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Alcohol Pathology and the Triarchic Model of Psychopathy: The Role of Protective Behavioral Strategies and Impulsivity

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ALCOHOL PATHOLOGY AND THE TRIARCHIC MODEL OF PSYCHOPATHY: THE ROLE OF PROTECTIVE BEHAVIORAL STRATEGIES AND IMPULSIVITY

by

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ABSTRACT

OVERVIEW: Psychopathy has been an area of growing interest in psychology for the last half century. Currently, the most common conceptualization of psychopathy breaks it down into two factors: primary and secondary psychopathy. More recently, psychopathy has been viewed through a more nuanced model, the Triarchic Model of Psychopathy. The present study examines the relationship between the three facets of the Triarchic Model and alcohol pathology via aspects of impulsivity and Protective Behavioral Strategies (PBS). METHOD: A college student sample of n = 967 individuals who endorsed consuming alcohol completed surveys regarding the Triarchic Model, impulsivity, PBS use, and alcohol pathology. RESULTS: Our findings indicate that boldness and disinhibition are significant predictors of alcohol pathology. Boldness was partially mediated by conscientiousness, while disinhibition was partially mediated by both conscientiousness and PBS use. Meanness was not associated with higher levels of alcohol pathology. CONCLUSIONS: It seems that aspects of psychopathy related to disinhibition and boldness are predictive of alcohol pathology, while meanness, though similar to primary psychopathy, does not relate to alcohol pathology as hypothesized. This thesis not only adds to the literature between psychopathy and alcohol pathology but allows for a more exact insight regarding aspects of psychopathy and their relation to alcohol pathology.

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TABLE OF CONTENTS

LIST OF FIGURES vi

LIST OF TABLES vii

CHAPTER 1: INTRODUCTION 1

Models of Psychopathy 2

Psychopathy and Impulsivity 5

Impulsivity and Problematic Alcohol Use 7

Psychopathy and Problematic Alcohol Use 8

Protective Behavioral Strategies 10

Present Study 12

CHAPTER 2: METHOD 14

Participants 14

Power Analysis 14

Procedure 15

Measures 15

Data Preparation and Analytic Overview 17

CHAPTER 3: RESULTS 19

Descriptive Statistics 19

Primary Analyses 19

CHAPTER 4: DISCUSSION 22

Clinical Implications 25

Limitations 26

Conclusion 27

APPENDIX A: FIGURE 29

APPENDIX B: TABLES 31

APPENDIX C: APPROVAL LETTER 35

APPENDIX D: QUESTIONNAIRES 37

REFERENCES 59

LIST OF FIGURES

Figure 1. Final model of the Triarchic Model of Psychopathy onto alcohol pathology via sensation seeking, conscientiousness, urgency, and PBS use..... 30

LIST OF TABLES

Table 1. Descriptive statistics and bivariate correlations..... 32

Table 2. Descriptive statistics of alcohol pathology 33

Table 3. Standardized effects from Triarchic Model of Psychopathy to alcohol pathology 34

CHAPTER 1: INTRODUCTION

Though not an official diagnosis in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013), psychopathy has received substantial interest in psychological research over the past half century (Patrick, 2006; Poythress & Hall, 2011), and has been linked to numerous negative outcomes (Widiger, 2006), including alcohol use (Sylvers, Landfield, & Lilienfeld, 2011; Taylor, Reeves, James, & Bobadilla, 2006). For example, in a study examining heavy episodic drinking and psychopathic traits, Sylvers and colleagues (2011) found that psychopathic traits were a positive predictor of heavy episodic drinking. In a separate study, researchers found that psychopathic traits and alcohol use were accounted for by reward sensitivity and the possible positive rewards associated with alcohol use, thus leading to more alcohol consumption (LaLiberte & Grekin, 2015). Thus, since at least the 1920s (Partridge, 1928; Patrick, Fowles, & Krueger, 2009), psychopathy has been broadly associated with various forms of alcohol consumption and alcohol related problems.

The modern conceptualization of psychopathy began in 1941 with Henry Cleckley's seminal text "The Mask of Sanity" (Cleckley, 1941). This would lay the groundwork for future research into the psychopathic personality to where present research can trace its roots. By the 1950s, the first edition of the DSM listed a diagnosis labeled as Sociopathic Personality Disturbance (Coolidge & Segal, 1998), marking the first time that psychopathy-like symptoms were recognized as an official mental health disorder. In 1980, with the third edition of the DSM, this became what is still known today as Antisocial Personality Disorder (Strack, 2005). Though, it should be noted that neither of these diagnoses were exclusively focused on "psychopathy" as a diagnostic feature. More recently, the DSM-5 has developed an alternative model section to

help conceptualize a variety of personality disorders, including Antisocial Personality Disorder (American Psychiatric Association, 2013). Here, there is an option that allows a clinician to specify the occurrence of psychopathic traits, defined broadly as a lack of fear coupled with bold interpersonal behaviors. Despite this inclusion, there remains disagreement in the field as to how best conceptualize and understand the underlying factors associated with psychopathy.

Models of Psychopathy

To better understand psychopathy, several models examining psychopathy and psychopathic traits have been developed. The most well-known model is Hare's (Hare, 1980, 2003; Hare & Neumann, 2006) Factor 1 and Factor 2 psychopathy, also referred to as primary and secondary psychopathy (Karpman, 1948; McHoskey, Worzel, & Szyarto, 1998). Primary psychopathy is defined by a number of abusive interpersonal and/or self-destructive behaviors such lying, cheating, glibness, aggression, fearlessness, and a lack of empathy. In contrast, secondary psychopathy is defined more by impulsive behavior, poor self-control, and thrill seeking (Hare, 2003; Lilienfeld & Andrews, 1996; McHoskey et al., 1998; Poythress & Hall, 2011).

However, recently there have been more nuanced models proposed, such as the Triarchic Model of psychopathy (Patrick et al., 2009). The goal of the Triarchic Model of Psychopathy was to create a more rounded conceptualization of psychopathy, one that integrates historical perspectives with neurological and etiological evidence (Evans & Tully, 2016). Importantly, the Triarchic Model is not meant to replace other models or conceptualizations of psychopathy, but rather to provide more specific measurement of the underlying psychopathic traits (Patrick, Drislane, & Strickland, 2012). As the name suggests, the Triarchic model views psychopathy as

a combination of three distinct, but related, higher order constructs: meanness, disinhibition, and boldness.

The meanness construct can trace its roots back to the Externalizing Spectrum Inventory (ESI), which was designed to measure both impulsive facets of psychopathy as well as more predatory and callous facets (Patrick, 2010). Thus, meanness is the callous nature often described of those high in psychopathic traits; the ability to exploit others and find pleasure in cruelty. Individuals high in this category of psychopathy often lack close relationships, are willing to exploit others without feeling remorse, and behave in a generally more aggressive and predatory nature (Patrick et al., 2012). Given that primary psychopathy is frequently seen as the more callous, calculating, and low-arousal subtype of psychopathy (Dean et al., 2013; Karpman, 1948; Levenson, Kiehl, & Fitzpatrick, 1995; McHoskey et al., 1998), meanness, via cruel and apathic behavior, appears to stem from this subtype of psychopathy. Indeed, previous research has shown that, of the three Triarchic constructs, meanness is the construct most robustly associated with primary psychopathy (Drislane, Patrick, & Arsal, 2014; Patrick et al., 2012; Patrick et al., 2009).

Disinhibition, however, appears to stem from the secondary psychopathy subtype (Drislane et al., 2014; Patrick et al., 2012; Patrick et al., 2009), and is also derived mainly from the ESI (Evans & Tully, 2016). It is described as involving impulsive behavior, lack of foresight, and poor planning all for immediate gratification (Patrick, 2010; Patrick et al., 2009). This strongly mirrors the facets that comprise secondary psychopathic traits (Dean et al., 2013; Levenson et al., 1995; Lyons, 2015; McHoskey et al., 1998). This description is supported by neurological evidence that impulsive behavior is, among other things, a dysfunction of the

prefrontal cortex (Drislane et al., 2014). Disinhibition is also generally referred to as the "externalizing" component of psychopathy (Drislane et al., 2014; Evans & Tully, 2016; Patrick et al., 2012; Patrick et al., 2009), as it is often seen through impulsive actions and a general lack of planning.

