The Relationship between Triarchic Factors of Psychopathy and Substance Use,
Internalizing Psychopathology, and Suicidality

by

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Certificate of Approval

This is to certify that the accompanying thesis by Natalie R. Thiel has been accepted in partial fulfillment of the requirements for graduation with Honors in Psychology.

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Abstract

The modern conception of psychopathy was proposed in the early twentieth century as superficial charm concealing interpersonal deficits and behavioral deviance. Two-factor models are often used to characterize psychopathy, but they are limited in recognizing different characteristics' relations to each other. This causes an incomplete understanding of how psychopathy relates to such psychopathological outcomes as internalizing symptoms, suicidality, and substance use. The more recent triarchic model could help explain these relationships by instead using three factors: boldness, meanness, and disinhibition (Patrick, Fowles, & Krueger, 2009). In this study, we investigate the relationship between boldness and disinhibition factors and psychopathological outcomes, such as substance use and suicidality, and the possible moderating role of meanness in these relationships. Measures of triarchic psychopathy, substance use, and internalizing symptoms were administered to 218 undergraduate students in Florida. Analysis yielded significant positive correlations between disinhibition and internalizing symptoms, suicidality, and substance use and between meanness and these three outcome variables. Analysis also yielded significant negative correlations between boldness and these three outcome variables. A moderation model showed a significant effect of meanness on the relationship between boldness and suicidality: increased meanness intensified the protective effects of boldness against suicidality. These results indicate that differences in past studies on the relationship between triarchic psychopathy and certain psychopathologies may be due to differing levels of boldness and meanness in participants. More research is necessary to confirm this conclusion, but this study

represents an important step in clarifying the complexities of psychopathological

outcomes of psychopathy.

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Introduction

According to Hervey Cleckley in his seminal text on psychopathy, *The Mask of Sanity,* literary and historical accounts that reflect the psychopathic personality date as far back as ancient Greece. However, the term psychopath with its modern meaning is relatively new and psychologists and psychiatrists still debate the scope and defining features of psychopathy. Debate over the scope of psychopathy may seem overly taxonomic, but the psychopathological outcomes associated with different definitions of psychology make standardizing and better understanding the psychopathic personality crucial. Experts have proposed several models of psychopathy to attempt to elucidate distinctions within psychopathy, such as varied symptomatology and maladaptive behaviors. However, externalizing and internalizing symptoms have been emphasized differently in each model of psychopathy, and there is minimal representation of internalizing symptoms overall. Better knowledge of both externalizing and internalizing correlates of psychopathy allows for an understanding of psychopathic individuals' propensity for maladaptive behaviors.

The triarchic model could help explain discrepancies in previous models by grouping the symptoms of the disorder into three factors: boldness, meanness, and disinhibition (Patrick et al., 2009). Examining psychopathy in terms of each triarchic factor and their interactions with each other may more fully explain the nature of psychopathy and how it is related to different psychopathological outcomes. We investigate the relationships between the boldness and disinhibition factors and psychopathology diagnostic outcomes— particularly substance use, depression and

anxiety, and suicidality— and the role of the meanness factor in moderating these relationships.

Early Characterization of Psychopathy

The modern conception of psychopathy is shaped by previous characterizations; however, previous characterizations differ in what aspects of psychopathy are considered salient. In *The Mask of Sanity*, first published in 1941, Cleckley popularized the concept of the psychopath and identified three main criteria of psychopathy (mask features, behavioral deviance features, and shallow-deceptive features) drawn from observations of neuropsychiatric inpatients (Cleckley, 1988). The first criterion, mask features, emphasizes superficial charm, an absence of anxiety and delusions, and a low likelihood of suicide. Next, behavioral deviance features are displayed in inadequately-motivated antisocial behavior, poor judgement, and lack of reliability. Finally, shallow-deceptive features are shown in lack of remorse or shame, affective poverty, and egocentricity. Cleckley concluded the most salient feature of psychopathy was the "mask of sanity," the ability to conceal severe underlying disorder with a credible appearance of psychological normality (Cleckley, 1988, p. 368). This early characterization of psychopathy clearly distinguishes between externalizing and internalizing symptoms, stating that psychopaths are noticeably lacking in internalizing symptoms of neuroticism and anxiety. According to Cleckley, the lack of internalizing symptoms present in psychopathy is a key feature of the mask, distinguishing highly psychopathic individuals from other individuals who show externalizing tendencies. Under this description, psychopaths are distinct from the common offender in that they do not often engage in murder or offenses that lead directly to major prison sentences. Cleckley also states that the mask of sanity can allow

psychopaths to be "successful psychopaths," individuals capable of functioning

adaptively within society despite their severe pathology (Cleckley, 1988, p. 268).

Modern Measures and Two-Factor Models

      Two-Factor Model from the Psychopathy Checklist-Revised (PCL-R).

