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## Concurrent and developmental correlates of psychopathic traits using a triarchic psychopathy model approach

**Hailey L. Dotterer,**

Department of Psychology, University of Michigan

**Rebecca Waller,**

Department of Psychology, Department of Psychiatry, University of Michigan

**Lora M. Cope,**

Department of Psychiatry, University of Michigan

**Brian M. Hicks,**

Department of Psychiatry, University of Michigan

**Joel T. Nigg,**

Department of Psychiatry, Oregon Health and Science University

**Robert A. Zucker, and**

Department of Psychology, Department of Psychiatry, University of Michigan

**Luke W. Hyde**

Department of Psychology, Center for Human Growth and Development, Institute for Social Research, University of Michigan

### Abstract

Psychopathy refers to a heterogeneous set of harmful dark traits and behaviors, including superficial charm, callousness, irresponsibility, and antisocial behavior. The triarchic psychopathy model (TriPM) posits that psychopathy is the combination of three traits: boldness, disinhibition, and meanness. However, little research has examined the concurrent and developmental correlates of these traits. We developed TriPM scales from the NEO Personality Inventory-Revised using an empirical-derived approach in a high-risk sample of 561 young adults (ages 17–25; 70.2% male). Concurrent correlates and developmental precursors of each scale were examined longitudinally using cross-informant reports from three critical developmental periods (ages 3–5; 9–11; 15–17). Using this approach, we identified consistent developmental precursors and concurrent correlates of boldness, including lower reactive control, fewer internalizing traits, and greater resiliency. Additionally, starting in adolescence we found that disinhibition was related to lower reactive control, more externalizing problems, substance use, and internalizing traits. Finally, although meanness demonstrated some expected concurrent relationships with criterion variables in early adulthood (e.g., lower adaptive functioning), we identified few consistent developmental precursors of meanness. Thus, a NEO-based approach to measuring the TriPM was successful in

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Correspondence: Luke W. Hyde, Department of Psychology, University of Michigan, 2251 East Hall, 530 Church St., Ann Arbor, MI 48109, USA. lukehyde@umich.edu.

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delineating boldness, disinhibition, and, to a lesser extent, meanness cross-sectionally during early adulthood. However, only boldness showed relative stability from developmental precursors in early childhood to our TriPM scale in early adulthood.

### Keywords

psychopathy; callous-unemotional traits; developmental psychopathology; aggression; violence

The study of psychopathy represents a cornerstone of research into “dark” personality traits. Psychopathy is defined by a constellation of harmful traits and behaviors, including superficial charm, callousness, irresponsibility, and antisocial behavior (Cleckley, 1941). Psychopathy predicts a host of harmful outcomes, including substance abuse and crime, and incurs striking financial costs to society (Skeem, Polaschek, Patrick, & Lilienfeld, 2011). Much research has focused on psychopathy as conceptualized by the Psychopathy Checklist-Revised (PCL-R: Hare, 2003). However, researchers have recently advocated for alternative conceptualizations of psychopathy informed by the broader personality literature, which place less emphasis on antisocial behavior as a core feature of psychopathy. This approach implies that psychopathic traits can be assessed dimensionally within non-criminal populations (Cooke & Michie, 2001; Skeem & Cooke, 2010). Such trait-based conceptualization of psychopathy may promote the study of developmental precursors of psychopathy (e.g., callous-unemotional traits; Frick, Ray, Thornton, & Kahn, 2014), especially since some characteristics tapped by the PCL-R may not emerge fully until adulthood or may only be evident in forensic samples. Precursors of psychopathy early in development could inform targets for early intervention to prevent increasingly harmful trajectories. Therefore, to identify core features of psychopathic traits and identify potential developmental precursors, researchers have developed measures that specifically assess psychopathy in terms of *personality traits*, as opposed to criminal behaviors (Lilienfeld & Fowler, 2006; Lilienfeld & Widows, 2005; Patrick, Fowles, & Krueger, 2009). In the current study, we derived a personality-based assessment of psychopathic traits in a community sample. We then examined the concurrent nomological network and developmental precursors of these psychopathic traits to understand the development and continuity of these traits and their correlates across childhood and adolescence.

### The Triarchic Model

The Triarchic Model of Psychopathy (which we abbreviate as TriPM; Patrick, Fowles, & Krueger, 2009) is a recent conceptualization of psychopathy positing that psychopathy encompasses three dimensional personality traits: boldness, disinhibition, and meanness (Patrick & Drislane, 2015; Patrick et al., 2009). Boldness taps the fearlessness core to many theories of psychopathy (Cleckley, 1941; Lilienfeld et al., 2012), including thrill-seeking and fearless dominance (Lilienfeld et al., 2012; Lykken, 1995). Boldness is also hypothesized to capture adaptive functioning, such as low stress reactivity, resiliency, and social assertiveness (Patrick & Drislane, 2015; Patrick et al., 2009). Disinhibition is derived from conceptualizations of low behavioral control (Kochanska, Murray, & Coy, 1997) and negative affectivity (Sher & Trull, 1994), predicting both externalizing and internalizing

traits and behaviors, including antisocial behavior (Patrick & Drislane, 2015; Patrick et al., 2009). Finally, meanness taps the hostility, social detachment, and lack of remorse evident among many highly antisocial individuals (Derefinko & Lynam, 2006; McCord & McCord, 1964). In particular, meanness encapsulates a cold-hearted interpersonal style and low affiliation with others (Patrick & Drislane, 2015; Patrick, Drislane, & Strickland, 2012; Patrick et al., 2009), exhibiting conceptual overlap with the callous-unemotional traits construct studied in youth (Frick et al., 2014).

## Nomological Networks of the Triarchic Scales

To better understand the TriPM, studies have begun to examine distinct nomological networks of each of the TriPM scales (i.e., the relationships between scores on each TriPM scale and a variety of measures assessing related personality and behavioral correlates) to examine if the TriPM scales do in fact tap the hypothesized traits (e.g., that boldness is correlated with resiliency or that disinhibition is related to substance use). This nomological network approach is necessary to establish the construct validity of the scales, to provide “meaning” for each TriPM scale, facilitate comparisons with other models of psychopathy, and inform hypotheses about which traits and behaviors could precede the emergence of TriPM traits from childhood to early adulthood.

Thus far, studies have reported both convergent and discriminant validity of the TriPM scales as measured by a self-report inventory specifically designed to assess the TriPM (i.e., Triarchic Psychopathy Measure; Patrick, 2010). These studies suggest that boldness is associated with higher levels of narcissism and sensation-seeking (e.g., Sellbom & Phillips, 2013), lower negative affect (e.g., Strickland, Drislane, Lucy, Krueger, & Patrick, 2013), and more adaptive functioning, including higher levels of well-being and lower levels of self-harm (e.g., Blagov, Patrick, Oost, Goodman, & Pugh, 2016). Consistent with the theoretical framework of the TriPM, disinhibition has been linked to more externalizing problems, including impulsivity and delinquency (e.g., Almeida et al., 2015; Donnellan & Burt, 2016; Strickland et al., 2013), with more internalizing problems, including depression and anxiety (e.g., Sica et al., 2015), and with lower adaptive functioning, such as increased stress reactivity (e.g., Sica et al., 2015). Finally, meanness has been associated with externalizing problems, such as aggression, irresponsibility, and callousness (e.g., Anderson, Sellbom, Wygant, Salekin, & Krueger, 2014; Donnellan & Burt, 2016). Meanness has demonstrated mixed associations with internalizing problems, with some studies reporting no associations (e.g., Sica et al., 2015), positive associations with detachment and depression (e.g., Donnellan & Burt, 2016; Strickland et al., 2013), or negative associations with negative affectivity (e.g., Anderson et al., 2014). Meanness has also been associated with lower adaptive functioning, such as less social connectedness (e.g., Blagov et al., 2016). In sum, theory and empirical work emphasize the importance of examining each of these three traits within the TriPM, as each component is related to the broader multidimensional psychopathy construct but each trait is related to a distinct set of correlates.

## The Nature of the TriPM Scales across Development

Following from this nomological network approach with adult samples, researchers have speculated about whether features associated with the TriPM traits are present in childhood and adolescence, which could mark continuity in the nomological network of the TriPM traits across time. In fact, a recent review of the child psychopathy field noted the striking need to study the developmental trajectory and network of components of psychopathy from early childhood into adolescence, particularly from a TriPM perspective (Salekin, 2017). Within the TriPM, Patrick and colleagues (2009) argued that an early “difficult temperament” likely contributes to the development of both disinhibition and meanness. A difficult temperament comprises both externalizing and internalizing traits and behaviors, including negative affect, poor reactive control, increased irritability, and attention difficulties (Cole, Dennis, Martin, & Hall, 2008; Frick & Morris, 2004). Boldness and meanness are thought to develop from conceptualizations of early “low fear”, including increased reward-seeking, low anxiety, and reduced stress sensitivity, which are thought to impair conscience and empathy development (Kochanska, 1993). Similarly, callous-unemotional traits in childhood, including a lack of empathy and shallow affect predict severe antisocial behavior in adulthood (Frick et al., 2014). Although researchers have investigated the continuity of personality traits more broadly across development and have specifically linked callous-unemotional traits to later antisocial behavior (Frick et al., 2014), no previous studies have prospectively examined the child-level developmental precursors of boldness, disinhibition, or meanness. As such, we still know little about whether the concurrent correlates of the TriPM scales show continuity from childhood to adulthood in terms of predicting the TriPM traits.

## Developmental Periods of Interest

To best understand the development of psychopathology, it is important to examine key developmental periods, particularly those that involve significant developmental change in the individual and/or the environment (Dodge & Pettit, 2003). In terms of the development of antisocial behavior and psychopathy, research has focused on the critical periods of early childhood, early adolescence, and mid-adolescence as periods in which antisocial behavior peaks and changes forms (Rutter & Sroufe, 2000). Moreover, these periods each mark major changes in biological and social development. For instance, the preschool period is marked by rapid brain growth, along with major development in emotional and cognitive abilities (Campbell, 1995). A large body of research suggests that the emergence of behavior problems in the preschool period predicts persistent and severe behavioral problems later in life (Barker, Oliver, Viding, Salekin, & Maughan, 2011; Zelazo & Carlson, 2012), emphasizing this period as relevant for understanding trajectories of psychopathic or antisocial traits across development. Next, the onset of puberty in pre-adolescence is associated with a shift in social roles as children spend less time with parents and more time in the school environment, and heralds heightened risk for the emergence of externalizing and internalizing disorders (Hinshaw, Lahey, & Hart, 1993; Moffitt, 1993). Finally, mid-adolescence represents a period of increasing influence of peer groups, when externalizing behaviors become more severe, and the onset of internalizing disorders peaks (Hinshaw et al., 1993; Moffitt, 1993). Therefore, we focused on examining potential developmental

precursors of the TriPM scales in these three critical developmental periods: preschool (ages 3–5), pre-adolescence (ages 9–11), and middle adolescence (ages 15–17).

