ASSOCIATIONS AMONG THE TRIARCHIC PSYCHOPATHIC CONSTRUCTS, FIVE-FACTOR MODEL OF PERSONALITY, NARCISSISM, DISINHIBITION, AND SUBSTANCE USE IN COLLEGE STUDENTS

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By

Kristen A. Kemp

Director: Dr. Kia Asberg
Associate Professor of Psychology
Psychology Department

Committee Members: Dr. David McCord, Psychology
Dr. Erin Myers, Psychology

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ABSTRACT

ASSOCIATIONS AMONG THE TRIARCHIC PSYCHOPATHIC CONSTRUCTS, FIVE-FACTOR MODEL OF PERSONALITY, NARCISSISM, DISINHIBITION, AND SUBSTANCE USE IN COLLEGE STUDENTS

Kristen Amanda Kemp

Western Carolina University (February 2016)

Director: Dr. Kia Asberg

The term "psychopathy" has had a controversial past with varying conceptualizations and definitions. Presently, psychopathy is "considered to entail persistent behavioral deviancy in the company of emotional-interpersonal detachment" (Patrick, 2010, p. 2). To explain psychopathy, Patrick (2010) formed the Triarchic Model of psychopathy, which divides psychopathy into three phenotypic constructs: disinhibition, boldness, and meanness. Disinhibition is explained by having a lack of impulse control, being irresponsible, and a dysregulation of emotions. Boldness is explained by social dominance, "high social efficacy, emotional resilience, [and] low stress reactivity" (p.3). Lastly, meanness is explained by deficiencies in empathy, being callous, and lack of attachment to others (Patrick, Fowles, & Krueger, 2009). In addition, the triarchic model of psychopathy has been conceptualized using the FFM in hopes to elicit the distinction between normal personality and psychopathy. Moreover, certain psychopathic (i.e., disinhibition and meanness) and personality traits (i.e., Extraversion, Agreeableness, and Conscientiousness) are related to substance misuse. This is of particular relevance to the present study, especially in lieu

of the fact that substance use on college campuses is prevalent, and on the rise. College students could engage in substance use due to sensation-seeking tendencies, or personality characteristics associated with disinhibition (Magid, MacLean, & Colder, 2007; Patrick et al., 2009). For example, the combination of certain psychopathic traits (i.e., elevated disinhibition and meanness) may predict more adverse substance use consequences (Patrick et al., 2009), but this link has not received much attention in non-clinical or non-incarcerated samples, thus it warrants further study. Furthermore, the extent to which pathological narcissism and psychopathy represent different constructs has been widely debated. Specifically, psychopathy and narcissism share several behavioral indicators and are often viewed on the same personality continuum, but at different points of severity (Fossati, Pincus, Borroni, Munteanu, & Maffei, 2014). These similarities include characteristics of grandiosity, lack of empathy, callousness, and interpersonal relationship difficulties. It has been suggested, however, that psychopathy is more problematic than narcissism due to higher antagonism, impulsivity, and moral disengagement (Fossati et al., 2014). Given the limitations of the current literature, the call for studies that examine associations between dimensional traits and clinical issues (e.g., substance abuse), and the potential for psychopathy contributing to maladjustment in college students, the associations among psychopathy, personality traits, and substance use needs to be further evaluated. Participants consisted of 127 undergraduate students from Western Carolina University. Participants completed a series of self-report measures examining psychopathy, normal personality, narcissism, substance use, and substance use consequences. In addition, participants completed an anti-saccade task as a physiological measure of disinhibition. Results indicated, as expected, psychopathy can be explained in terms of the five-factor model of personality, especially in terms of Agreeableness and Conscientiousness. Moreover, results support previous

findings that psychopathy and narcissism are highly interrelated; however, psychopathy demonstrates more characteristics related to disinhibition. Psychopathy and specific normal personality traits (i.e., Extraversion, Conscientiousness, and Agreeableness) predict negative substance use consequences. Lastly, the anti-saccade task was not an accurate measure of disinhibition and impulsivity. Implications and limitations will be discussed.

CHAPTER 1: INTRODUCTION

The term "psychopathy" has been controversial since its appearance in the mental health world. Although psychopathy is commonly understood as "behavioral deviance" with "deficient affect and social relatedness," there is still much discussion about a universal definition (Drislane, Patrick, & Arsal, 2014, p. 350). Because there is no agreed-upon definition of psychopathy, it can be challenging to accurately measure it. According to Patrick (2010), psychopathy is "considered to entail persistent behavioral deviancy in the company of emotional-interpersonal detachment (p .2)." To explain psychopathy, Patrick (2010) formed the Triarchic Model of psychopathy, which divides psychopathy into three phenotypic constructs: disinhibition, boldness, and meanness. Disinhibition is explained by having a lack of impulse control, being irresponsible, and a dysregulation of emotions. Boldness is explained by social dominance, "high social efficacy, emotional resilience, [and] low stress reactivity" (p.3). Lastly, meanness is explained by deficiencies in empathy, being callous, and lack of attachment to others (Patrick et al., 2009). To measure psychopathy, Patrick (2010) developed the Triarchic Psychopathy Measure (TriPM), which evaluates the three domains of psychopathy. Psychopathy is related to a variety of maladaptive behaviors including substance use, criminality, violence, narcissism, and antisocial personality characteristics. Although psychopathy has a negative connotation, it can also be adaptive. In particular, boldness is associated with fearlessness, which is a characteristic commonly seen in individuals with positions of leadership, or who are viewed highly in society (Lilienfeld et al., 2012). Additionally, psychopathic traits can be beneficial in hostile and harsh environments, promoting survival (da Silva, Rijo, & Salekin, 2015; Del Giudice, Ellis, & Shirtcliff, 2010).

Psychopathy can also be explained using the five-factor model of personality (FFM). The FFM includes five different personality domains including Neuroticism, Extraversion, Agreeableness, Openness, and Conscientiousness. These personality factors are closely related to psychopathic traits. Measures of psychopathy can be transformed into FFM traits, which can explain psychopathy as specific personality traits, versus as a unidimensional category. According to the FFM, behaviors consistent with psychopathy include individuals who show antisocial personality disorder symptoms, criminality, substance abuse, delinquent behavior, and risky behavior (Derefinko & Lynam, 2006). The FFM can be used to understand the major components and features of psychopathy, which has not been thoroughly evaluated.

Moreover, there is a well-established relationship between psychopathic traits and substance use. Between 5 and 40 percent of individuals with substance use disorders also have elevated levels of psychopathy. Specifically, antisocial traits inherent in the psychopathy construct and "normal" personality, respectively, are believed to contribute to substance misuse due to these individuals' seeking sensation and participating in risky behaviors and activities (Hopley & Brunelle, 2012). Likewise, these traits include disinhibition and impulsivity, which have been correlated with sensation seeking and alcohol use, particularly in college students (Magid et al., 2007). The antisocial personality feature of psychopathy has been associated with drug and alcohol abuse in both incarcerated and non-incarcerated samples. The combination of substance misuse and psychopathy contribute to maladaptive behaviors, including aggression, violence, and even incarceration. The combination of substance misuse and psychopathy increase the likelihood of criminal recidivism and lack of success in intervention (Hopley & Brunelle, 2012). The relation between substance misuse and psychopathic traits has been recognized in a variety of research studies, but the effects of other personality traits in

psychopathy on substance misuse has not been evaluated closely, particularly in a college student sample.

In summary, psychopathy has been considered a personality disorder with interpersonal, emotional, and behavioral deficits. These deficits can be explained and seen in normal personality by using the five-factor model of personality (FFM). Given that psychopathy is related to a variety of personality traits and both maladaptive and adaptive outcomes, it is important to assess which domains of psychopathy and which personality traits are the most strongly related to substance use and misuse to create the "perfect storm" resulting in maladaptive behavior. This information can shed light on appropriate intervention programs that may be necessary to treat these individuals in order for them to have a successful life. Currently, research that evaluates the associations among psychopathy, personality traits, and substance use uses clinical populations such as in incarcerated males and females and individuals in substance use treatments centers, which is not generalizable across age and education level (Poy, Segarra, Esteller, López, & Moltó, 2014). This study is evaluating the relation between the triarchic model of psychopathy, the five-factor model of personality (FFM), gaze patterns relating to disinhibition, and substance use consequences in college students.

CHAPTER 2: LITERATURE REVIEW

Psychopathy: Historical Conceptualizations

Psychopathy has been investigated, defined, and researched in a variety of ways since the 19th century. Originally, psychopathy was used to explain signs of abnormal personality characteristics and behaviors, particularly in criminals with high levels of aggression and cruelty who did not meet the insanity definition (Moreira, Almeida, Pinto, & Fávero, 2014). In 1801, Dr. Philip Pinel (1809) was the first individual to provide a scientific explanation of these psychopathic behaviors, naming it "mania without delirium." Pinel (1809) believed that these individuals understood that their behavior was irrational, but did not show any delusions (Moreira et al., 2014). Pinel (1809) was one of the first psychiatrists to emphasize that there is a separation between mental disorders and intellect, especially in those with psychopathy. He suggested that some disorders are solely emotionally based, with an undamaged intellect. Later, Benjamin Rush (1812) expanded Pinel's (1809) description of psychopathy by adding "alienation of the mind" to explain that those with psychopathy have deficits in controlling their will or desire, in addition to a lack of moral capability (Buzina, 2012, p. 355). These individuals were aggressive and irresponsible and committed acts without a motive. James Cowles Prichard (1835) coined the terms "moral insanity and moral imbecility" as two descriptors of psychopathy (Buzina, 2012, p. 355). These two terms were used to explain the importance of affective and emotional dysfunction in these individuals, although they were intelligent and capable of understanding. Because these individuals did not follow social norms by participating in antisocial and criminal behaviors, psychopathy became a stand-alone disorder (Buzina, 2012; Hervé & Yuille, 2007).