      Factor analysis of the most widely used measure of psychopathy, the PCL-R

(Hare, 1991), commonly groups psychopathic characteristics into two factors and places

a heavy focus on aggressive behavioral deviance in defining psychopathy, contrasting

Cleckley's (1988) emphasis on the psychopath's ability to 'mask' behavioral deviance

features. Factor 1 traits center on interpersonal deficits (i.e. charm and deceitfulness) and

affective deficits (i.e. lack of empathy, callousness, and incapacity for remorse; Hare,

1980). Factor 2 traits focus on antisocial lifestyle (i.e. impulsivity, deviant activities, and

criminal behavior; Hare, 1980). Factor 1 has been associated with emotional detachment;

Factor 2 is associated with substance use, antisocial behavior, and internalizing

symptoms such as neuroticism (Benning, Patrick, Hicks, Blonigen, & Krueger, 2003;

Hare, 1991). Evidence suggests a positive relationship between the lifestyle and

behavioral aspects of psychopathy (e.g., antisocial behavior and alcohol abuse-

dependence), as expressed in Factor 2, and suicidality (Anestis, Bagge, Tull, & Joiner,

2011), whereas evidence shows that affective and interpersonal characteristics of

psychopathy (e.g., shallow affect, remorselessness, and emotional dependence), as

indicated in Factor 1, have a weak or nonexistent relationship with suicidality (Douglas,

Herbozo, Poythress, Belfrage, & Edens, 2006). Factor 1 focuses primarily on

externalizing symptoms, whereas Factor 2 indexes some internalizing symptoms such as neuroticism, which may hold relevance to suicidality.

Two-Factor Model from the Psychopathic Personality Inventory (PPI).

The two-factor model derived from the PCL-R is useful in analyzing populations where aggressive deviance is prevalent, such as in prison settings. However, Alterman, Cacciola, and Rutherford (1993) note that there may be limitations to the PCL-R in assessing psychopathy in non-prison populations because individuals in the general community typically lack psychiatric and criminal records. The Psychopathic Personality Inventory (PPI) improves on limitations of the PCL-R in the general population and has shown to be capable of assessing psychopathic tendencies in nonclinical samples (Lilienfeld & Andrews, 1996). The PPI is a comprehensive self-report measure of personality characteristics of psychopathy that commonly yields two factors: fearless dominance and impulsive antisociality (Lilienfeld & Andrews, 1996). The characteristics of charm and callousness indicated in Factor 1 of the PCL-R are expressed in two factor models based on the PPI as fearless dominance. Fearless dominance has been negatively correlated with neuroticism and depression (Ross, Benning, Patrick, Thompson, & Thurston, 2009) and has shown to be a protective factor against various internalizing symptoms, particularly personality factors in anxiety and fearfulness (Benning, Patrick, Salekin, & Leistico, 2005). Factor 2 traits of impulsivity and substance use are expressed in PPI-based models as the impulsive antisociality factor. Impulsive antisociality has shown to be significantly positively correlated with neuroticism and depression (Ross et al., 2009). The PPI assesses traits encompassed by Factor 1 of the PCL-R (i.e. high dominance, venturesomeness) that would be a protective factor against suicidality and

behaviors encompassed by Factor 2 (i.e. alcohol and drug abuse-dependence) that would

be a risk factor for suicidality (Benning et al., 2003).

Limits of Two-Factor Models

Consistent with Cleckley's original model, suicidality is noticeably absent in the

PPI fearless dominance factor, likely due to traits of high-stress tolerance and callousness

(Verona, Hicks, & Patrick, 2005; Anestis et al., 2016). Past research has shown that

psychopathy is related to lower levels of neuroticism (Benning et al., 2003; Patrick, 2018)

and decreased risk for suicidality (Verona et al., 2005; Patrick, 2018). However, these

theories and findings contradict research indicating that the externalizing

psychopathologies of antisocial lifestyle in the two factor-model are related to increased

suicidality (Anestis et al., 2011). Additionally, past studies have shown that psychopaths

may display severe impulsive-externalizing symptoms without comorbid internalizing

psychopathology (Ross et al., 2009). These findings are at odds with findings indicating

that externalizing symptomatology is associated with *increased* levels of internalizing

symptoms (Pesenti-Gritti et al., 2008). Further research is needed to resolve the

discrepancy between findings that indicate a positive relationship between externalizing

and internalizing symptoms and findings that show there is a lack of internalizing

symptoms in psychopathy. Cleckley's description, PCL-R-based models, and PPI-based

models all lack an understanding of the internalizing symptoms of psychopathy that

would explain differing propensities to suicidality.

It is important to note that some studies have proposed three- and four-factor

models derived from the PCL-R and PPI. The three-factor model (Cooke & Michie,

2001) expands Factor 1 into two factors (affective deficits and impression management), thereby giving more importance to aspects similar to Cleckley's mask features than the two-factor model. The four-factor model (Vitacco, Neumann, & Jackson, 2005) is similar to the three-factor model but also emphasizes violence and antisocial behavioral patterns that go beyond impulsivity. These models may better describe psychopathy than the two-factor model, however, they still fail to explain many inconsistencies in the clinical outcomes of psychopathy and exclude some traits found in psychopathy that could be protective against internalizing symptoms.

The Triarchic Model

The triarchic model (Patrick et al., 2009) may provide better explanations for the relationships between aspects of the psychopathic personality and externalizing issues and can help clarify discrepancies in the research on psychopathy and suicidality. Previous conceptualizations of psychopathy such as the two-factor model derived from the PCL-R focus heavily on deviant behavior and aggressiveness, effectively ignoring the mask traits noted in Cleckley's landmark characterization of psychopathy. Models that focus on deviance are useful in forensic assessments, but their lack of consideration of positive adjustment in psychopathy limits the scope of these models and does not account for successful psychopaths and other psychopathic phenotypes (Skeem, Polaschek, Patrick, & Lilienfeld, 2011). Because previous research has shown that psychopathy includes traits outside of the violence many associate with psychopathy (Benning et al., 2005; Lilienfeld, Latzman, Watts, Smith, & Dutton, 2014; Lilienfeld et al., 2012), a model with a larger scope is required for a more nuanced understanding of psychopathy.