## Measurement and Modeling of the TriPM Scales

A strength of the TriPM is its roots in the broader personality literature, meaning that the TriPM scales can be assessed using items from existing personality measures, in addition to the purpose-built TriPM measure (i.e., Triarchic Psychopathy Measure; Patrick, 2010). Normal range personality measures are relevant for measuring psychopathic traits in community samples where there are low base rates of individuals with extreme levels of psychopathy, but there still exists significant variability in psychopathic traits (Hare & Neumann, 2008). Moreover, existing large-scale studies often assess a variety of constructs that are relevant to nomological networks of psychopathic traits, but may not have included direct assessments of psychopathy (Benning, Patrick, Blonigen, Hicks, & Iacono, 2005). Previous studies have found that various conceptualizations of psychopathy can be measured using well-established broadband personality measures, including the Multidimensional Personality Questionnaire (e.g., MPQ; Benning, Patrick, Blonigen, et al., 2005; Gaughan, Miller, Pryor, & Lynam, 2009) and the NEO Personality Inventory Revised (e.g., NEO-PI-R; Costa & McCrae, 1992; Gaughan et al., 2009; Hyde, Byrd, Votruba-Drzal, Hariri, & Manuck, 2014; Miller, Lyman, Widiger, & Leukefeld, 2001). A review of the results from these personality-derived measures of psychopathy concluded that a general model of personality (e.g., five factor model) can be used to capture the majority of the variance in psychopathic traits and derive meaningful psychopathy scales from the items of these scales (Lynam & Widiger, 2007).

Previous studies have used this approach to model the three TriPM scales using items from existing personality scales, including the MPQ (Brislin, Drislane, Smith, Edens, & Patrick, 2015; Brislin, Venables, et al., 2015) and Minnesota Multiphasic Personality Inventory-2-Restructured Form (MMPI-2-RF; Ben-Porath, Tellegen, & Pearson, 2008). For example, Sellbom et al. (2016) found that MMPI-RF derived scales of the TriPM demonstrated convergent and discriminant validity in both offender and non-offender samples particularly for the disinhibition and boldness scales (Sellbom et al., 2016), and these results were replicated in additional samples of both offenders and college students (Kutchen et al., 2016). However, previous studies have yet to derive TriPM scales using the NEO-PI-R, despite it being a widely-used measure of personality that has been used to assess psychopathic traits using other conceptualizations of psychopathy (e.g., Psychopathic Personality Inventory: Ross, Benning, Patrick, Thompson, & Thurston, 2009; Levenson Self-Report of Psychopathy: Ross, Lutz, & Bailey, 2004; PCL-R: Widiger & Lynam, 1998).

In relation to the NEO-PI-R, Poy et al (2014) examined associations between the TriPM scales of the Triarchic Psychopathy Measure (Patrick, 2010) and big five personality factors via the 30 facet scales of the NEO-PI-R (Poy, Segarra, Esteller, López, & Moltó, 2014). The associations found between the TriPM scales and broad personality (as assessed with the NEO-PI-R) were consistent TriPM theory, and supported the expected divergence between the three TriPM scales in relation to personality traits (Poy et al., 2014). Moreover, the NEO-PI factors accounted for a large proportion of the variance in each TriPM scale (boldness =

67%; disinhibition = 53%; meanness = 44%) (Poy et al., 2014), suggesting that NEO-PI-R facets may be able to capture the dimensions of the TriPM. Thus, based on previously identified correlations between the TriPM traits as captured by the original Triarchic Psychopathy Measure and NEO items, we sought to create empirically-derived measures of boldness, meanness, and disinhibition, via a facet-weighted approach used by many other studies that examined personality-based approaches of psychopathy. To do so, previous studies have used regression weights generated from prior associations between traditional psychopathy measures (e.g., Psychopathic Personality Inventory, PPI; Lilienfeld & Widows, 2005) and personality scales (e.g., MPQ), which are then applied to create new psychopathy scales (e.g., MPQ-estimated PPI) (see Lilienfeld, Watts, Francis Smith, Berg, & Latzman, 2015 for a review of this and other personality approaches of psychopathy). In this approach, the regression weights from the previous study are multiplied against facet scores from the personality measure for each participant to create a weighted composite for each psychopathy dimension (e.g., if  $-.52$  is the weight between facet Anxiety and TriPM boldness, then for each participant,  $-.52$  is multiplied by the Anxiety facet score and added to all other weighted facet scores that were significantly correlated to boldness in the previous study). This empirically-derived approach has been used in many previous papers to develop valid, personality informed measures of psychopathy using personality questionnaires, including items of the NEO (e.g., Benning, Patrick, & Iacono, 2005; Blonigen, Hicks, Krueger, Patrick, & Iacono, 2005; Hicks et al., 2012; Hyde et al., 2014; Lynam & Widiger, 2007; Phillips, Sellbom, Ben-Porath, & Patrick, 2014; Ross et al., 2009; Sellbom et al., 2012; Witt, Donnellan, & Blonigen, 2009). In the current study, we followed this approach to create a new TriPM measure from items of the NEO-PI-R using regression weights from Poy et al. (2014) with participant-level NEO facets scores. We examined the criterion validity of these scores in a large, prospective longitudinal community sample.

## Current Study

The overarching goal of the current study was to examine concurrent and developmental nomological networks of the TriPM scales measured using factors empirically-derived from NEO-PI-R items within a community sample enriched for externalizing problems. The sample has been followed continuously from early childhood into early adulthood, allowing for prospective analysis of potential developmental precursors to the TriPM scales (Zucker et al., 2000; Zucker, Hicks, & Heitzeg, 2016). Our first aim was to establish the construct validity and concurrent nomological network of empirically-derived NEO-PI based TriPM scales by examining concurrent associations between each TriPM scale and a network of traits and behaviors within three broad domains of externalizing, internalizing, and adaptive functioning, assessed using multi-informant latent factors. Our second aim was to identify developmental precursors of the TriPM scales using prospective reports of a similar network of traits and behaviors from the same three domains (i.e., externalizing, internalizing, and adaptive functioning) assessed at three critical developmental stages: preschool (ages 3–5), pre-adolescence (ages 9–11), and middle adolescence (ages 15–17) using multiple informants (self-, teacher-, and parent-report, and interviewer). Figure 1 depicts our specific hypotheses for each TriPM scale and each domain, including specific measures within each domain at each time point (T1: ages 3–5; T3: ages 9–11; T5: ages 15–17; T6: ages 18–20).

We used measures assessing constructs that, (1) we hypothesized to be related to the TriPM scales based on previous research within domains of externalizing problems, internalizing traits, and adaptive functioning, and (2) were available at multiple time points. Specifically, we hypothesized that boldness would be concurrently and prospectively related to more sensation-seeking, but would involve fewer antisocial peer relationships (externalizing domain), fewer internalizing traits, and more adaptive functioning. Next, we hypothesized that disinhibition would be concurrently and prospectively associated with more externalizing problems, more internalizing traits, and lower adaptive functioning. Finally, we hypothesized that meanness would be concurrently and prospectively related to externalizing problems, greater negative emotionality, but not to other internalizing traits, and worse adaptive functioning (see Figure 1 for a summary of these hypotheses).

## Methods

### Participants

The sample consisted of 561 young adults participating in the Michigan Longitudinal Study (MLS), an ongoing multi-wave prospective study of families at high risk for substance use disorders (Zucker, Ellis, Fitzgerald, Bingham, & Sanford, 1996). A rolling, community-based recruitment process was used to assess children from families with an alcoholic father (high-risk families), as well as children from matched families without an alcoholic parent (low-risk families), who lived in the same neighborhoods as the high-risk families (Zucker et al., 2000). High-risk families were identified both through the court system using drunk driving arrest records of men and through community canvassing. Low-risk families were recruited through community canvassing in the neighborhoods where high-risk families resided, and were matched based on age and sex of the target child and community characteristics. Given these sampling and recruitment criteria, this sample can be considered enriched with children high on heritable and contextual risk for externalizing behaviors, but with a range of early risk (i.e., some children had no risk, whereas a large proportion had definite risk for externalizing behavior). Further information regarding recruitment and sample characteristics is described elsewhere (Zucker et al., 1996; Zucker et al., 2000). This study has been approved by the Institutional Review Board at the University of Michigan (HUM00039806).

### Procedure

Families participated in extensive in-home assessments at baseline and assessment waves thereafter that occurred at three-year intervals (denoted as T wave). For the current study, we included participants for whom data were available at the T6 assessment ( $N=561$ ; ages 18–20; 70.2% male;  $M$  age = 19.66,  $SD = 1.05$ ). Earlier assessment waves included in our analyses were data from T1 (ages 3–5;  $N=268–290$ ), T3 (ages 9–11;  $N=270–350$ ), and T5 (ages 15–17;  $N= 301–581$ ). 205 participants had siblings in the study (ranging from 1–2 siblings; 454 total non-independent participants) at T6.