Similarly to Pinel (1809), Prichard (1835) suggested that mental disorders were separate from intellect, moving toward a belief that abnormal personality was a type of social deviance, not a disturbed intellect (Felthous, 2007). One of Pinel's (1809) students, Esquirol (1839), created the diagnostic category called "monomania," which explained the mind as "understanding, will, and feeling" (p.11). Disturbances in understanding, will, or feeling were considered intellectual monomanias, instinctive monomanias, or affective monomanias, respectively. Esquirol (1839) was one of the first individuals to create specific diagnostic categories for psychopathy (Felthous, 2007). Moving away from a social outlook on psychopathy, Lombroso (1876) incorporated biology and heredity. Lombroso (1876) focused around the idea of the "born criminal," suggesting that criminal activity was explained by biology (Felthous, 2007). Lombroso (1876) wanted these individuals contained in an asylum because of their criminal activities and behaviors. This confinement was solely used to protect society from these criminal activities (Buzina, 2012). The term "psychopathic" was not used until Koch (1889) generated the terms "psychopathic inferiority" as a replacement of insanity. Psychopathic inferiority was used to conceptualize a wide range of abnormal personalities. Koch (1889) was the first individual to describe psychopathy in a way that is still used and understood in present-day psychopathy concepts. "Psychopathic inferiorities" is divided into two categories: congenital and acquired, and then both are divided into three additional categories: psychopathic predisposition, psychopathic defect, and psychopathic degeneration (Buzina, 2012; Felthous, 2007). These categories are used to explain changes in behavior throughout an individual's lifetime.

Similarly to Lombroso's (1876) idea of psychopathy being hereditary, Bleuler (1896) believed that psychopathy was on a continuum. This continuum included an individual's "innate

psychological deviations" which could differentiate mentally healthy and unhealthy individuals (as cited in Buzina, 2012, p.135). The development and exploration of psychopathy in the 19th century predominantly focused on the distinction between defects in intellect and emotional disturbance. During this time, psychopathy was explained in terms of social, emotional and behavioral deviance versus intellectual deficits. Furthermore, psychopathy was also evaluated in terms of innate, biological causes, and not just strictly social causes.

In the beginning of the 20th century, psychopathy was evaluated based on a social dimension. Kraepelin (1909-15) developed the idea of "psychopathic conditions," which was used to explain the abnormalities in personality. Specifically, Kraepelin (1909-15) believed that psychopathy consisted of impulsiveness, compulsiveness, homosexuality, and mood disturbances. Kraepelin (1909-15) went on to describe "psychopathic personalities" which were solely judged by society and specifically explained defects in personality. This social judgment included individual's who were born as unstable. Kraepelin (1909-15) explained that these individuals are liars and "swindlers," excitable and impulsive, and eccentric (Felthous, 2007, p.19). He also adds that these abnormal personalities were developed due to brain changes and inherited causes, which produced a variety of abnormal personality symptoms (Buzina, 2012). Kretschmer (1921) believed there was an explicit structure of personality. He suggested that there was a relationship between body type and personality. He defined three body types: pyknic, leptosomic, and athletic. These body types were associated with different personality characteristics on a continuum, consisting of both normal and abnormal personality characteristics (Felthous, 2007). Kretschmer (1921) believed that those with mental illness and those without could be compared quantitatively; normal individuals have the same personality characteristics as those with mental illness, except not as severe (Buzina, 2012). Schneider

(1923) disagreed with Kretschmer (1921) in that psychopathy was not a mental illness because it was not connected to somatic problems or disease. To be considered a mental illness, Schneider (1923) believed that psychopathy should not be determined based on societal judgment, which is what Kraepelin (1909) argued, and instead should be compared to the "average norm." Abnormal personality is not necessarily mental illness. Schneider (1923) created 10 different types of psychopathic personalities consisting of qualities such as callousness, explosiveness, mood deviation, and emotionally unstableness. Schneider's (1923) depiction of the different types of psychopathic personalities is seen in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) categorization of personality disorders (Felthous, 2007). Henderson (1939) was one of the first to emphasize the importance of heredity and the environment in the development of psychopathy. He determined that there are three different types of psychopathic conditions: aggressive, inadequate, and creative types. The aggressive and inadequate types of psychopathy are used to explain abnormal levels of aggression and irresponsibility. His depictions of psychopathy have been significant in the legal world, providing specific terminology and explanation of abnormal personality. Henderson's (1939) description of psychopathy also contributed to the diagnosis and treatment of mental illness (Felthous, 2007). Partridge (1930) coined the term "sociopathy" to describe behavior that could not be changed nor corrected into societal normal behavior. He believed that these individual's were maladjusted during their childhood development. This lack of adjustment is exhibited by emotional outbursts and neediness, similarly to how a child would respond to being punished. Patridge (1930) was one of the fist individuals to associate dissocial behavior with childhood development (Buzina, 2012; Felthous, 2007). Moving away from sociopathy, Karpman (1941) distinguished two forms of psychopathy: idiopathic and symptomatic. Symptomatic psychopathy

is used to describe behavior that is viewed on the surface as "psychopathic behavior" and could be explained by "intra-psychic conflicts" (Felthous, 2007, p.16). In symptomatic psychopathy, the underlying mechanism of behavior is not hard to understand. On the other hand, idiopathic psychopathy describes behaviors that are seen as psychopathic, but cannot be followed back to an underlying mechanism or cause (Felthous, 2007; Karpman, 1941). Karpman (1941) made the distinction between two different types of psychopathy: one that had an explained cause, the other did not. Cleckley (1950), a popular name associated with psychopathy, became influential in the 20th century. Cleckley (1950) focused on case reports to describe psychopathy in his book *The Mask of Sanity*. In his book, Cleckley (1950) came up with 16 characteristics of psychopaths ranging from charm and intelligence to a lack of remorse and self-centeredness. Cleckley (1950) presented a paradox in these individuals. According to Cleckley (1950), these individuals are highly intelligent and friendly, with exceptional rational abilities, but they participate in risky behaviors and activities, which result in jail time. Although these individuals are highly intelligent and logical, they cannot control their behavior. These individuals do not have the capacity to understand themselves or others, which is why these antisocial behaviors cannot be controlled. Because of this paradox, Cleckley (1950) believed that psychopathy should be considered a "severe disease" (Buzina, 2012; Felthous, 2007). Cleckley's (1950) research on and explanation of psychopathy continues to influence psychopathy research today.

It was not until the late 20th century with the development of the Hare Psychopathy Scales that psychopathy was considered a clinical syndrome instead of a disease. Hare (1980) created the Hare Psychopathy Checklist, which was later revised in 1991 and 2008. This checklist focused on defining psychopathic characteristics, specifically interpersonal, affective, behavioral, and lifestyle characteristics. During the 21st century, the explanation of psychopathy

moved away from the categorical view to a dimensional view. The dimensional view emphasizes that psychopathy is not categorically exclusive; rather, it is a continuum (Moreira et al., 2014). All individuals have some degree of psychopathic personality traits, but these traits become problematic based on the intensity of them. Here, there is no black and white "cutoff" for psychopathy. Psychopathy is now related to antisocial behaviors and the discrimination of disruptive behaviors and relationships. Instead of focusing on psychopathic behaviors, the focus is on the personality characteristics of these individuals. Recently, psychopathy research has been extended to look at priming, brain abnormalities, fear reduction, facial expression recognition, and more. Compared to the research conducted in the 20th century and before, present psychopathy research has become much more elaborate, solving many unanswered questions (Moreira et al., 2014).

Psychopathy Models

Karpman (1941) was an influential clinician whose major complaint about the depiction of psychopathy was the lack of specificity in the definition and description of psychopathy. This lack of specificity resulted no clear criteria for diagnosing psychopathy. Karpman (1941) suggested that to diagnose an individual with psychopathy they must show antisocial behaviors in addition to "a strong need for immediate gratification, a lack of anxiety, guilt or remorse over their actions, a grandiose sense of self, an entitles attitude, and callous, impulsive, and irresponsible actions" (Hervé & Yuille, 2007, p. 38). Karpman (1941) created a model of psychopathy that separated psychopaths into two clinical types: symptomatic and idiopathic. Symptomatic psychopaths exhibit psychopathic behaviors that can be traced back to a specific cause. Idiopathic psychopaths also exhibit psychopathic behaviors, but they have no distinguishable cause. Karpman (1941) focused on two cases, the first one which explained

symptomatic psychopathy in which the client's behaviors were caused by parental rejection. Karpman (1941) suggested emotional situations that an individual is not ready to accept would express these behaviors as a defense reaction. The second case demonstrated idiopathic psychopathy. Here, the client presented psychopathic behaviors, but these behaviors could not be explained by a specific cause. According to Karpman (1941), these individuals are "self-centered, thoroughly egotistic, hedonistic, [and] selfish" (p.137). The main focus of Karman's (1941) model was the etiology of psychopathy. For symptomatic psychopathy, the etiology is known, whereas in idiopathic psychopathy has no known etiology. This began the discussion about how psychopathy develops, further elaborating the psychopathy research.

Cleckley (1950) was one of the most influential clinicians who sought out an accurate description of psychopathy. Unlike Karpman (1941), Cleckley (1950) was more interested in determining the characteristics of psychopathy, not the etiology. According to Cleckley (1950), "the psychopath has a genuine and very serious disability, disorder, defect, or deviation" (p. 367). In previous descriptions of psychopathy, Cleckley's (1950) major complaint was that it was generally considered personality psychopathology, but not a specific disorder, causing confusion in diagnosing psychopaths. To overcome this confusion, Cleckley (1950) created a model of psychopathy that compiled a list of 16 characteristics of psychopathy based on his observations of cases in forensic and psychiatric settings (Hervé & Yuille, 2007). These characteristics included superficial charm and good "intelligence," absence of delusions and other signs of irrational thinking, absence of "nervousness" or psychoneurotic manifestations, unreliability, untruthfulness and insincerity, lack of remorse or shame, inadequately motivated antisocial behavior, poor judgment and failure to learn by experience, pathologic egocentricity and incapacity for love, general poverty in major affective reactions, specific loss of insight,

unresponsiveness in general interpersonal relations, fantastic and uninviting behavior with drink and sometimes without, suicide rarely carried out, sex life impersonal, trivial, and poorly integrated, and failure to follow any life plan (Cleckley, 1950). In addition to these 16 characteristics, Cleckley (1950) emphasized that the predominant cause of these characteristics was the individuals' deficiency in affective reactions. The challenge that resulted from categorizing these characteristics in relation to a deficiency in affective reactions was that they were contradictory. The paradox was that these individuals did not meet the psychiatric criteria for psychosis, but behaved outrageously in society. Cleckley (1950) called this "semantic aphasia," which describes the dissociations between the actions and language of these individuals, specifically "why psychopaths often say one thing but do another" (Hervé & Yuille, 2007, p.43). Psychopaths also demonstrate "psychopathic anxiety" which is tension resulting from a lack of fulfillment of their selfish needs (Hervé & Yuille, 2007). The most influential conclusion from Cleckley (1950) is that psychopaths are unable to experience and understand emotion long-term. The temporary emotions psychopaths exhibit, such as irritation, lust, and anger, are not deep-rooted, which is why they are unable to have control over their impulses and behaviors. This distinction Cleckley (1950) made supported the disparity between characteristics of psychopaths and characteristics of nonpsychopaths. Cleckley's (1950) findings moved the psychopathy research from focusing on etiology to determining what characteristics and deficiencies these individuals encompass.