The triarchic model of psychology and its corresponding inventory, the TriPM, provides this larger scope. Instead of grouping traits into the interpersonal deficit and antisocial lifestyle factors of the two-factor model, the triarchic model groups characteristics into three factors: boldness, disinhibition, and meanness (Patrick et al., 2009). Meanness and disinhibition reflect Factor 1 and 2 (meanness = 1, disinhibition = 2) of the model developed from the PCL-R; boldness captures the positive adjustment put forward by Cleckley and tapped by fearless dominance in the PPI. This model resolves some of the tension between Cleckley's original description of the psychopath and more recent, deviance-centered models of psychopathy by accounting for the interpersonal deficits and antisocial lifestyle characteristic of the disorder as well as mask aspects that could be considered more positive.

Disinhibition.

Disinhibition describes a general deficiency in impulse control that includes difficulty regulating emotions and actions, lack of planning, and inability to delay gratification (Patrick et al., 2009). This lack of impulse control is related to behaviors such as angry-reactive aggression, sensation seeking, impatience, and impulsive actions (Krueger et al., 2007, Patrick 2009). Dotterer et al. (2017) found that triarchic disinhibition is significantly correlated to several more specific externalizing problems, such as rule-breaking, attention problems, and drug and alcohol use problems. These characteristics and behaviors grouped under disinhibition correspond well to the antisocial deviance factor of the PCL-R (Patrick, Hicks, Krueger, & Lang, 2005) and the impulsive antisociality factor of the PPI (Blonigen, Hicks, Krueger, Patrick, & Iacono, 2005), indicating that externalizing psychopathology is a key component of psychopathy.

The strong connection between externalizing behaviors and psychopathy via disinhibition is consistent with models of psychopathy influenced by the heavy use of criminal populations in studies of psychopathy and the popular perception of psychopaths as violent and desire-driven. However, disinhibition is also associated with internalizing symptoms less commonly connected to psychopathy, such as anxiety, depression, and social withdrawal (Dotterer et al., 2017). The connection between disinhibition and both externalizing and internalizing symptoms helps clarify why analyses of psychopathy through different models come to varied conclusions on psychopathic behavior. How much a model taps disinhibition influences how salient externalizing and internalizing symptoms appear. The disinhibition measure is associated with elevated neuroticism and anxiety, which are in turn associated with suicide risk (Brezo, Paris, & Turecki, 2006). Research has shown elevated suicide risk in individuals with reactive aggressiveness and/or criminal behavior, as contained in the disinhibition factor (Bukstein et al., 1993; Virkkunen, 1979). Further, psychopathic individuals high in Factor 2 traits of impulsivity and antisociality — traits emphasized under disinhibition in the triarchic model — are at a uniquely elevated risk for suicide (Anestis et al., 2016; Verona, Patrick, & Joiner, 2001).

Boldness.

Boldness describes a combination of fearlessness, social potency, and low neuroticism (Patrick et al., 2009) that leads to behavioral characteristics such as low reactivity to stress (Benning et al., 2003), persuasiveness (Patrick et al., 2009), and emotional resilience (Lilienfeld et al., 2016). Boldness addresses Cleckley's theory of the successful psychopath, capturing the charm and social potency of the psychopathic

personality (Cleckley, 1988). Boldness is important to the understanding of psychopathy in non-criminal populations because it correlates to positive social adjustment and the general population is likely to have more successful psychopaths than prisons do (Cleckley, 1988). In terms of psychopathology, boldness correlates negatively with internalizing symptoms, including neuroticism, and is associated with low anxiety (Latzman et al., 2018). Boldness is directly drawn from the PPI-I and relates positively to narcissism (Benning et al., 2005; Patrick, 2009). Because pathological narcissism is associated with anxiety and suicidal tendencies (Harrop et al., 2017; Fowles, 1980) and pathologically narcissistic individuals are uniquely predisposed to neuroticism because of significant regulatory deficits and maladaptive coping skills for disappointments and threats to their self-image, there would be reason to expect that high boldness would be associated with suicidality (Pincus et al., 2009). However, emotional resilience and high stress tolerance in the boldness factor have been shown to be a protective factor against suicidality (Benning et al., 2005). Moreover, boldness shows no internalizing symptoms of neuroticism and anxiety which would normally predict suicidality (Latzman et al., 2018).

Meanness.

Meanness describes a cluster of traits that includes lack of empathy, exploitation of others, and satisfaction from instrumental cruelty to others. Meanness is typically shown behaviorally through a lack of close attachments, disregard for authority, exploitation and manipulation of others, conceit, and predatory aggression (Patrick et al., 2009). Meanness is fundamental to how psychopathy is measured in criminal populations, in part because meanness is associated with the aggressive deviancy

characteristic of psychopathy in criminal samples (Patrick et al., 2009). However, recent research on meanness indicates that meanness can be examined independently of aggressive deviance (Krueger et al., 2007). Psychopathy self-report scales developed by Krueger et al. (2007) yielded a superordinate factor of externalization that constructs related to meanness all loaded onto significantly. But these scales also yielded a subordinate factor that included callousness, sensation-seeking, and deceit. This finding indicates that the construct of meanness is distinct from aggressive behavior, reflects an underlying lack of empathy and predisposition to sensation-seeking, and can be successfully identified in the general population. Meanness is associated with externalizing psychopathology, but to a lesser extent than disinhibition (Dotterer et al., 2017). Unlike disinhibition and boldness, meanness does not appear to have a consistent association with internalizing psychopathology. Mixed associations between meanness and internalizing symptoms such as suicidality have been reported, but no conclusive relationship has emerged (Donnellan & Burt, 2016; Dotterer et al., 2017; Sica et al., 2015).