### Measures

**TriPM scales**—TriPM scale scores were created using personality facets from the 240-item NEO Personality Inventory-Revised (Costa & McCrae, 1992) assessed at T6 (ages 18–

20). Table 1 presents the personality facets used to estimate each of the scales. Specifically, regression weights derived from an undergraduate sample of young men and women ( $N=349$ ; 72% female; Poy et al., 2014) were applied to NEO-PI-R facet scale scores to create factor scores for the TriPM scales<sup>1</sup>. In this study, we calculated TriPM scales separately for men and women based on gender differences reported by Poy and colleagues (2014) such that each trait (boldness, disinhibition, meanness) was a sum of each included facet weight multiplied by the betas from regressions including the NEO facets and original Triarchic Personality Measure (see Table 1 for the regression equations used). This empirically-derived approach to creating psychopathy scores has been used extensively in past research on the NEO-PI-R and other personality measures (Lilienfeld et al., 2015). Boldness was formed from 22 NEO facets in women and 16 NEO facets in men, with the following facets having the highest weights across gender: lower depression (e.g., “Sometimes I feel completely worthless”, reverse), lower self-consciousness (e.g., “It doesn’t embarrass me too much if people ridicule and tease me”), lower vulnerability (e.g., “I rarely overindulge in anything”), and greater assertiveness (e.g., “I have often been a leader of groups I have belonged to”). Disinhibition was formed from 20 NEO facets in women and 11 NEO facets in men, with the following facets having the highest weights across gender: lower competence (e.g., “I pride myself on my sound judgment”, reverse), lower dutifulness (e.g., “Sometimes I’m not as dependable or reliable as I should be”), lower self-discipline (e.g., “I have trouble making myself do what I should”), and lower deliberation (e.g., “I often do things on the spur of the moment”). Finally, meanness was formed from 16 NEO facets in women and 15 NEO facets in men, with the following facets having the highest weights across gender: lower trust (e.g., “I’m suspicious when someone does something nice for me”), lower straightforwardness (e.g., “If necessary, I am willing to manipulate people to get what I want”), lower altruism (e.g., “Some people think of me as cold and calculating”), and lower compliance (e.g., “When I’ve been insulted, I just try to forgive and forget”, reverse). Our approach for generating TriPM scores produced expected correlations between scales. Among men, boldness was negatively correlated with meanness ( $r = -.69, p < .001$ ) and disinhibition ( $r = -.65, p < .001$ ), and meanness and disinhibition were positively correlated ( $r = .86, p < .001$ ). This pattern was also true in women, with boldness being negatively correlated with meanness ( $r = -.47, p < .001$ ) and disinhibition ( $r = -.67, p < .001$ ), and meanness and disinhibition being positively correlated ( $r = .93, p < .001$ ).

**Concurrent and developmental correlates**—To examine the concurrent nomological network and the developmental precursors of the TriPM factors, we measured traits within the broad domains of externalizing, internalizing, and adaptive functioning concurrently and at developmentally salient periods: ages 3–5 (preschool), ages 9–11 (pre-adolescence), and ages 15–17 (middle adolescence). Whenever possible, scales across several measures were combined into multi-informant constructs using a latent variable approach to reduce multiple comparisons and decrease measurement error (see Table 2), though we did separate

<sup>1</sup>In a previous version of the manuscript, we utilized a different approach based on face-valid items and a series of exploratory and confirmatory factor analyses (see Supplemental Materials). As these models did not meet adequate fit, we present this alternate empirically-derived approach. The face-valid scales were only modestly correlated with the current scales (see Supplemental Table 1). However, both sets of TriPM scores exhibited very similar relationships with criterion variables.



constructs that were meaningfully different within each domain (e.g., negative emotionality versus internalizing problems). In general, latent variables at each time point included the same scales or developmentally equivalent scales; however, in some cases not all measures were available at each time point.

**Externalizing**—The core constructs in the externalizing domain were: (1) externalizing problems, (2) reactive control, (3) sensation seeking, (4) antisocial peers, and (5) substance use (Table 2; Table 3; Table 4).

**Externalizing problems:** To assess externalizing problems (i.e., aggression, rule-breaking, attention problems, hostile affect, and rudeness), we created a latent factor by combining summed scores from each of the following scales at each wave across multiple measures and informants. Rule-breaking, aggression, and attention problems scales were included from the Achenbach System of Empirically Based Assessment (ASEBA). In the concurrent analyses at T6 (ages 18–20;  $\alpha$ s = .81–.82), the Adult Self Report (ASR; Achenbach & Rescorla, 2003) was used. In the prospective analyses, at T1 (ages 3–5;  $\alpha$ s = .42–.85), T3 (ages 9–11;  $\alpha$ s = .56–.87), and T5 (ages 15–17;  $\alpha$ s = .77–.89) the 4–18 year old version of the Child Behavior Checklist (CBCL; Achenbach, 1991) was used. Additionally, teacher report was available at T3 ( $\alpha$ s = .74–.95) and T5 ( $\alpha$ s = .80–.95) via the Teacher Report Form (TRF; Achenbach, 1991).

The self-reported hostile affect subscale (15 items) from the Multiple Affect Adjective Check List-Revised (MAACL-R; Zuckerman, Lubin, & Rinck, 1983) was also included in the latent factor at T6 ( $\alpha$ s = .80–.95) and T5 ( $\alpha$ s = .80–.95).

The parent-reported aggression (6 items) and rudeness (6 items) subscales from the Child Behavior Rating Scale (CBRS; Maguin, Zucker, & Fitzgerald, 1994; Nye, Zucker, & Fitzgerald, 1995) were also included in the latent factor at T1 ( $\alpha$ s = .80–.95), T3 ( $\alpha$ s = .80–.95), and T5 ( $\alpha$ s = .80–.95).

**Reactive control:** Reactive control was assessed in the concurrent analyses at T6 ( $\alpha$  = .64) via the California Adult Q-Sort (CAQ; Block, 1961) and in the prospective analyses at T1 ( $\alpha$  = .79) and T3 ( $\alpha$  = .75) via the California Child Q-Sort (CCQ; Block & Block, 1980). These examiner-rated measures permit the observer to systematically describe the participant's personality and functioning with a standardized language. After a 3 to 4 hour session with the participant and family, test administrators completed the CAQ or CCQ, which involved sorting 100 descriptive statement cards that needed to be placed in a forced-choice, nine-category normal distribution (1=Least Descriptive; 9=Most Descriptive). In this study, the reactive control subscale measures spontaneous and automatic regulation that has been motivated by immediate incentive. Low reactive control scores have been associated with externalizing problems (Martel et al., 2007). For adults, the reactive control scale is based on 12 items including “unable to delay gratification” (reverse coded) and “is a genuinely dependable and responsible person.” In children, the reactive control subscale consisted of 14 items including “has a rapid personal tempo; reacts and moves quickly” (reverse coded) and “is physically cautious.” All scores used from the Q-Sort (i.e., reactive control, negative

emotionality, resiliency) were computed based on previously published Q-sort item scales (Eisenberg et al., 1996; Eisenberg et al., 2003).

**Sensation seeking:** Sensation seeking was self-reported in both the concurrent analyses at T6 ( $\alpha = .66$ ) and prospective analyses at T5 ( $\alpha = .65$ ) using the 12-item subscale from the MAACL-R.

**Antisocial peers:** Involvement with antisocial peers was assessed in both the concurrent analyses at T6 ( $\alpha_s = .63-.89$ ) and the prospective analyses at T5 ( $\alpha_s = .63-.96$ ) using the Peer Behavior Profile (PBP; Bingham et al., 1995), which asks participants to report on their peers' antisocial behaviors (e.g., sexual activity, substance use, delinquent behaviors; Table 2). The PBP is a 34-item measure that was adapted from Social Control Theory (Wiatrowski, Griswold, & Roberts, 1981) and Problem Behavior Theory (Donovan & Jessor, 1985). Adolescents were asked to consider "the friends you hang around with most of the time" and their degree of involvement in various activities and behaviors using a 5-point Likert scale (1=Almost None; 5=Almost All).

**Substance use:** A latent factor of substance use was created that included self-reported number of alcohol problems and drug problems, as well as the number of binge drinking days, using the Drinking and Other Drug Use History Questionnaire-Adult Version (DDHQ-A; Zucker & Fitzgerald, 1991) at T6. T6 alcohol problem ( $\alpha = .99$ ) and drug problem scores ( $\alpha = .99$ ) included the number of drinking or drug-related problems (from a possible 37 and 22 items, respectively) ever reported by the subject since the age of 11 years (Table 2). At earlier ages, we were limited to the use of items from the Youth Version of the DDHQ (Zucker & Fitzgerald, 2002) that demonstrated variance in endorsement within the sample. As such, at T5 only self-reported alcohol problems and binge drinking were included on the latent factor. T5 alcohol problem scores included the number of problems that occurred in the year preceding the data collection (Table 2).

**Internalizing**—The following core constructs were assessed in the internalizing domain: (1) internalizing problems and (2) negative emotionality (Table 2; Table 3; Table 4).

**Internalizing problems:** We created a latent factor of internalizing problems using summed scores from each of the relevant scales at each wave across multiple measures and informants. Anxiety and withdrawn scales were included from the ASEBA. In the concurrent analyses at T6 ( $\alpha_s = .78-.90$ ), the ASR was used. In the prospective analyses, at T1 ( $\alpha_s = .62-.68$ ), T3 ( $\alpha_s = .71-.79$ ), and T5 ( $\alpha_s = .76-.80$ ) the CBCL was used. Additionally, teacher report was available at T3 ( $\alpha_s = .83-.87$ ) and T5 ( $\alpha_s = .84-.88$ ) via the TRF. Self-reported anxious (10 items;  $\alpha = .79$ ) and depressed (12 items;  $\alpha = .85$ ) affect subscales from the self-reported MAACL-R were also assessed at T5 (Table 2).

**Negative emotionality:** Negative emotionality, the propensity to experience depressed mood, anxiety, and irritable anger, was assessed via informant from the CAQ at T6 ( $\alpha = .70$ ) and the CCQ at T1 ( $\alpha = .83$ ) and T3 ( $\alpha = .86$ ). The negative emotionality subscale is based on 10 items in adults with sample statements including "is basically anxious" and "over reactive

to minor frustrations; irritable.” In children, the negative emotionality subscale consists of 11 items including “is anxious and fearful” and “tends to brood and ruminate.”

**Adaptive functioning**—The core constructs in this domain were (1) broad adaptive functioning including in career and relationships, (2) resiliency, (3) positive affect, (4) association with prosocial peers, and (5) prosociality such as fewer social problems and politeness (Table 2; Table 3; Table 4).

**Broad adaptive functioning:** Broad adaptive functioning was assessed via self-report at T6 ( $\alpha = .50$ ) using the ASR adaptive functioning scale, which included items assessing relationships with friends and family, as well as educational and occupational success.

**Resiliency:** Resiliency, the ability to flexibly adapt one’s level of control in response to the environment, was assessed via examiner report from the CAQ at T6 ( $\alpha = .81$ ) and the CCQ at T1 ( $\alpha = .79$ ) and T3 ( $\alpha = .79$ ). In adults, the 11-item resiliency subscale includes statements such as “responds to humor” and “able to see the heart of important problems.” In children, the 11-item resiliency subscale includes statements such as “uses and responds to reason” and “is curious and exploring, eager to learn, open to new experiences.”