The exploration of psychopathy predominantly focused on the etiology, description, and definition of the construct, but no one sought out to create a reliable and valid measure of psychopathy until Hare (1980). Hare and his colleagues focused on operationally defining psychopathy, which was turned into a measure of psychopathy called the Hare Psychopathy

Checklist (PCL) and the Hare Psychopathy Checklist – Revised (PCL-R) (Hervé & Yuille, 2007). The major influence in the creation of the PCL was the lack of a reliable and valid measurement to assess psychopathy, as well as Cleckley's (1950) description of psychopathy. The purpose of the PCL-R was to assess psychopathy in an adult criminal sample. The conceptualization of psychopathy, specifically seen in the PCL-R, reflects Cleckley's (1950) description of psychopathy using 16 characteristics. In addition, there was not a measurement that could distinguish the diagnosis of psychopathy from antisocial personality disorder. As a result, the PCL and PCL-R were created, which had a combination of personality traits and antisocial behaviors (Hare & Neumann, 2008). This was a major contribution to the diagnosis of psychopathy. The PCL-R has become one of the most widely used measures of psychopathy and has been thoroughly researched. The PCL-R is a rating scale consisting of 20 items rated on a 3-point scale using semi-structure interviewing techniques. Each score is summed and compared to the "prototypical profile of a psychopath" (Hervé & Yuille, 2007, p.48). A score of 30 or above indicates psychopathy. Instead of explaining psychopathy as categories, the PCL-R is broken up into four dimensions: interpersonal, affective, lifestyle, and antisocial (Hare & Neumann, 2008). The interpersonal and affective dimensions are considered Factor 1 and the lifestyle and antisocial dimensions are considered Factor 2. A score of 30 or above on the PCL-R indicates that the individual has high levels of interpersonal, affective, lifestyle, and antisocial deficits. Because of this dimensional approach, the PCL-R can overlap with symptoms of other disorders. Specifically, the affective dimension most strongly distinguishes psychopaths from individuals with other disorders (Hare & Neumann, 2008). In assessing psychopathy, the PCL-R is considered the most commonly used, reliable, and valid measurement. The "Hare psychopath" is

like no other description of psychopathy and behaves in a way that results in vital consequences for society.

Although there is a negative connotation associated with psychopathy, the construct can be viewed as adaptive. Specifically, psychopathy can be viewed through an evolutionary perspective or framework, suggesting that the development and maintenance of psychopathy is used for survival. According to such a framework, psychopathy can be considered not solely as a disorder, but as an "adaptive strategy to deal with hostile psychosocial environments" (da Silva et al., 2015, p.86). The underlying premise of such a view is that an individual's biological stress response system (SRS) adapts (i.e., calibrates) in response to external situations, thereby promoting adaptive outcomes and/or observable differences in psychological and social adjustment (Del Giudice et al., 2010). Specifically, the Adaptive Calibration Model (ACM)[1] is an evolutionary model, which explains the development of the SRS in individuals. The ACM suggests that individual differences in stress responsivity are due to "conditional adaptation," where individuals modify development in response to their environment (Del Giudice et al., 2010, p. 1563) in order to promote survival and passing on their genes. Specifically, individuals are evolved to survive and reproduce in a variety of environments, some of which are hostile, whereas others are supportive (da Silva et al., 2015). Moreover, the ACM includes four "prototypical patterns of stress responsivity" that are dimensional in nature, including sensitive, buffered, vigilant, and unemotional (da Silva et al., 2015, p.88). Out of these four patterns of responsivity, the unemotional pattern has the most overlap with psychopathy. This pattern is related to characteristics of low empathy, impulsivity, aggression, and inhibition, similar to

[1] Although a test of the Adaptive Calibration Model (ACM) is beyond the scope of the proposed study, it is important to include this theory as an illustration of, and explanation for, the complexity of psychopathy as having both adaptive and maladaptive attributes.

characteristics associated with psychopathy. In a harsh environment, these characteristics are adaptive and promote survival (da Silva et al., 2015).

Additionally, research suggests psychopathy and the unemotional pattern can be developed in two pathways: a harsh environment or a genetic predisposition. An unpredictable environment can contribute to the development and emergence of psychopathic traits, which individuals can use as a protective factor. From an evolutionary perspective, taking risks, being impulsive and being competitive is more adaptive in a harsh environment (promotes survival) compared to the experience of those individuals who do not have these traits (Del Giudice et al., 2010). Likewise, antisocial behaviors related to psychopathy - including "risk-taking, reduced self-control, a selfish disposition, short-term mating effort" and aggression - can also promote survival in stressful environments (da Silva et al., 2015, p. 90). In addition, those who are able to remain calm and control their stress (i.e., remain unemotional) can thrive in hostile situations and environments (da Silva et al., 2015). Although it can be argued that psychopathy has adaptive features in some environments, the societal costs are still large and overall it appears that elevated psychopathy is associated with predominantly negative consequences.

Triarchic Model of Psychopathy. More recently, the Triarchic Model of psychopathy was proposed to combine historical explanations of psychopathy with empirical evidence. This model includes three phenotypic constructs: disinhibition, boldness, and meanness (Patrick, 2010). Specifically, disinhibition is characterized by impulsivity, irresponsibility, and hostility. Individuals who have high levels of disinhibition display externalizing behaviors such as acting in the moment, deficits in affect, and lack of controlling behaviors. Historically, the conceptualization of psychopathy placed great emphasis on externalizing deviant behaviors such as criminal behavior, addictive behaviors, and conduct problems (Patrick, 2010; Patrick et al.,

2009). On its own, disinhibition is not considered psychopathy, but when it is paired with boldness and meanness, it is (Patrick et al., 2009). Boldness is characterized by the ability to remain calm and focused under pressure, recover rapidly from stressful situations, dominance and low anxiety. Individuals with high levels of boldness are able to remain calm in a variety of situations, react to stress appropriately, and have high tolerance. Boldness, also known as fearless-dominance, is considered to be an adaptive construct of psychopathy. Boldness is not specifically related to fearlessness, but is considered a genotypic disposition (Patrick et al., 2009). Lastly, meanness is characterized by deficits in empathy, callousness, aggression, and excitement seeking. Individuals who have high levels of meanness demonstrate a need for pleasure and satisfaction, rebelliousness, and manipulative. Meanness is a key component to criminal behavior due to these individuals lacking guilt, fear, compassion, and remorse (Patrick et al., 2009).

The Triarchic Model constructs can also be related to the two factors of the PCL-R. Specifically, meanness and a few characteristics of boldness are related to Factor 1 of the PCL-R and disinhibition, with a few characteristics of meanness, are related to Factor 2 of the PCL-R. The relation between the two factors can be explained by the overlap of meanness in both factors, which supports the idea that psychopathy is dimensional, not categorical. To measure disinhibition, boldness, and meanness, Patrick (2010) developed the Triarchic Psychopathy Measure (TriPM). The TriPM includes three brief scales to measure disinhibition, boldness, and meanness. The boldness scale is a new measurement, which was created to explain more precisely social efficacy, narcissism, excitement/thrill seeking, and interpersonal deficits. Disinhibition and meanness are interrelated, but are more severe when the etiological factor of difficult temperament is contributing to the relations between the two constructs. However,

disinhibition and boldness are not strongly interrelated. Boldness and meanness, on the other hand, are interrelated and are particularly more severe when low dispositional fear is contributing to the relationship. Patrick's (2010) model suggests that boldness, meanness, and disinhibition are interrelated, further indicating that psychopathy is dimensional in nature.

Psychopathy and Narcissism

Psychopathic traits are associated with a variety of behaviors, especially maladaptive behaviors. In particular, there has been a debate about the difference between pathological narcissism and psychopathy, due to their close similarity in behaviors. More recently, narcissistic and psychopathic traits are viewed as being on the same personality continuum, but at different points (Fossati et al., 2014). Psychopathy and narcissism are considered to be multidimensional in nature, sharing a variety of traits including grandiosity, lack of empathy, callousness, and deficits in interpersonal relationships. The multidimensionality of psychopathy and narcissism contributes to the confusion about how these personality pathologies differ from one another. A major challenge in the differentiation of psychopathy and narcissism is that they have a diverse range of phenotypic expression (Fossati et al., 2014). For example, narcissism can be viewed as two types: grandiose and vulnerable. The same occurs for psychopathy: primary and secondary. These different expressions of narcissism and psychopathy are intercorrelated.

Similarly, according to a study conducted by Fossati and her colleagues (2014), narcissism and psychopathy are related constructs, but differ in the severity of aggression and moral dysfunction. Both pathological narcissism and psychopathy were related to exploitative, norm-rejecting, and affective dysregulation, but there are key differences between the two. Specifically, both psychopathy and narcissism were related to "antagonism, low honesty-humility, and moral disengagement"; however, psychopathy had a stronger association with

these traits compared to narcissism, suggesting that psychopathy is more severe (Fossati et al., 2014, p. 412). In addition, psychopathy was related to high levels of impulsivity, whereas pathological narcissism was not. These differences suggest that although narcissism and psychopathy share maladaptive behaviors, they are different constructs on the same personality continuum.

Psychopathy: Present Definition

As noted previously, psychopathy has been associated with a variety of definitions and proposed etiologies throughout history. Presently, the definition of psychopathy continues to be debated, but there is some consensus. According to Glenn, Kurzban, and Raine (2011), for example, "psychopathy is a personality type describing individuals who demonstrate a pronounced lack of guilt, remorse, and empathic concern for others" (p.372). In addition, these individuals demonstrate antisocial behaviors and are considered to be impulsive, risk-takers who lack behavioral control, and present as "charming, manipulative, egocentric, and grandiose" (p.372). Others have suggested that there are additional personality traits that should be considered as part of the definition of psychopathy, including fearlessness, boldness, and invulnerability (Crego & Widiger, 2014). The most widely used and accepted definition of psychopathy is "persistent behavioral deviancy in the company of emotional-interpersonal detachment" (Patrick, 2010, p. 2). This definition combines three key characteristics of psychopathy: behavioral deviancy and affective and interpersonal deficits, which will be the main focus while examining psychopathy. It is important also to examine these characteristics in relation to normal personality, which will be discussed next.

