemotional factor of the Antisocial Process Screening Device (Frick & Hare, 2001), and the Coldheartedness subscale of the PPI (Lilienfeld & Andrews, 1996), and conceptually it relates to

weak affiliation/attachment in the RDoC framework. The third construct of the model, disinhibition, involves impulsive–unrestrained behavior, poor affect regulation, and low frustration tolerance (Patrick & Drislane, 2015; Skeem, Polaschek, Patrick, & Lilienfeld, 2011); this construct has been operationalized as the common factor among impulsive–antisocial and substance-related disorders (Krueger et al., 2002), and as the general factor of the Externalizing Spectrum Inventory (Krueger, Markon, Patrick, Benning, & Kramer, 2007; Patrick, Kramer, Krueger, & Markon, 2013), and corresponds to deficient response inhibition in the RDoC framework.

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The Triarchic Psychopathy Measure (Driscane, Patrick, & Arsal, 2014) was devised as one means for operationalizing the constructs of this model in the domain of self-report, and a considerable body of evidence for the triarchic model has been generated using this inventory. Studies with both offender and community samples have consistently found that the triarchic constructs, as indexed by the Triarchic Psychopathy Measure, account for substantial variance in other psychopathy instruments and relate to personality traits relevant to psychopathy such as narcissism, sensation seeking, and Machiavellianism (Driscane et al., 2014; Poy, Segarra, Esteller, López, & Moltó, 2014; Sellbom & Phillips, 2013; Stanley, Wygant, & Sellbom, 2013). However, as dimensional dispositions, the triarchic constructs can also be indexed using items from general inventories of personality (cf. Lynam & Derefinko, 2006; Walton, Roberts, Krueger, Blonigen, & Hicks, 2008).

As discussed by Patrick and Driscane (2015), development and validation of scale measures of these constructs using items from alternative sources is valuable in multiple ways. In line with the classic notion that target constructs transcend specific manifest measures (cf. Cronbach & Meehl, 1955), efforts to operationalize the triarchic constructs in differing ways (e.g., differing self-report scales, interview, informant report, behavioral performance, physiological indicators), can extend what we know about these constructs. Also the availability of alternative scale measures of the triarchic constructs can provide a basis for latent variable models of these constructs (Patrick & Driscane, 2015). To the extent latent variable models include indicators from domains other than self-report, prediction of criterion variables in these other measurement domains can be enhanced (Patrick, Venables, et al., 2013). Furthermore, the availability scale measures of the triarchic constructs composed of items from general personality inventories can permit these constructs to be investigated using existing data from large-scale studies, including etiologically informative (e.g., longitudinal, twin) studies and multidomain assessment studies (cf. Friedman, Kern, Hampson, & Duckworth, 2014).

Consistent with these goals, Brislin, Driscane, Smith, Edens, and Patrick (2015) developed triarchic scales using items from the Multidimensional Personality Questionnaire (MPQ; Patrick, Curtin, & Tellegen, 2002; Tellegen, 2011; Tellegen & Waller, 2008), a broadband measure of normal-range personality that has been administered in longitudinal studies including the Minnesota Twin Family Study (Iacono, Carlson, Taylor, Elkins, & McGue, 1999) and the Dunedin Multidisciplinary Health and Development Study (Silva, 1990). Following procedures used in prior triarchic (Tri)-scale development work, a consensus-based rating approach (Hall et al., 2014) was used to identify candidate items for the MPQ-Tri scales. Provisional scales consisting of these items were refined through internal psychometric analyses

in a mixed-gender community sample and then evaluated for validity in this sample and a separate male prisoner sample. MPQ Boldness was found to be associated both with indices of adaptive psychological functioning (e.g., low anxiety and fearfulness, high positive affect and sociability) and measures of deviancy (e.g., elevated levels of antagonism and risk taking). MPQ Meanness was preferentially related to criterion variables reflecting a manipulative interpersonal style and a lack of social closeness. Finally, MPQ Disinhibition was positively associated with both externalizing (i.e., substance use) and internalizing (i.e., anxiety, negative affect) symptomatology. These results for the MPQ-Tri scales converge with the nomological networks of the triarchic model constructs as indexed by other existing operationalizations.

Although providing important initial evidence for the validity of the MPQ-Tri scales, further validation work is warranted before proceeding to use these scales in specialized existing data sets. In particular, further work is needed to evaluate the validity of the MPQ-Tri scales in predicting criteria of other types in clinical samples consisting of women as well as men.

### *Current Study Aims and Hypotheses*

The current study was undertaken to replicate and extend findings prior validation research, using data from three participant samples: a mixed-gender undergraduate sample, a male offender sample consisting of participants residing in a court-mandated substance abuse treatment facility, and a sample of female offenders from a federal prison facility. These participant samples were different from the community and male federal prison samples used by Brislin et al. (2015). Table 1 details all hypothesized associations between MPQ-Tri scales and available criterion measures. Broadly, we hypothesized that (1) scores on the MPQ-Tri Boldness Scale would be preferentially related to affective–interpersonal versus impulsive–antisocial features of psychopathy, narcissistic and histrionic personality tendencies, and low levels of trait fear; (2) scores on the MPQ-Meanness Scale would relate preferentially to the affective features of psychopathy, low socialization, and high levels of aggressive and antagonistic personality traits; and (3) scores on MPQ Disinhibition would exhibit associations with impulsive–antisocial features of psychopathy, substance use and antisocial behavior, and personality traits associated with emotion dysregulation. Additionally, based on prior research showing that impulsive–antisocial features of psychopathy are associated with increased trauma exposure and also greater emergence of posttraumatic stress disorder (PTSD) symptoms (Blonigen, Sullivan, Hicks, & Patrick, 2012), we hypothesized that higher MPQ-Disinhibition scores, in particular, would be associated with heightened exposure to trauma and elevated PTSD symptomatology.