**Positive affect:** Positive affect was self-reported in both the concurrent analyses at T6 ( $\alpha = .89$ ) and prospective analyses at T5 ( $\alpha = .89$ ) using the 21-item subscale from the MAACL-R.

**Prosocial peer:** Involvement with prosocial peers (e.g., friends with church involvement, extracurricular activity involvement) was assessed in both the concurrent analyses at T6 ( $\alpha$ s = .56–.86) and the prospective analyses at T5 ( $\alpha$ s = .57–.87) using the PBP.

**Prosociality:** To assess prosocial behaviors, such as social skills, we created a latent factor to assess these behaviors using summed scores from each of the relevant scales at each wave across multiple measures and informants. The social problems scale (reverse coded) was included from the ASEBA. In the prospective analyses, at T1 ( $\alpha = .68$ ), T3 ( $\alpha = .76$ ), and T5 ( $\alpha = .76$ ) the CBCL was used. Additionally, teacher report was available at T3 ( $\alpha = .85$ ) and T5 ( $\alpha = .79$ ) via the TRF. Politeness (6 items) and affection (6 items) were also parent-reported using the CBRS scales at T1 ( $\alpha$ s = .75–.82), T3 ( $\alpha$ s = .80–.84), and T5 ( $\alpha$ s = .83–.87).

### Data Analytic Strategy

To examine the nomological network of the TriPM scales, we examined zero-order correlations separately for each scale. We then fit regression models that included the three TriPM scales as independent variables to account for their potential overlap in predicting concurrent behavioral and trait correlates (T6). Associations were then assessed between the TriPM scales and behavioral data separately for each earlier developmental wave (T1, T3, T5) (Table 3; Table 4). We also included gender and participant’s age at the specific assessment in the regression models. To account for the nesting of siblings in the model, all analyses were carried using the COMPLEX command in Mplus (Muthén & Muthén, 2014). All models were fit using maximum likelihood (ML) estimation. Table 3 summarizes the results for the concurrent associations, and Table 5 summarizes the results for the

developmental associations. Table 4 presents the developmental precursors assessed at each time point, and whether each precursor was a significant predictor of each of the TriPM scales across time. Figure 2 presents all of the results found, and whether these results matched our original hypotheses.

## Results

### The Nomological Network of the TriPM Scales in Young Adulthood

**Is boldness associated with more sensation seeking, fewer internalizing traits, and more adaptive functioning?**—Within the externalizing domain, boldness was significantly related to more sensation seeking, and was not related to externalizing problems or substance use as predicted (Table 3; Figure 2). Unexpectedly, boldness was not related to having fewer antisocial peers, but was significantly related to lower reactive control. Within the internalizing domain, boldness was related to fewer internalizing problems and lower negative emotionality as predicted. Finally, within the adaptive functioning domain, boldness was significantly related to more overall adaptive functioning, resiliency, positive affect, and having more prosocial peers as predicted. Therefore, in general, boldness demonstrated expected relationships with more sensation seeking, fewer internalizing traits, and more adaptive functioning. Unexpectedly, boldness was also associated with lower reactive control and was not associated with number of antisocial peers (Table 3; Figure 2).

**Is disinhibition associated with more externalizing traits and behaviors, more internalizing traits, and lower adaptive functioning?**—Within the externalizing domain, disinhibition was significantly related to more externalizing problems, lower reactive control, more sensation seeking, and more lifetime substance use as predicted. Surprisingly, disinhibition was not associated with number of antisocial peers. Within the internalizing domain, disinhibition was significantly related to more internalizing problems and greater negative emotionality as predicted. Finally, within the adaptive functioning domain, disinhibition was related to lower adaptive functioning and lower resiliency as predicted, but it was surprisingly not related to lower positive affect or having fewer prosocial peers. In sum, disinhibition demonstrated expected relationships with more externalizing traits and behaviors, more internalizing traits, and lower overall adaptive functioning and lower resiliency. Unexpectedly, disinhibition was not associated with having more antisocial peers, showing lower positive affect, or having fewer prosocial peers (Table 3; Figure 2).

**Is meanness associated with more externalizing problems, greater negative emotionality, and lower adaptive functioning?**—Within the externalizing domain, meanness was associated with increased association with antisocial peers as predicted, but was not associated with reactive control or substance use. In contrast to our hypotheses, meanness was not related to more externalizing problems, and was associated with lower sensation seeking. Within the internalizing domain, meanness was not associated with internalizing problems as predicted. In contrast to our hypotheses, meanness was also not associated with negative emotionality. Within the adaptive functioning domain, meanness

was significantly related to lower overall adaptive functioning, lower positive affect, and having fewer prosocial peers as predicted, but was not associated with lower resiliency. In sum, meanness demonstrated expected associations with having more antisocial peers and lower adaptive traits, including lower overall adaptive functioning, lower positive affect, and fewer prosocial peers. Inconsistent with predictions, meanness was associated with lower sensation seeking, and was not related to more externalizing problems, greater negative emotionality, or lower resiliency (Table 3; Figure 2).

**Summary of concurrent relationships**—In sum, boldness was related to more sensation seeking, fewer internalizing traits, and more adaptive traits. Disinhibition was associated with more externalizing traits and behaviors, more internalizing traits, and lower overall adaptive functioning and resiliency. Meanness was related to less sensation seeking and more antisocial peer relationships, lower adaptive functioning and positive affect, and fewer prosocial peer relationships. Thus, the findings for boldness and disinhibition most closely matched our hypothesized nomological network (Figure 1; Figure 2).

### Developmental Precursors of the TriPM Scales in Young Adulthood

**Is boldness preceded by more sensation seeking, fewer internalizing traits, and more adaptive functioning across development?**—Within the externalizing domain, boldness was preceded by more sensation seeking at ages 15–17, and was not associated with more externalizing problems at any developmental period, lower reactive control at ages 3–5, or more substance use at ages 15–17 as predicted. Surprisingly, boldness was preceded by *lower* reactive control at ages 9–11, and was not related to having fewer antisocial peers at ages 15–17. Within the internalizing domain, boldness was preceded by lower negative emotionality across all developmental periods (ages 3–5 and ages 9–11) and fewer internalizing problems at ages 9–11 and ages 15–17 (though not at ages 3–5) as predicted. Finally, within the adaptive functioning domain, boldness was preceded by higher levels of resiliency at each developmental period, more prosociality at ages 9–11, and having more prosocial peers at ages 15–17. Unexpectedly, boldness was not preceded by more prosociality at ages 3–5 or ages 15–17, or by higher positive affect at ages 15–17 (Table 4; Table 5; Figure 2). In sum, boldness was preceded by lower reactive control (ages 3–5), less internalizing traits (lower negative emotionality at ages 3–5 and ages 9–11; fewer internalizing problems at ages 9–11), and more adaptive functioning (resiliency at ages 3–5 and ages 9–11; prosociality at ages 9–11; more prosocial peers at ages 15–17).

**Is disinhibition preceded by more externalizing traits and behaviors, more internalizing traits, and lower adaptive functioning across development?**—Within the externalizing domain, disinhibition was preceded by lower reactive control at ages 3–5, and more externalizing problems (ages 15–17), more sensation seeking (ages 15–17), and more lifetime substance use (ages 15–17) as predicted. Inconsistent with our predictions, however, disinhibition was not preceded by lower reactive control at ages 9–11, and was not preceded by more externalizing problems earlier in development (ages 3–5 or ages 9–11) or having more antisocial peers (ages 15–17). Within the internalizing domain, disinhibition was not preceded by greater negative emotionality at any developmental period, but was instead preceded by *lower* negative emotionality specifically at ages 3–5.

Moreover, disinhibition was not related to more internalizing problems at ages 3–5 or at ages 15–17, but was preceded by *fewer* internalizing problems (ages 9–11). Finally, within the adaptive functioning domain, disinhibition was not related to lower resiliency at any developmental period, but was instead preceded by *greater* resiliency at ages 3–5.

Additionally, disinhibition was only preceded by less prosociality at age 15, and was not preceded by lower positive affect or fewer prosocial peers as had been hypothesized (Table 4; Table 5; Figure 2).

In sum, although disinhibition was concurrently related to more externalizing problems, lower reactive control, and more internalizing traits, developmentally, disinhibition was not preceded by more externalizing problems until ages 15–17, was not consistently preceded by lower reactive control (e.g., ages 3–5 but not ages 9–11), and was not preceded by lower prosociality except for later in development (e.g., not at ages 3–5 or ages 9–11, but at ages 15–17). Moreover, disinhibition was unexpectedly related to having lower negative emotionality (ages 3–5) and internalizing problems (ages 9–11), and greater resiliency (ages 3–5).

**Is meanness preceded by more externalizing problems, greater negative emotionality, and lower adaptive functioning?**—Within the externalizing domain, meanness was preceded by more externalizing problems at ages 15–17, but not at ages 3–5 or ages 9–11, as well as lower sensation seeking (ages 15–17), and more antisocial peer relationships (ages 15–17) as predicted. Meanness was also not preceded by lower reactive control at any period or by substance use at ages 15–17 as predicted. Within the internalizing domain, meanness was preceded by greater negative emotionality at ages 3–5 as predicted. Surprisingly, however, meanness was not preceded by greater negative emotionality at ages 9–11, and was instead preceded by *more internalizing* problems at ages 9–11. Finally, within the adaptive functioning domain, meanness was preceded by lower resiliency (ages 3–5), lower positive affect (ages 15–17), and fewer prosocial peers (ages 15–17). Surprisingly, however, meanness was not preceded by lower prosociality in any period, or by lower resiliency at ages 9–11 (Table 4; Table 5; Figure 2). In sum, meanness was only preceded by greater negative emotionality at ages 3–5, more antisocial peer relationships (ages 15–17), lower positive affect (ages 15–17), and fewer prosocial peer relationships (ages 15–17) as predicted. Inconsistent with hypotheses, meanness was preceded by greater resiliency at ages 3–5 and more internalizing problems at ages 9–11. Further, meanness was unrelated to externalizing problems, except for at ages 15–17, and was unrelated to resiliency at ages 9–11 or prosociality at any age.