Interactions between triarchic factors

Past research exists on the relationship of triarchic factors in general to psychopathology. However, little is known about how the interactions between these factors may relate to psychopathology. The combination of these factors is key, because disinhibition without meanness is difficult to distinguish from antisocial personality disorder, boldness without meanness represents socially adaptive traits, and boldness and disinhibition show no significant correlation with each other in either undergraduates or

community adults (Latzman et al., 2018; Patrick et al., 2009). Meanness appears to be the connection between boldness and disinhibition, showing positive correlation to each (Patrick et al., 2009). Therefore, it is possible that meanness plays a particularly important role in the triarchic model and influences how the factors interact.

Current Study

The first aim of the current study is to examine the main effects of each triarchic factor on general internalizing symptoms, suicidality, and substance use. Based on past research indicating that high scores on Factor 2 (antisocial lifestyle) of the PCL-R, which corresponds strongly to disinhibition, are associated with increased rates of suicide, internalizing symptoms, and substance use, we hypothesized that increased disinhibition (when controlling for meanness) would predict higher levels of all three psychopathological outcomes measured. Because of findings that PPI fearless dominance has shown to be protective against internalizing tendencies and boldness was developed from fearless dominance, we hypothesized that increased boldness (when controlling for meanness) would predict lower levels of internalizing symptoms and suicidality. We anticipated no relationship between boldness and substance use because boldness within the theoretical framework of the triarchic model does not encompass traits relevant to externalizing behaviors. Meanness corresponds to Factor 1 (callous-unemotional) psychopathy and the callous aggression subfactor of the Externalizing Spectrum Inventory (ESI; Krueger, Markon, Patrick, Benning, & Kramer, 2007). Since Factor 1 and ESI callous aggression have shown no clear relationship to internalizing or

externalizing symptoms in past research, our investigation of the relationship between meanness and each of the outcome variables is exploratory.

The second aim of the current study is to explore the relations between boldness and disinhibition and internalizing, suicidality, and substance use as a function of meanness. Because the influence of meanness combined with other triarchic factors on diagnostic outcomes has not been previously examined, and the effects of meanness on both externalizing and internalizing are inconclusive, this research question is exploratory. However, because meanness is the factor that connects boldness and disinhibition within the diagnosis of psychopathy, it may play an important role in these relationships.

Methods

Participants

Participants were undergraduate students enrolled at Florida State University recruited based on their scores on the TriPM. Participants from the highest and lowest 20 percent of scores for boldness and disinhibition were recruited for extreme-groups analysis, along with a sample of participants from the middle 60 percent of scores. Participants who had significant visual or hearing impairment, had a history of head injury that may make testing unadvisable or physiological response data uninterpretable, or were taking prescription medication that may render physiological response data uninterpretable were excluded from the sample. The final sample consisted of 218 participants age 18 to 47 years old ($M = 25.27$, $SD = 4.22$), 49.3% male and 49.8% female, and 79% Caucasian, 12.4% Black/African American, 0.5% American Indian/Alaskan Native, and 5.5% Asian.

Materials

Participants completed a number of personality, externalizing behavior, internalizing behavior, and other inventories, including the Triarchic Inventory (TriPM), the Inventory of Depression and Anxiety Symptoms, and the 100-item version of the Externalizing Spectrum Inventory.

Triarchic Psychopathy Measure (TriPM).

The TriPM is a 58-item self-report inventory consisting of a 19-item boldness scale, a 20-item disinhibition scale, and a 19-item meanness scale. The TriPM asks

participants to rate how accurate each item is for them on a four-item Likert scale (*false, somewhat false, somewhat true, true*). The boldness subscale of the TriPM was developed from Factor 1 of the PPI and the disinhibition and meanness scales were developed from the Externalizing Spectrum Inventory (Hall et al., 2014). According to past evaluations (Evans & Tully, 2016; Marion et al., 2013; Sellbom & Phillips, 2013; Stanley, Wygant, & Sellbom, 2013), the TriPM shows strong concurrent and content validity, incremental validity, and internal consistency. The triarchic scales are moderately or strongly associated with the PPI, Self-Report Psychopathy scale-III, and the Youth Psychopathic Traits Inventory (Evans & Tully, 2016). Factor analysis by Marion et al. (2013) on the TriPM, LSRP, and PPI also yielded a 3-factor model consisting of disinhibitory and impulsive personality, mean or cold-hearted interpersonal style, and bold and fearless personality, supporting the three domains of the triarchic model and the design of the TriPM. A study by Stanley, Wygant, and Sellbom (2013) also showed that the TriPM adds power beyond the PPI to the prediction of psychopathic criterion measures. Finally, Cronbach's α for boldness, meanness, and disinhibition have been measured in past studies at .77-.89, .88-.90, and .84-.89, respectively (Sellbom & Phillips, 2013; Stanley et al., 2013).