**Table 1.** Criterion Measures and Hypothesized Associations With MPQ-Triarchic Scales.

Measure	Sample	Items/type	Content/subscales	Hypothesized associations with MPQ-triarchic scales				Source of hypothesis
				Boldness	Meanness	Disinhibition		
Sensation Seeking Scale (SSS; Zuckerman, 1979)	U	40-Item/SR	Total score, Disinhibition (Dis), Boredom Susceptibility (BS), Thrill and Adventure Seeking (TAS), Experience Seeking (ES)	+ (Total score, all subscales)	0 (Total score, TAS, ES); + (BS, Dis)	+ (Total score, BS, Dis); 0 (TAS, ES)	Benning, Patrick, Blonigen, Hicks, and Iacono (2005)	
Emotional Empathy Scale (EES; Mehrabian & Epstein, 1972)	U	33-Item/SR	Affective sensitivity and ability to experience emotional states of others	0	-	0	Benning, Patrick, Blonigen, et al. (2005)	
Fear Survey Schedule III (FSS-III; Arrindell, Emmelkamp, & van der Ende, 1984)	U	52-Item/SR	Total score, Social Fear, Agoraphobic Fear, Bodily Injury Fear, Death/Illness, Aggression/Sex-Related Fear, Animal Fears	-(Total score, all subscales)	0 (Total score, all subscales)	+(Total score, all subscales)	Benning, Patrick, Blonigen, et al. (2005)	
Taylor Manifest Anxiety Scale (TMAS; Taylor, 1953)	U	50-Item/SR	Physical and emotional symptoms of anxiety	-	0	+	Benning, Patrick, Blonigen, et al. (2005)	
Emotionality-Activity-Sociability-Impulsivity Temperament Survey (EASI; Buss & Plomin, 1975)	U	25-Item/SR	Temperament traits: Fearfulness (Fear), Anger (An), Distress (Dis), Sociability (Soc), Activity (Ac), and Impulsivity (Im)	-(Fear, Dis); 0 (An); + (Soc, Ac, Im)	-(Soc, Ac); 0 (Fear, Dis, Im); + (An)	-(Soc); 0 (Ac); + (Fear, Dis, An, Im)	Benning, Patrick, Blonigen, et al. (2005)	
Questionnaire Upon Mental Imagery (QMI; Sheehan, 1967)	U	35-Item/SR	Capacity to imagine visual, auditory, olfactory, gustatory, and tactile experiences. Reversed so that higher scores reflect better imagery ability	+	-	0	Benning, Patrick, Blonigen, et al. (2005), Patrick et al. (2002)	
Socialization Scale (So; Gough, 1960)	U, M	54-Item/SR	Lower scores associated with antisocial tendencies	0	-	-	Benning, Patrick, Blonigen, et al. (2005)	
Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988)	U, M	40-Item/SR	Total, Authority (Au), Exhibitionism (Ex), Superiority (Su), Entitlement (En), Exploitativeness (Exp), Self-Sufficiency (SS), Vanity (Van)	+(Total score, all subscales)	+(Total score, Exp, En) 0 (Au, Ex, Su, SS, Van)	0 (Total score, all subscales)	Benning, Patrick, Blonigen, et al. (2005), Venables and Patrick (2012)	
Structured Clinical Interview for DSM-IV Personality Disorders (SCID-II Questionnaire; First, Spitzer, Gibbon, Williams, & Benjamin, 1995)	M	119-Item/SR	Criteria for Axis-I personality disorders. Conduct disorder symptoms pertain to antisocial behavior before age 15 years. Avoidant (APD); Dependent (DPD); Depressive (DsPD); Borderline (BPD); Obsessive Compulsive (OCPD); Passive Aggressive (PAPD); Paranoid (PPD); Schizotypal (StPD); Schizoid (SPD); Conduct Disorder (CD); Histrionic (HPD); Narcissistic (NPD)	-(APD, DPD, DsPD, BPD); 0 (OCPD, PAPD, PPD, StPD, SPD, CD); + (HPD, NPD)	0 (DPD, DsPD, StPD, SPD, HPD, OCPD); + (APD, PPD, StPD, SPD, CD); + (HPD, NPD)	0 (StPD, SPD, HPD); + (APD, DPD, DsPD, PAPD, PPD, BPD, NPD, CD)	Strickland et al. (2013), Blackburn et al. (2003), Venables and Patrick (2012), Patrick, Durbin, and Moser (2012), Hall et al. (2014), Drislane et al. (2015)	
Externalizing Spectrum Inventory-Interview Form (ESI-IF; Venables & Patrick, 2009)	M	234-Item/I	Problematic use of alcohol, marijuana, and other drugs	0 (Alcohol, Marijuana, Other Drug)	0 (Alcohol, Marijuana, Other Drug)	+(Alcohol, Marijuana, Other Drug)	Benning, Patrick, Blonigen, et al. (2005)	

(continued)

Table 1. (continued)

Hypothesized associations with MPQ-triarchic scales							
Measure	Sample	Items/type	Content/subscales	Boldness	Meanness	Disinhibition	Source of hypothesis
Trait Fear Inventory (TF-55; Patrick et al., 2012)	M	55-Item/SR	Measures fear/fearlessness with higher scores reflecting greater dispositional fearfulness	–	0	+	Patrick et al. (2012), Drislane et al. (2015)
Inventory of Depression and Anxiety Symptoms (IDAS; Watson et al., 2007)	M	64-Item/SR	Recent symptoms of depression and anxiety. Ten scales: Suicidality (Su), Lassitude (La), Insomnia (In), Appetite Loss (Ap Loss), Appetite Gain (Ap Gain), Ill Temper (IT), Well-Being (WB), Panic (Pa), Social Anxiety (SA), and Traumatic Intrusions (TI). Two broad scales: General Depression (GD) and Dysphoria (Dys)	– (GD, Dys, SA); 0 (Su, La, In, Ap Loss, Ap Gain, IT, Pa, SA, TI); + (WB)	– (WB); 0 (GD, Dys, SA, Su, La, In, Ap Loss, Ap Gain, IT, Pa, SA, TI)	– (WB); 0 (Ap Gain, Ap Loss); + (GD, Dys, SA, Su, La, In, IT, Pa, SA, TI)	Blonigen et al. (2010)
Psychopathy Checklist–Revised (PCL-R; Hare, 2003)	M, F	20-Item/I	Total score, Factor 1 (affective–interpersonal symptoms), Factor 2 (impulsive–antisocial symptoms), and interpersonal, affective, impulsive–irresponsible, and antisocial facets	+ (Total score, Factor 1, interpersonal facet); 0 (Factor 2, affective, impulsive–irresponsible, and antisocial facets)	+ (Total score, Factor 1 and 2, affective and antisocial facets); 0 (interpersonal and impulsive–irresponsible and antisocial facets)	+ (Total score, Factor 2, impulsive–irresponsible and antisocial facets); 0 (Factor 1, affective and interpersonal facets)	Benning, Patrick, Blonigen, et al. (2005), Venables and Patrick (2012); Hart and Hare (1989); Skeem et al. (2011); Hall et al. (2014); Drislane et al. (2015)
DSM-IV Antisocial Personality Disorder (ASPD)	F	I, R	Assessed child and adult symptoms of ASPD as defined by DSM-IV	0 (CD, ASPD)	+ (CD, ASPD)	+ (CD, ASPD)	
Alcohol Dependence Scale (ADS; Skinner & Allen, 1982)	F	25-Item/SR	Alcohol-related problems	0	0	+	Benning, Patrick, Blonigen, et al. (2005), Venables and Patrick (2012)
Short Drug Abuse Screening Test (SDAST; Skinner, 1982)	F	20-Item/SR	Drug-related problems	0	0	+	Benning, Patrick, Blonigen, et al. (2005), Venables and Patrick (2012)
Potentially Traumatic Events (PTEs; Blonigen et al., 2012)	F	SR, I, R	Lifetime instances of experiencing or witnessing PTEs	0	0	+	Blonigen et al. (2012)
PTSD Checklist–Civilian version (PCL-C; Weathers, Litz, Herman, Huska, & Keane, 1993)	F	17-Item/SR	Ratings of severity with which respondents experiences DSM-IV PTSD symptoms (Reexperiencing, Avoidance, Numbness, Hyperarousal) in the past month	0 (All subscales)	0 (All subscales)	+ (All subscales)	Blonigen et al. (2012)

Note. U= undergraduate sample; M = male offender substance treatment sample; F = female sample; SR = self-report; I = interview; R = records; 0 = no hypothesized association; – = negative hypothesized association; + = positive hypothesized association; DSM-IV = *Diagnostic and Statistical Manual of Mental Disorders—Fourth edition*; PTSD = *posttraumatic stress disorder*; MPQ = *Multidimensional Personality Questionnaire*.

The current study also included a focus on gender effects. Although some published work suggests that expressions of psychopathic and antisocial tendencies may differ as a function of gender (Cale & Lilienfeld, 2002; Hicks et al., 2012), this work is quite limited and no studies to date have tested for gender differences in relations of the triarchic constructs with criterion variables. Thus, we did not have specific a priori hypotheses regarding gender differences. However, we undertook exploratory analyses comparing correlations of MPQ-Tri scales with criterion variables for college men versus women and male versus female offenders. Criterion measures consisting of psychopathy-relevant traits and temperament dispositions assessed through questionnaires were available for the college sample as a whole. Criterion measures differed for the male and female offender samples, but the best established clinical inventory for psychopathy, the interview-based PCL-R (Hare, 2003), was available for both these samples, enabling us to compare associations of MPQ-Tri scales with PCL-R total, factor, and facet scores across the two.