## Discussion

We used a broadband measure of normal personality to derive TriPM scales and then tested the validity of those scales by examining their concurrent correlates and developmental precursors across 17 years of development (ages 3–5 to ages 18–20). This personality-based measurement approach best captured the TriPM boldness scale, with scores exhibiting expected associations with criterion variables that were robust across development. These findings support the usefulness of this personality-based method in assessing TriPM boldness and highlights the stability of the nomological network of boldness from early

childhood into young adulthood. Our approach also appeared to accurately capture TriPM disinhibition well concurrently and during adolescence (though not in childhood), as expected associations with criterion variables emerged in late adolescence, and were stable to young adulthood. Our findings also suggest that TriPM meanness, as measured via this empirically derived personality-based approach with the NEO-PI-R, was associated with several of the predicted criterion variables in young adulthood (e.g., having more antisocial peers, lower positive affect, and lower adaptive functioning), but not with other key variables such as lower anxiety. Additionally, meanness showed little continuity of this nomological network across development such that associations between the developmental precursors and scores on the meanness scale were inconsistent.

### Cross-Sectional Nomological Networks of the TriPM Scales

**Boldness**—Boldness was associated with external correlates indicative of a positive and outgoing temperament as predicted by original conceptualizations within the TriPM theoretical framework (Patrick & Drislane, 2015; Patrick et al., 2009) and prior empirical work on the TriPM (Hall et al., 2014; Stanley, Wygant, & Sellbom, 2013). Interestingly, boldness was associated with lower reactive control even when accounting for disinhibition, which is surprising given that low reactive control is expected to be primarily related to disinhibition and not boldness. This association still fits with the TriPM however, as boldness is conceptualized to include some traits that are related to inhibitory processes, specifically increased social approach and venturesomeness (Patrick & Drislane, 2015; Patrick et al., 2009). Indeed, in the current study, the reactive control scale included items that might traditionally be expected to correlate with disinhibition (e.g., “tends toward over-control of needs and impulses [reverse scored]”, “is a genuinely dependable and responsible person [reverse scored]”), but also included items that are consistent with assertiveness and approach (e.g., “delays or avoids action [reverse scored]”, “genuinely submissive; accepts domination comfortably [reverse scored]”, “is a talkative individual”). Therefore, when measured with a broadband measure of normal personality, boldness overlapped somewhat with disinhibition (and both were highly correlated), as both were associated with lower reactive control and more sensation-seeking. In general, however, our findings fit with the notion that boldness, when parsed from the other TriPM traits, is associated with positive adjustment and, in contrast to disinhibition and meanness, could protect against negative outcomes.

**Disinhibition**—Disinhibition was associated with external correlates that were indicative of an aggressive and emotionally dysregulated temperament as predicted by the TriPM theoretical framework and prior empirical work on the TriPM (Anderson et al., 2014; Hall et al., 2014; Sellbom, Wygant, & Drislane, 2015; Sica et al., 2015; Stanley et al., 2013; Strickland et al., 2013). As noted, the nomological network of disinhibition showed overlap with that of boldness. In addition, disinhibition shared similar associations with meanness, as both traits predicted worse overall adaptive functioning. However, disinhibition was distinct from the other TriPM scales in correlating with more externalizing problems and substance use, as well as more internalizing traits. These findings fit with the broader literature on disinhibition as a negative trait that has wide-ranging negative consequences.

**Meanness**—Meanness was associated with deviant peer associations (e.g., significantly more antisocial peers, significantly fewer prosocial peers) and lower positive affect, which is consistent with a hostile and withdrawn temperament as conceptualized in the TriPM. Interestingly however, meanness was not related to other externalizing constructs (including the latent factor of externalizing problems, which tapped aggression and rule-breaking). These findings suggest that individuals high on meanness as measured by the NEO are characterized by hostility and low affiliation (Patrick et al., 2009), but not necessarily externalizing behavior. The current results also extend previous work that has linked meanness to fewer adaptive traits (e.g., Blagov et al., 2016).

Surprisingly, meanness was not significantly associated with internalizing problems. This finding contradicts previous studies, as well as the original TriPM theory, that link meanness to *lower* anxiety (Blagov et al., 2016; Patrick & Drislane, 2015; Sellbom et al., 2015). Moreover, meanness was not related to lower resiliency, which was expected based on previous relationships reported between meanness and fewer adaptive traits (Blagov et al., 2016). Therefore, although meanness had a nomological network that was distinct from that of boldness and disinhibition, we did not find several of the expected relationships based on the original TriPM theory (i.e., it was not related to fewer internalizing problems or lower resiliency). One explanation for these surprising findings is that the broad personality facets used in this study may not be well-suited to truly capture TriPM meanness. For example, consistent with our findings, Sellbom and colleagues (2016) also found that their MMPI-2-RF-based meanness scale demonstrated fewer expected convergent and discriminant associations with criterion variables as compared to boldness and disinhibition. Indeed, TriPM meanness might be better captured with more traditional measures such as measures of callous-unemotional traits (Frick et al., 2014). Moreover, meanness may simply not be captured well by the facets or items within normative personality measures. On the other hand, some previous studies have also reported a similar pattern of results in which TriPM meanness was not related to internalizing problems, particularly when parsed from disinhibition (Anderson et al., 2014; Hall et al., 2014; Sica et al., 2015). These findings have been taken to suggest that it is only by examining the combination or nexus of boldness, meanness, and disinhibition that psychopathy can be measured (Patrick & Drislane, 2015). Thus, it may be that only a combination of the TriPM traits results in a construct that is akin to traditional conceptualizations of psychopathy that feature lower anxiety and maladaptive functioning.

### Developmental Precursors of the TriPM

**Continuity of boldness-related correlates across development**—The developmental precursors of boldness mirrored the relationships found in the cross-sectional nomological network in young adulthood (e.g., lower anxiety and depression, and greater prosociality and resiliency), and further support TriPM theory (Patrick & Drislane, 2015). As found in the cross-sectional nomological network, boldness was also preceded by lower reactive control as early as ages 3–5. As noted above, while we had originally expected poor reactive control to uniquely predict disinhibition, the association between low reactive control and boldness is still in line with TriPM theory. Specifically, the developmental precursors of boldness proposed by Patrick et al. (2009) included traits relating to low fear,



sensation-seeking, and approach, which are consistent with our finding that boldness was preceded by lower reactive control, even when accounting for the overlap with disinhibition. These results also highlight that the TriPM traits do have some overlap (e.g., low fear could have a developmental role in the emergence of both boldness and disinhibition). Moreover, as with the measure of reactive control in young adulthood, the reactive control scale in earlier development included several items that fit descriptions of increased activity and social affiliation as opposed to pure inhibitory control (e.g., “is shy and reserved; makes social contact slowly” [reverse scored] and “is self-assertive” [reverse coded]). Overall, we found consistent evidence for continuity in the nomological network of the development of boldness – that is boldness as measured in adulthood emerges from (or shows continuity from) early traits such as greater resiliency and lower negative affectivity that are moderately stable across development.

### **Stability of disinhibition-related correlates in later compared to earlier**

**development**—Continuity of the correlates of disinhibition was found in late adolescence (e.g., ages 15–17) such that disinhibition was preceded by more externalizing problems and lower adaptive functioning, as was found in the cross-sectional nomological network in young adulthood. However, earlier in development we did not replicate this network and found several unexpected precursors of disinhibition. While disinhibition was preceded by lower reactive control at ages 3–5 ( $\beta = -.21$ ), this relationship was not significant at ages 9–11 ( $\beta = -.13$ ). Moreover, disinhibition was not preceded by more externalizing problems either at ages 3–5 or ages 9–11. Additionally, disinhibition was preceded by *lower* negative emotionality at ages 3–5 and fewer internalizing problems at ages 9–11. Disinhibition was also preceded by *greater* resiliency at ages 3–5. These results contradict TriPM theory that disinhibition should be preceded by an early difficult temperament including both externalizing and internalizing problems (Patrick et al., 2009). Our findings are particularly surprising given the large body of literature that has demonstrated the relative stability of poor self-control and disinhibition across decades of development (Caspi & Moffitt, 1995; Caspi, Roberts, & Shiner, 2005).

It could be that our measure of TriPM disinhibition exhibits a unique developmental trajectory such that earlier in life, a disinhibited temperament was more overlapping with boldness, encompassing lower reactive control, but not necessarily more severe externalizing or internalizing problems. The role transitions and changes associated with late adolescence may have precipitated a shift, such that greater disinhibition began to confer an increase in harmful behaviors, as represented by concurrent associations with more-sensation seeking, more substance use, and lower prosociality. These harmful behaviors could have then escalated over time, following on from associated negative consequences (e.g., school discipline, substance abuse), which further exacerbated displays of externalizing behavior or the development of internalizing problems. Indeed, the transition to late adolescence has been associated with an increase in externalizing problems resulting from growing independence from parental supervision (Dodge & Pettit, 2003).

On the other hand, it could be that our personality-based approach to the TriPM may represent disinhibition in a way that is not sensitive enough to identify precursors in early childhood. More nuanced measures of impulsivity and low inhibitory control that

differentiate between components of disinhibition in adulthood may be more appropriate (Nigg, 2000). Alternatively, it could also be that our latent constructs of internalizing and externalizing problems varied with the different reporters we had available at different ages (e.g., ages 3–5 had only parent report; ages 9–11 had both parent and teacher report; ages 15–17 had parent, teacher, and self report), undermining the stability of relationships with self-reported items concerning disinhibition during early adulthood. Future research could clarify the extent to which our pattern of findings represents a unique developmental trajectory of TriPM disinhibition, or simply artifacts of the methods used in the current study.

**Inconsistent meanness-related correlates across development**—As with cross-sectional findings, some of the precursors to meanness were consistent with hypotheses, including more externalizing problems and lower positive affect at ages 15–17. However, meanness was not preceded by several key hypothesized criterion variables, including lower resiliency and negative emotionality at ages 9–11 and lower prosociality at any age. Clearly the current measure of meanness did not capture the construct concurrently or prospectively in ways expected based on the TriPM. Measures of TriPM meanness that include more severe items that better represent the callousness and coldhearted hostility (e.g., TriPM scales developed from the Psychopathy Personality Inventory; Hall et al., 2014), as opposed to more normative personality traits, may demonstrate more expected associations with developmental precursors, highlighting the potential limitation of the NEO to capture this unique and severe trait. That is, NEO facets and items may simply not tap the more severe behaviors and traits inherent in the meanness construct and more specific measures, such as those of callous-unemotional traits, may be better at capturing these harmful traits.