The TriPM gives scores for each factor and for total triarchic psychopathy. We used only the individual scales because subscale scores were analyzed in terms of other subscale scores, not in terms of overall psychopathy.

Inventory of Depression and Anxiety Symptoms (IDAS).

The IDAS (Watson et al., 2007) is a self-report 180-item inventory with two broader scales for General Depression and Dysphoria, developed from conducting

principal factor analyses on college students, psychiatric patients, and community adults. It has 10 specific symptom subscales (i.e. Suicidality, Lassitude, Insomnia, Appetite Loss, Appetite Gain, Ill Temper, Well-Being, Panic, Social Anxiety, and Traumatic Intrusions) developed to extend upon previous models' validity in measuring depression and anxiety. In relation to other self-report and interview-based measures for depression and anxiety, IDAS shows strong short-term stability, excellent concurrent validity, and good discriminant validity (Watson et al., 2007). Cronbach's α had median value of .82 across all IDAS scales, representing strong internal consistency. In terms of concurrent validity, the IDAS correlates strongly with the BDI-II (i.e. General Depression scale $r =$ .83; and Dysphoria $r = .81$).

In this study we focus on general internalizing symptoms, so we used an IDAS composite score for our analyses. The composite was created by combining the dysphoria, suicidality, lassitude, insomnia, appetite loss, appetite gain, ill temper, well-being, panic, social anxiety, and traumatic intrusions subscales.

100-item Externalizing Spectrum Inventory (EXT-100).

The Externalizing Spectrum Inventory (ESI) is a 415-item self-report measure of externalizing symptoms (Krueger et al., 2007). Because this inventory is too long to be practical in many studies, several shortened versions have been developed. We used the 100-item version of this measure created by Hall, Bernat, and Patrick (2007). According to Hall et al., scores on the 100-item version had a correlation of $r = .98$ with scores on the full inventory. A separate evaluation of the 100-item ESI showed good internal consistency, with $α = .95$ (Blonigen et al., 2011). The 100-item ESI also has high

construct validity, showing strong positive associations with externalizing symptomatology such as antisocial behavior and substance use (Hall et al., 2007).

For the purposes of our study, we examined only the alcohol problems and use, drug problems and use, and marijuana problems and use subscales of the inventory. A composite score was created by combining these subscales and analyses were drawn from the composite.

Procedure

This study is based on data from a larger project which includes physiological measurements and genetic analysis. The data relevant to our study are drawn from the questionnaires only.

Data collection was conducted in two parts within a single-day session, with the first part lasting about two hours and 30 minutes and the second about two hours. Participants completed a laboratory assessment in which their physiological responses were recorded during a series of seven task procedures. During the sensor hook-up period preceding the physiological assessment, participants completed a series of questionnaires assessing personality traits, including suicidality and the triarchic questionnaire, and life experiences. After physiological testing concluded, a DNA sample was collected from each participant in the form of a saliva sample. Following this step, participants completed two video-recorded clinical interviews.

Results

Simple correlations were obtained for the relationship between each triarchic factor and each outcome variable (IDAS composite score, IDAS suicidality, and substance use). We examined meanness as a moderator in the relationships between the other two triarchic factors (boldness and disinhibition) and the outcome variables. The moderation analysis was conducted using the Hayes PROCESS macro for SPSS.

Simple correlations between factors and outcomes

Results of the Pearson correlation showed that there was a significant positive association between disinhibition and IDAS composite score, $r(206) = .34$, $p < .001$, IDAS suicidality, ($r(210) = .18$, $p = .008$, and substance use, $r(215) = .61$, $p < .001$. There was also a significant positive association between meanness and IDAS composite score, $r(206) = .28$, $p < .001$, IDAS suicidality, $r(209) = .20$, $p = .004$, and substance use, $r(215) = .27$, $p < .001$. There was a significant negative association between boldness and IDAS composite score, $r(203) = -.20$, $p = .005$, IDAS suicidality, $r(207) = -.18$, $p = .008$, and substance use, $r(212) = -.17$, $p = .015$.

IDAS internalizing

The model including disinhibition, meanness, and the interaction between meanness and disinhibition accounted for 14% of the variance in IDAS composite scores, $F(3, 202) = 10.92$, $p < .001$, $R^2 = .14$. The regression analysis showed a positive relationship between disinhibition and total IDAS, $b = .723$, $t(202) = 3.34$, $p = .001$, and a positive relationship between meanness and total IDAS, $b = .542$, $t(202) = 2.20$, $p = .029$.

The interaction term did not show any significant effect on the relationship between disinhibition and total IDAS.

The model including boldness, meanness, and the interaction between meanness and boldness accounted for 16% of the variance in total IDAS, $F(3, 199) = 12.89$, $p < .001$, $R^2 = .16$. The regression analysis showed a negative relationship between boldness and total IDAS, $b = -.734$, $t(199) = -4.22$, $p < .001$, and a positive relationship between meanness and total IDAS, $b = .389$, $t(205) = 2.06$, $p = .040$. The interaction term between meanness and boldness showed an effect of meanness on the relationship between boldness and total IDAS approaching, but not reaching, significance, $b = -2.06$, $t(199) = -1.70$, $p = .091$.

IDAS suicidality

The model including disinhibition, meanness, and the interaction between disinhibition and meanness accounted for 6% of the variance in suicidality, $F(3, 205) = 4.14$, $p = .007$, $R^2 = .06$. The regression analysis showed a positive relationship between meanness and suicidality, $b = .389$, $t(205) = 2.06$, $p = .040$, and a positive relationship approaching significance between disinhibition and suicidality, $b = .31$, $t(3, 202) = 1.90$, $p = 0.59$. The interaction term was not significant.