Boldness has been the source of some disagreement in the literature (Evans & Tully, 2016; Miller & Lynam, 2012). Patrick et al. (2009) discuss that this feature of psychopathy is essentially the ability to remain calm and focused in otherwise stressful circumstances. Although, this may seem like an adaptive trait, boldness also taps into a lack of empathy and correlates with measures of narcissism (Patrick, 2010). Patrick (2010) also breaks down the boldness sub-group into dominance, venturesomeness, and low anxiousness, as based on the Psychopathic Personality Inventory (PPI). Boldness appears to stem from pieces of secondary psychopathy (venturesomeness) as well as elements of primary psychopathy (dominant behavior). Previous studies have also found that boldness does not map as well onto primary and secondary psychopathy or constructs often related to psychopathy, such as impulsivity, nor does it correlate as strongly with meanness or disinhibition as they do with each other (Drislane et al., 2014; Weidacker, O'Farrell, Gray, Johnston, & Snowden, 2017). Neurologically, boldness is thought to reflect the fearless temperament seen from deficits in the amygdala compared to impulsive behavior that is thought to be rooted more in deficient prefrontal cortex activation (Drislane et al., 2014; Patrick & Bernat, 2009). Overall, there is strong evidence supporting these facets of psychopathy (Patrick, 2010; Patrick et al., 2009), though there has been little research on how boldness, meanness, and disinhibition relate to alcohol pathology or impulsivity.

Psychopathy and Impulsivity

One of the most consistent downstream outcomes of psychopathy is impulsivity (Dean et al., 2013; Jones & Paulhus, 2011; Lyons, 2015; Poythress & Hall, 2011). Indeed, Karpman (1948) identified impulsive behavior as a core component of what we now classify as secondary psychopathy. However, impulsivity itself is a multifaceted construct. A popular model of impulsivity, proposed by Whiteside and Lynam (2001), identifies four different, albeit related, factors that comprise impulsive behavior: negative **u**rgency, lack of **p**erseverance, lack of **p**remeditation, and **s**ensation seeking (UPPS). More recently, a fifth component has been added which indexes one's propensity to engage in rash behavior in the context of positive mood (**p**ositive urgency) (Cyders et al., 2007).

These factors are measured via the UPPS-P Impulsive Behavior Scale, which yields a score for each of the five factors (Lynam, Smith, Cyders, Fischer, & Whiteside, 2007). Higher negative urgency indicates the individual is more likely to act in a rash, impulsive fashion in response to negative emotions, while higher positive urgency indicates the individual is more likely to act in a rash, impulsive fashion in response to positive emotions (Coskunpinar, Dir, & Cyders, 2013; Whiteside & Lynam, 2001). Lack of perseverance indicates that the individual does not often finish tasks once started, while lack of premeditation indicates the individual does not often plan actions ahead of time and may more often act without thinking (Whiteside & Lynam, 2001). Sensation seeking is associated with a drive to try new, often exhilarating or exciting activities (Whiteside & Lynam, 2001).

While each factor of the UPPS-P taps into a specific facet of impulsivity, there is evidence that these factors load on higher order impulsivity processes (Cyders & Smith, 2007;

Smith et al., 2007). Specifically, there is evidence that positive and negative urgency load onto a single higher-order "urgency" factor (Cyders & Smith, 2007). Furthermore, previous research has combined positive and negative urgency to create a more general urgency factor of impulsivity (Billieux, Gay, Rochat, & Van der Linden, 2010; Cyders, 2013). Similarly, Smith and colleagues (2007) found that lack of perseverance and lack of premeditation load on the higher-order construct of conscientiousness. This conceptualization has also been utilized in previous studies (Settles et al., 2012). Additionally, this conceptualization of rash action and conscientiousness is consistent with research into dual-process models of impulsivity (Dawe, Gullo, & Loxton, 2004; Dawe & Loxton, 2004). Interestingly, sensation seeking, has not been shown to load on either of these higher order factors, suggesting it represents a distinct aspect of impulsive behavior (Cyders & Smith, 2007; Smith et al., 2007).

As noted, impulsive behavior is considered a core outcome of psychopathy (Blackburn, 1969), especially secondary psychopathy (Dean et al., 2013; Levenson et al., 1995; Miranda Jr, MacKillop, Meyerson, Justus, & Lovallo, 2009). Research has also fleshed out the ways in which different aspects of impulsivity relate to psychopathy. For example, Lynam and Widiger (2007) review several measures of psychopathy along with the traditional break-down of primary and secondary, and found that certain psychopathic traits are consistently linked to low conscientiousness. In another study, secondary psychopathy, but not primary psychopathy, was significantly negatively correlated with scores on conscientiousness (Ross, Lutz, & Bailley, 2004). Similar results have been found regarding psychopathic traits and urgency, with positive correlations existing between secondary psychopathy and both positive and negative urgency (Miller, Watts, & Jones, 2011). Anestis et al. (2009) also found a correlation between secondary

psychopathy and negative urgency, and that negative urgency significantly predicted secondary psychopathic traits while controlling for primary psychopathy and other facets of impulsivity. Sensation seeking has also been found to be connected with psychopathic traits (Blackburn, 1969; Mann et al., 2017a; Mann, Paul, Tackett, Tucker-Drob, & Harden, 2017b; Zuckerman, Buchsbaum, & Murphy, 1980). For example, Mann and colleagues (2017a) found sensation seeking to be significantly associated with antisocial behavior, which was replicated in a sample of adolescents (Mann et al., 2017b). Furthermore, Spellbom and Phillips (2013) found that boldness significantly correlates with sensation seeking. Thus, when impulsivity is broken down into its various facets, psychopathy continues to be related with impulsivity, though there is evidence that different aspects of psychopathy relate to different aspects of impulsivity. Specifically, psychopathic disinhibition appears to be related to both urgency and low conscientiousness, while boldness appears to be most strongly related to sensation seeking.

Impulsivity and Problematic Alcohol Use

Impulsivity has also been consistently connected to alcohol consumption and use (Coskunpinar et al., 2013; Hittner & Swickert, 2006; Magid & Colder, 2007; Magid, MacLean, & Colder, 2007). For example, Magid and Colder (2007) examined alcohol use among college students within the framework of the UPPS. Results indicated that individuals with higher rates of sensation seeking and lower rates of premeditation both consumed more alcohol, while individuals with higher rates of urgency and lower rates of perseverance experienced more alcohol-related problems. Coskunpinar et al. (2013)'s review of the UPPS and alcohol use and problems literature revealed similar findings; specifically, that drinking quantity is most related to low levels of perseverance, while urgency (both positive and negative) best predicts drinking

problems. As noted, psychopathy is often conceptualized with impulsivity as a core outcome (Poythress & Hall, 2011). Thus, impulsivity could be one way that individuals with more psychopathic traits are at higher risk for alcohol problems; this is supported by previous research (Ray, Poythress, Weir, & Rickelm, 2009; Varlamov, Khalifa, Liddle, Duggan, & Howard, 2011).

Psychopathy and Problematic Alcohol Use

Previous research has shown a consistent association between alcohol use/problems and trait psychopathy (Kimonis, Tatar II, & Cauffman, 2012; Sher & Trull, 1994; Sylvers et al., 2011). For example, Sylvers and colleagues (Sylvers et al., 2011) found that individuals higher in psychopathic traits report more frequent episodes of heavy episodic drinking. Research has shown that the association between secondary psychopathy and problematic alcohol use is mediated by trait levels of impulsivity (Blackburn, 1969; Heritage & Benning, 2013; Smith & Newman, 1990; Whiteside & Lynam, 2009), which is theoretically consistent with the notion that secondary psychopathy is driven by poor impulse control (Dean et al., 2013; Miranda Jr et al., 2009), an aspect of temperament consistently associated with problematic alcohol use (Bobova, Finn, Rickert, & Lucas, 2009; Taylor et al., 2006).