### Implications, Limitations, and Future Directions

Overall, the current study supports the utility of personality measures to assess TriPM boldness as distinct from disinhibition or meanness. The findings lay an important foundation for the study of psychopathic traits in studies lacking direct measures of the construct, as well as in studies of non-clinical, community samples. The current study established unique relationships between personality-based TriPM scales and external correlates in young adulthood that were generally consistent with theory (Patrick & Drislane, 2015; Patrick et al., 2009) and prior cross-sectional studies (Almeida et al., 2015; Anderson et al., 2014; Blagov et al., 2016; Donnellan & Burt, 2016; Sellbom et al., 2015; Sica et al., 2015). The cross-sectional results support the notion that broad personality factors can be used to capture TriPM traits in young adulthood, particularly boldness and disinhibition. Importantly, however, this approach may not be well-suited for assessing meanness, as we did not find expected associations with key phenotypes considered central to meanness, including lower anxiety and lower prosociality. These surprising findings also emerged even when using an alternate method to construct the TriPM traits from specific face-valid NEO items (see Supplemental Table 2), suggesting it is not just the empirically-derived approach we used that resulted in poor measurement of meanness. Thus, an approach that uses the five-factor personality model and NEO items may accurately tap TriPM boldness and disinhibition, but may not be ideal for assessing meanness.

The current study also extends previous work by exploring prospective developmental precursors of TriPM traits for the first time. Overall, precursors of boldness were identifiable across development as early as the preschool period and begin to demonstrate what early precursors of boldness may consist of (e.g., lower negative emotionality and greater resiliency). However, precursors of disinhibition did not emerge until adolescence and there were fewer meaningful developmental precursors of meanness at any age period. On one hand, these results could be an artifact of our personality-based approach to the TriPM traits, implying that the NEO items do not adequately tap the meanness construct. On the other hand, the findings could highlight important differences in the psychopathy construct in childhood versus adulthood. Research in adult psychopathy has typically examined the overlap and divergence of different components within psychopathy, as well as the construct's overall psychometric functioning as a unitary construct (Hare & Neumann, 2008). In contrast, studies of children and adolescents have often isolated specific components as key developmental markers of adult psychopathy, with a large focus on callous-unemotional traits (CU traits; Frick et al., 2014). Although a large amount of research has shown that CU traits predict more severe and stable antisocial behavior, including later psychopathic traits, CU traits may not specifically predict the interpersonal-affective components of psychopathy, which contain callousness (e.g., Burke, Loeber, & Lahey, 2007; Hawes, Byrd, Waller, Lynam, & Pardini, 2017; Lynam, Caspi, Moffitt, Loeber, & Stouthamer-Loeber, 2007). Moreover, significant heterogeneity between-individuals for both initial levels and rates of change in CU traits across development have been noted (e.g., Baskin-Sommers, Waller, Fish, & Hyde, 2015; Hawes et al., 2017). These studies suggest that, although callousness or meanness may predict a poor course of antisocial behavior, it may not show high homotypic continuity.

While further research will be necessary to determine the replicability of the developmental patterns identified in this study, the current study benefitted from extensive, multi-informant measures, which allowed us to establish traits that appeared to be well-measured from the NEO (boldness, disinhibition to a lesser extent) and which traits appear to be poorly specified by this approach (i.e., meanness). Additional strengths of the study include the use of cross-informant reports (e.g., self, teacher, parent, and researcher), latent behavioral factors combining multiple measures and reporters, and 17 years of prospective longitudinal data, including examination of three critical periods of development. Further, our sample represents a population at increased risk for externalizing disorders, but is also representative of communities outside of clinical or criminal samples that have been used more commonly in the study of psychopathy (Armstrong & Costello, 2002; O'Neil, Conner, & Kendall, 2011). By including families with clinical levels of substance use disorder and antisocial behavior outside of a clinical setting, as well as low-risk families from the community, we were able to better understand the development and nomological network of the TriPM scales in community participants with enrichment for risk for externalizing outcomes such as psychopathy.

While this study had notable strengths, there were also some limitations that could be addressed in future research. First, while an aim of the study was to develop TriPM scales based on broader personality items, we were not able to link the scales to existing traditional measures of psychopathy or the purpose-built TriPM scales (Patrick, 2010). As a primary

goal of the TriPM is to integrate diverse conceptualizations of psychopathy, future research should also validate the current scales by determining whether they demonstrate expected relationships with other psychopathy measures. Second, since these relationships were examined in a community sample (albeit high-risk), findings may not extend to adult offenders. Future studies could also explore the generalizability of these NEO-based scales by examining gender and race as moderators as psychopathy may manifest differently in women (Carré, Hyde, Neumann, Viding, & Hariri, 2013; Verona & Vitale, 2006) and African-Americans (Baskin-Sommers, Newman, Sathasivam, & Curtin, 2011; Hyde et al., 2015). Additionally, gender differences have previously been found in the development of both externalizing and internalizing problems (Crick & Zahn-Waxler, 2003), highlighting the importance of future studies comparing relationships for men versus women and boys versus girls.

Third, it is unclear whether the associations between constructs measured early in development and in adulthood represent developmental effects (i.e., lower reactive control leads to later boldness) or represent the continuity of psychopathic traits (i.e., boldness itself is present in preschool and related to reactive control but we have not measured it, and it is stable across the lifespan). The TriPM is somewhat limited in the discussion of how psychopathy may emerge, and thus future research (and theory) is necessary to determine the processes by which these traits may manifest and/or change over development in heterotypic or homotypic ways. Fourth, we sought to examine the nomological networks and developmental correlates of the TriPM scales, resulting in the use of many measures/scales. Although we utilized data reduction techniques whenever possible, including the construction of latent factors for similar constructs (e.g., externalizing problems, internalizing problems, prosociality), the results represent a broad pattern of findings. Moreover, the latent factors often included reports from different informants, and it could be that teacher, parent, and self-reports may vary in associations with the TriPM at different developmental periods. With the current results as a foundation, future studies are needed to examine narrower links between the TriPM scales and specific correlates. We also focused on criterion variables that we expected to be particularly relevant to psychopathy and were well-measured in this sample. Future research is necessary to examine components of the nomological networks of the TriPM scales beyond the traits and behaviors in this study (e.g., empathy, guilt).

Fifth, given the scope of this work, we did not examine the extent to which environmental contexts, such as parents, peers, and neighborhoods may shape the development of these traits across the lifespan. Thus, an important next step in the extension of this work would be to examine a more specific developmental model by investigating construct by context interactions (e.g., testing if parenting  $\times$  early temperament predicts boldness). Finally, we used an empirical approach based on correlations between the TriPM measure and NEO-PI facets in a separate study of undergraduates (Poy et al., 2014). Although this approach has been widely used (Benning, Patrick, Blonigen, et al., 2005; Blonigen, Hicks, Krueger, Patrick, & Iacono, 2006; Hyde et al., 2014; Witt et al., 2009), in this case, it did not seem to capture the construct of meanness well. Other approaches including expert consensus approaches or factor analytic methods identifying specific NEO-PI items could yield different or complimentary findings.

Even with these limitations, this study benefited from prospective longitudinal data assessed over 17 years using multiple informants, in a large community sample enriched for risk for externalizing problems. The results support the use of broadband personality measures to capture TriPM boldness and potentially disinhibition in early adulthood. Further research is necessary to determine how to best leverage a personality-based approach to assess meanness (or perhaps we did capture meanness and it does not have the expected nomological network). Our findings support previous research investigating the validity of the TriPM, in particular the distinct nature of each of the TriPM scales, while expanding our understanding of the model through the use of a widely-used existing assessment of personality, and the examination of developmental precursors. This work bridges broader personality, psychopathology, developmental, and measurement research, ultimately informing knowledge about the development of the dark traits related to psychopathy.

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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### General Scientific Summary

Within the triarchic psychopathy model (TriPM), psychopathy has been conceptualized as being composed of three traits: boldness, disinhibition, and meanness. Using a five factor personality-derived measure of the TriPM, we found continuity in the nomological network of boldness across development, including both prospective and concurrent associations with fewer internalizing problems and greater resiliency. Beginning in adolescence and into adulthood, disinhibition was related to more externalizing problems and substance use. However, prospective associations with meanness were inconsistent, suggesting limitations either in using personality measures of the TriPM, or in the meanness construct itself.

		T1	T3	T5	T6		
<b>Boldness:</b>	<b>Externalizing</b>	Externalizing Problems	nr	nr	nr	nr	
		Reactive Control	nr	nr		nr	
		Sensation Seeking			+	+	
		Substance Use			nr	nr	
		Antisocial Peers			-	-	
	<b>Internalizing</b>	Internalizing Problems	-	-	-	-	
		Negative Emotionality	-	-		-	
	<b>Adaptive Functioning</b>	Mean Adaptive Functioning				+	
		Resiliency	+	+		+	
		Positive Affect			+	+	
		Prosociality	+	+	+		
		Prosocial Peers			+	+	
	<b>Disinhibition:</b>	<b>Externalizing</b>	Externalizing Problems	+	+	+	+
			Reactive Control	-			-
			Sensation Seeking			+	+
Substance Use					+	+	
Antisocial Peers					+	+	
<b>Internalizing</b>		Internalizing Problems	+	+	+	+	
		Negative Emotionality	+	+		+	
<b>Adaptive Functioning</b>		Mean Adaptive Functioning				-	
		Resiliency	-	-		-	
		Positive Affect			-	-	
		Prosociality	-	-	-		
		Prosocial Peers			-	-	
<b>Meanness:</b>		<b>Externalizing</b>	Externalizing Problems	+	+	+	+
			Reactive Control	nr	nr		nr
			Sensation Seeking			nr	nr
	Substance Use				nr	nr	
	Antisocial Peers				+	+	
	<b>Internalizing</b>	Internalizing Problems	nr	nr	nr	nr	
		Negative Emotionality	+	+		+	
	<b>Adaptive Functioning</b>	Mean Adaptive Functioning				-	
		Resiliency	-	-		-	
		Positive Affect			-	-	
		Prosociality	-	-	-		
		Prosocial Peers			-	-	