The model including boldness, meanness, and the interaction between boldness and meanness accounted for 12% of the variance in suicidality, $F(3, 202) = 9.05$, $p < .001$, $R^2 = .12$. The regression analysis of boldness on suicidality showed a negative relationship between boldness and suicidality, $b = -.481$, $t(202) = -3.69$, $p < .001$, and a positive relationship between meanness and suicidality, $b = .689$, $t(202) = 4.03$, $p < .001$. The interaction term between meanness and boldness showed a significant moderating

effect of meanness on the relationship between boldness and suicidality: for low meanness (1 SD below mean value), $b = -.165$, $t(202) = -.961$, $p = .338$; for mean meanness, $b = -.481$, $t(202) = -3.686$, $p < .001$; and for high meanness (1 SD above mean), $b = -.798$, $t(202) = -4.192$, $p < .001$ (Figure 1).

EXT-100 substance use

The model including disinhibition, meanness, and the interaction between disinhibition and meanness accounted for 37% of the variance in substance use, $F(3, 211)$ $= 41.90$, $p < .001$, $R^2 = .37$. The regression analysis of disinhibition on substance use showed a positive relationship between disinhibition and substance use, $b = 2.51$, $t(211)$ $= 9.74$, $p < .001$, and no significant effect of meanness on substance use. The interaction term was not significant.

The model including boldness, meanness, and the interaction between boldness and meanness accounted for 8% of the variance in substance use, $F(3, 208) = 6.21$, p $< .001$, $R^2 = .08$. The regression analysis of boldness on substance use showed no significant effect of boldness on substance use and a positive relationship between meanness and substance use, $b = 1.12$, $t(208) = 3.41$, $p < .001$. The interaction term was not significant.

Discussion

In our correlation analyses, we found that, consistent with our hypotheses, disinhibition was significantly positively correlated with general internalizing symptoms, suicidality, and substance use. The correlations between boldness and the IDAS measures (general and suicidality) were also consistent with our hypotheses, showing significant negative relationships. We did not expect to find a significant relationship between boldness and substance use, but boldness and substance use were significantly correlated. In the final correlation analysis, we found significant positive correlations between meanness and all three outcome variables. These results are valuable in contributing to the growing body of literature concerning the clinical outcomes of psychopathy. However, the purpose of this study is to examine the relationship between each factor *alone* and the clinical outcomes and to investigate the possible role of meanness as a moderator in these relationships, so this discussion will focus on the results of the moderation analyses.

The current study's first aim was to examine the triarchic model factors' relations to suicidality and general internalizing symptoms as measured by the IDAS. Previous research has shown that high traits in impulsivity are correlated with internalized symptoms of depression and suicidality (Anestis et al., 2016; Ross et al., 2009), but our findings did not reach significance for the relationship between disinhibition and suicidality ($p = .059$). Their lack of significance may be explained by research showing that the antisocial dimension of psychopathy, and not the impulsive dimension, is related to suicidality (Swogger, Conner, Meldrum, & Caine, 2009). Next, our study found that

disinhibition was positively correlated with general internalizing symptoms. These findings are consistent with previous research showing that disinhibition is related to internalizing symptoms which are less commonly related to psychopathy, such as depression and anxiety (Dotterer et al., 2017). Disinhibition was strongly positively correlated with substance use, where the moderation model accounted for 37% of the variance in substance use. These findings support previous research that shows impulsiveness is significantly correlated with substance use (Krueger et al., 2007) and significantly contributes to the development of substance use (Dawe & Loxton, 2004).

In support of our hypothesis we found that boldness was negatively correlated with suicidality. This aligns with previous research showing that characteristics of emotional resilience and high stress tolerance in the boldness factor serve as protective factors against suicidality (Benning et al., 2005). Moreover, we found that boldness was negatively correlated with general internalizing symptoms. These findings are in alignment with previous research showing that boldness has a negative correlation with internalized symptoms that normally predict suicidality such as depression or anxiety (Latzman et al., 2018). The results for boldness align with Cleckley's notion of positive adjustment which predicts reduced incidence of internalizing symptoms and suicidal behavior (Patrick et al., 2009). These findings are captured in Cleckley's idea of the successful psychopath who is capable of concealing severe underlying disorder to function adaptively in society. In this way, individuals high in boldness are distinct from the common offender and those suffering from psychological disorder in that they engage in destructive behavior without experiencing the associated internalized symptoms (e.g., suicidality and depression and anxiety).

Because previous research has not shown a clear relationship between meanness and suicidality or internalizing symptoms, our research question on meanness was exploratory. Our results show meanness is positively correlated with suicidality. This might be explained by research showing that the antisocial lifestyle traits of psychopathy indexed by the meanness factor are positively correlated with suicidality (Verona et al., 2005). Further, our study found that meanness is positively correlated with general internalizing symptoms. These findings expand on a previous lack of conclusive findings for meanness where there were mixed associations between meanness and internalizing symptoms (Donnellan & Burt, 2016; Dotterer et al., 2017; Sica et al., 2015). Finally, our findings show meanness is positively correlated with substance use.