Given that the disinhibition factor of the Triarchic Model of Psychopathy seems to stem primarily from secondary psychopathy, and is characterized by impulsive behavior, it seems likely that disinhibition would be related to problems regarding alcohol use via low levels of perseveration and premeditation. Disinhibition also appears to be partially constructed of the secondary psychopathy trait of excessive emotionality (Anestis, Anestis, & Joiner, 2009; Lynam & Widiger, 2007; Patrick et al., 2009). Thus, individuals with higher levels of disinhibition may be more likely to act rashly when imposed with either strong negative or positive emotions –

linking disinhibition to both positive and negative urgency. Previous research has linked secondary psychopathy to negative urgency (Anestis et al., 2009), though to date only one study appears to have examined correlations between the Triarchic Model of Psychopathy's definition of disinhibition and the different facets of impulsivity as measured by the UPPS-P (Weidacker et al., 2017). These results indicated that disinhibition is significantly correlated with low perseverance, low premeditation, high negative urgency, and high positive urgency.

Boldness, however, has been more difficult to connect to problematic alcohol use, as it does not map as well onto existing models of psychopathy. However, previous research has compared boldness to narcissism (Sellbom & Phillips, 2013), which has been linked to greater alcohol pathology (Luhtanen & Crocker, 2005). Furthermore, research indicated that boldness is comprised of a sense of adventure seeking and low trait anxiety (Patrick, 2010). Given that boldness significantly correlates with sensation seeking (Sellbom & Phillips, 2013), it is possible that high levels of boldness are related to alcohol pathology via sensation seeking.

Albeit more sparse, there is some evidence that primary psychopathy is also related to increased alcohol pathology, and that this could be due to reduced harm avoidance behaviors (Kramer, Stevenson, & Dvorak, 2017; Levenson et al., 1995). Specifically, Levenson et al. (1995) developed primary and secondary psychopathy scales using a college student population in order to expand measurement tools beyond those normed on inmates. They found that both primary and secondary psychopathy traits were related to ease of boredom. They also found that primary psychopathy, but not secondary, was negatively correlated with harm avoidance. In a recent study, Kramer et al., 2017 found that primary psychopathy was linked to alcohol problems via lower harm reduction (specifically lower use of protective behavioral strategies) when

drinking. Given the relationship between meanness and primary psychopathy, there is theoretical reasoning that individuals with high levels of meanness would engage in lower use of harm reduction strategies.

In summary, research has consistently linked the disinhibition factor of psychopathy to aspects of impulsivity, and this may mediate the association between disinhibition and alcohol problems. Boldness has been associated to sensation seeking and venturesome, which may in turn link boldness to alcohol-related problems. There is little evidence linking meanness to alcohol problems via factors of impulsivity. However, the conceptualization of meanness as a proxy for primary psychopathy suggests that behaviors associated with lower harm avoidance may link meanness to alcohol problems. One such behavior is the use of protective behavioral strategies (PBS) when drinking.

Protective Behavioral Strategies

PBS are specific behaviors that an individual can engage in (e.g. drinking water between alcoholic beverages), or commit not to engage in (e.g. not playing drinking games), that help reduce problems related to alcohol consumption (DeMartini et al., 2013; Martens, Pederson, LaBrie, Ferrier, & Cimini, 2007; Pearson, 2013). PBS are comprised of three subcategories: Stopping/limiting drinking, manner of drinking, and serious harm reduction. Stopping/limiting drinking PBS are behaviors that focus on a pre-determined time or drink amount that an individual will stop at. Some examples of this are deciding before going out when to leave the bar or party, or determining not to exceed a predetermined number of drinks. Manner of drinking refers to ways in which an individual can consume alcohol. PBS in this category can be actions such as avoiding drinking games or shots of liquor. Serious harm reduction refers to more direct

safety behaviors, such as keeping your drink with you at all times, not drinking and driving, or making sure you go home with a friend.

These behaviors have shown promise in reducing both alcohol consumption and problems related to alcohol consumption (Kenney & LaBrie, 2013; Martens et al., 2004). Furthermore, research has shown that the categories of PBS mitigate alcohol consumption and problems in different ways. For example, one study found that manner of drinking PBS tactics were associated with primarily less alcohol use, while serious harm reduction PBS was associated with less alcohol-related problems (Martens, Martin, Littlefield, Murphy, & Cimini, 2011). Interestingly, Martens et al. (2011) did not find evidence that the stopping/limiting PBSs resulted in lower alcohol consumption or alcohol-related problems. There is also evidence that moderate drinkers use the most PBS (Prince, Carey, & Maisto, 2013; Sugarman & Carey, 2007; Werch, 1990) and that PBS use possibly increases alcohol consumption among college students who use greater amounts of PBS than their peers (Sugarman & Carey, 2007). Nevertheless, PBS use has ample evidence that it can help both reduce overall alcohol consumption and curb alcohol-related problems.

Furthermore, PBS has been found to be a malleable intervention target (Dvorak, Pearson, Neighbors, & Martens, 2015), as they are thought to be less of an individual trait and more of teachable acts (Martens et al., 2004), though it should be noted that stand-alone PBS interventions have not demonstrated any substantial results (LaBrie, Napper, Grimaldi, Kenney, & Lac, 2015; Martens, Smith, & Murphy, 2013). However, when coupled with a norm-based intervention, the success of PBS reducing alcohol pathology increases (Lewis & Neighbors, 2006). Often, these interventions focus on the discrepancy between what an individual perceives

the drinking norm to be, and what the drinking norm actually is, which highlights how much more a heavy-drinking individual consumes compared to his/her peer (Lewis & Neighbors, 2006).

There is also evidence that PBS use is inversely related to cluster B personality traits (Doumas, Miller, & Esp, 2017). Levenson et al. (1995) found that primary psychopathy was inversely related to harm reduction behaviors, which is in direct conflict with PBS. Kramer et al. (2017) found that primary psychopathy was inversely related to PBS, which, in turn, was inversely related to alcohol use and problems. However, no study has examined secondary psychopathy (or the more nuanced Triarchic model) within the context of harm reduction strategies when drinking. Furthermore, certain PBSs, such as setting a predetermined number of drinks or time to leave the drinking venue, are in direct conflict with the impulsive, sensation-seeking nature of secondary psychopathy. Thus, it is necessary to further investigate how a more nuanced model of psychopathy relates to PBS and alcohol pathology. The Triarchic Model of Psychopathy intricately breaks down the construct of psychopathy and allows for a better understanding of how different aspects of psychopathy relate to alcohol pathology.

Present Study

Given that those with psychopathic traits seem to be at a heightened risk for using alcohol (Kimonis et al., 2012; Sher & Trull, 1994; Sylvers et al., 2011), it is necessary to better understand how particular psychopathic traits lead to alcohol pathology and the mechanisms by which this occurs. The present study examined the association between the three sub-categories of the Triarchic Model of Psychopathy (boldness, meanness, and disinhibition) and alcohol pathology as a function of impulsivity and PBS use among college students. Given that the

disinhibition subcategory appears to be related to more secondary psychopathic traits, we hypothesized different mechanisms linking disinhibition to alcohol pathology than that for boldness and meanness. We also hypothesized that meanness would be linked to alcohol pathology via a different mechanism than boldness, given the low correlation between boldness and meanness in previous literature (Weidacker et al., 2017). Specifically, we hypothesized that all three sub-categories of the Triarchic Model will be indirectly related to increased alcohol pathology (H1). We hypothesized that disinhibition would be related to heightened alcohol pathology via higher levels of urgency and lower levels of conscientiousness, (H2), while boldness would be related to increased alcohol pathology via sensation seeking (H3), and meanness would be related to heightened levels of alcohol pathology via lower use of PBS (H4).

CHAPTER 2: METHOD

Participants

Participants were *n* = 967 college student drinkers (592 women) from a local Southeast university. Participants ranged in age from 18 to 61 years old (*M* = 20.39, *SD* = 4.74). They were recruited over the fall 2017 and spring 2018 semesters. All participants endorsed consuming alcohol. Some students were able to receive SONA credits for participation.

Power Analysis

A monte carlo simulation was conducted to determine the necessary sample size. Mean standardized effect sizes between the exogenous variables, mediators, and outcome were estimated based on previous research. Intercorrelations were used to estimate expected associations among the predictors and mediators. In cases where effect sizes were not found, small associations were specified to provide a conservative estimate. An initial iteration with 200 specified observations revealed that most paths were adequately powered, though some were still underpowered. Possible observations were then increased to 300. This resulted in all direct and indirect effects reaching or exceeding traditional levels of power (1-βs = 0.84 – 1.00). Recent research in our lab suggests that approximately 57% of respondents consume alcohol. In addition, approximately 10% of the sample does not complete the full survey. Based on the power analysis, the goal was to screen 800 participants, which was well exceeded with the total sample size of *n* = 1,635. This number of participants also allowed for adequate power after removing non-drinkers and accounting for missing data.