## Method

### Participants

The validity of scores for the MPQ-Tri scales was evaluated in the following samples.

**Undergraduate Sample.** Participants were 346 students (mean age = 18.8 years,  $SD = 2.4$ ; 248 females) from Florida State University. The racial/ethnic composition was 88.5% Caucasian and 11.5% African American, of whom 5.5% were Hispanic. Study procedures were approved by the Florida State University Institutional Review Board and all participants provided informed written consent.

**Male Offender Substance Treatment Sample.** Participants were adult male offenders ( $N = 190$ ; mean age = 30.3,  $SD = 9.6$ ) from a residential substance use treatment facility in Florida, comprising 72.6% Caucasian, 20.0% African American, 1% Asian, and 6.4% mixed- or other-race individuals, of whom 13.1% were Hispanic. Study procedures were approved by relevant institutional review boards and all participants provided informed written consent prior to participation.

**Female Prisoner Sample.** Participants consisted of 216 female inmates (mean age = 31.9 years,  $SD = 6.8$ ) from the Federal Correctional Institution in Tallahassee, Florida, a low-medium security prison. The racial/ethnic composition was 57.1% African American, 40.3% White, 4% Asian, and 2.2% mixed- or other-race. The study was approved by the institutional review board at Florida State University and the research review committee of the Federal Bureau of

Prisons, and all individuals provided informed written consent prior to participation.

### Measures and Procedure

Data for items comprising the 155-item brief form of the MPQ (Patrick et al., 2002) were available for participants in all study samples. The MPQ has a 2-point response format, and includes single-statement items answered true/false and forced-choice items answered A/B. Items comprising the MPQ-Tri scales were each scored 0 or 1 in the keyed direction and averaged within scale (Boldness, Meanness, Disinhibition; see Brislin et al., 2015, for a listing of scale items) to yield a 0 to 1 score for each. Previously, the MPQ has been used to estimate the Fearless Dominance and Self-Centered Impulsivity factors of the PPI (Benning, Patrick, Blonigen, et al., 2005). The MPQ-Tri scales provide an alternative, item-based mapping of the triarchic constructs that is complementary to these MPQ-estimated PPI factor variables.<sup>1</sup> Differing sets of criterion measures were also available for the three samples, as listed in Table 1. Questionnaire measures for each sample were completed by participants within a single assessment session. The assessment session for participants in the male and female offender samples also included administration of the interview protocol for the PCL-R.

### Data Analysis

Cronbach's alpha was used to evaluate the internal consistencies of the MPQ-Tri scales, and Feldt's (1969)  $W$  statistic was used to test for gender differences in alpha coefficients for each. Patterns of convergent and discriminant validity were evaluated for each sample by computing Pearson correlations between scores on the MPQ-Tri scales and available criterion measures as shown in Table 1. Fisher's  $Z$  statistic was used to test for differences in the magnitude of validity coefficients between males and females across samples. Additionally, to evaluate the unique contribution of each MPQ-Tri Scale to prediction of each criterion measure in the differing study samples, we conducted multiple regression analyses in which scores for all three MPQ-Tri scales were included together as predictors of each external criterion. Statistical effects were evaluated using an alpha level of  $p < .01$ , to balance concerns of power and Type I error.

## Results

### Psychometric Properties of MPQ-Tri Scales in Each Participant Sample

Within the overall undergraduate sample, MPQ Disinhibition and Meanness were appreciably correlated ( $r = .47, p < .01$ ),

**Table 2.** MPQ-Based Triarchic Scales: Intercorrelations and Sample Descriptives, by Participant Sample.

	MPQ Boldness	MPQ Meanness	M (SD)	Alpha
<i>Undergraduate sample (N = 346)</i>				
<i>Males (n = 98)</i>				
MPQ Boldness	—	—	0.61 (0.19)	.74
MPQ Meanness	-.27*	—	0.47 (0.20)	.72
MPQ Disinhibition	-.06	.50*	0.48 (0.21)	.76
<i>Females (n = 248)</i>				
MPQ Boldness	—	—	0.52 (0.21)	.78
MPQ Meanness	-.10	—	0.31 (0.19)	.72
MPQ Disinhibition	-.03	.46*	0.44 (0.19)	.74
<i>Male offender substance treatment sample (N = 190)</i>				
MPQ Boldness	—	—	0.56 (0.19)	.75
MPQ Meanness	-.02	—	0.40 (0.23)	.79
MPQ Disinhibition	-.04	.65*	0.49 (0.23)	.81
<i>Female prisoner sample (N = 216)</i>				
MPQ Boldness	—	—	0.45 (0.15)	.63
MPQ Meanness	.08	—	0.32 (0.22)	.81
MPQ Disinhibition	.06	.66*	0.42 (0.24)	.83

Note. MPQ = Multidimensional Personality Questionnaire; M = mean item score (range = 0-1); SD = standard deviation.

\* $p < .01$ .

whereas MPQ Boldness was unrelated to either Meanness or Disinhibition ( $r_s = -.07$  and  $-.01$ , respectively). Means (SDs) for Boldness, Meanness, and Disinhibition scales in this sample as a whole, computed as mean item endorsements, were 0.55 (0.21), 0.36 (0.21), and 0.46 (0.20), respectively. Internal consistencies (Cronbach's alpha) were .78, .75, and .75, respectively. The upper part of Table 2 shows scale intercorrelations, means/standard deviations, and internal consistency coefficients separately for men and women within this sample. Intercorrelations between MPQ-Tri scales were largely similar for male and female undergraduates. The only notable difference was that men showed a significant negative association between MPQ Boldness and Meanness; however, the magnitude of this correlation was not significantly different from that for female undergraduates (Fisher's  $Z = -1.46$ ,  $p = .07$ ). Additionally, male undergraduates scored significantly ( $p < .01$ ) higher than female undergraduates on MPQ Boldness ( $t = 3.85$ ) and Meanness ( $t = 6.80$ ). Feldt tests revealed no significant differences in alpha reliabilities for the MPQ-Tri scales across gender subgroups within the undergraduate sample.

Table 2 also shows scale intercorrelations, means/standard deviations, and internal consistency coefficients for the male substance abuse treatment and female prisoner samples. Paralleling gender results for the undergraduate sample, male offenders scored significantly ( $p < .01$ ) higher than female offenders on Boldness ( $t = 6.41$ ) and Meanness ( $t = 3.57$ )—and also Disinhibition ( $t = 3.00$ ). In addition, a Feldt test revealed that the alpha coefficient for MPQ Boldness was significantly lower for the female prisoner sample than for the male substance treatment sample ( $W = .68$ ,  $p < .01$ ).

## Validity Analyses

### Undergraduate Student Sample

*Relations with psychopathy-relevant criterion measures.* Table 3 shows correlations ( $r_s$ ) between MPQ-Tri scores and self-report criterion measures of specific relevance to psychopathy within the undergraduate sample. Also shown are standardized beta coefficients and multiple  $R_s$  from regression analyses in which scores for all three MPQ-Tri scales were used to predict criterion variables.

As predicted, MPQ Meanness and Disinhibition demonstrated significant negative bivariate correlations with the Socialization Scale (see Table 3), and relationships for these scales remained significant in the regression analysis. With regard to narcissism, consistent with Brislin et al. (2015) and our hypotheses, MPQ Boldness was the strongest unique predictor of overall scores on the Narcissistic Personality Inventory (NPI) and its Authority, Superiority, Sufficiency, and Vanity subscales. Along with Boldness, Disinhibition also showed positive associations with NPI Exhibitionism, both at the zero-order (bivariate) level and in the omnibus-prediction model. Contrary to findings reported in Brislin et al. (2015), all three MPQ-Tri scales were positively related to the NPI's Entitlement and Exploitativeness subscales, with each contributing uniquely to prediction in the regression analysis for the former, but only Boldness and Meanness contributing uniquely in the analysis for the latter.