The current study's second aim was to examine how the triarchic factors of boldness and disinhibition relate to outcomes in substance use, suicidality, and internalizing symptoms as a function of meanness. Our exploratory research in meanness found significant results for the boldness-meanness interaction with suicidality. At low levels of meanness, the effect of meanness on the boldness-suicidality relationship is not significant, so low meanness does not appear to modulate the protective effect boldness has against suicidality. At moderate levels of meanness, the coefficient becomes larger and the value becomes significant, and at high levels of meanness, the coefficient increases again and remains significant. This indicates that meanness is acting as a moderator on the relationship between boldness and suicidality whereby meanness intensifies the protective effect of boldness against suicidality. Furthermore, our findings show results approaching significance for the relationship between boldness and meanness and general internalizing symptoms. These results were not significant,

however, they show a possible moderating role of meanness on the protective effect of boldness against internalizing symptoms that mirrors the effect meanness shows on boldness and suicidality. That is, as meanness increases, the negative relationship between boldness and internalizing symptoms may become more negative. This could indicate that meanness enhances the protective effect of boldness against not only the specific internalizing symptom of suicidality but also against internalizing tendencies in general.

This moderating effect seems to conflict with our results showing a positive correlation between meanness and IDAS suicidality and composite score. If the antisocial lifestyle aspects of the meanness factor contribute to increased internalizing symptoms, what could account for a seemingly opposing effect where meanness enhances boldness' protective effects? Because findings on the effects of meanness have been so mixed, past research does not provide a clear explanation for why this might be. However, one possible explanation becomes more apparent if we look at boldness as moderating meanness instead of the other way around as we initially theorized. One pathway through which the seemingly conflicting results for meanness in this study could be resolved is the antisocial lifestyle aspects of meanness. In a low-boldness individual, the antisocial lifestyle aspects of meanness may be leading to internalizing symptoms via mechanisms such as a lack of positive engagement with others or thwarted belongingness (Anestis et al., 2016). However, in a high-boldness individual, the link between antisocial lifestyle and internalizing symptoms could be weakened by the emotional resilience involved in boldness. This theory still does not offer a rationale for why the combination of meanness and boldness would be more intensely protective than boldness alone, but it could help us

understand why meanness' correlates could change when it is combined with boldness. More research in this area, particularly research that probes the interaction between meanness and boldness, is clearly needed.

Limitations

The TriPM provides relevant nuance to the manifestation of different psychopathic characteristics, but it is limited in its scope as a self-report measure. The TriPM results may be less accurate due to social desirability bias occurring in participant's responses. For example, when responding to items such as "I've injured people to see them in pain," participants may have been less honest in a desire to be viewed favorably by others. Because the current study only used the TriPM for operationalizing participants' psychopathic tendencies, our results may be more limited by the effects of social desirability bias than if we had combined this with another non-self-report measure such as the PCL-R. Further, because all measures used in the current study were self-report, our findings may be especially limited by participants' response bias or lack of insight. Psychopathic individuals tend to experience difficulty in having insight into their own psychological problems (Patrick, 2018) and this may undermine the generalizability of our results.

One other limitation to our study may come from participant fatigue as a result of the extensive testing period, which was 4.5 hours in a single day session. This extensive testing period may have caused participant's responses to be less accurate for the measures administered later in the testing period.

One final limitation was that our measures for suicidality and substance use were subscales of other measures, causing them to be very short questionnaires and potentially

less accurate in outcomes. Our measure for suicidality was a subscale of the IDAS measure. Our measure for substance use was a subscale of the EXT-100. However, using scales specifically devoted to suicidality and substance use would likely produce more accurate and detailed results.

Future research

The TriPM may serve well in future research in concert with other measures of psychopathy such as the PCL-R. As our findings indicate, the TriPM provides nuance given by the triarchic factors and their interactions which are undetected by other measures. For example, the positive adjustment features of psychopathy emphasized by Cleckley (e.g., absence of psychotic symptoms; lack of anxiety or suicidality) are weakly represented in the PCL-R (Patrick et al., 2009). The triarchic model expands on the PCL-R by introducing the effect of positive adjustment as expressed by the boldness factor. The TriPM thus provides insight into how the boldness factor may serve as a protective factor against suicidality and internalized symptoms.

Future research should also continue to expand on and explore the interaction between meanness and boldness. Our study indicates the relevance of this interaction in predicting outcomes for suicidality and potentially for substance use (i.e. our study found an interaction approaching significance) and thus pertains to a deeper understanding of psychopathy. Because previous research has provided mixed findings on the role of meanness, the interaction found in the current study is difficult to understand. Further, it is unclear why meanness seemed to enhance the protective effect of boldness in our study. Future research should continue to investigate the interaction between meanness and boldness and should probe the moderating role played by meanness and the influence

of boldness as a protective factor to improve understanding of this interaction between triarchic factors.

Conclusions

Overall, results from our study support past findings that show a positive correlation between disinhibition and both internalizing symptoms and substance use and a negative correlation between boldness and internalizing psychopathology. More importantly, this study also emphasizes the usefulness of the triarchic model of psychopathy while revealing aspects of the model that require further research. The interaction we found between meanness and boldness indicates that while past research on meanness may not show as clean a relationship to psychopathological outcomes as boldness and disinhibition, it has the potential to affect these relationships. Each individual factor does not generate the psychopathic phenotype and the phenotype is changed by the interplay of the factors. When we exclude factors or do not separate the factors, we lose crucial information about the psychopathic personality. Therefore, without looking at each factor and its interaction with other factors, we cannot fully understand the scope of psychopathy and its outcomes.