Procedure

Data was collected via Sona. Participants were invited via email to participate in a study titled "Gambling Perceptions and Tendencies Among College Students." The email sent to students contained a link that directed them to the study, where they completed informed consent and were directed to the survey items. The IRB approved this study, and all participants were treated in accordance with the APA ethical guidelines for research (Sales & Folkman, 2000).

Measures

The measures of interest address trait levels of psychopathy, engagement in PBS strategies, trait levels of impulsivity, and problematic alcohol consumption and use. Demographic questions such as sex, gender, ethnicity, and age were also recorded.

Psychopathy. Psychopathy was measured via the Triarchic Psychopathy Measure (TriPM). The TriPM is a 58-item measure scored on a four-point Likert scale (0 = False, 1 = Mostly false, 2 = Mostly true, 3 = True) and is meant to measure psychopathic traits based on Patrick et al. (2009)'s conceptualization of psychopathy (Evans & Tully, 2016; Patrick, 2010). The TriPM is broken down into 3 subscales with 19-items assessing boldness (α = .771, *M* = 2.662, *SD* = 0.416; sample item: "I have a knack for influencing people."), 19-items assessing meanness (α = .885, *M* = 1.755, *SD* = 0.494; sample item: "I don't have much sympathy for people."), and 20-items assessing disinhibition (α = .856, *M* = 1.819, *SD* = 0.457; sample item: "I often act on immediate needs.").

Protective Behavioral Strategies. Protective Behavioral Strategies (PBS) were measured with the Protective Behaviors Strategies Scale (PBSS). The PBSS is a 15-item scale that assesses the three types of PBS: Stopping/limiting drinking (α = .873, *M* = 3.058, *SD* =

1.284; sample item: “Determine, in advance, not to exceed a set number of drinks.”), manner of drinking (α = .785, *M* = 1.831, *SD* = 1.220; sample item: “Avoid drinking games.”), and serious harm reduction (α = .701, *M* = 4.215, *SD* = 1.047; sample item: “Know where your drink has been at all times.”). Previous research has found strong construct validity and reliability of the PBSS (Martens et al., 2007; Pearson, D’Lima, & Kelley, 2013a). The three subcategories were used to create a total of PBS use (α = .936, *M* = 2.886, *SD* = 1.039).

Impulsivity. Impulsivity was measured using the Urgency, Premeditation, Perseverance, and Sensation seeking (UPPS-P) Impulsivity Behavior Scale. The UPPS-P is a five-factor model, comprised of 59 statements that participants rate on a 4-point Likert scale, ranging from “Strongly agree” to “Strongly disagree” (Lynam et al., 2007). These 59 items break down to represent the five sub-categories: negative urgency (α = .877, *M* = 2.172, *SD* = 0.625; 12 items; sample item: “I always keep my feelings under control.”), premeditation (α = .890, *M* = 3.030, *SD* = 0.600; 11 items; sample item: “I usually think carefully before doing anything.”), perseverance (α = .855, *M* = 3.006, *SD* = 0.588; 10 items; sample item: “I generally like to see things through to the end.”), sensation seeking (α = .868, *M* = 2.783, *SD* = 0.647; 12 items; sample item: “I’ll try anything once.”), and positive urgency (α = .941, *M* = 1.854, *SD* = 0.611; 14 items; sample item: “I tend to lose control when I am in a great mood.”). The original creation of the UPPS found that it had good convergent (*M* = 0.580) and divergent (*M* = 0.170) validity (Whiteside & Lynam, 2001). Additional research found that including positive urgency explained unique variance of risky behaviors amongst college students (Cyders et al., 2007). Previous research supports the use of the UPPS-P with a college student population (Cyders & Smith, 2007, 2008; Spillane, Smith, & Kahler, 2010). The positive and negative urgency

subscales were combined to create a total "urgency" variable (α = .947, *M* = 2.002, *SD* = 0.600). The perseverance and premeditation subscales were combined to create a total "conscientiousness" variable (α = .917, *M* = 3.017, *SD* = 0.542).

Alcohol pathology. Problematic alcohol use was assessed via the Alcohol Use Disorder Identification Test (AUDIT). The AUDIT is a 10-item questionnaire, that is comprised of three subscales: serious harm (α = .595, *M* = 1.466, *SD* = 2.281; sample item: "Have you or someone else been injured as a result of your drinking?"), alcohol dependence (α = .725, *M* = 0.679, *SD* = 1.567; sample item: "How often during the last year have you found that you were not able to stop drinking once you had started?"), and alcohol consumption (α = .695, *M* = 3.714, *SD* = 2.345; sample item: "How often do you have six or more drinks on one occasion?"). Previous research supports the AUDIT as an accurate measure of consumption and problems related to alcohol consumption among college student drinkers (DeMartini & Carey, 2009), with good reliability and validity (Donovan, Kivlahan, Doyle, Longabaugh, & Greenfield, 2006; Saunders, Aasland, Babor, & de la Fuente, 1993). AUDIT scores also can be clinically interpreted, with a score of 8 or higher indicating possible hazardous drinking, and a score of 13 or higher for women and 15 or higher for men indicating possible alcohol dependence (Saunders et al., 1993). The three subscales were combined to create a single measure of alcohol pathology (α = .771, *M* = 5.859, *SD* = 5.031).

Data Preparation and Analytic Overview

The entire dataset contained *n* = 1,635 participants (980 women). However, *n* = 668 (40.86%) of the sample did not endorse consuming alcohol (a necessity in order to examine alcohol pathology). Thus, they were removed from the analyses, resulting in a final sample of *n*

= 967 (592 women). To test the hypotheses, we specified a model with boldness predicting greater alcohol pathology via increased sensation seeking, meanness predicting alcohol pathology via lower PBS use, and disinhibition predicting alcohol pathology via increased urgency and decreased conscientiousness. Model fit was evaluated with the χ^2 test (ideal χ^2 is $p >$ .05), Root Mean Square Error of Approximation (RMSEA; ideally $\leq$ 0.070), Standardized Root Mean Square Residual (SRSM; ideally < .050), and the Comparative Fit Index (CFI; ideally > .900; Hooper, Coughlan, & Mullen, 2008; Marsh, Hau, & Wen, 2004). Confidence intervals of indirect effects were calculated from 5,000 bootstrapped random draws (MacKinnon, 2008). All model parameters are standardized.

To test the hypotheses, we specified a model with the sub-category of disinhibition predicting greater alcohol pathology via increased impulsivity (higher urgency and lower conscientiousness) while controlling for PBS use and sensation seeking, and with the sub-categories boldness and meanness each predicting greater alcohol pathology via lower sensation seeking and PBS use, respectively, while controlling for impulsivity. A path model was utilized, with each factor of psychopathy (boldness, meanness, and disinhibition) and each mediator specified as observed variables. Our outcome variable was alcohol pathology, defined by both consumption and problems from consumption, and was also treated as an observed variable. Regarding the hypothesized paths, boldness lead to sensation seeking, meanness lead to PBS, and disinhibition lead to urgency and conscientiousness. These pathways all lead to alcohol pathology.

CHAPTER 3: RESULTS

Descriptive Statistics

The total sample size was n = 967 (61.22% female) college student drinkers from a large, public, Southeast university. The mean age of participants was 20.39 years old (SD = 4.74). Males had significantly higher levels of boldness (M = 2.753, SD = 0.417) than females (M = 2.604, SD = 0.406; $t(958) = -5.476$, $p < .001$) as well as higher levels of meanness (M = 1.939, SD = 0.463) than females (M = 1.639, SD = 0.478; $t(958) = -9.587$, $p < .001$). Males also had significantly higher levels of sensation seeking (M = 2.894, SD = 0.638) than females (M = 2.714, SD = 0.643; $t(957) = -4.226$, $p < .001$). Similarly, males had significantly higher levels of alcohol pathology (M = 6.488, SD = 5.339) than females (M = 5.461, SD = 4.788; $t(965) = -3.106$, $p = .002$), while females endorsed higher levels of PBS use (M = 3.042, SD = 1.002) than males (M = 2.638, SD = 1.050; $t(938) = 5.913$, $p < .001$). There were no significant sex differences regarding disinhibition, urgency, or conscientiousness.