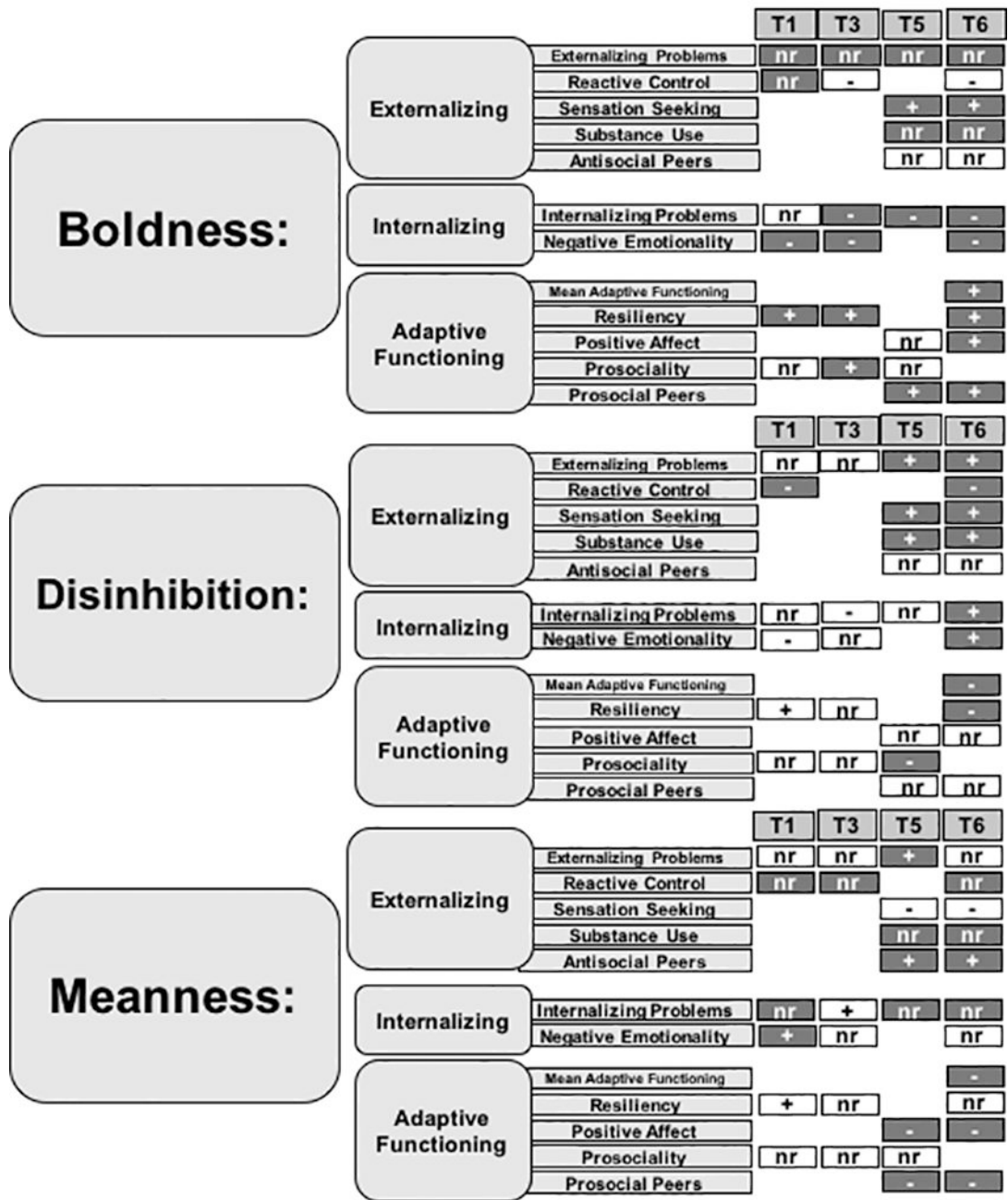
**Figure 1. Hypothesized Prospective and Concurrent Nomological Networks of the TriPM Scales**  
 TriPM= The Triarchic Model of Psychopathy. T1= ages 3–5; T3 = ages 9–11; T5= ages 15–17; T6 = ages 18–20. + = positive association. – = negative association. nr = not related. The hypothesized prospective (T1, T3, T5) and concurrent (T6) associations between each TriPM scale and all measured correlates. Correlates are grouped by domain (e.g., externalizing, internalizing, adaptive functioning). When measures were assessed at a given time point, a box is displayed with either a +, – or nr to indicate that the relationship between that correlate at that time point was either hypothesized to be positively, negatively, or not related to the TriPM scale to the left.

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**Figure 2. Resulting Prospective and Concurrent Nomological Networks of the TriPM Scales**  
 TriPM= The Triarchic Model of Psychopathy. T1= ages 3–5; T3 = ages 9–11; T5= ages 15–17; T6 = ages 18–20. + = positive association. – = negative association. nr = not related. The prospective (T1, T3, T5) and concurrent (T6) associations between each TriPM scale and all measured correlates found in the current study. Correlates are grouped by domain (e.g., externalizing, internalizing, adaptive functioning). When measures were assessed at a given time point, a box is displayed with either a +, – or nr to indicate that the relationship between that correlate at that time point was either positively, negatively, or not related to the

TriPM scale to the left. White boxes explicitly indicate that the relationship was in contrast to the hypothesized direction.

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**Table 1**

NEO-PI Facets of Personality Represented in Each TriPM Scale

NEO Facet	Weights for Boldness		Weights for Disinhibition		Weights for Meanness	
	Women	Men	Women	Men	Women	Men
<i>Neuroticism</i>						
Anxiety	-.52	-.53	.31	-	.29	.35
Angry Hostility	-.20	-.45	.47	.43	.22	-
Depression	-.54	-.53	.40	.35		
Self-Consciousness	-.64	-.62	.25	-		
Vulnerability	-.55	-.62	.53	.37	-.20	-.46
			Vulnerability	.36	-	-.40
<i>Extraversion</i>						
Warmth	.37	.31	<i>Extraversion</i>	-	Excitement-Seeking	.32
Gregariousness	.40		Warmth	-.22	Positive Emotions	-
Assertiveness	.67	.67	Excitement Seeking	.31		
Activity	.44	.36				
Excitement-Seeking	.32	-				
Positive Emotions	.54	.38		.20		
<i>Openness</i>						
Fantasy	.20	-	<i>Agreeableness</i>			
Aesthetics	.23	-	Trust	-.32	-.42	-.64
Feelings	.37	.41	Straightforwardness	-.30	-.31	-.39
Actions	.39	.32	Altruism	-.24	-.33	-.60
Ideas	.29	.38	Compliance	-.36	-.37	-.44
Values	-	.27	Modesty	-.16	-	-
					Modesty <sub>g</sub>	-.32
					Tender-Mindedness	-.20
						-.49
<i>Agreeableness</i>			<i>Conscientiousness</i>			
Trust	.25	-	Competence	-.55	-.43	
Straightforwardness	-.36	-.41	Order	-.42	-	-.37
Modesty	-.37	-.32	Dutifulness	-.58	-.48	-
			Achievement Striving	-.35	-	-.42
			Self-Discipline	-.57	-.34	-.30
					Achievement Striving	-

NEO Facet	Weights for Boldness		Weights for Disinhibition		Weights for Meanness		
	Women	Men	NEO Facet	Women	NEO Facet	Women	Men
Conscientiousness							
Competence	.26	.33	Deliberation	-.66	Self-Discipline	-.31	-.28
Achievement Striving	.23	-			Deliberation	-.37	-
Self-Discipline	.18	-					

*Note.* TriPM= The Triarchic Model of Psychopathy. To calculate the NEO-derived TriPM scales, we multiplied participants' the listed NEO facet scores by the zero-order Pearson correlations presented (previously found between the NEO facets and the scales of the original Triarchic Psychopathy Measure in a mixed gender undergraduate sample; Poy et al., 2014), and then summed all of the facet scores listed under each TriPM trait to create TriPM composite scores for boldness, disinhibition, and meanness. – = The facet was not significantly correlated with the TriPM trait and was therefore not included in the composite score for that gender.



Table 2

Loadings of Subscales on Latent Factors

Developmental		T1	T3	T5	T6	
<u>Externalizing Problems</u>						
Subscale	Report			<u>Concurrent</u>	Report	
CBCL Aggression	Parent	.91***	.75***	.87***	ASR Aggression Self	.76***
CBCL Delinquency	Parent	.61***	.66***	.79***	ASR Rule-Breaking Self	.70***
CBCL Attention Problems	Parent	.68***	.64***	.74***	ASR Attention Problems Self	.81***
CBRS Aggression	Parent	.51***	.47***	.67***	MAACL-R Hostile Affect Self	.45***
CBRS Rude	Parent	.50***	.62***	.68***		
TRF Aggression	Teacher		.75***	.59***		
TRF Delinquency	Teacher		.69***	.56***		
TRF Attention Problems	Teacher		.64***	.64***		
MAACL-R Hostile Affect	Self			.19***		
<u>Substance Use</u>						
Subscale	Report				<u>Substance Use</u>	
Age 15 Binge Drinking	Self			.66***	Subscale	
Age 15 Alcohol Problems	Self			.61***	Lifetime Alcohol Use Problems Self	.99**
Age 16 Binge Drinking	Self			.78***	Lifetime Drug Use Problems Self	.54**
Age 16 Alcohol Problems	Self			.80***		
Age 17 Binge Drinking	Self			.61***		
Age 17 Alcohol Problems	Self			.72***		
<u>Internalizing Problems</u>						
Subscale	Report				<u>Internalizing Problems</u>	
CBCL Withdrawn	Parent	.67***	.35**	.79***	Subscale	
CBCL Anxiety Problems	Parent	.82***	.34**	.74***	ASR Withdrawn Self	.77***
TRF Withdrawn	Teacher		.87***	.33***	ASR Anxiety Self	.87***
TRF Anxiety Problems	Teacher		.74***	.30**		

Developmental Externalizing Problems	T1	T3	T5	Concurrent Externalizing Problems	T6
MAACL-R Anxious / Self			.25**		
MAACL-R Depressed / Self			.28**		
Prosociality					
Subscale					
CBCL Social Problems	Parent	-.68***	-.34***		
CBRS Polite	Parent	.49**	.40***	.80***	
CBRS Affectionate	Parent	.32**	.15 <sup>†</sup>	.47***	
TRF Social Problems	Teacher	-.67***	-.39***		

<sup>†</sup>Note.  $p < .10$ ;

\*  $p < .05$ ;

\*\*  $p < .01$ ;

\*\*\*  $p < .001$ .