Also contrary to hypothesis, all three MPQ-Tri scales showed positive associations with overall scores on the Sensation Seeking Scale (SSS) and its Boredom Susceptibility and Disinhibition subscales, both in simple

**Table 3.** Undergraduate Sample ( $N = 346$ ): Relations Between MPQ-Based Triarchic Scales and Psychopathy-Related Criterion Measures.

	MPQ-based triarchic scale			Multiple R
	Boldness, $r$ ( $\beta$ )	Meanness, $r$ ( $\beta$ )	Disinhibition, $r$ ( $\beta$ )	
<i>Socialization Scale</i>				
Total score	-.03 (-.05)	-.44* (-.27*)	-.51* (-.38*)	.56*
<i>Narcissistic Personality Inventory</i>				
Total score	.69* (.69*)	.08 (.08)	.11 (.08)	.70*
Authority	.69* (.69*)	-.02 (.02)	.03 (.03)	.69*
Exhibitionism	.51* (.51*)	.03 (-.07)	.24* (.28*)	.57*
Superiority	.40* (.40*)	-.09 (-.03)	-.10 (-.08)	.42*
Entitlement	.30* (.31*)	.30* (.24*)	.27* (.16*)	.45*
Exploitativeness	.45* (.46*)	.21* (.21*)	.16* (.06)	.51*
Sufficiency	.45* (.45*)	-.06 (.02)	-.11 (-.11)	.46*
Vanity	.23* (.24*)	.04 (.06)	.01 (-.02)	.24*
<i>Sensation Seeking Scale</i>				
Total score	.38* (.40*)	.25* (.16*)	.31* (.24*)	.52*
Thrill and Adventure Seeking	.42* (.42*)	.01 (.00)	.07 (.08)	.43*
Experience Seeking	.23* (.23*)	.05 (.01)	.11 (.11)	.26*
Boredom Susceptibility	.14 (.16*)	.37* (.26*)	.36* (.24*)	.45*
Disinhibition	.20* (.22*)	.28* (.19*)	.31* (.23*)	.41*
<i>Emotional Empathy Scale</i>				
Total score	-.18* (-.20*)	-.36* (-.39*)	-.13 (.05)	.41*

Note. MPQ = Multidimensional Personality Questionnaire;  $r$  = Pearson correlation coefficient;  $\beta$  = standardized beta coefficient from regression model incorporating scores on the three MPQ-based triarchic scales as predictors. Bolded values denote instances in which  $r$ s for males and females differed at  $p < .01$  based on Fisher Z statistic. Underlined value denotes that female  $r > male r$ .

\* $p < .01$ .

correlational and regression analyses (see Table 3); however, as expected, Boldness showed selective associations with the SSS Thrill/Adventure Seeking and Experience Seeking subscales. While it was hypothesized that empathy would be uniquely associated with Meanness, both Boldness and Meanness showed negative associations with scores on the Emotional Empathy Scale (Table 3) at the bivariate level and in the omnibus regression analysis.

*Relations with self-report measures of Fearfulness, Temperament, and Imagery Ability.* As predicted, MPQ Boldness and Disinhibition demonstrated opposing relations with overall fearfulness as indexed by the Fear Survey Schedule (FSS-III; see Table 4)—robustly negative in the case of the former and modestly positive in the case of the latter. Consistent with hypotheses, MPQ Boldness also showed negative associations, in both bivariate and regression analyses, with all subscales of the FSS except the Aggression/Sex subscale (which is less coherent than other subscales; Beck, Carmin, & Henninger, 1998). Relationships for the other MPQ-Tri scales with FSS subscales were evident mainly in the regression analyses, with Disinhibition exhibiting a positive association with Blood/Injury fears, and Meanness exhibiting a contrasting negative association with this subscale and also with Animal Phobia fears.

With regard to trait anxiety, at the zero-order level, all three MPQ-Tri scales were associated (in line with a priori prediction) with total scores on the Taylor Manifest Anxiety Scale; however, only the associations for Boldness and Disinhibition (negative and positive, respectively) remained significant when all three scales were entered as concurrent predictors in a regression model—indicating that the modest positive correlation between Meanness and Taylor Manifest Anxiety Scale was attributable to the overlap between Meanness and Disinhibition.

The associations between MPQ-Tri scales and Emotionality–Activity–Sociability–Impulsivity Temperament Survey (EASI) temperament traits (Table 4) were likewise highly consistent with findings reported by Brislin et al. (2015). MPQ Boldness was negatively associated with scores on the Fearfulness and Distress scales and positively associated with Sociability, Activity, and Impulsivity scores, both at the bivariate level and in the context of regression analyses. MPQ Meanness was negatively correlated with Sociability, and positively correlated at the bivariate level with Impulsivity and Anger; however, the relationship between Meanness and Impulsivity was rendered nonsignificant when all three MPQ-Tri scales were included together in a regression model. MPQ Disinhibition was positively correlated with the Impulsivity, Anger, Fearfulness, and Distress scales of

**Table 4.** Undergraduate Sample ( $N = 346$ ): Relations Between MPQ-Based Triarchic Scales and Criterion Measures Pertaining to Fearfulness/Anxiety, Temperament, and Imagery Ability.

	MPQ-based triarchic scale			Multiple, $R$
	Boldness, $r$ ( $\beta$ )	Meanness, $r$ ( $\beta$ )	Disinhibition, $r$ ( $\beta$ )	
<i>Fear Survey Schedule</i>				
Total score	-.28* (-.29*)	-.05 (-.14)	.09 (.16*)	.32*
Social Phobia	-.34* (-.34*)	.07 (-.02)	.14* (.15)	.37*
Agoraphobia	-.22* (-.22*)	.01 (-.06)	<b>.07</b> (.10)	.24*
Blood/Injury/Injection	-.17* (-.18*)	-.11 (-.20*)	.09 (.18*)	.26*
Aggression/Sex	-.09 (-.09)	-.09 (-.08)	<b>-.08</b> (-.04)	.14
Animal Phobia	-.18* (-.19*)	-.11 (-.17*)	.03 (.11)	.23*
<i>Taylor Manifest Anxiety Scale</i>				
Total score	-.37* (-.37*)	.19* (-.04)	.42* (.43*)	.56*
<i>EASI</i>				
Emotionality				
Fearfulness	-.38* (-.39*)	-.08 (-.24*)	.17* (.28*)	.47*
Anger	.04 (.06)	.39* (.20*)	.50* (.41*)	.53*
Distress	-.33* (-.33*)	.00 (-.21*)	.30* (.40*)	.48*
Sociability				
Activity	.33* (.31*)	-.28* (-.31*)	-.15* (.10)	.43*
Activity	.37* (.36*)	-.10 (-.15*)	.07 (.14)	.40*
Impulsivity	.18* (.19*)	.21* (-.04)	.53* (.55*)	.56*
<i>Questionnaire on Mental Imagery</i>				
Total score	.21* (.22*)	-.14* (-.10)	-.11 (-.06)	.25*

Note. MPQ = Multidimensional Personality Questionnaire;  $r$  = Pearson correlation coefficient;  $\beta$  = standardized beta coefficient from regression model incorporating scores on the three MPQ-based triarchic scales as predictors; EASI = Emotionality–Activity–Sociability–Impulsivity Temperament Survey. For Questionnaire on Mental Imagery, higher scores reflect better imagery ability. Bolded values denote instances in which  $r$  for males significantly exceeded  $r$  for females ( $p < .01$ ) based on Fisher's  $Z$  statistic.