Primary Analyses

Model Fit. All predictors and mediators were treated as observed variables. The initial model showed adequate overall fit to the data, $\chi^2(14) = 106.935$, $p < .001$, CFI = 0.951, RMSEA = 0.083 (90% CI = 0.069, 0.098), SRMR = 0.043. Modification indices that indicated significantly better model fit (i.e., $\geq$ 3.84) were examined. The modification indices suggested adding paths from different aspects of the triarchic model to the mediators; specifically, a path between conscientiousness and boldness. Theoretically, this made sense, as individuals with higher levels of boldness may engage in less premeditation, a core component of

conscientiousness (Smith et al., 2007). The new model also suggested adding paths from disinhibition to both sensation seeking and PBS use. Again, this made both intuitive and theoretical sense (Anestis et al., 2009; Miller et al., 2011), as individuals with heightened levels of disinhibition would likely engage in significantly more sensation seeking and, consistent with previous research, less PBS use (Martens et al., 2009; Pearson, Kite, & Henson, 2012, 2013b). The re-specified model showed significant improvement and overall excellent fit to the data, $\chi^2(8) = 28.043$, $p < .001$, CFI = 0.989, RMSEA = 0.051 (90% CI = 0.031, 0.072), SRMR = 0.018 (see Figure 1). A Satorra-Bentler Scaled Chi Square test (Satorra & Bentler, 1994) indicated that the re-estimated model was superior to the original model (Satorra-Bentler $\chi^2 = 79.367$ [6], $p < .001$). Finally, differences between sexes were examined using a multigroup observed variable path analysis. There were no significant modification indices on model paths, indicating there were no sex differences in the model.

Path Analysis. We examined the three components of the Triarchic Model of Psychopathy as predictors of alcohol pathology via urgency, conscientiousness, sensation seeking, and PBS use. Results indicated that boldness was positively associated with sensation seeking ($\beta = 0.403$, $p < .001$) and conscientiousness ($\beta = 0.125$, $p < .001$). Disinhibition was negatively associated with conscientiousness ($\beta = -0.365$, $p < .001$), and PBS use ($\beta = -0.191$, $p < .001$) and was positively associated with sensation seeking ($\beta = 0.093$, $p = .002$) and urgency ($\beta = 0.598$, $p < .001$). Meanness was inversely associated with PBS use ($\beta = -0.070$; $p = .117$), though this relationship was not statistically significant.

Of the examined mediators, none appeared to fully mediate the relationship between the components of the Triarchic Model and alcohol pathology. The relationship between sensation

seeking and alcohol pathology was not significant (β = 0.026, *p* = .476), nor was the relationship between urgency and alcohol pathology (β = 0.033, *p* = .430). Conscientiousness was negatively associated with alcohol pathology (β = -0.082, *p* = .031) as was PBS use (β = -0.283, *p* < .001). Despite the mediators, boldness was positively associated with alcohol pathology (β = 0.085, *p* = .026) as was disinhibition (β = 0.227, *p* < .001). Meanness was not significantly associated with alcohol pathology (β = 0.003, *p* = .953).

Specific indirect and total effects were also calculated. Results indicated that neither the indirect effect of boldness → sensation seeking → alcohol pathology (β = 0.011, 95% CI [-0.018, 0.041]) nor of boldness → conscientiousness → alcohol pathology (β = -0.010, 95% CI [-0.023, -0.001]) were significant, though the total effect of boldness to alcohol pathology was significant (β = 0.085, *p* = .019, 95% CI [0.018, 0.161]). Regarding disinhibition, significant indirect effects were found for disinhibition → PBS use → alcohol pathology (β = 0.054, 95% CI [0.030, 0.083]) and disinhibition → conscientiousness → alcohol pathology (β = 0.030, 95% CI [0.004, 0.059]). Furthermore, the total indirect effect (β = 0.106, 95% CI [0.057, 0.158]) and total effect (β = 0.333, *p* < .001, 95% CI [0.237, 0.435]) were both significant. There were no significant direct or indirect effects regarding meanness, PBS use, and alcohol pathology.

CHAPTER 4: DISCUSSION

The present thesis investigated the three components of the Triarchic Model of Psychopathy (i.e. boldness, meanness, and disinhibition) as predictors of alcohol pathology along with possible mechanisms by which this occurs via a path analysis. Support for hypotheses were mixed. Results indicate that disinhibition was negatively associated with conscientiousness and positively associated with urgency, supporting hypothesis 2. Though not hypothesized, disinhibition was also significantly associated with sensation seeking and PBS use, such that those with higher levels of disinhibition endorsed higher sensation seeking and lower PBS use. Results also indicate that boldness is significantly associated with sensation seeking, supporting hypothesis 3. Though not hypothesized, results also indicate that boldness is a significant predictor of conscientiousness, such that higher levels of boldness were associated with higher levels of conscientiousness. Meanness was not significantly associated with PBS use, thus failing to support hypothesis 4. However, it is important to note that a two-tailed test was specified to provide conservative results. It is possible that, should a directional, one-tail test be specified, meanness would negatively predict PBS use.

Regarding the aspects of the triarchic model predicting alcohol pathology, both boldness and disinhibition significantly predicted alcohol pathology, such that higher levels of either trait were associated with great alcohol pathology. Meanness was not associated with alcohol pathology. Furthermore, sensation seeking was not associated with alcohol pathology, nor was urgency. Both conscientiousness and PBS use were negatively associated with alcohol pathology. Hence, it seems that conscientiousness partially mediates the relationship between

boldness and alcohol pathology while both conscientiousness and PBS use partially mediate the relationship between disinhibition and alcohol pathology, thus partially supporting hypothesis 1.

Previously, the most well-known conceptualization of psychopathy was primary and secondary psychopathy, or Factor1 and Factor 2 (Hare, 1980, 2003; Hare & Neumann, 2006; Karpman, 1948; McHoskey et al., 1998), and a majority of the previous research regarding psychopathy, impulsivity, and alcohol pathology has involved this conceptualization of psychopathy. Previous research has found secondary psychopathy, via impulse difficulties, to be linked to alcohol pathology (Blackburn, 1969; Heritage & Benning, 2013; Smith & Newman, 1990; Whiteside & Lynam, 2009). Previous research has also found that primary psychopathy is linked to greater alcohol pathology seemingly via a lack of harm reduction strategies (Kramer et al., 2017; Levenson et al., 1995). However, no study has examined a more nuanced conceptualization of psychopathy in its relation to alcohol pathology. The results in the present study not only shed light on similarities between the Triarchic Model of Psychopathy with the primary/secondary model but help to illustrate how these Triarchic facets of psychopathy may differ in their relation to alcohol pathology.

Based on previous research (Dean et al., 2013; Drislane et al., 2014; Lyons, 2015; Patrick, 2010; Patrick et al., 2009), disinhibition was conceptualized as being more similar to secondary psychopathy. In terms of the present outcome of interest, the relationship between disinhibition and alcohol pathology is quite similar to that between secondary psychopathy and alcohol pathology. Indeed, previous research has found that individuals with higher levels of urgency and lower levels of conscientiousness endorse greater alcohol pathology (Coskunpinar et al., 2013; Magid & Colder, 2007), and individuals with higher levels of secondary

psychopathy endorse greater levels of urgency (Anestis et al., 2009) and lower levels of conscientiousness (Ross et al., 2004). The relationship between disinhibition and PBS use could also be explained by this apparent lack of premeditation, a core component of conscientiousness. Indeed, there is some research showing that, among college student drinkers, the association between conscientiousness (conceptualized in one study as "good self-control") and alcohol-related problems is mediated via PBS use (Pearson et al., 2013b). PBS use, by its nature, requires the individual to plan ahead and remain in control of their self and immediate belongings (e.g., their drink). Thus, an individual with high urgency and low conscientiousness may well experience difficulty successfully engaging in PBS.