The Five-Factor Model of Personality

The five-factor model of personality (FFM) is the most commonly used model of personality to describe individual traits and differences. In 1961, Ernest Tupes and Ray Christal published a report that included five factors of personality. Their compilation and separation of traits into five distinct factors did not have much influence in the psychological world. It was not until the 1980s when others began to separate personality traits, resulting in five factors (McCrae & Costa, 2013). Research consisting of psychological questionnaires examining personality traits indicated that these traits were highly related to the Big Five factors of personality. The FFM is composed of five factors that are designed to describe normal personality. These factors include Neuroticism (N), Extraversion (E), Openness to Experience (O), Agreeableness (A), and Conscientiousness (C). Within each factor, there are six facets. Neuroticism describes a dimension of traits from low to high including calm and stable to sad and scared. Extraversion describes a dimension of traits from low to high including reserved and solitary to outgoing and cheerful. Openness to Experience describes a dimension of traits from low to high including rigidness and practical to imaginative and curious. Next, Agreeableness describes a dimension of traits from low to high including selfishness and aggression to generosity and honesty. Last, Conscientiousness describes a dimension of traits from low to high including unambitious and laid back to hardworking and disciplined (McCrae & Costa, 2013). The FFM has allowed for advancement in research in personality psychology.

Five-Factor Model and Psychopathy

Because the FFM consists of a variety of traits that fit into five dimensions, these traits can also overlap with conceptualizations of psychopathy. As previously mentioned, the PCL-R is the most commonly used measure to assess and conceptualize psychopathy. To determine how psychopathy relates to the FFM, Widiger and Lynam (1998) explained the PCL-R on an item-by-

item basis in FFM terms, and argued that each item on the PCL-R could be explained by a specific facet of the FFM (Derefinko & Lynam, 2013). Specifically, each core feature of psychopathy according to the PCL-R could be explained in FFM language. Widiger and Lynam (1998) found that each item on the PCL-R could be represented by one, or many, facets of the FFM (Derefinko & Lynam, 2013). In addition, psychopaths are considered to have low levels of Agreeableness and Conscientiousness, but mix of high and low levels of Neuroticism (i.e., low self-consciousness, high impulsiveness) and Extraversion (i.e., low warmth, high excitement seeking). Psychopathy assessed using the FFM indicates high convergence with other measures of psychopathy such as the PCL-R and Psychopathic Personality Inventory (PPI; Derefinko & Lynam, 2013). This suggests that the traits assessed by the FFM are also similar to the traits assessed by psychopathy measures.

Moreover, assessing psychopathy using the FFM predict behaviors associated with psychopathy (i.e., criminality, substance use, risky behavior). In contrast, the FFM has been used to show "successful psychopathy," which explains individuals who have high levels of psychopathy, but do not go to prison (Derefinko & Lynam, 2013, p. 111). These individuals are high functioning and successful in their field of work (i.e., doctors, lawyers, entertainers, etc.). Specifically, the FFM conceptualizes successful psychopathy based on certain traits. For example, the prototypical psychopath has low levels of Agreeableness (i.e., arrogant and exploitive) and Conscientiousness (i.e., unreliable and aimlessness). Successful psychopaths are those who are low in Agreeableness, but not low in Conscientiousness, and these individuals have been found to obtain advanced degrees.

Similarly, some studies find that psychopaths portray themselves having good subjective well-being and being happy and particularly satisfied with life. The relation between

psychopathy and subjective well-being, however, varies with personality traits. In the literature, subjective well-being is often associated with high levels of Extraversion, Conscientiousness and Agreeableness, and low levels of Neuroticism (e.g., Love & Holder, 2014). As previously noted, psychopaths generally exhibit the opposite of this, displaying low levels of Conscientiousness and Agreeableness, and a moderate level of Neuroticism. It is suggested therefore that psychopaths (especially men) may experience poor subjective well-being. Common characteristics associated with psychopathy and moderate to high levels of Neuroticism include impulsivity, hostility, and anger, whereas subjective well-being emphasizes life satisfaction and overall happiness (Love & Holder, 2014). On the other hand, low levels of Neuroticism, particularly low anxiety, depression, and self-consciousness, which are also low in psychopaths, are associated with high subjective well-being. In addition, narcissism is related to high subjective well-being, which is also associated with high levels of psychopathy. Because those with high levels of psychopathy disregard the consequences of their actions, are self-centered, and are focused on their personal gains, they may actually express happiness and life satisfaction because they are primarily concerned with their own well-being and are not affected by others (Love & Holder, 2014). Although subjective well-being is related to psychopathy, psychopathy is not the only influencing factor. Love and Holder (2014) found that when the FFM was accounted for, "psychopathy did not account for significant variance" in subjective well-being (p.115). This finding supports the idea that psychopathy is on a continuum of normal personality, but is more severe, and with the influence of specific normal personality traits, can result in two entirely different outcomes.

Poy and his colleagues (2014) used the FFM to describe the triarchic model of psychopathy to determine if the three phenotypic constructs (boldness, meanness, and

disinhibition) were related to any of the five factors, using the NEO-PI-R and the TriPM. They found that the three phenotypic constructs represented "distinctive configurations of normal personality traits" (p.73). At the domain level, they found that disinhibition was associated with low Conscientiousness and Agreeableness, as well as high Neuroticism. Moreover, disinhibition was associated with high Excitement-Seeking and low Warmth at the facet level of Extraversion domain (Poy et al., 2014). The FFM description of the triarchic model of psychopathy emphasizes the externalizing difficulties (i.e., low constraint, emotional instability, vulnerability, substance use, delinquent behavior, criminality) seen in those with high levels of psychopathy (Miller & Lynam, 2003). In addition, meanness was associated with very low Agreeableness and moderately low Conscientiousness (p.74). Meanness was also associated with low Warmth, Gregariousness, and Positive Emotions at the facet level of the Extraversion domain (Poy et al., 2014). Because meanness and disinhibition are highly correlated with one another, the description of the triarchic model of psychopathy at the facet level of the FFM was difficult to differentiate. Interestingly, the distinguishable difference between meanness and disinhibition in FFM terms related to differences in levels of Agreeableness and Neuroticism. Meanness was associated with lower levels of Agreeableness compared to the disinhibition construct whereas disinhibition was associated with higher levels of Neuroticism compared to the meanness construct (Poy et al., 2014). This supports the idea that the key characteristics of those with psychopathy include high levels of externalizing problems in addition to interpersonal deficits.

Boldness, on the other hand, was associated with Low Neuroticism and Agreeableness, and high Extraversion, Openness, and Conscientiousness. This supports the notion that those high in psychopathy have characteristics of fearlessness, dominance, self-confidence, and sociability. At the facet level, boldness was associated with arrogance and manipulation, which

supports the relation between psychopathy and narcissism (Poy et al., 2014). The boldness construct is the distinguishing factor that determines whether an individual will be a successful psychopath, or a criminal psychopath. Specifically, high Conscientiousness is related to successful psychopathy, whereas low Conscientiousness is related to criminal psychopathy (Poy et al., 2014).

Taken together, these findings suggest that psychopathic traits are on a normal personality continuum, but with varying influences, which can result in adaptive or maladaptive outcomes. In combination with normal personality traits, individuals with high levels of the psychopathic construct boldness can be successful and functional in society. On the other hand, normal personality traits in combination with high levels of the psychopathic constructs disinhibition and meanness can result in maladaptive behaviors and societal consequences (e.g, jail time, substance abuse). These findings suggest that psychopathy is not categorical, but is dimensional, overlapping with normal personality traits and personality disorders. The influence of normal personality traits on psychopathic traits is fundamental in understanding how psychopathy is dimensional, and what implications these traits have on individuals developing maladaptive (or adaptive) behaviors.

Five-Factor Model of Personality, Psychopathy, and Antisocial Personality Disorder

In addition to efforts to explain psychopathy in FFM/personality terms, there has been a great deal of controversy and confusion when trying to distinguish antisocial personality disorder and psychopathy. Both antisocial personality disorder and psychopathy share externalizing problems, but the conceptualization of psychopathy also emphasizes interpersonal and affective deficits. Originally, psychopathy was conceptualized as having 16 characteristics including superficial charm, lack of remorse or shame, poor judgment and failure to learn by experience,

and insincerity (Cleckley, 1950). In the DSM-IV-TR, psychopathy was considered another term for antisocial personality disorder based on Hare's conceptualization, although there were distinct differences between psychopathy and antisocial personality disorder (American Psychiatric Association, 2000). Specifically, the diagnosis of antisocial personality disorder relied heavily on the behavioral expressions, but not on the interpersonal and affective deficits, which indicates a major difference between the diagnosis of antisocial personality disorder and psychopathy (Hervé & Yuille, 2007). According to the DSM-IV-TR, to be diagnosed with antisocial personality disorder, the individual only needs to display three of the seven symptoms, and this could be accomplished with only displaying antisocial behaviors (American Psychiatric Association, 2000). Interestingly, individuals with psychopathy could be diagnosed with antisocial personality disorder, due to the antisocial behaviors in addition to the affective and interpersonal deficits, but individuals with antisocial personality disorder cannot usually be diagnosed with psychopathy because they lack interpersonal and affective deficits (Hervé & Yuille, 2007).

In addition, studies have mostly confirmed that psychopathy is a much better predictor of criminality and criminal recidivism compared to antisocial personality disorder. To assess non-incarcerated individuals for psychopathy, the Psychopathic Personality Inventory (PPI; Psychopathic Personality Inventory, Revised, PPI-R) was created. The PPI focuses on the interpersonal and affective traits seen in psychopaths, but does not emphasize criminal behaviors (Cox et al., 2013). The PPI has two factors: Fearless Dominance and Impulsive Antisociality. These factors focus on personality traits that are seen in both the FFM and recent conceptualizations of psychopathy. These traits include low anxiety, high risk-taking, dominance, impulsivity, externalization, and self-centeredness (Cox et al., 2013). The PPI can

also be used to identify subtypes of psychopathy and antisocial personality disorder. Cox and his colleagues (2013) found that "six of the eight PPI subscales could be used to classify individuals into subgroups": primary and secondary subgroups, which revealed a difference between psychopathic antisocial personality disorder and non-psychopathic antisocial personality disorder (p.131). The primary subgroup showed interpersonal fearlessness and dominance, whereas the secondary subgroup showed low fearlessness and blaming others for their externalizing behaviors. The main difference between the primary subgroup and the secondary subgroups is that the primary subgroup consisted of individuals who were calculating, whereas the individuals in the secondary subgroup were not. Specifically, non-psychopathic antisocial personality disorder individuals had lower scores on the PPI compared to psychopathic antisocial personality disorder individuals. Primary psychopaths were found to be disposed to recidivism compared to secondary psychopaths. It was suggested that primary psychopaths are prone to problematic externalizing behaviors compared to secondary psychopaths (Cox et al., 2013). This study was able to demonstrate that there is a difference between psychopathy and antisocial personality disorder, but because both are dimensional, there is some overlap. In fact, and as noted previously, behaviors such as substance misuse and abuse are often characteristic of individuals who express antisocial or psychopathic tendencies, especially at the more severe or elevated end of the dimensional constructs.