\* $p < .01$ .

the EASI, and modestly negatively correlated with Sociability. The latter association with Sociability became nonsignificantly *positive* in the regression analysis, suggesting a suppressor relationship between MPQ Meanness and Disinhibition with this temperament variable. Likewise, MPQ Meanness emerged as a significant negative predictor of scores on EASI Fearfulness, Disinhibition, and Activity after accounting for overlap among the MPQ-Tri scales through multiple regression.

Consistent with hypotheses, we found that mental imagery, as measured by the Questionnaire Upon Mental Imagery, was associated selectively with MPQ Boldness (with reported image vividness increasing as a function of boldness). At the zero-order level, MPQ Meanness was related in an opposing negative direction with imagery ability, but this association was reduced to nonsignificance in the regression analysis.

#### Male Offender Substance Treatment Sample

*Relations with interview-assessed psychopathy and self-report measures of Conduct Disorder, other psychopathy-related constructs, and substance problems.* Table 5 presents relationships for the MPQ-Tri scales with interview and self-report measures of psychopathy and related criterion variables in the male offender sample. MPQ Meanness and

Disinhibition were both related at the zero-order level to total scores on the PCL-R (Table 5), but when these scales were included together with MPQ Boldness in a regression analysis, neither emerged as a unique predictor, suggesting that was is the overlap between Meanness and Disinhibition ( $r = .65$  in this sample) that accounted most for their relations with PCL-R Total scores. Consistent with prior findings (Brislin et al., 2015), MPQ Boldness was preferentially associated with scores on PCL-R Factor 1 and its interpersonal facet. By contrast, MPQ Meanness and Disinhibition each showed positive bivariate associations with the affective facet of PCL-R Factor 1, and with scores on Factor 2 and its antisocial facet. In the omnibus prediction (i.e., regression) context, associations for each of these scales with the affective facet fell below .01 significance (i.e.,  $ps = .09$  and  $.21$  for Meanness and Disinhibition, respectively), whereas relationships for Disinhibition with Factor 2 and its antisocial facet remained significant (corresponding  $ps$  for Meanness =  $.39$  and  $.08$ ). MPQ Disinhibition also showed a unique positive association with the PCL-R impulsive/irresponsible facet at the zero order, which fell just short of significance ( $p = .02$ ) in the regression analysis.

Regarding other psychopathy-relevant criterion variables assessed via self-report (Table 5), MPQ Meanness and Disinhibition each predicted unique variance in conduct



**Table 5.** Male Offender Substance Treatment Sample ( $N = 190$ ): Relations of MPQ-Based Triarchic Scales With Psychopathy, Psychopathy-Related Variables, and Substance-Related Problems.

	MPQ-based triarchic scale			Multiple R
	Boldness, $r$ ( $\beta$ )	Meanness, $r$ ( $\beta$ )	Disinhibition, $r$ ( $\beta$ )	
<i>Psychopathy Checklist-Revised (PCL-R; n = 185)</i>				
PCL-R Total score	.16 (.17)	.24* (.11)	.27* (.21)	.33*
PCL-R Factor 1	.21* (.22*)	.18 (.12)	.18 (.11)	.30*
PCL-R Factor 2	.03 (.05)	.27* (.08)	.35* (.31*)	.36*
Interpersonal Facet	.28* (.29*)	.09 (.05)	.09 (.07)	.30*
Affective Facet	.08 (.09)	.23* (.16)	.21* (.12)	.26*
Impulsive/Irresponsible Facet	-.06 (-.05)	.13 (-.02)	.21* (.22)	.22
Antisocial Facet	.13 (.15)	.34* (.15)	.39* (.30*)	.44*
<i>SCID-II Questionnaire</i>				
Conduct Disorder Symptoms	.12 (.14)	.47* (.26*)	.48* (.32*)	.54*
<i>Narcissistic Personality Inventory (n = 151)</i>				
Total score	.57* (.58*)	.22* (.28*)	.12 (-.04)	.62*
Authority	.57* (.59*)	.15 (.31*)	-.01 (-.20)	.62*
Exhibitionism	.45* (.46*)	.19 (.18)	.16 (.05)	.50*
Superiority	.44* (.44*)	.07 (.15)	.00 (-.08)	.45*
Entitlement	.28* (.30*)	.29* (.28*)	.22* (.05)	.41*
Exploitativeness	.37* (.38*)	.15 (.12)	.15 (.09)	.42*
Sufficiency	.34* (.35*)	.06 (.13)	.01 (-.06)	.36*
Vanity	.14 (.15)	.09 (.08)	.08 (.04)	.18
<i>Socialization Scale (n = 146)</i>				
Total score	.00 (-.03)	-.51* (-.23*)	-.58* (-.43*)	.61*
<i>ESI-Interview Form (n = 190)</i>				
Alcohol Problems	-.03 (-.02)	.14 (.03)	.18 (.17)	.19
Marijuana Problems	.08 (.09)	.21* (.01)	.32* (.32*)	.33*
Drug Problems	-.03 (-.02)	.03 (-.13)	.17 (.25*)	.20

Note. MPQ = Multidimensional Personality Questionnaire; SCID-II = Structured Clinical Interview for *Diagnostic and Statistical Manual of Mental Disorders—Fourth edition* Axis II Personality Disorders; ESI = Externalizing Spectrum Inventory;  $r$  = Pearson correlation coefficient;  $\beta$  = standardized beta coefficient from regression model incorporating scores on the three MPQ-based triarchic scales as predictors.

\* $p < .01$ .

disorder symptoms as indexed by the SCID-II Questionnaire. Results for total NPI narcissism in male offenders largely paralleled findings in the undergraduate sample, with Boldness demonstrating significant positive  $r$ s/ $\beta$ s with all NPI subscales except Vanity. Meanness showed a more modest association with overall NPI scores in both bivariate and regression analyses, attributable particularly to relations with Entitlement and Authority subscales. MPQ Disinhibition was unrelated to NPI narcissism as a whole, showing a relationship with Entitlement only, attributable to overlap with Meanness. Also mirroring results for the undergraduate sample, MPQ Meanness and Disinhibition both showed unique, negative associations with the Socialization scale.

Substance use problems were quantified in terms of scores on Alcohol and Other Drug Use/Problems scales from the Externalizing Spectrum Inventory-Interview Form. Whereas bivariate  $r$ s for MPQ Disinhibition with Alcohol Problems and Drug Problems fell just short of significance ( $ps = .019$  and  $.013$ , respectively), the association

with Drug Problems rose to significance in the regression analysis and it showed robust associations with Marijuana Problems in both bivariate and omnibus-prediction analyses (Table 5). As hypothesized, these associations were specific to the Disinhibition scale.

*Relations with self-report measures of Fearfulness, Internalizing Psychopathology, and Personality Disorder Symptoms.* Table 6 presents relationships for the male offender sample between MPQ-Tri scales and criterion variables reflecting fear, anxiety, depression, and personality disorder (PD) symptomatology as assessed by self-report. As hypothesized, MPQ Boldness showed a strong preferential negative association with Trait Fear. With regard to internalizing symptoms, all three MPQ-Tri scales were related at the zero-order level to the General Depression, Dysphoria, Well-Being, and Social Anxiety subscales of the Inventory of Depression and Anxiety Symptoms (IDAS). Scores on MPQ Boldness were negatively correlated with General Depression, Dysphoria, and Social Anxiety, and positively

**Table 6.** Male Offender Substance Treatment Sample ( $N = 190$ ): Relations of MPQ-Based Triarchic Scales With Criterion Measures Pertaining to Fearfulness, Internalizing Psychopathology, and Personality Disorder Symptoms.