T1 = ages 3-5; T3 = ages 9-11; T5 = ages 15-17; T6 = ages 18-20. The latent factors listed are those that combined subscales from several different measures and reporters. When loadings are not listed for a given wave of data collection, in general the variable or measure was not collected.

<sup>†</sup>Though this variable was collected at T6, it was removed from original analysis; instead ASR Anxiety (encompassing anxious/depressed problems) was used.

Correlation and Regression Analyses Between TriPM Scale Scores and Concurrent Personality Traits and Behavior

Table 3

Scale	Report Version	Boldness		Disinhibition		Meanness		R <sup>2</sup>
		r	β	r	β	r	β	
<b>Ages 18–20</b>								
<u>Externalizing Domain</u>								
Externalizing Problems	LF	-.16 <sup>†</sup>	-.16 <sup>†</sup>	.61 <sup>***</sup>	.62 <sup>***</sup>	.14	.16	.40 <sup>***</sup>
Reactive Control	O	-.27 <sup>***</sup>	-.28 <sup>***</sup>	-.40 <sup>***</sup>	-.39 <sup>***</sup>	.07	.04	.21 <sup>***</sup>
Sensation Seeking	S	.50 <sup>***</sup>	.56 <sup>***</sup>	.16 <sup>**</sup>	.19 <sup>**</sup>	-.29 <sup>*</sup>	-.35 <sup>**</sup>	.24 <sup>***</sup>
Antisocial Peers	S	-.06	-.05	.13	.13	.55 <sup>***</sup>	.64 <sup>***</sup>	.21 <sup>***</sup>
Substance Use	S	.11	.10	.23 <sup>**</sup>	.23 <sup>**</sup>	-.02	-.07	.06
<u>Internalizing Domain</u>								
Internalizing Problems	LF	-.56 <sup>***</sup>	-.60 <sup>***</sup>	.25 <sup>*</sup>	.28 <sup>**</sup>	-.03	-.06	.29 <sup>***</sup>
Negative Emotionality	O	-.21 <sup>**</sup>	-.21 <sup>**</sup>	.21 <sup>**</sup>	.21 <sup>**</sup>	.10	.12	.08 <sup>**</sup>
<u>Adaptive Functioning</u>								
Mean Adaptive Functioning	S	.31 <sup>***</sup>	.35 <sup>***</sup>	-.16 <sup>*</sup>	-.18 <sup>*</sup>	-.33 <sup>**</sup>	-.32 <sup>*</sup>	.12 <sup>***</sup>
Resiliency	O	.33 <sup>***</sup>	.34 <sup>***</sup>	-.14 <sup>*</sup>	-.15 <sup>*</sup>	-.08	-.09	.09 <sup>***</sup>
Positive Affect	S	.38 <sup>***</sup>	.43 <sup>***</sup>	.07	.09	-.48 <sup>***</sup>	-.58 <sup>***</sup>	.19 <sup>***</sup>
Prosocial Peers	S	.36 <sup>***</sup>	.38 <sup>***</sup>	.07	.08	-.36 <sup>**</sup>	-.43 <sup>*</sup>	.16 <sup>**</sup>

<sup>†</sup>Note.  $p < .10$ ;

\*  $p < .05$ ;

\*\*  $p < .01$ ;

\*\*\*  $p < .001$ .

TriPM= The Triarchic Model of Psychopathy. In the report form column, LF = Latent factor (see Table 1 for specific subscales and report forms for each); O = Observer; S = Self. Both  $r$  values from zero-order correlations and  $\beta$  estimates in regression models that included all TriPM scales as well as age and gender as covariates are presented.

**Table 4**

## Significant Observed Developmental Precursors of the TriPM

<b>Boldness</b>		
<u>Toddlerhood</u>	<u>Childhood</u>	<u>Late Adolescence</u>
Externalizing Problems	Externalizing Problems	Externalizing Problems
<b>Reactive Control (-)</b>	<b>Reactive Control (-)</b>	<b>Sensation Seeking (+)</b>
Internalizing Problems	<b>Internalizing Problems (-)</b>	Antisocial Peers
Negative Emotionality	<b>Negative Emotion (-)</b>	Substance Use
Prosociality	<b>Prosociality (+)</b>	<b>Internalizing Problems (-)</b>
<b>Resiliency (+)</b>	<b>Resiliency (+)</b>	Prosociality
		Positive Affect
		<b>Prosocial Peers (+)</b>
<b>Disinhibition</b>		
<u>Toddlerhood</u>	<u>Childhood</u>	<u>Late Adolescence</u>
Externalizing Problems	Externalizing Problems	<b>Externalizing Problems (+)</b>
<b>Reactive Control (-)</b>	Reactive Control	<b>Sensation Seeking (+)</b>
Internalizing Problems (-)	<b>Internalizing Problems (-)</b>	Antisocial Peers
<b>Negative Emotion (-)</b>	Negative Emotion	<b>Substance Use (+)</b>
Prosociality	Prosociality	Internalizing Problems
<b>Resiliency (+)</b>	Resiliency	<b>Prosociality (-)</b>
		Positive Affect
		Prosocial Peers
<b>Meanness</b>		
<u>Toddlerhood</u>	<u>Childhood</u>	<u>Late Adolescence</u>
Externalizing Problems	Externalizing Problems	<b>Externalizing Problems (+)</b>
Reactive Control	Reactive Control	<b>Sensation Seeking (-)</b>
Internalizing Problems	<b>Internalizing Problems (+)</b>	<b>Antisocial Peers (+)</b>
<b>Negative Emotionality (+)</b>	Negative Emotionality	Substance Use
Prosociality	Prosociality	Internalizing Problems
<b>Resiliency (-)</b>	Resiliency	Prosociality
		<b>Positive Affect (-)</b>
		<b>Prosocial Peers (-)</b>

*Note.* TriPM= The Triarchic Model of Psychopathy. All constructs assessed at any given time period are included in the table, and constructs in bold were significantly associated with the TriPM scale. + indicates a positive relationship between the TriPM scale and construct. - indicates a negative relationship between the TriPM scale and construct.

Correlation and Regression Analyses Between TriPM Scales and Developmental Precursors of Personality Traits and Behavior

Table 5

Scale	Report	Boldness		Disinhibition		Meanness		R <sup>2</sup>
		r	β	r	β	r	β	
<b>Ages 3–5</b>								
<u>Externalizing Domain</u>								
Externalizing Problems	LF	.04	.04	.11	.11	.23 <sup>†</sup>	.23	.14 <sup>***</sup>
Reactive Control	O	-.26 <sup>*</sup>	-.23 <sup>†</sup>	-.18 <sup>†</sup>	-.21 <sup>*</sup>	.03	.13	.10 <sup>†</sup>
<u>Internalizing Domain</u>								
Internalizing Problems	LF	.00	-.01	.08	.09	-.05	-.10	.08 <sup>†</sup>
Negative Emotionality	O	-.22 <sup>*</sup>	-.23 <sup>*</sup>	-.25 <sup>***</sup>	-.27 <sup>**</sup>	.35 <sup>**</sup>	.37	.19 <sup>**</sup>
<u>Adaptive Functioning</u>								
Prosociality	LF	.36	.41	-.26 <sup>***</sup>	-.31	-.04	.18	.30 <sup>*</sup>
Resiliency	O	.29 <sup>***</sup>	.33 <sup>***</sup>	.26 <sup>***</sup>	.26 <sup>**</sup>	-.35	-.29 <sup>*</sup>	.21 <sup>**</sup>
<b>Ages 9–11</b>								
<u>Externalizing Domain</u>								
Externalizing Problems	LF	-.03	-.03	.10	.10	.35 <sup>†</sup>	.37 <sup>†</sup>	.11 <sup>**</sup>
Reactive Control	O	-.25 <sup>**</sup>	-.27 <sup>**</sup>	-.14 <sup>†</sup>	-.13	-.12	-.17	.08 <sup>*</sup>
<u>Internalizing Domain</u>								
Internalizing Problems	LF	-.33 <sup>**</sup>	-.37 <sup>***</sup>	-.22 <sup>*</sup>	-.24 <sup>*</sup>	.43 <sup>**</sup>	.46 <sup>*</sup>	.19 <sup>†</sup>
Negative Emotionality	O	-.34 <sup>***</sup>	-.34 <sup>***</sup>	-.08	-.10	.07	.13	.07 <sup>†</sup>
<u>Adaptive Functioning</u>								
Prosociality	LF	.39 <sup>***</sup>	.43 <sup>***</sup>	-.01	-.02	-.17	-.13	.12 <sup>*</sup>
Resiliency	O	.39 <sup>***</sup>	.39 <sup>***</sup>	.12	.13	.01	-.02	.12 <sup>*</sup>
<b>Ages 15–17</b>								
<u>Externalizing Domain</u>								
Externalizing Problems	LF	.14 <sup>†</sup>	.15	.26 <sup>**</sup>	.27 <sup>***</sup>	.34 <sup>*</sup>	.36 <sup>*</sup>	.13 <sup>**</sup>
Sensation Seeking	S	.44 <sup>***</sup>	.48 <sup>***</sup>	.16 <sup>**</sup>	.18 <sup>**</sup>	-.32 <sup>*</sup>	-.37 <sup>*</sup>	.19 <sup>***</sup>
Antisocial Peers	S	.03	.03	.07	.09	.48 <sup>***</sup>	.50 <sup>**</sup>	.15 <sup>**</sup>

Scale	Report	Boldness		Disinhibition		Meanness		R <sup>2</sup>
		r	β	r	β	r	β	
Substance Use	LF	.14	.13	.23*	.24*	.08	.07	.08
<u>Internalizing Domain</u>								
Internalizing Problems	LF	-.31***	-.33**	.14	.15	.09	.07	.08
<u>Adaptive Functioning</u>								
Prosociality	LF	.05	.05	-.40***	-.41***	-.15	-.15	.17*
Positive Affect	S	.11	.11	-.02	-.01	-.54***	-.63***	.12*
Prosocial Peers	S	.32***	.37***	.12†	.13	-.58***	-.67***	.25**

† Note.  $p < .10$ ;

\*  $p < .05$ ;

\*\*  $p < .01$ ;

\*\*\*  $p < .001$ .

TriPM = The Triarchic Model of Psychopathy. In the report form column, LF = Latent factor (see Table 1 for specific subscales and report forms for each); O = Observer; S = Self. Both  $r$  values from zero-order correlations and  $\beta$  estimates in regression models that included all TriPM scales as well as age and gender as covariates are presented.