In lieu of this association and its common occurrence among college students, substance use (i.e., misuse and adverse consequences of use) will be discussed next.

Substance Use and Consequences

Substance use is a growing problem, especially in college students. According to the Monitoring the Future (MTF) 2013 study using 1,090 college students, the annual prevalence

rate of any illicit drug use in college students was 38.9% (Johnston, O'Malley, Bachman, Schulenberg, & Miech, 2014). Specific drugs used included hallucinogens other than LSD (3.7%), ecstasy (5.3%), methamphetamine (0.4%), and ketamine (0.9%). The annual prevalence rate of marijuana use in college students was 35.5%, however, daily marijuana use in college students was 10%. The use of amphetamines without medical supervision is higher in college students compared to non-college students, specifically Adderall (10.7%) and Ritalin (3.6%). In addition, alcohol use is incredibly high in college students. MTF (2013) found that the annual prevalence rate of alcohol use in college students was 75.6%. Specifically, 40% of the college students had reported being drunk within the past two weeks (Johnston et al., 2014). In addition, males and females differ in the amount of substances used and the resulting consequences. For example, among emerging adults between the ages of 18 and 25-years, the rate of alcohol abuse and dependence in men is twice that of their female counterparts (Iwamoto, Corbin, Lejuez, & MacPherson, 2014). Men also participate in more problematic behaviors associated with substance use including driving while under the influence, violence, and criminality (Iwamoto et al., 2014). The most frequently used substances in the college population include alcohol, marijuana, and cocaine, and the substance use consequences range in severity from mild to severe. These consequences can include hangovers, having unprotected sex, going to the hospital, problems with police or authority, or driving while intoxicated (Gillespie, Holt, & Blackwell, 2007).

Substance use is associated also with injury, sexual assault or rape. According to the National Institute of Health (2005), in a 12-month period, nearly 600,000 college students were injured due to drinking, 700,000 reported being assaulted by a student who was drinking, and

nearly 100,000 sexual assaults or rape occurred due to alcohol intoxication (Gillespie et al., 2007).

In addition to the prevalence of substance use in the college student population, the incorporation of psychopathic traits can result in an even more major concern. The relationship between substance use and psychopathy has been well examined; psychopathy and substance misuse often co-occur. Specifically, "the rates of psychopathy in those with a substance use disorder vary from 5 to 40%" (Hopley & Brunelle, 2012, p. 947). In addition, psychopathy has been associated with higher frequency of alcohol, cannabis, opioid, and stimulant misuse. Because psychopathy is dimensional with affective and interpersonal deficits, as well as antisocial and deviant behavior, substance misuse is generally associated with the antisocial behavior component of psychopathy (Hopley & Brunelle, 2012). Moreover, psychopathy and substance misuse are associated with criminal behavior and recidivism, and unfortunately respond poorly to intervention (Hopley & Brunelle, 2012). Consistent with these findings, criminal offenders with high levels of psychopathic traits commonly meet the criteria for a substance use disorder diagnosis (Hopley & Brunelle, 2012). Similarly, individuals with substance use disorders also show elevated levels of aggressive and impulsive behavior, as well as psychopathic traits, suggesting that these individuals share similar traits to those with psychopathy (Hopley & Brunelle, 2012).

It should be noted that certain psychopathic traits are more closely related to substance misuse, including impulsivity, proactive aggression, negative emotionality, and disinhibition (Alcorn et al., 2013; Hopley & Brunelle, 2012; Magyar, Edens, Lilienfeld, Douglas, & Poythress, 2011). In addition, sensation seeking is a predictor of alcohol *use*, whereas impulsivity is a predictor of alcohol *problems*, however, impulsivity and sensation seeking are

also correlated with each other (Magid et al., 2007). In the literature, sensation seeking is associated with the need for varied stimulation. Consequently, the use of substances can contribute to this stimulation arousal, and can lead to misuse if the individual is excessively using substances until the arousal is met. Research has also suggested that impulsiveness can contribute to dangerous substance use consequences, particularly using substances with disregard to the possible consequences (Magid et al., 2007). Moreover, impulsivity is a key predictor in current and/or future substance use problems. In fact, recent research suggests that impulsive substance use is related to two core processes: the heightened impulse to use drugs, and the reduced ability to inhibit drug use (Gullo, Loxton, & Dawe, 2014). In addition, impulsivity in relation to addiction is connected to reward sensitivity and disinhibition. These individuals are also at a greater risk for committing violent activities. As explained by Patrick and his colleagues (2009), the disinhibition construct of the triarchic model is related to a variety of maladaptive consequences including "alienation and distrust, aggressive acting out, untrustworthiness, proneness to drug and alcohol problems, and engagement in illicit or other norm-violating activities" (p. 925). These behaviors can lead to conduct problems, and criminal and addictive behavior. Disinhibition further emphasizes the externalizing problems in psychopathy, which is considered a major component of the psychopathy definition. In addition, the boldness component is associated with fearless dominance, relating to thrill seeking and adventure seeking (Patrick et al., 2009). Although boldness is not *directly* related to substance misuse, this lack of anxiety and fear, and need to participate in thrill-like activities, could contribute *indirectly* to substance misuse, but more studies are needed. Furthermore, meanness is associated with rebelliousness, exploitativeness, and excitement- and sensation-seeking traits. In turn, these traits have been linked to aggression, physical cruelty, destructiveness, and non-cooperation with

authority. Not surprisingly, these behaviors are the key characteristics of psychopathy in criminal samples (Patrick et al., 2009). Specific traits (i.e., disinhibition, meanness, sensation-seeking, impulsivity) are more related to maladaptive and consequential behaviors (i.e., violence, aggression, criminality, substance use). Although certain psychopathic traits can be adaptive (i.e., risk-taking, aggression, competitive, low anxiety, fearlessness, dominance), they can indirectly result in maladaptive behaviors (i.e., sexual promiscuity, fighting). As can be seen, these traits often overlap, resulting in two entirely different outcomes: adaptation or maladaptation. These outcomes can result from early experience to stressful events or a genetic predisposition, which forces individuals to modify their response to stress (da Silva et al., 2015, Del Giudice et al., 2010). Because these traits can result in two entirely different outcomes, it is important to determine the how the combination of psychopathic traits produce a risk for, or protect from, the development of problematic behavior, and how psychopathy is associated with other aspects of personality.

Present Study

As previously elaborated on, psychopathy has a controversial reputation, with significant debate about its definition and etiology. The initial controversy revolved around the varying historical definitions of psychopathy and how psychopathy is viewed in society. The complex, yet different, models of psychopathy provided insight to three key features of psychopathy, which are presently agreed upon. These key features include antisocial behavior and interpersonal and affective deficits. Furthermore, pathological narcissism and psychopathy have been compared due to their close similarity, supporting the idea that psychopathy and narcissism are on the same personality continuum, but differ in severity. In addition, the FFM has been used to attempt to explain psychopathy. The triarchic model of psychopathy has been conceptualized

using the FFM in hopes to elicit the distinction between normal personality and psychopathy. Moreover, certain psychopathic and personality traits are related to substance misuse. This is of particular relevance to the present study, especially in lieu of the fact that substance use on college campuses is prevalent, and on the rise. College students could engage in substance use due to sensation-seeking tendencies, or personality characteristics associated with disinhibition (Magid et al., 2007; Patrick et al., 2009). For example, the combination of certain psychopathic traits (i.e., elevated disinhibition and meanness) may predict more adverse substance use consequences (Patrick et al., 2009), but this link has not received much attention in non-clinical or non-incarcerated samples, thus it warrants further study. Moreover, it is imperative to assess the association between psychopathic traits and normal personality traits to determine if, in the presence of psychopathy, normal personality traits can protect individuals from engaging in maladaptive substance use.

Given the limitations of the current literature, the call for studies that examine associations between dimensional traits and clinical issues (e.g., substance abuse), and the potential for psychopathy contributing to maladjustment in college students, the associations among psychopathy, personality traits, and substance use needs to be further evaluated. Findings may help to determine the potential impact these constructs have on behavior, both adaptive and maladaptive, in college students. These findings may be used in substance use prevention and intervention efforts on college campuses, and aid in the efforts to decrease college students' experiences of adverse consequences as a result of their use (i.e., harm reduction; White, 2006).

Hypotheses and Statistical Plan

Hypothesis 1. Based on previous research (Poy et al., 2014; Widiger & Lynam, 1998), we expect to see an inverse association between the TriPM total scores and Agreeableness and

Conscientiousness. We also expect there to be a positive correlation between the TriPM total score and the Neuroticism and Extraversion traits. In addition, we expect that the TriPM Disinhibition scale will be inversely associated with Conscientiousness and Agreeableness, and positively associated with Neuroticism. Likewise, we expect that TriPM Meanness will show a negative correlation with Agreeableness, Conscientiousness, and Extraversion. Lastly, we expect to see an inverse relationship between TriPM Boldness with Neuroticism and Agreeableness, and a positive relationship with Extraversion, Openness, and Conscientiousness. This hypothesis will be examined through a correlation matrix.

Hypothesis 2. Based on previous research (Miller, Gentile, & Campbell, 2013), we expect to see a positive correlation between TriPM total scores with Five Factor Narcissism Inveotry (FFNI) subscale scores in Reactive Anger, Need for Admiration, Thrill Seeking, Cynicism/Distrust, Manipulativeness, Exploitativeness, Entitlement, Lack of Empathy, and Arrogance. In addition, we expect to see a positive correlation between TriPM total scores with FFNI Grandiose and FFNI Vulnerable. This hypothesis will be examined using a correlation matrix.