Meanness, however, seems to be a more complicated story. There is evidence that individuals with higher levels of primary psychopathy experience greater alcohol pathology due to lower harm reduction strategies (Kramer et al., 2017; Levenson et al., 1995); this was not found in the present study for meanness. This may indicate that meanness is tapping into a more specific aspect of psychopathy than primary psychopathy. While primary psychopathy encompasses the interpersonal affective components of psychopathy (Lilienfeld & Andrews, 1996; McHoskey et al., 1998), which includes predatory and callous behavior, it is possible that meanness ONLY includes those behaviors and does not include other aspects of psychopathy captured under the primary umbrella, such as glibness and deceit.

Boldness, of the three triarchic facets, does not map as well onto the primary/secondary model of psychopathy (Drislane et al., 2014; Weidacker et al., 2017). However, a component of boldness is venturesomeness, hence the hypothesized relationship between boldness and sensation seeking. Indeed, that relationship was significant, though it does not appear to account

for the relationship between boldness and alcohol pathology. Additionally, boldness was found to be positively associated with conscientiousness, which was not hypothesized. Theoretically, it made sense to add to the model, as it is possible that boldness is inversely associated with conscientiousness, given the venturesomeness component to boldness. However, results indicated that boldness was positively associated with conscientiousness. This finding, combined with the positive association between boldness and sensation seeking, may indicate a sort of "controlled risk taking," such that an individual with high levels of boldness may take calculated, planned risks rather than the rash actions seen from an individual with high levels of disinhibition. Given the characteristics associated with the boldness factor of psychopathy, it is possible that individuals with higher levels of boldness desire to "remain in control" as a way to stay socially dominant and better manipulate social interactions in their favor. Future research is needed to fully understand this finding.

Clinical Implications

Though the current study was not a clinical intervention, the results offer important groundwork for future clinical insights. The present findings suggest that individuals who have more disinhibition features of psychopathy may benefit from treatment that targets rash action, poor planning, and a lack of perseverance. This provides more detailed targets than the broad concept of impulsivity that has been linked to these psychopathic traits in the past (Dean et al., 2013; Jones & Paulhus, 2011; Poythress & Hall, 2011). Similarly, individuals with more of the boldness psychopathic features would benefit from interventions targeting a different aspect of impulsivity; that is, sensation seeking. Given the relationship between both boldness and disinhibition and alcohol pathology seems to be partially mediated by aspects of impulsivity,

interventions such as Acceptance and Commitment Therapy (ACT) or Motivational Interviewing (MI) may be beneficial for decreasing unwanted behaviors and increasing desired outcomes, as they help elicit value-based change from patients (Hayes, Strosahl, & Wilson, 2011; Rubak, Sandbæk, Lauritzen, & Christensen, 2005).

Additionally, individuals with higher levels of disinhibition may benefit from interventions targeting PBS. Previous research has found PBS use to be a malleable intervention target (Dvorak et al., 2015). Specifically, Dvorak et al. (2015) found that a norm-based intervention utilizing Deviance Regulation Theory (DRT) significantly improved PBS use among college students. Given that individuals with higher levels of disinhibition have impulsivity difficulties, a norm-based intervention may encourage them to curtail their negative behavior and increase a positive behavior (i.e., engage in more PBS use). Furthermore, individuals with psychopathic traits may not be as difficult to treat as previous research suggested (D'Silva, Duggan, & McCarthy, 2004; Skeem, Monahan, & Mulvey, 2002). Thus, the present study not only supplies important evidence for the possibility of interventions, but it identifies different intervention targets, depending on the individual's specific psychopathic traits.

Limitations

The present study is not without its limitations. The most obvious is that the sample collected was from college student drinkers rather than a clinical sample. Though personality traits are considered to exist on a spectrum, future research should investigate these associations among a clinical sample. However, it is worth noting that the Triarchic Model has been compared and used with both clinical and nonclinical samples of individuals with psychopathic

traits (Gatner, Douglas, & Hart, 2017; Sellbom & Phillips, 2013; Stanley, Wygant, & Sellbom, 2013). Future research should also examine if these associations hold across time, as our study was cross-sectional in nature and thus only allowed an examination at one time point. Finally, future research should delve into the discrepancies in results from primary psychopathy and meanness in order to better understand the possible subtle differences between the two. Similarly, future research should also examine the relationship between boldness and conscientiousness to parse out why these two constructs are positively associated. It could be that the Triarchic Model is lacking a manipulation piece, with boldness only hedging near that component of psychopathy. Despite these limitations, the present study offers deeper insight into how the psychopathic traits of the Triarchic Model relate to alcohol pathology.

Conclusion

The present study examined the relationship between boldness, meanness, and disinhibition and alcohol pathology as a function of various facets of impulsivity and PBS use among a college student population. We found that boldness was associated with sensation seeking and conscientiousness, and that the relationship between boldness and conscientiousness partially mediated the relationship between boldness and alcohol pathology. We also found that disinhibition was positively associated with urgency and sensation seeking and negatively associated with conscientiousness and PBS use. The relationship between disinhibition and alcohol pathology was also partly mediated by conscientiousness and PBS use. Meanness was not significantly associated with PBS use or alcohol pathology. This study provides a more exact insight into various psychopathic traits, their relationship with alcohol pathology, and the

different mediators by which this may occur. Future studies should expand on these findings, and attempt to develop possible interventions based on the unique mediators currently identified.

APPENDIX A: FIGURE

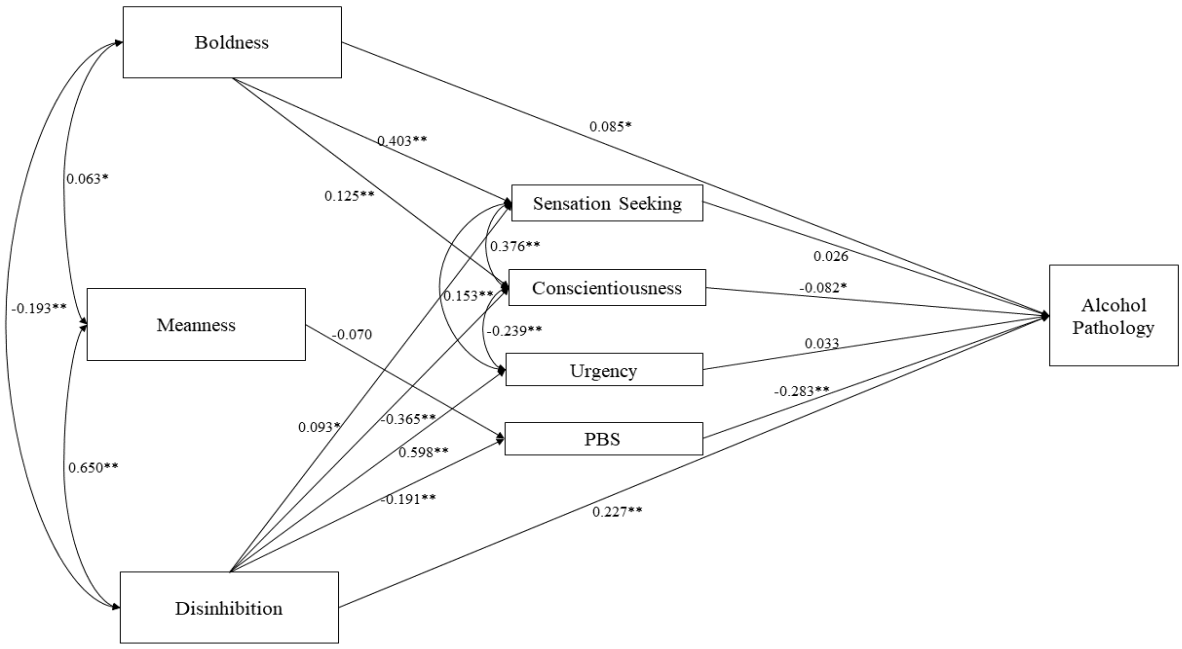

Figure 1. *Final model of the Triarchic Model of Psychopathy onto alcohol pathology via sensation seeking, conscientiousness, urgency, and PBS use.*

Note: All values given are standardized betas (β); *p < .05, **p < .001.