	MPQ-based triarchic scale			Multiple R
	Boldness, $r$ ( $\beta$ )	Meanness, $r$ ( $\beta$ )	Disinhibition, $r$ ( $\beta$ )	
Trait Fear ( $n = 155$ )				
Total score	-.64* (-.64*)	.09 (-.07)	.17 (.21)	.65*
IDAS ( $n = 148$ )				
General Depression	-.27* (-.26*)	.30* (.01)	.46* (.46*)	.52*
Dysphoria	-.27* (-.26*)	.28* (-.05)	.46* (.48*)	.53*
Lassitude	-.09 (-.07)	.32* (.07)	.41* (.33*)	.42*
Insomnia	-.10 (-.10)	.18 (-.07)	.33* (.38*)	.35*
Suicidality	-.12 (-.11)	.20 (.09)	.22* (.15)	.25
Appetite Loss	-.08 (-.08)	.13 (-.07)	.25* (.30*)	.27*
Appetite Gain	-.17 (-.17)	.02 (-.04)	.06 (.09)	.18
Ill Temper	.03 (.04)	.42* (.20)	.47* (.34*)	.49*
Well-Being	.32* (.31*)	-.25* (-.15)	-.24* (-.14)	.41*
Social Anxiety	-.43* (-.42*)	.28* (.15)	.28* (.17)	.52*
Panic	-.03 (-.02)	.30* (.10)	.37* (.30)	.37*
Traumatic Intrusions	.07 (.08)	.26* (-.02)	.40* (.42*)	.41*
SCID-II Questionnaire ( $n = 190$ )				
Avoidant PD	-.58* (-.57*)	.39* (.29*)	.34* (.13)	.70*
Dependent PD	-.18 (-.17)	.16 (.02)	.23* (.22)	.29*
Obsessive Compulsive PD	-.09 (-.08)	.30* (.28*)	.21* (.02)	.31*
Passive Aggressive PD	-.20* (-.19*)	.44* (.22*)	.49* (.34*)	.55*
Depressive PD	-.41* (-.39*)	.47* (.22*)	.52* (.36*)	.67*
Paranoid PD	-.16 (-.14*)	.57* (.37*)	.55* (.30*)	.64*
Schizotypal PD	-.16 (-.15)	.31* (.24)	.27* (.11)	.35*
Schizoid PD	-.18 (-.18)	.23* (.21)	.17 (.03)	.30*
Histrionic PD	.47* (.47*)	.06 (-.07)	.15 (.21*)	.50*
Narcissistic PD	.16 (.18*)	.44* (.30*)	.40* (.21)	.50*
Borderline PD	-.20* (-.18*)	.58* (.23*)	.69* (.53*)	.73*

Note. MPQ = Multidimensional Personality Questionnaire; IDAS = Inventory of Depression and Anxiety Symptoms; SCID-II = Structured Clinical Interview for *Diagnostic and Statistical Manual of Mental Disorders—Fourth edition* Axis II Personality Disorders; PD = personality disorder.

\* $p < .01$ .

correlated with Well-Being, whereas MPQ Meanness and Disinhibition were each correlated with these scales in the opposing direction. In regression models, only MPQ Boldness and Disinhibition remained significant predictors of General Depression and Dysphoria, whereas Boldness emerged as the sole unique predictor of Well-Being and Social Anxiety (positively and negatively, respectively). Consistent with hypotheses and previous findings (Berg et al., 2015), MPQ Disinhibition emerged as the sole unique predictor of Traumatic Intrusions, Lassitude, Ill Temper, Insomnia, and Appetite Loss subscales of the IDAS. Meanness showed positive zero-order correlations with some subscales of the IDAS, but these associations were due to shared variance with Disinhibition.

For PD symptoms assessed using the SCID-II Questionnaire (Table 6), MPQ Boldness was associated negatively with symptoms of several PDs, including Avoidant, Passive Aggressive, Depressive, and Borderline.

By contrast, MPQ Meanness and Disinhibition each showed positive associations with these PDs. Similar associations were evident in regression analyses; however, MPQ Disinhibition failed to account for unique variance in Avoidant PD symptoms. In the regression model for Paranoid PD symptoms, MPQ Meanness and Disinhibition each predicted positively, whereas Boldness accounted for unique variance in the negative direction. Somewhat consistent with findings for the NPI, both MPQ Boldness and Meanness were positively related to symptoms of Narcissistic PD as assessed by the SCID-II Questionnaire; however, the association with Boldness was much weaker in this case (only evident in the regression model), and MPQ Disinhibition showed a moderate positive correlation with narcissistic tendencies assessed in this manner, which differs from narcissism as assessed by the NPI (Pincus & Lukowitsky, 2010). Scores on MPQ Boldness were also positively correlated with symptoms of Histrionic PD.

**Table 7.** Female Prisoner Sample ( $N = 216$ ): Relations of MPQ-Based Triarchic Scales With Psychopathy, ASPD, and Substance-Related Problems.

	MPQ-based triarchic scale			Multiple R
	Boldness, $r$ ( $\beta$ )	Meanness, $r$ ( $\beta$ )	Disinhibition, $r$ ( $\beta$ )	
<b>Psychopathy Checklist–Revised (PCL-R)</b>				
PCL-R Total score	.09 (.06)	.38* (.16)	.43* (.33*)	.45*
PCL-R Factor 1	.13 (.11)	.24* (.15)	.23* (.13)	.28*
PCL-R Factor 2	.06 (.02)	.44* (.17)	.52* (.40*)	.53*
Interpersonal Facet	.16 (.15)	.16 (.06)	.18* (.12)	.24
Affective Facet	.08 (.06)	.28* (.20)	.24* (.11)	.30*
Impulsive/Irresponsible Facet	.06 (.03)	.33* (.06)	.46* (.42*)	.46*
Antisocial Facet	.05 (.00)	.48* (.24*)	.52* (.36*)	.55*
<b>SCID-II ASPD</b>				
Adult Antisocial Symptoms	.09 (.06)	.35* (.15)	.40* (.30*)	.42*
Conduct Disorder Symptoms	.10 (.07)	.39* (.20)	.41* (.27*)	.44*
Total ASPD Symptoms	.11 (.07)	.43* (.21*)	.47* (.33*)	.50*
<b>Substance Use</b>				
ADS	.06 (.02)	.41* (.23*)	.43* (.28*)	.46*
SDAST	.09 (.07)	.16 (–.07)	.29* (.33*)	.31*

Note. MPQ = Multidimensional Personality Questionnaire; SCID-II = Structured Clinical Interview for *Diagnostic and Statistical Manual of Mental Disorders—Fourth edition* Axis II Personality Disorders; ASPD = Antisocial Personality Disorder; ADS = Alcohol Dependence Scale; SDAST = Short Drug Abuse Screening Test.

\* $p < .01$ .

Interestingly, MPQ Disinhibition emerged as an additional positive predictor of Histrionic symptoms in the regression analysis, providing evidence for a suppressor effect between MPQ Meanness and Disinhibition in relations with this scale. In addition, MPQ Meanness and Disinhibition each showed positive associations with Obsessive Compulsive PD, but only Meanness predicted uniquely in the regression analysis. Meanness also showed significant positive zero-order  $r$ s with Schizoid and Schizotypal PDs, which were evident to a lesser degree for Disinhibition. These associations reflected variance in common between Meanness and Disinhibition along with variance unique to Meanness, as prediction coefficients for Meanness approached significance in regression analyses for these PDs ( $ps = .02$  and  $.01$ ), whereas coefficients for Disinhibition were negligible ( $ps = .78$  and  $.24$ ).