Hypothesis 3. Based on previous research on veterans in SUD treatment (Kemp, Moussa, Asberg, & Bobadilla, 2015), we expect to see a positive correlation between TriPM Disinhibition and Meanness with InDUC Impulse Control consequences. Additionally, we expect to see a positive correlation between TriPM Disinhibition with InDUC Social Responsibility consequences. This hypothesis will be examined using a correlation matrix.

Hypothesis 4. We will explore the extent to which substance use consequences and alcohol use, respectively, can be predicted from the three constructs of psychopathy (i.e., disinhibition, meanness, and boldness) and the five factors of personality (i.e., Openness to

Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism). We predict that although several constructs may correlate independently with the DV (as per the previous hypotheses), particular psychopathy domains (i.e., disinhibition, meanness) and personality factors (i.e., Neuroticism, Extraversion) may best explain InDUC and AUDIT scores (i.e., contribute unique variance). This hypothesis will be examined using two separate regression equations.

Hypothesis 5. We predict that disinhibition (as measured by an anti-saccade task on E-Prime) will show a positive correlation with TriPM Disinhibition, InDUC Impulse Control consequences, and the Neuroticism and Extraversion domains of the FFM. In addition, we predict that disinhibition (as measured by an anti-saccade task on E-Prime) will show a negative correlation with the Conscientiousness domain of the FFM. This hypothesis will also be tested by using a correlation matrix.

CHAPTER 3: METHODOLOGY

Participants

Participants were recruited from a southeastern university through the SONA research participation pool and upper level psychology courses. The sample consisted of 81 females and 46 males between the ages of 18 and 49 years. The majority of the participants were between the ages of 18 and 21 (93.8%) and were primarily Caucasian (77.2%), although the sample included a diverse range of ethnicities (15.7% African American, .8% Hispanic, 3.9% Asian, and 2.4% Other).

Procedure

Participants read a hard copy of the consent form that explained the expectations of the study, potential risks and benefits (if any), and the ability to withdraw from the study at any time without penalty. Next, participants took out their personal laptop and logged into their student email account to receive access to the Qualtrics link where the questionnaires were answered. Participants were given an identification number to keep their responses anonymous, which was typed into the "participant ID" question on Qualtrics. While completing the questionnaires, the participants were instructed to move to a separate desktop computer to complete the second part of the study. The second part of the study included a seven-minute anti-saccade task. After completing the anti-saccade task, participants were instructed to finish the questionnaires on their laptops. After finishing both parts of the study, participants were given a debriefing form that provided contact information of the researcher, faculty advisor, IRB, and Counseling and Psychological Services (CAPS), in the event they wished to speak to someone about their substance use or other issues they may have experienced.

Measures

Psychopathy. Psychopathy was measured using the Triarchic Psychopathy Measure (TriPM; Patrick, 2010), which consists of 58 items that measure the three phenotypic construct subscales: boldness, meanness, and disinhibition. The summation of the three subscales results in a Total Psychopathy score. The TriPM Disinhibition scale consists of 20 items. The TriPM Meanness scale consists of 19 items. Lastly, the TriPM Boldness scale consists of 19 items. The TriPM is a 4-point Likert scale (1 = true, 2 = mostly true, 3 = mostly false, 4 = false). A question from the boldness scale is "I'm more optimistic more often that not." For the meanness scale, an example question is "I would enjoy being in a high-speed chase." For the disinhibition scale, an example question is "I often act on immediate needs." The TriPM was found to have acceptable reliability in this sample ($\alpha = .78$). A previous study (Spencer, 2013) found good reliability for both men ($\alpha = .83$) and women ($\alpha = .80$) using the TriPM. Similarly, a recent study (Hall et al., 2014) demonstrated acceptable internal consistency of the TriPM subscales in an undergraduate sample, with $\alpha = .86$ for boldness, $\alpha = .82$ for meanness, and $\alpha = .75$ for disinhibition.

Five-Factor Model of Personality. Personality was measured using the M5-120 (Johnson, 2001), which consists of 120 items that measure the five factors of personality: Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. In addition, the M5-120 measures six facets under each domain. The six facets in the Openness to Experience domain include imagination, artistic interests, emotionality, adventurousness, intellect, and liberalism. The six facets in the Conscientiousness domain include self-efficacy, orderliness, dutifulness, achievement-striving, self-discipline, and cautiousness. The six facets in the Extraversion domain include friendliness, gregariousness, assertiveness, activity level, excitement – seeking, and cheerfulness. The six facets in the Agreeableness domain include trust,

morality, altruism, cooperation, modesty, and sympathy. Lastly, the six facets in the Neuroticism domain include anxiety, anger, depression, self-consciousness, impulsiveness, and vulnerability. The M5-120 is a 5-point Likert scale (1 = Inaccurate, 2 = Moderately Inaccurate, 3 = Neither, 4 = Moderately Accurate, 5 = Accurate). A few example statements from the M5-120 include "Worry about things," "Love excitement," and "See beauty in things that others might not notice." The M5-120 was found to have good reliability ($\alpha = .90$), as did each domain with $\alpha = .86$ for Extraversion, $\alpha = .87$ for Agreeableness, $\alpha = .84$ for Conscientiousness, $\alpha = .88$ for Neuroticism, and $\alpha = .77$ for Openness to Experience.

Narcissism. Narcissism was measured using the Five Factor Narcissism Inventory **(**FFNI; Glover, Miller, Lynam, Crego, & Widiger, 2012), which consists of 148 items that measure narcissism according to the FFM. The FFNI contains 15 scales that measure the grandiose and vulnerable factors of narcissism. Neuroticism has four subscales including reactive anger, shame, indifference, and need for admiration. Extraversion has three subscales including exhibitionism, authoritativeness, and thrill seeking. Openness to Experience has one subscale including grandiose fantasies. Agreeableness has six subscales including cynicism/distrust, manipulativeness, exploitativeness, entitlement, lack of empathy, and arrogance. Lastly, Conscientiousness has one subscale including acclaim seeking. The FFNI is a 5-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree). A few example questions from the FFNI include "I am very good at getting others to follow my lead," "I daydream about someday becoming famous," and "When people judge me, I just don't care." The FFNI was found to have excellent reliability ($\alpha = .92$).

Substance Use Consequences. Substance use consequences were measured using the Inventory of Drug Use Consequences **(**InDUC-2R; Tonigan & Miller, 2002), which consists of

50 items that measures five facets: physical, intrapersonal, social responsibilities, interpersonal, and impulse control consequences of substance use. The InDUC is answered using a 4-point Likert scale (0 = never, 1 = once or a few times, 2 = once or twice per week, 3 = daily or almost daily). An example question from the InDUC-2R is "I have had a hangover or felt bad after drinking or using drugs" (Physical problems). The InDUC-2r was found to have excellent reliability (.94).

Alcohol Use. Alcohol use was measured using the Alcohol Use Disorders Identification Test (AUDIT; Saunders, Aasland, Babor, De La Fuente, & Grant, 1993), which consists of 10 items that measure three domains: Hazardous Alcohol Use, Dependence Symptoms, and Harmful Alcohol Use. The self-report version was used for this study. To score the AUDIT, each response has a score ranging from 0 to 4. There are four risk level zones. Zone I is a score between 0 and 7, Zone II is a score between 8 and 15, Zone III is a score between 16 and 19, and Zone IV is a score between 20 and 40. Each zone has specific interventions based on severity. An example question from the AUDIT is "How often do you have a drink containing alcohol?" The AUDIT was found to have acceptable reliability ($\alpha = .73$).

Disinhibition. A physiological measure of disinhibition was explored using an anti-saccade task on E-Prime. E-Prime is used for computerized experimental designs and for this study, was installed and completed on a Dell desktop computer. Participants completed the entire task, which lasted approximately seven minutes, on the desktop computer. This task consisted of 72 trials and participants were asked to focus on a central-fixation array of three asterisks for 250, 750, 1250, 1750, or 2250 ms, followed by a flashing cue 11.4 cm to the left or right of the central-fixation, followed by a target arrow on the opposite screen location from the flashing cue. The flashing cue was a "=" presented for 80 ms, blanked for 50 ms, and presented again for 80

ms, and blanked again for 50 ms. The target arrow was masked after 80 ms by the sequence of a "+" and then a "❖" symbol. At this point, participants identified the direction the arrow was pointing by key-press responses (2=down, 4=left, 8=up, 6=right). Following the participants' response, a blank screen showed for 400 ms. Participants began with 20 trials of arrow-identification practice in which the target arrows were presented and masked at the central fixation. Each arrow direction was presented 5 times. After the practice trials, the anti-saccade test trials began. The anti-saccade task measures the proportion of errors on the 72 trials in addition to reaction time. This task measures the participant's ability to control impulses and inhibitions (Kallimani et al., 2009).

CHAPTER 4: RESULTS

First, descriptive statistics were examined to understand the demographic background of our participants and distribution of the self-report measures. See Tables 1a-1f. Next, a correlation matrix was examined to assess the associations between the three psychopathy domains (boldness, meanness, disinhibition) and the five factors of normal personality (Openness to experience, Neuroticism, Extraversion, Conscientiousness, Agreeableness) for our first hypothesis. As expected, results indicated that TriPM Total score was positively correlated with Extraversion and negatively correlated with Agreeableness and Conscientiousness. TriPM Disinhibition was negatively correlated with Agreeableness and Conscientiousness and positively correlated with Neuroticism. TriPM Meanness was inversely associated with Agreeableness, Conscientiousness, and Openness to Experience. Lastly, TriPM Boldness was inversely associated with Agreeableness and Neuroticism and positively associated with Extraversion. See Table 2.

For our second hypothesis, a correlation matrix was examined also to assess the associations between the three psychopathy domains and the 17 subscales on the five factor narcissism inventory (FFNI). Results indicated that TriPM Boldness, TriPM Meanness, TriPM Disinhibition, and TriPM Total were positively correlated with FFNI Grandiosity, FFNI Thrill Seeking, FFNI Arrogance, FFNI Lack of Empathy, FFNI Entitlement, FFNI Exploitativeness, FFNI Manipulativeness, and FFNI Grandiose Fantasies. TriPM Meanness, TriPM Disinhibition, and TriPM Total were positively correlated with FFNI Distrust. TriPM Disinhibition and TriPM Total were positively correlated with FFNI Reactive Anger. TriPM Boldness and TriPM Meanness were positively correlated with FFNI Indifference and FFNI Authoritativeness. TriPM

Meanness and TriPM Disinhibition were positively correlated with FFNI Vulnerability. TriPM Boldness was negatively correlated with FFNI Shame, FFNI Need for Admiration, and FFNI Vulnerability and positively correlated with FFNI Acclaim-Seeking and FFNI Exhibitionism. TriPM Disinhibition was positively correlated with FFNI Need for Admiration. Lastly, TriPM Total was positively correlated with FFNI Indifference, FFNI Exhibitionism, FFNI Authoritativeness, and FFNI Acclaim Seeking and negatively correlated with FFNI Shame. See Table 3.