APPENDIX B: TABLES

Table 1. *Descriptive statistics and bivariate correlations*

Variables	1	2	3	4	5	6	7	8	9	10
1. Age	----									
2. Sex	-.040	----								
3. Boldness	.230	-.174*	----							
4. Meanness	-.130	-.296*	.105*	----						
5. Disinhibition	-.108*	-.048	-.185*	.639*	----					
6. Urgency	-.141*	-.039	-.107*	.412*	.608*	----				
7. Conscientiousness	.106*	.035	.187*	-.293*	-.398*	-.417*	----			
8. Sensation Seeking	-.133*	-.135*	.391*	.125*	.037	.144*	.330*	----		
9. PBS	.007	.190*	-.021	-.237*	-.243*	-.168*	.103*	-.163*	----	
10. Alcohol Pathology	-.075*	-.100*	.040	.272*	.340*	.253*	-.196*	.096*	-.361*	----
Mean	20.385	1.612	2.662	1.755	1.819	2.002	3.017	2.783	2.886	5.860
SD	4.740	0.488	0.416	0.494	0.457	0.611	0.542	0.647	1.039	5.031
Range: Lower Limit	18	1	1.278	1.000	1.000	1.000	1.095	1.000	0.000	1.000
Range: Upper Limit	61	2	3.737	3.632	3.700	4.000	4.000	4.000	5.000	36.000

Note: All values are unstandardized. Sex coded as 1 = males, 2 = females. *$p < .05$

Table 2. *Descriptive statistics of alcohol pathology*

Mean AP for women (*SD*)	5.461 (4.788)
Mean AP for men (*SD*)	6.488 (5.339)
% of women who endorsed possible hazardous drinking (scores $\geq$ 8)	23.310%
% of men who endorsed possible hazardous drinking (scores $\geq$ 8)	30.400%
% of women who endorsed possible alcohol dependence (scores $\geq$ 13)	7.090%
% of men who endorsed possible alcohol dependence (scores $\geq$ 15)	9.070%

Note. AP = alcohol pathology

Table 3. *Standardized effects from Triarchic Model of Psychopathy to alcohol pathology*

Parameter	**Effects**	
	Estimate (SE)	*95% CI*
Effects from Boldness to Alcohol Pathology		
Specific Indirect Effects		
Boldness → Sensation Seeking → AP	0.011 (0.015)	-0.018, 0.041
Boldness → Conscientiousness → AP	-0.010 (0.005)	-0.023, -0.001
Total Indirect Effect	0.000 (0.014)	-0.026, 0.029
Direct Effect		
Boldness → AP	0.085 (0.038)	0.011, 0.164
Total Effect	0.085 (0.037)	0.018, 0.161
Effects from Meanness to Alcohol Pathology		
Specific Indirect Effect		
Meanness → PBS → AP	0.020 (0.013)	-0.004, 0.046
Direct Effect		
Meanness → AP	0.003 (0.050)	-0.098, 0.097
Total Effect	0.023 (0.052)	-0.081, 0.121
Effects from Disinhibition to Alcohol Pathology		
Specific Indirect Effects		
Disinhibition → Urgency → AP	0.020 (0.025)	-0.030, 0.069
Disinhibition → Conscientiousness →AP	0.030 (0.014)	0.004, 0.059
Disinhibition → Sensation Seeking → AP	0.002 (0.004)	-0.004, 0.011
Disinhibition → PBS → AP	0.054 (0.013)	0.030, 0.083
Total Indirect Effect	0.106 (0.025)	0.057, 0.158
Direct Effect		
Disinhibition → AP	0.227 (0.055)	0.121, 0.339
Total Effect	0.333 (0.050)	0.237, 0.435

Note. PBS = protective behavioral strategies, AP = alcohol pathology. All estimates are standardized betas (β).

APPENDIX C: APPROVAL LETTER

University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Approval of Exempt Human Research

From: **UCF Institutional Review Board #1**
FWA00000351, IRB00001138

To: **Robert Dvorak**

Date: **June 27, 2017**

Dear Researcher:

On 06/27/2017, the IRB approved the following activity as human participant research that is exempt from regulation:

Type of Review:	Exempt Determination
Project Title:	Beliefs & Attitudes about Gambling
Investigator:	Robert Dvorak
IRB Number:	SBE-17-13006
Funding Agency:	
Grant Title:	
Research ID:	N/A

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Sophia Dziegielewski, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

Kamille Chap

Signature applied by Kamille Chaparro on 06/27/2017 10:32:32 AM EDT

IRB Coordinator

Note: Data collected for this thesis was part of a larger data collection process.

APPENDIX D: QUESTIONNAIRES

Protective Behavioral Strategies Scale

Please indicate the degree to which you engage in the following behaviors when using alcohol or "partying."

	Never	Rarely	Occasionally	Sometimes	Usually	Always	Do not wish to respond
Use a designated driver.	○	○	○	○	○	○	○
Determine not to exceed a set number of drinks.	○	○	○	○	○	○	○
Alternate alcoholic and nonalcoholic drinks.	○	○	○	○	○	○	○
Have a friend let you know when you have had enough to drink.	○	○	○	○	○	○	○
Avoid drinking games.	○	○	○	○	○	○	○
Leave the bar/party at a predetermined time.	○	○	○	○	○	○	○
Make sure that you go home with a friend.	○	○	○	○	○	○	○

Know where your drink has been at all times.	○	○	○	○	○	○	○
Drink shots of liquor.	○	○	○	○	○	○	○
Stop drinking at a predetermined time.	○	○	○	○	○	○	○
Drink water while drinking alcohol.	○	○	○	○	○	○	○
Put extra ice in your drink.	○	○	○	○	○	○	○
Avoid mixing different types of alcohol.	○	○	○	○	○	○	○
Drink slowly, rather than gulp or chug.	○	○	○	○	○	○	○
Avoid trying to "keep up" or "out-drink" others.	○	○	○	○	○	○	○

AUDIT Questionnaire

Please select the answer that is correct for you

How often do you have a drink containing alcohol?

- ○ Never
- ○ Monthly or less
- ○ 2 to 4 times a month
- ○ 2 to 3 times a week
- ○ 4 or more times a week
- ○ Do not wish to respond

How many drinks containing alcohol do you have on a typical day when you are drinking?

- ○ 1 or 2
- ○ 3 or 4
- ○ 5 or 6
- ○ 7,8, or 9
- ○ 10 or more
- ○ Do not wish to respond

How often do you have six or more drinks on one occasion?

- ○ Never
- ○ Less than monthly

- ○ Monthly
- ○ Weekly
- ○ Daily or almost daily
- ○ Do not wish to respond

How often during the last year have you found that you were not able to stop drinking once you had started?

- ○ Never
- ○ Less than monthly
- ○ Monthly
- ○ Weekly
- ○ Daily or almost daily
- ○ Do not wish to respond

How often during the last year have you failed to do what was normally expected from you because of drinking?

- ○ Never
- ○ Less than monthly
- ○ Monthly
- ○ Weekly
- ○ Daily or almost daily
- ○ Do not wish to respond

How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?

- ○ Never
- ○ Less than monthly
- ○ Monthly
- ○ Weekly
- ○ Daily or almost daily
- ○ Do not wish to respond

How often during the last year have you had a feeling of guilt or remorse after drinking?

- ○ Never
- ○ Less than monthly
- ○ Monthly
- ○ Weekly
- ○ Daily or almost daily
- ○ Do not wish to respond

How often during the last year have you been unable to remember what happened the night before because you had been drinking?

- ○ Never
- ○ Less than monthly
- ○ Monthly
- ○ Weekly
- ○ Daily or almost daily
- ○ Do not wish to respond

Have you or someone else been injured as a result of your drinking?

- ○ No
- ○ Yes, but not in the last year
- ○ Yes, during the last year
- ○ Do not wish to respond

Has a relative or friend or a doctor or another health worker been concerned about your drinking or suggested you cut down?

- ○ No
- ○ Yes, but not in the last year
- ○ Yes, during the last year
- ○ Do not wish to respond

Triarchic Measure of Psychopathy

This questionnaire contains statements that different people might use to describe themselves. Each statement is followed by four options:
[ ] True [ ] Somewhat true [ ] Somewhat false [ ] False

For each statement, choose the option that describes you best. There are no right or wrong answers; just choose the option that best describes you.