#### Female Prisoner Sample

*Relations with interview and self-report assessments of Psychopathy, Antisocial Personality, and Substance Use.* Table 7 shows associations for MPQ-Tri scales with interview-based measures of psychopathy and antisocial behavior, and self-report measures of substance problems, in the female prisoner sample. Consistent with findings for the male offender substance treatment sample, PCL-R Total and Factor 2 scores showed positive relations with both MPQ Meanness and Disinhibition. However, the predicted association for MPQ Boldness with PCL-R Factor 1 fell

below significance ( $p = .056$ ), although its association with the interpersonal facet approached our conservative  $.01$  significance threshold ( $p = .019$ ). Contrary to hypotheses, MPQ Disinhibition evinced a stronger, significant relationship with Factor 1 and a comparable, just significant association with the interpersonal facet. However, regression analyses for these PCL-R score variables indicated that the latter associations for Disinhibition were largely attributable to overlap with Meanness. For the PCL-R affective facet, Meanness emerged as the strongest predictor in the regression model, with a near significant ( $p = .019$ ) beta coefficient. In the regressions for Factor 2 and its facets, MPQ Disinhibition emerged as the only unique predictor of Factor 2 and its impulsive/irresponsible facet, whereas Meanness and Disinhibition each accounted for unique variance in the antisocial facet.

Consistent with hypotheses, MPQ Meanness and Disinhibition each showed positive  $r$ s with child, adult, and total symptoms of Antisocial Personality Disorder (ASPD) within this female prisoner sample (Table 7). In regression models, Disinhibition emerged as the only unique predictor of adult and child ASPD symptoms, whereas both Meanness and Disinhibition contributed uniquely to prediction of overall symptoms. In the domain of substance problems, consistent with hypotheses, Disinhibition selectively predicted scores on the drug abuse (Short Drug Abuse Screening Test) measure, both in zero-order and regression analyses, whereas both MPQ Disinhibition and Meanness

**Table 8.** Female Prisoner Sample ( $N = 216$ ): Relations of MPQ-Based Triarchic Scales With Traumatic Life Events and PTSD Symptoms.

	MPQ-based triarchic scale			Multiple R
	Boldness, $r$ ( $\beta$ )	Meanness, $r$ ( $\beta$ )	Disinhibition, $r$ ( $\beta$ )	
Potentially Traumatic Events PTSD Checklist–Civilian Version	-.05 (-.07)	.24* (.09)	.29* (.23*)	.30*
Reexperiencing Symptoms	-.16 (-.15)	.25* (-.01)	.38* (.34)	.48*
Avoidance Symptoms	-.01 (-.01)	.31* (.08)	.39* (.27*)	.46*
Numbness Symptoms	-.11 (-.12)	.41* (.16)	.47* (.29*)	.59*
Hyperarousal Symptoms	-.13 (-.14)	.43* (.15)	.51* (.35*)	.61*

Note. MPQ = Multidimensional Personality Questionnaire; PTSD = posttraumatic stress disorder. All regression  $\beta$ s for the PTSD Checklist–Civilian Version reflect regression analyses with trauma included as a covariate.

\* $p < .01$ .

showed associations with alcohol abuse (Alcohol Dependence scale) scores in analyses of both types (see Table 7).

**Relations with traumatic life events and PTSD symptoms.** Consistent with prediction, MPQ Disinhibition and Meanness each showed positive  $r$ s with reported exposure to traumatic events in the female prisoner sample, but Disinhibition alone predicted trauma exposure uniquely (see Table 8). MPQ Boldness showed negative but nonsignificant ( $ps \geq .02$ ) relations with all symptom categories from the PTSD Checklist, whereas MPQ Meanness and Disinhibition showed significant positive  $r$ s with symptoms of each type.

To evaluate the contributions of the MPQ-Tri scales in prediction of PTSD symptoms beyond their relations with trauma history, regression analyses for the symptom score variables incorporated scores on the Potentially Traumatic Events as a covariate. Even after controlling for trauma exposure, Disinhibition—but not Meanness—emerged as a significant predictor of Avoidance, Numbness, and Hyperarousal symptoms. Neither scale showed a unique predictive relationship with Reexperiencing symptoms, indicating that it was variance in common between the two that accounted for their zero-order associations with this symptom variable.

### Gender Comparisons

**Undergraduate Sample.** Although male and female undergraduates differed as noted above in mean scores on the MPQ-Tri scales, patterns of relations with criterion measures were highly similar across genders. Only a small number of  $r$ s differed significantly across male and female participants (see bolded coefficients in Tables 2 and 3). Most notably, MPQ Boldness was associated more strongly with SSS total scores in women than men ( $r$ s = .41 and .15, respectively, Fisher's  $Z = -2.35$ ), and MPQ Disinhibition

was associated more strongly with FSS total scores in men than women ( $r$ s = .35 and .06,  $Z = 2.53$ )—with the latter reflecting male/female differences in particular for the FSS Agoraphobia ( $r$ s = .33/-.01,  $Z = 2.92$ ) and Sex/Aggression subscales ( $r$ s = .20/-.17,  $Z = 3.10$ ). Gender differences were also evident in relations of MPQ Disinhibition with NPI Superiority (male/female  $r$ s = .06/-.17,  $Z = 1.92$ ) and MPQ Meanness with NPI Vanity (male/female  $r$ s = .17/-.05,  $Z = 1.83$ ).

**Offender Samples.** The PCL-R was administered to both male and female offenders, allowing for gender comparisons to be made on this measure. Scores for Factor 1 and the Interpersonal facet were both significantly higher in the female prisoner sample ( $M$ s = 8.4 and 4.3, respectively) than the male substance treatment sample ( $M$ s = 7.2 and 3.4;  $t$ s = 3.20 and 4.17,  $ps < .005$ ). By contrast, scores for the Antisocial facet were significantly lower in the female prisoner sample ( $M = 3.1$ ) than the male substance treatment sample ( $M = 3.8$ ;  $t = 3.61$ ,  $p < .001$ ). No male/female sample differences were observed for Total ( $M$ s = 19.9/20.7), Factor 2 (10.1/9.8), or Affective (3.8/4.1), or Impulsive–Irresponsible (6.3/6.4) facets of the PCL-R.

Additionally, Fisher's  $Z$  statistic was used to test for differences between male and female offenders in the magnitude of  $r$ s for the MPQ-Tri scales with PCL-R Total, factor, and facet scores (see Tables 5 and 7). Only one significant difference emerged: MPQ Disinhibition was more strongly associated with scores on the PCL-R Impulsive–Irresponsible facet in the female prisoner sample ( $r = .46$ ) than the male substance treatment sample ( $r = .21$ ;  $Z = 2.73$ ,  $p < .01$ ).

### Discussion

Current findings replicate and extend prior validation research on the MPQ-based triarchic scales (Brislin et al., 2015) and provide new information regarding gender differences in relations between triarchic constructs and

criterion variables of differing types. Results for the three current study samples complement findings from Brislin et al. (2015) in showing unique relations for boldness, meanness, and disinhibition as indexed by the MPQ with criterion measures of personality pathology, internalizing (anxiety, mood) symptomatology, and temperament. Consistent with recent work (Venables, Hall, & Patrick, 2014), these findings provide further evidence that boldness plays an integral role in psychopathy, specifically in relation to the interpersonal facet. Additionally, current results provide further evidence that the triarchic model constructs relate to important clinical outcomes that extend beyond psychopathy (cf. Nelson, Strickland, Krueger, Arbis, & Patrick, 2015; Venables et al., 2015).