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Tables and Figures

Table 1

Simple Correlations between Triarchic Factors and Clinical Outcomes

Factor	Outcome	*r*	*p*	*N*
Disinhibition	General internalizing	.34	< .001	206
	Suicidality	.18	.008	210
	Substance use	.61	< .001	215
Boldness	General internalizing	-.20	.005	203
	Suicidality	-.18	.008	207
	Substance use	-.17	.015	212
Meanness	General internalizing	.28	< .001	206
	Suicidality	.20	.004	209
	Substance use	.27	< .001	215

Table 2

Moderation Model for Meanness, Disinhibition, and Outcomes

Predictor	Outcome	β	*SE*	*t*	*p*	LLCI 95%	ULCI 95%
Disinhibition	General internalizing	0.72	0.22	3.34	.001	0.30	1.15
Meanness		0.54	0.25	2.20	.029	0.06	1.03
Disinhibition* Meanness		0.77	1.10	0.70	.484	-1.39	2.93
Disinhibition	Suicidality	0.31	0.17	1.90	.059	-0.01	.64
Meanness		0.39	0.19	2.06	.040	0.02	0.76
Disinhibition* Meanness		-0.97	0.84	-1.16	.249	-2.62	0.68
Disinhibition	Substance use	2.51	0.26	9.74	< .001	2.00	3.01
Meanness		0.02	0.29	0.06	.953	-3.02	2.08
Disinhibition* Meanness		-0.47	1.29	-0.36	.719	-3.02	2.08

Table 3

Moderation Model for Meanness, Boldness, and Outcomes

Predictor	Outcome	β	SE	t	p	LLCI 95%	ULCI 95%
Boldness	General Internalizing	-0.73	0.17	-4.22	< .001	-1.08	-0.39
Meanness		1.23	0.23	5.38	< .001	0.78	1.68
Boldness* Meanness		-2.06	1.21	-1.70	.091	-4.46	0.33
Boldness	Suicidality	-0.48	0.13	-3.69	< .001	-0.74	-0.22
Meanness		0.69	0.17	4.03	< .001	0.35	1.03
Boldness* Meanness		-2.30	0.92	-2.52	.013	-4.11	-0.50
Boldness	Substance use	0.44	0.25	1.74	.083	-0.06	0.93
Meanness		1.12	0.33	3.41	< .001	0.47	1.77
Boldness* Meanness		.42	1.76	.24	.813	-3.06	3.90
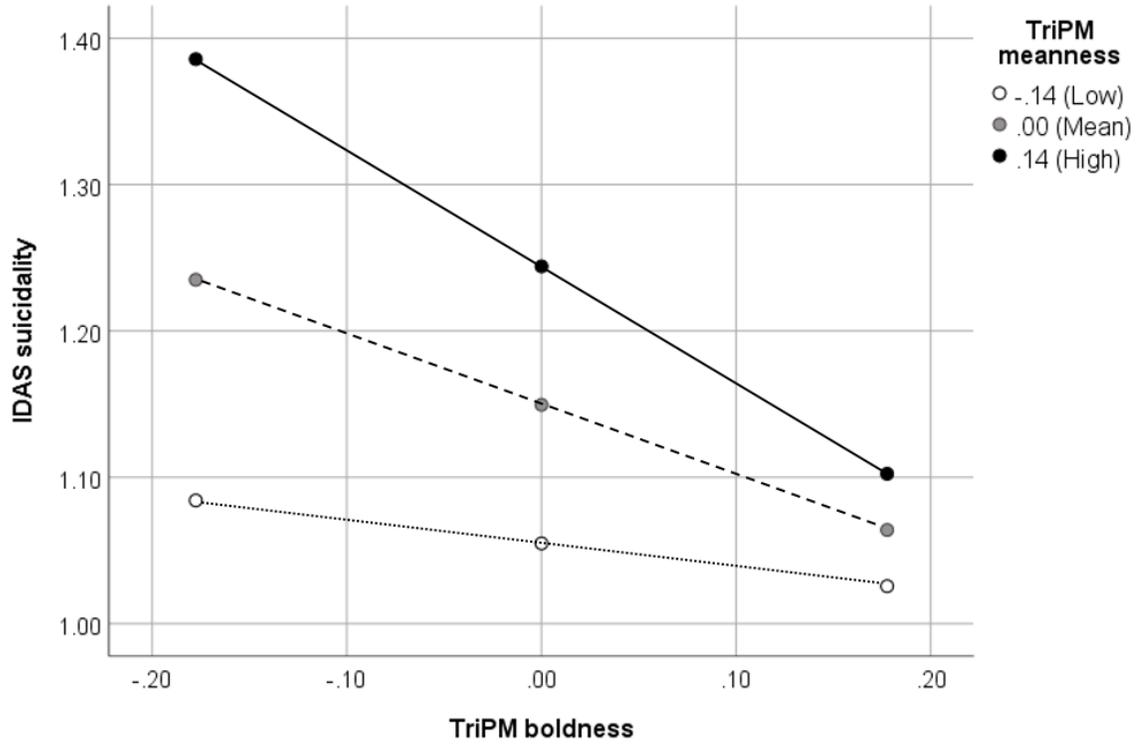
Figure 1. Meanness as a moderator of the relationship between boldness and suicidality.

As the level of meanness increases, the relationship between boldness and suicidality

becomes more negative.