	True	Somewhat true	Somewhat false	False	Do not wish to respond
I'm optimistic more often than not.	○	○	○	○	○
How other people feel is important to me.	○	○	○	○	○
I often act on immediate needs.	○	○	○	○	○
I have no strong desire to parachute out of an airplane	○	○	○	○	○
I've often missed things I promised to attend.	○	○	○	○	○
I would enjoy being in a high-speed chase.	○	○	○	○	○
I am well-equipped to deal with stress.	○	○	○	○	○

I don't mind if someone I dislike gets hurt.	○	○	○	○	○
My impulsive decisions have caused problems with loved ones.	○	○	○	○	○
I get scared easily.	○	○	○	○	○
I sympathize with others' problems.	○	○	○	○	○
I have missed work without bothering to call in.	○	○	○	○	○
I'm a born leader.	○	○	○	○	○
I enjoy a good physical fight.	○	○	○	○	○
I jump into things without thinking.	○	○	○	○	○
I have a hard time making things turn out the way I want.	○	○	○	○	○
I return insults.	○	○	○	○	○
I've gotten in trouble because I	○	○	○	○	○

missed too much school.					
I have a knack for influencing people.	○	○	○	○	○
It doesn't bother me to see someone else in pain.	○	○	○	○	○
I have good control over myself.	○	○	○	○	○
I function well in new situations, even when unprepared.	○	○	○	○	○
I enjoy pushing people around sometimes.	○	○	○	○	○
I have taken money from someone's purse or wallet without asking.	○	○	○	○	○
I don't think of myself as talented.	○	○	○	○	○
I taunt people just to stir things up.	○	○	○	○	○
People often abuse my trust.	○	○	○	○	○

I'm afraid of far fewer things than most people.	○	○	○	○	○
I don't see any point in worrying if what I do hurts someone else.	○	○	○	○	○
I keep appointments I make.	○	○	○	○	○
I often get bored quickly and lose interest.	○	○	○	○	○
I can get over things that would traumatize others.	○	○	○	○	○
I am sensitive to the feelings of others.	○	○	○	○	○
I have conned people to get money from them.	○	○	○	○	○
It worries me to go into an unfamiliar situation without knowing all the details.	○	○	○	○	○

I don’t have much sympathy for people.	○	○	○	○	○
I get in trouble for not considering the consequences of my actions.	○	○	○	○	○
I can convince people to do what I want.	○	○	○	○	○
For me, honesty really is the best policy.	○	○	○	○	○
I’ve injured people to see them in pain.	○	○	○	○	○
I don’t like to take the lead in groups.	○	○	○	○	○
I sometimes insult people on purpose to get a reaction from them.	○	○	○	○	○
I have taken items from a store without paying for them.	○	○	○	○	○
It’s easy to embarrass me.	○	○	○	○	○
Things are more fun if a	○	○	○	○	○

little danger is involved.					
I have a hard time waiting patiently for things I want.	○	○	○	○	○
I stay away from physical danger as much as I can.	○	○	○	○	○
I don't care much if what I do hurts others.	○	○	○	○	○
I have lost a friend because of irresponsible things I've done.	○	○	○	○	○
I don't stack up well against most others.	○	○	○	○	○
Others have told me they are concerned about my lack of self-control.	○	○	○	○	○
It's easy for me to relate to other people's emotions.	○	○	○	○	○
I have robbed someone.	○	○	○	○	○

I never worry about making a fool of myself with others.	○	○	○	○	○
It doesn't bother me when people around me are hurting.	○	○	○	○	○
I have had problems at work because I was irresponsible.	○	○	○	○	○
I'm not very good at influencing people.	○	○	○	○	○
I have stolen something out of a vehicle.	○	○	○	○	○

UPPS-P Impulsivity Behavior Scale

Below are a number of statements that describe ways in which people act and think. For each statement, please indicate how much you agree or disagree with the statement.

	Agree Strongly	Agree Somewhat	Disagree Some	Disagree Strongly	Do not wish to respond
I have a reserved and cautious attitude toward life.	○	○	○	○	○
I have trouble controlling my impulses.	○	○	○	○	○
I generally seek new and exciting experiences and sensations.	○	○	○	○	○
I generally like to see things through to the end.	○	○	○	○	○
When I am very happy, I can’t seem to stop myself from doing things that can have bad consequences.	○	○	○	○	○
My thinking is usually careful and purposeful.	○	○	○	○	○

I have trouble resisting my cravings (for food, cigarettes, etc.).	○	○	○	○	○
I'll try anything once.	○	○	○	○	○
I tend to give up easily.	○	○	○	○	○
When I am in great mood, I tend to get into situations that could cause me problems.	○	○	○	○	○
I am not one of those people who blurt out things without thinking.	○	○	○	○	○
I often get involved in things I later wish I could get out of.	○	○	○	○	○
I like sports and games in which you have to choose your next move very quickly.	○	○	○	○	○
Unfinished tasks really bother me.	○	○	○	○	○

When I am very happy, I tend to do things that may cause problems in my life.	○	○	○	○	○
I like to stop and think things over before I do them.	○	○	○	○	○
When I feel bad, I will often do things I later regret in order to make myself feel better now.	○	○	○	○	○
I would enjoy water skiing.	○	○	○	○	○
Once I get going on something I hate to stop.	○	○	○	○	○
I tend to lose control when I am in a great mood.	○	○	○	○	○
I don't like to start a project until I know exactly how to proceed.	○	○	○	○	○

Sometimes when I feel bad, I can’t seem to stop what I am doing even though it is making me feel worse.	○	○	○	○	○
I quite enjoy taking risks.	○	○	○	○	○
I concentrate easily.	○	○	○	○	○
When I am really ecstatic, I tend to get out of control.	○	○	○	○	○
I would enjoy parachute jumping.	○	○	○	○	○
I finish what I start.	○	○	○	○	○
I tend to value and follow a rational, "sensible" approach to things.	○	○	○	○	○
When I am upset I often act without thinking.	○	○	○	○	○
Others would say I make bad choices when I am extremely	○	○	○	○	○

happy about something.					
I welcome new and exciting experiences and sensations, even if they are a little frightening and unconventional.	○	○	○	○	○
I am able to pace myself so as to get things done on time.	○	○	○	○	○
I usually make up my mind through careful reasoning.	○	○	○	○	○
When I feel rejected, I will often say things that I later regret.	○	○	○	○	○
Others are shocked or worried about the things I do when I am feeling very excited.	○	○	○	○	○
I would like to learn to fly an airplane.	○	○	○	○	○
I am a person who always gets the job done.	○	○	○	○	○

I am a cautious person.	○	○	○	○	○
It is hard for me to resist acting on my feelings.	○	○	○	○	○
When I get really happy about something, I tend to do things that can have bad consequences.	○	○	○	○	○
I sometimes like doing things that are a bit frightening.	○	○	○	○	○
I almost always finish projects that I start.	○	○	○	○	○
Before I get into a new situation I like to find out what to expect from it.	○	○	○	○	○
I often make matters worse because I act without thinking when I am upset.	○	○	○	○	○
When overjoyed, I feel like I can't stop myself	○	○	○	○	○

from going overboard.					
I would enjoy the sensation of skiing very fast down a high mountain slope.	○	○	○	○	○
Sometimes there are so many little things to be done that I just ignore them all.	○	○	○	○	○
I usually think carefully before doing anything.	○	○	○	○	○
When I am really excited, I tend not to think of the consequences of my actions.	○	○	○	○	○
In the heat of an argument, I will often say things that I later regret.	○	○	○	○	○
I would like to go scuba diving.	○	○	○	○	○
I tend to act without thinking when I am really excited.	○	○	○	○	○

I always keep my feelings under control.	○	○	○	○	○
When I am really happy, I often find myself in situations that I normally wouldn't be comfortable with.	○	○	○	○	○
Before making up my mind, I consider all the advantages and disadvantages.	○	○	○	○	○
I would enjoy fast driving.	○	○	○	○	○
When I am very happy, I feel like it is okay to give in to cravings or overindulge.	○	○	○	○	○
Sometimes I do impulsive things that I later regret.	○	○	○	○	○
I am surprised at the things I do while in a great mood.	○	○	○	○	○

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