For our third hypothesis, a correlation matrix was examined to assess the associations between the three psychopathy domains and the six problems associated with substance use (InDUC; physical, interpersonal, intrapersonal, impulse control, social responsibility, and total problems). Results indicated that TriPM Total and TriPM Disinhibition were positively correlated with all six problems associated with substance use. TriPM Meanness was positively correlated with all substance use consequences except InDUC Interpersonal and InDUC Social Responsibility. Lastly, TriPM Boldness was positively associated with InDUC Intrapersonal, InDUC Impulse Control, and InDUC Total. See Table 4.

A multiple regression analysis was conducted to examine whether normal personality (Extraversion, Conscientiousness, and Agreeableness) and the three psychopathy domains (boldness, meanness, and disinhibition) significantly predicted participants' impulse control consequences resulting from substance use. The overall model accounted for 22.1% of the variance in InDUC Impulse Control scores ($R^2 = .221$, $F(6, 115) = 5.426$, $p<.01$), but only TriPM Disinhibition was a significant predictor ($\beta = .325$, $p<.01$). See Table 5.

A separate multiple regression analysis was used to test if the three psychopathy domains (boldness, meanness, disinhibition) could significantly predict participants' AUDIT scores. The

results from the regression indicated that three factors explained 14.4% of the variance (R^2 = .144, F(3, 116) = 6.479, p<.000). It was found that TriPM Boldness significantly predicted AUDIT total scores (β = .180, p<.05), as did TriPM Disinhibition (β = .317, p<.01). See Table 6.

A correlation matrix was used to examine the associations between the three psychopathy domains (boldness, meanness, disinhibition), normal personality (Openness to Experience, Conscientiousness, Extraversion, Agreeableness, Neuroticism), InDUC subscales, and reaction time and error rates from the anti-saccade task on E-Prime. Results indicated that none of the psychopathy domains or five factors of personality significantly correlated with reaction time and error rates. Extraversion and the anti-saccade error rates were approaching significance (r = .172, p = .055). InDUC Physical consequences and anti-saccade error rates was positively correlated (r = .217, p<.05).

CHAPTER 5: DISCUSSION

It is suggested that there is a strong interrelation between psychopathy, narcissism, and normal personality traits, and this interrelation can have an influence on both adaptive and maladaptive behaviors. For example, a variety of studies have found a link between psychopathy and maladaptive behaviors such as substance use, aggression, and violence, suggesting that psychopathy is more commonly associated with maladaptive behaviors (Alcorn et al., 2013; Cox et al., 2013; Magid et al., 2007; Magyar et al., 2011). In particular, substance use among individuals with psychopathic characteristics appears especially common; however, some individuals develop substance use disorders, whereas others have no significant problems with daily functioning as a result of their use. In addition, previous studies have found that psychopathy and narcissism can be explained using normal personality traits, suggesting that psychopathy and narcissism are on the same personality continuum as normal personality, except are more severe (Derefinko & Lynam, 2013; Fossati et al., 2013; Miller & Lynam, 2003; Poy et al., 2014). With the long-standing debate on the definition of psychopathy, problematic behaviors associated with psychopathy (i.e., substance use), and the connection between psychopathy and other personality traits, it is necessary to have a full understanding of psychopathy as a dimensional construct. This study examined the three triarchic psychopathy domains, the five-factor model of personality, narcissism, disinhibition, and substance use in college students.

Our first hypothesis examined the association between the three triarchic psychopathy domains and the five domains of normal personality. As expected, findings indicated that psychopathic tendencies were inversely associated with Agreeableness and Conscientiousness

and suggested also that psychopathy was associated with Extraversion. Neuroticism was not associated with overall psychopathy in this sample. This is consistent with a previous study (Poy et al., 2014) in which there were mixed findings about the association between psychopathy and Neuroticism. Some psychopathy domains (i.e., disinhibition) are associated with high levels of Neuroticism, whereas other domains (i.e., meanness) are not associated with Neuroticism. This suggests that it is important to view psychopathy based on its individual domains and traits.

In terms of domains of psychopathy, findings supported our prediction that disinhibition would be negatively correlated with Agreeableness and Conscientiousness, and positively correlated with Neuroticism. Those individuals with difficulty managing their impulses may be more likely to get into disputes with others, have trouble getting along, and fail to pay attention to details and responsibilities in their daily life. Our findings would suggest also that individuals who struggle to inhibit their impulses tend to also exhibit more traits associated with neuroticism. Next, findings supported also the assumption that psychopathic meanness is associated with being less agreeable and less conscientious, but this aspect of psychopathy was not associated with Extraversion in this sample. Instead, traits associated with meanness were linked to being less open to experience. This, too, is consistent with some previous research. Specifically, Poy and colleagues (2014) found a negative correlation between meanness and different facets of Extraversion, suggesting that the Extraversion domain may not be the best factor to explain psychopathy in terms of normal personality. Instead, focusing on the low levels of Agreeableness and Conscientiousness can distinguish between normal personality and psychopathic traits.

Lastly, the psychopathic tendency associated with boldness was inversely associated with both Neuroticism and Agreeableness, and positively associated with Extraversion in this sample.

In contrast, our findings did not support the association between boldness and the personality traits of Openness to Experience and Conscientiousness. We would expect to see a strong positive correlation between boldness and Openness to Experience and Conscientiousness because boldness is described by fearlessness, self-confidence, and sociability, which is associated in individuals with high levels of Openness to Experience and Conscientiousness. One argument could be that since high levels of Conscientiousness are associated with successful psychopathy and low levels are linked to criminal psychopathy, our sample of college students may not demonstrate any traits related to boldness. Specifically, their Conscientiousness levels could be moderate and average, suggesting that they are well adjusted (Poy et al., 2014). This would need to be further explored in future studies.

Our second hypothesis examined the relationship between psychopathy and narcissism. We expected to see a positive correlation between TriPM total scores with nine facets of narcissism as measured by the FFNI (i.e., Reactive Anger, Need for Admiration, Thrill Seeking, Cynicism/Distrust, Manipulativeness, Exploitativeness, Entitlement, Lack of Empathy, and Arrogance). In support of our hypothesis, findings suggested that overall psychopathy was positively correlated with all of the nine facets of narcissism except Need for Admiration, Shame, and Vulnerability. These results support the previous findings that narcissism and psychopathy are highly interrelated, sharing many of the same traits (Fossati et al., 2014; Miller et al., 2013). We also examined the extent to which different psychopathy domains overlap with narcissism facets. Specifically, findings indicated that boldness is associated with many fearless-dominant traits of narcissism, such as arrogance, entitlement, and grandiosity. Similarly, meanness shared many callous-unemotional traits with narcissism, including manipulativeness, lack of empathy, exploitativeness, and grandiosity. Furthermore, disinhibition shares many

externalizing traits with narcissism such as thrill-seeking, reactive anger, and need for admiration. This is consistent with the notion that narcissism and psychopathy are on the same personality continuum and are dimensional constructs, with the main difference being that psychopathy has more externalizing difficulties (e.g., aggression, violence, sensation seeking) compared to narcissism.

Our third hypothesis examined the relationship between the psychopathy and substance use consequences. We expected to see a positive correlation between substance use consequences associated with poor impulse control, and both psychopathic disinhibition and meanness. This was supported by our findings. We also expected to see a positive correlation between disinhibition and a failure to meet social responsibilities due to substance use. Our results support this hypothesis, thus providing additional support for the association between psychopathy and adverse substance use consequences (Hopley & Brunelle, 2012; Magyar et al., 2011). Moreover, all five types of adverse substance use consequences (physical, intrapersonal, interpersonal, social responsibility, and impulse control problems) were linked to psychopathic disinhibition and overall psychopathy in this sample. This suggests that psychopathy - especially the disinhibition domain - is associated with many negative consequences pertaining to substance use. Previous research (Alcorn et al., 2011; Kemp et al., 2015; Magyar et al., 2011) suggests that the disinhibition domain of psychopathy is the most associated with maladaptive behaviors, particularly substance use, which our findings strongly support. We found a positive correlation between psychopathic boldness and intrapersonal consequences related to substance use. This was not expected and we suspect this is due to noise within our data set.

Our fourth hypothesis examined the relative contribution of normal personality and psychopathy to substance use and various substance use consequences. Findings indicated that

psychopathic disinhibition and boldness, but not meanness, significantly predicted impulse control consequences stemming from substance use, suggesting that these two domains of psychopathy contribute to more maladaptive consequences from substance use compared to meanness. Next, three factors of personality were added (i.e., Agreeableness, Conscientiousness, Extraversion), in addition to the three psychopathy domains. Results indicated that the model was statistically significant in predicting impulse control consequences related to substance use; however, disinhibition was the only predictor.

We also examined the three psychopathy domains and substance use (total AUDIT scores) to determine what psychopathy domain, if any, contributes to college students' frequency of use. Findings of a multiple regression indicated that both disinhibition and boldness contributed to substance use, providing further support for the association between externalizing difficulties and psychopathic traits (disinhibition, impulsivity have the strongest correlation with substance use and abuse; Magid et al., 2007). As indicated by our findings, out of the three psychopathy domains, disinhibition tends to be more strongly associated with maladaptive behaviors (i.e., substance use, impulsivity, aggression, and thrill-seeking).

Overall, our findings regarding the associations among psychopathy, narcissism, normal personality, and substance use were largely supported. It appears, however, that disinhibition is a major component in substance use and abuse. While there is a significant amount of overlap between psychopathy and narcissism, the disinhibition domain of psychopathy is the distinguishing factor because of its strong link to externalizing behaviors, unlike narcissism. In addition, certain personality traits (i.e., Agreeableness, Conscientiousness, Extraversion) in combination with specific psychopathy domains (i.e., disinhibition, boldness) can predict substance use consequences; however, disinhibition is significantly more dominant and

influential in the development of adverse substance use consequences. With this knowledge, we can recognize the impact personality has on the development and maintenance of substance use disorders.