Across the three participant samples, observed relationships between the MPQ scale measures of the triarchic constructs and psychopathy-relevant variables were largely consistent with theory as well as past empirical findings. Results for MPQ Boldness provide further evidence that although this disposition is associated with features of positive adjustment (e.g., low anxiety and fear), it also plays a role in psychopathy-related pathology (e.g., PCL-R Factor 1, and its interpersonal features in particular) and tendencies to seek out novel and potentially dangerous activities (e.g., SSS thrill/adventure- and experience-seeking). MPQ Meanness demonstrated associations consistent with descriptions of this construct as entailing weak affiliative capacity and a lack of concern for others, and was related to callous-exploitative tendencies as reflected in the affective and antisocial facets of the PCL-R and conduct disorder symptoms. Furthermore, observed associations for MPQ Disinhibition coincided with the idea of this construct entailing deficient behavioral and emotional restraint (e.g., impulsive/irresponsible features of PCL-R Factor 2, adult symptoms of ASPD), and representing the point of intersection between psychopathy and externalizing psychopathology (Patrick et al., 2009; Patrick, Hicks, Krueger, & Lang, 2005)—and in turn, negative affect and anxious-depressive (internalizing) psychopathology, which often co-occurs with externalizing problems (Krueger, 1999).

Findings from the female prisoner sample regarding relations of the triarchic constructs with trauma exposure and PTSD symptomatology were novel and warrant specific discussion. High levels of disinhibition were uniquely related to self-reported trauma exposure, which included events such as physical abuse and violent acts. Controlling for exposure to trauma, Disinhibition was also uniquely related to the avoidance, numbness, and hyperarousal symptoms of PTSD. These findings coincide with other data from the current study indicating positive associations for MPQ Disinhibition with measures of distress (anxious-depressive) symptomatology. As a whole, these findings suggest that high levels of trait disinhibition in women are related both to increased levels of exposure to traumatic

incidents, and more maladaptive reactions and ineffective coping following these traumatic incidents.

### Gender Effects

To further extend findings presented by Brislin et al. (2015), we tested for gender differences in mean scores on the triarchic constructs as indexed by the MPQ, as well as in their observed relations with criterion measures. Within the undergraduate sample, men demonstrated significantly higher mean levels of boldness and meanness than women. Corresponding analyses comparing male and female offenders (i.e., substance treatment participants and prison inmates, respectively) revealed higher mean scores on all three MPQ-based triarchic scales for male offenders.

Despite these mean-level differences, only limited evidence was found for gender differences in associations of the triarchic score variables with criterion measures. Within the undergraduate sample, where criterion measures of all types were available for both men and women, two main differences were evident. First, a higher correlation was found between MPQ Boldness and Total scores on the SSS for female as compared with male students, perhaps indicating a stronger venturesomeness component to fearless-dominant tendencies in community women as compared with men. Second, MPQ Disinhibition was related more to FSS fearfulness among male than female undergraduates, in particular to scores on FSS subscales reflecting anxiousness in public places and discomfort with aggressive/sexual displays.

The PCL-R was the only measure in common between the male substance treatment and female prisoner samples. For this measure, the two samples differed only in the relationship of MPQ Disinhibition with the impulsive/irresponsible facet of PCL-R Factor 2, with women showing a stronger positive  $r$  between the two (Fisher's  $Z = 2.73$ ,  $p = .006$ ). Taken together with the above-noted finding for FSS scores in the undergraduate sample, this finding suggests that disinhibition may reflect somewhat weak restraint in women as compared with more fearful tendencies combined with weak restraint in men. With regard to PCL-R Factor 1, a significant association was evident for men between MPQ Boldness and the interpersonal facet specifically. This association fell short of significance in women, but the magnitude of  $r$  in this case did not differ from the correlation for men, indicating a similar association between boldness and interpersonal features of psychopathy across the two genders.

### Limitations and Future Directions

Our results must be considered in light of certain limitations. First, individuals in the undergraduate sample did not score significantly lower on the MPQ-Tri scales than the

offender samples. While this finding coincides with results from other work (Uzieblo et al., 2007), it nonetheless warrants further research, including evaluation of effects of third variables such as age on item endorsements. Within the student sample, there was unequal representation of male and female participants, which may have led to gender comparisons being underpowered given our conservative alpha level. Findings for gender in the current work were broadly consistent with those from prior large-*N* studies indicating similar relation for psychopathy-related traits with conceptually relevant criteria variables across women and men (Benning, Patrick, Blonigen, et al., 2005; Hall, Benning, & Patrick, 2004; Kennealy, Hicks, & Patrick, 2007) despite mean-level differences in such traits (e.g., Benning, Patrick, & Iacono, 2005; Krueger et al., 2002). At the same time, a small number of potentially meaningful gender differences were identified that warrant further investigation in follow-up studies using larger samples and more diverse sets of measures.

Notwithstanding these limitations, findings from the current study serve to extend the initial validation of the MPQ-Tri scales while also being the first study to evaluate gender effects for the triarchic constructs in both clinical and nonclinical samples. Building on these findings, further work using data from longitudinal studies such as the Minnesota Twin Family Study (Iacono et al., 1999) and Dunedin Multidisciplinary Health and Development Study (Silva, 1990) can be undertaken to evaluate the heritability of triarchic constructs and clarify the interplay of genetic and environmental influences on these dispositions over the course of development. The MTFS study in particular includes data for parents and siblings as well as twin pairs and includes multiwave data for twins from various domains of measurement (i.e., self-report, parent-report, structured diagnostic interview, task performance, lab physiology, structural and functional MRI data). Work utilizing this and other such data sets can help advance knowledge of the scope and specificity of these constructs in other measurement domains (e.g., behavioral, physiological).

As discussed in other recent writings (Latzman et al., 2015; Patrick & Drislane, 2015), the triarchic constructs of boldness, meanness, and disinhibition correspond to constructs specified in the National Institute of Mental Health's RDoC research framework (Insel et al., 2010)—that is, acute threat, affiliation/attachment, and response inhibition, respectively. As such, these constructs relate to other clinical conditions besides psychopathy that involve weak or excessive fear, disturbed social relations, and/or deficient self-control (Nelson et al., 2015; Patrick, Venables et al., 2013; Venables et al., 2015). Additionally, the current work complements recent research directed at establishing a primate model for investigating psychological and biological processes of relevance to core psychopathy-relevant dispositions (Latzman et al., 2015). Further research focusing on

constructs of the triarchic model assessed in compatible ways across samples of various types, primate as well as human, will serve to extend knowledge of the nomological network of psychopathy, along with other forms of psychopathology for which the triarchic constructs are relevant. In particular, future research using large data sets that include information relevant to etiology can help advance our understanding of the causal bases and developmental course of psychopathy and other high-impact clinical problems.

### Authors' Notes

The views, opinions, and/or findings contained in this report are those of the authors and shall not be construed as an official Department of the Army position, policy, or decision, unless so designated by other documents.

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### Note

1. Correlations for the three MPQ-Tri scales with the two PPI factors (Fearless Dominance, Impulsive Antisociality), computed as unit-weighted averages of MPQ scales uniquely predictive of each (cf. Benning et al., 2003, Table 5), were as follows: MPQ Boldness = .84 and .13,  $p < .001$  and  $p = .07$ , respectively; MPQ Meanness = -.12 and .71,  $p = .09$  and  $p < .001$ , respectively; MPQ Disinhibition = -.23 and .80,  $p < .005$  and  $p < .001$ , respectively. Regression models incorporating all MPQ-Tri scales as concurrent predictors confirmed MPQ Boldness as the dominant predictor of estimated PPI-Fearless Dominance ( $\beta = .84$ ;  $\beta$ s for MPQ Meanness and Disinhibition = .03 and -.21, respectively) and MPQ Disinhibition as the dominant predictor of estimated PPI-Impulsive Antisociality ( $\beta = .59$ ;  $\beta$ s for MPQ Meanness and Disinhibition = .33 and .16, respectively). Results were highly similar (i.e., all  $r$ s/ $\beta$ s within  $\pm .03$ ) for PPI factor scores computed as averages of MPQ scales weighted by beta coefficients from regression models reported by Benning et al. (2003).

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