Our final hypothesis examined the relationship between reaction time and error rates as measure during the anti-saccade task, the three psychopathy domains, five factors of personality, and the five substance use consequences. We predicted that there would be a positive correlation between the error rates and disinhibition, substance use consequences associated with poor impulse control, Neuroticism, and Extraversion. We also predicted a negative correlation between reaction time and disinhibition and impulse control consequences from using substances. We also predicted that the error rates would have a negative correlation with Conscientiousness. Our findings did not support these associations. After examining these relationships using a correlation matrix, we only found a significant positive correlation between the anti-saccade error rates and physical consequences of substance use (i.e., being hung-over, experiencing physical problems stemming from use of drugs or alcohol). The lack of findings may warrant some further explanation and elaboration on the task. Specifically, the anti-saccade task required participants to quickly look to the opposite side of the screen where the flash was and inhibit their eye gaze from the flash so that they could focus on the arrow and what direction the arrow was pointing in. In addition, participants needed to control their key responses to make sure they were selecting the accurate key. This task can measure impulsivity and disinhibition, although our findings do not support that. Previous research (Caswell, Morgan, & Duka, 2013) suggests that individuals with "motor impulsivity," also known as "behavioral disinhibition," have difficult inhibiting or suppressing an inappropriate response (i.e., clicking the key to identify the direction of the arrow before seeing the arrow). We would expect individuals who

are highly disinhibited and have impulse control problems to prematurely click the key to identify the arrow, resulting in higher error rates and faster reaction times. This is a limitation to the study and needs to be examined further. Another task that could more accurately measure disinhibition could be the Stop Signal Task (SST; Logan, 1994). This task primarily measures motor impulsivity, although there are mixed findings and controversies associated with this task as well.

In addition to the potential shortcomings of the task used in this study, there are a few additional limitations that must be considered when examining the findings. First, our sample was comprised of undergraduate students, many of whom did not currently use any substances (46.5%). Because a major focus of this study was on substance use and substance use consequences, the number of participants' who used substances (53.5%) limited our ability to understand the true extent to which psychopathy and personality influence substance use consequences. Future studies, if conducting research with a non-clinical sample, should utilize a sample that is predominantly composed of substance users. Second, our sample size (n = 127) was not large enough to complete more advance statistical analyses. With the number of variables examined in this study, it would have been beneficial to have at least 160 participants. It should be noted, however, that our regression equations utilized at least n=20 per variable entered, which is consistent with the common rule of thumb for such analysis (Tabachnick & Fidell, 2007). In addition, our sample was limited to undergraduate students enrolled in an Introduction to Psychology course, with the exception to a few students who were enrolled in upper-level psychology courses. Future studies should use a variety of recruitment techniques to have a larger, more diverse, sample size.

Overall, the data suggest that the three domains of psychopathy, narcissism, and normal personality have a significant amount of overlap, supporting the idea that personality is on a continuum and is dimensional in nature. When comparing psychopathy and narcissism, the major distinguishing factors are the externalizing difficulties that make up the definition, identification, and measurement of psychopathy. Moreover, the data show that specific psychopathic traits (i.e., Disinhibition) are more responsible for substance and maladaptive substance use consequences. It is important to note that psychopathic traits are not the only contributor in this equation; normal personality traits (i.e., Extraversion, Agreeableness, Conscientiousness) also play a big role in the development and maintenance of substance use problems. Future research should include a physiological measure of disinhibition (i.e., SST, eye-tracking) to determine the underlying mechanisms of impulsivity in hopes to determine other contributions to the relationship between psychopathy, personality, and substance use.

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APPENDIX A

Table 1a: *Descriptive Statistics - Age*

	Frequency	Percent
18	67	52.8
19	24	18.9
20	18	14.2
21	10	7.9
22	1	.8
23	2	1.6
24	2	1.6
35	1	.8
49	1	.8
Total	127	100
Mean = 20.06		
SD = 4.19		

Table 1b: *Descriptive Statistics - Sex*

	Frequency	Percent
Male	46	36.2
Female	81	63.8
Total	127	100

Table 1c: *Descriptive Statistics - Race*

	Frequency	Percent
White	98	77.2
Black	20	15.7
Hispanic	1	.8
Asian	5	3.9
Other	3	2.4
Total	127	100

Table 1d: *Descriptive Statistics – Drugs used in the past*

	Frequency	Percent
None	35	27.6
Alcohol	49	38.6
Alcohol and Marijuana	30	23.6
Alcohol, Marijuana, Illicit	13	10.2
Total	127	100

Table 1e: *Descriptive Statistics – Drugs used presently*

	Frequency	Percent
None	59	46.5
Cigarettes	1	.8
Alcohol	49	38.6
Marijuana	4	3.1
Alcohol and Marijuana	11	8.7
Alcohol, Marijuana, Illicit	2	1.6
Marijuana and Illicit	1	.8
Total	127	100

Table 1f: *Descriptive Statistics for Self-Report Measures*

	Mean	SD	Range
TriPM Total	60.96	18.76	30-141
TriPM Boldness	32.38	8.21	12-51
TriPM Meanness	12.85	9.52	0-46
TriPM Disinhibition	15.73	7.79	2-44
Extraversion	3.47	.55	2-5
Agreeableness	3.79	.57	2-5
Conscientiousness	3.77	.49	3-5
Neuroticism	2.94	.65	1-4
Openness to Experience	3.33	.47	2-5
FFNI Reactive Anger	2.62	.67	1-5
FFNI Shame	3.03	.74	1-5
FFNI Indifference	2.91	.76	1-5
FFNI Need for Admiration	2.76	.62	1-4
FFNI Exhibitionism	3.08	.69	1-5
FFNI Authoritativeness	3.27	.77	1-5
FFNI Grandiose Fantasies	3.31	.71	2-5
FFNI Manipulativeness	2.55	.74	1-5
FFNI Exploitativeness	2.26	.83	1-5
FFNI Entitlement	2.11	.67	1-5
FFNI Lack of Empathy	2.08	.72	1-4
FFNI Arrogance	2.34	.67	1-5
FFNI Acclaim Seeking	3.83	.67	1-5
FFNI Thrill Seeking	2.56	.88	1-5
FFNI Distrust	2.89	.57	1-4
FFNI Grandiosity	2.76	.49	2-5
FFNI Vulnerability	2.82	.48	2-4
InDUC Total	11.51	11.96	0-56
InDUC Physical	1.71	1.97	0-11
InDUC Interpersonal	1.53	1.78	0-7
InDUC Intrapersonal	1.66	2.17	0-12
InDUC Impulse Control	2.02	2.68	0-13
InDUC Social Responsibilities	.92	1.75	0-12
AUDIT	4.18	3.87	0-16

Table 2: *Correlations between TriPM Domains and M5-120 Factors*

Variables	1	2	3	4	5	6	7	8	9
1. TriPM Bold	1								
2. TriPM Mean	.32**	1							
3. TriPM Disin.	.08	.49**	1						
4. TriPM Total	.63**	.85**	.70**	1					
5. E	.62**	.07	.08	.34**	1				
6. A	-.24**	-.78**	-.41**	-.67**	-.04**	1			
7. C	.15	-.39**	-.54**	-.35**	.12	.39**	1		
8. N	-.65**	-.01	.33**	-.15	-.41**	-.01	-.35**	1	
9. O	.17	-.25**	.00	-.05	.21*	.37**	.26**	-.16	1

*p<.05
** p<.01

Table 3: *Correlations between TriPM Domains and FFNI*

Variables	Boldness	Meanness	Disinhibition	Total
Reactive Anger	.03	.40**	.44**	.40**
Shame	-.59**	-.14	0	-.33**
Indifference	.59**	.37**	.13	.50**
Need Admiration	-.42**	.04	.29**	-.04
Exhibitionism	.52**	.12	.11	.34**
Authoritativeness	.71**	.33**	.12	.53**
Grand Fantasies	.39**	.29**	.19**	.40**
Manipulativeness	.50**	.58**	.33**	.65**
Exploitativeness	.30**	.63**	.36**	.60*
Entitlement	.26**	.55**	.31**	.52**
Lack Empathy	.23**	.70**	.34**	.59**
Arrogance	.44*	.61**	.35**	.65**
Acclaim	.46**	.12	-.08	.23**
Thrill Seeking	.43**	.52**	.35**	.60**
Distrust	-.17	.31**	.38**	.24**
Grandiosity	.66**	.66**	.35**	.77**
Vulnerability	-.40**	.19**	.36**	.07

*p<.05
** p<.01

Table 4: *Correlations between TriPM Domains and InDUC Subscales*

Variables	Boldness	Meanness	Disinhibition	Total
InDUC Physical	.17	.22*	.28**	.30**
InDUC Interpersonal	.15	.25**	.47**	.39**
InDUC Intrapersonal	.18*	.17	.27**	.27**
InDUC Impulse Control	.24**	.27**	.41**	.41**
InDUC Social Respons.	.02	.13	.29**	.20*
InDUC Total	.21*	.24*	.42**	.38**

*p<.05
** p<.01

Table 5: *Multiple Regressions of TriPM Domains, Normal Personality and InDUC Impulse Control Consequences*

	Model 1			Model 2			Model 3			Model 4			Model 5			Model 6		
Predictors	*B*	*SE B*	β	*B*	*SE B*	β	*B*	*SE B*	β	*B*	*SE B*	β	*B*	*SE B*	β	*B*	*SE B*	β
Disinhibition	.14	.03	.41	.13	.03	.37	.13	.03	.39	.13	.03	.38	.13	.03	.38	.11	.04	.33
Meanness				.02	.03	.08	.00	.03	.00	.00	.03	.02	.00	.04	.03	.00	.04	.02
Boldness							.06	.03	.20	.05	.04	.15	.05	.04	.15	.06	.04	.18
E										.05	.04	.15	.36	.54	.07	.38	.54	.08
A													.04	.62	.00	.16	.63	.04
C																-.67	.58	-.12
R^2		.17			.17			.21			.21			.21			.22	
F for change in R^2		24.37**			.67			5.20*			.46			.01			1.35	

**p<.01
*p<.05

Table 6: *Multiple Regressions of TriPM Domains and AUDIT Total scores*

	Model 1			Model 2			Model 3		
Predictor	*B*	*SE B*	β	*B*	*SE B*	β	*B*	*SE B*	β
TriPM Disinhibition	.17	.04	.33	.15	.05	.30	.16	.05	.32
TriPM Meanness				.03	.04	.07	.00	.04	.01
TriPM Boldness							.09	.04	.18
R^2		.11			.11			.14	
F for change in R^2		14.66**			.47			3.99*	

**p<.01
*p<.05