“HAVE A DRINK, YOU’LL FEEL BETTER.” PREDICTORS OF DAILY ALCOHOL CONSUMPTION AMONG EXTRAVERTS: THE MEDIATIONAL ROLE OF COPING

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"Have a Drink, You’ll Feel Better." Predictors of Daily Alcohol Consumption
Among Extraverts: The Mediational Role of Coping

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ABSTRACT OF THE THESIS

“Have a Drink, You’ll Feel Better.” Predictors of Daily Alcohol Consumption among Extraverts: The Meditational Role of Coping

by

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Master of Arts in Psychology
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Historically, college students have been shown to consume more alcohol relative to similar age groups who do not attend college. A recent estimate indicates that the average number of alcoholic drinks consumed per week by undergraduates is around five standard drinks. This predisposes undergraduate heavy drinkers to a myriad of negative outcomes including academic, social, physical, and psychological problems. Many studies have attempted to identify personality types which may be predisposed to subsequent alcohol use, however, others have largely abandoned this quest for an “alcoholic personality” and have adopted more complicated approaches by linking personality measures with intrinsic motivations to drink, and drinking as a response to stress (i.e., coping). To date, a vast majority of research in these domains have focused primarily on the personality dimension of neuroticism, while a paucity of literature exists measuring extraversion specifically, and literature that does exist has yielded varying results.

The present thesis focused on how undergraduates, specifically extraverts, cope with stress on a daily level and how those coping strategies may leave them predisposed to subsequent alcohol use. Using a daily diary approach, this study tested the applicability of the differential coping choice model in a sample of undergraduate college students, with the goal of testing mediational pathways from extraversion and coping (problem-focused and social support) predicting alcohol consumption. Three hundred sixty six participants completed an Internet-based diary page once a day for five consecutive days and among other measures, reported their daily stress level, coping strategies utilized, and how much they drank.

Results confirmed initial hypotheses that at the individual level, higher scores on the extraversion scale were associated with higher levels of drinks being consumed per day. At the daily level, increased use of daily problem-focused coping strategies were associated with fewer drinks being consumed per day while increased use of daily social support coping was marginally predictive of higher levels of drinks being consumed per day. These results suggest the relationship between extraversion and alcohol consumption to be at least partially mediated by these two coping strategies.
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Figure 1. Mediational pathway: Extraversion predicting alcohol mediated by problem-focused and social coping. *Significant at the .01 level **Significant at the .001 level. ...........................................................................................................19
I would first like to thank my mentor Dr. Scott Roesch for welcoming me into his lab and for the opportunity to grow as both a researcher and a person. I would also like to thank my thesis committee members Dr. Allison Vaughn and Dr. Susan Woodruff for their time and feedback. Dr. Woodruff and everyone at the Center for Alcohol and Drug Studies should also be recognized for their support over the years, for opening many doors for me, and for creating a work environment that is simultaneously challenging and entertaining. Finally, I would like to thank my mother for her constant understanding and guidance, my father for his blunt but honest perspective, and my wonderful girlfriend for her unending patience, love, and support. I would not have gotten here today without the help of all of you. Thank you.
CHAPTER 1

INTRODUCTION

Past research has shown that the average number of alcoholic drinks consumed per week by college students is five standard drinks (e.g., 12 oz. of beer, 1.5 oz. of hard liquor, 5 oz. of wine; International Center for Alcohol Policies, 1998; Wechsler, Molnar, Davenport, & Baer, 1999). Additionally, students have been shown to consume more alcohol relative to similar age groups who did not attend college (U.S. Department of Health and Human Services SAMHSA, 2006). Undergraduates who drink heavily are at risk for several physical, psychological, academic, and social problems (e.g., hangovers, physical injury, anxiety, lower self-esteem, risky sexual behaviors) (Baer, 2002; Kushner & Sher, 1993; Stewart & Devine, 2000). Early researchers attempted to predict those who are at risk for heavy alcohol use by examining individual personality traits, although this search for an “alcoholic personality” has been largely abandoned in favor of more complicated approaches (Hussong, 2003). In 1993, Thombs, Beck, and Mahoney discussed that previous studies evaluating the link between personality and alcohol use had failed to address the context in which one drinks, particularly in young adults. Others (Cooper, 1994; Cooper, Frone, Russell, & Mudar, 1995; Cox & Klinger, 1988) have looked at individual motivations (e.g., to socialize, to cope) behind drinking as a potential link between personality traits and alcohol consumption. High extraversion individuals may be at particularly high risk for alcohol use given their social nature and need for stimulation, and among alcoholic families, high extraversion children are at higher risk for later alcoholism (compared to their low extraversion counterparts) (Hill, Shen, Lowers, & Locke, 2000). Many researchers have attempted to explain the drinking behaviors through personality dimensions and coping behaviors (Britton, 2004; Cooper, Russell, Skinner, Frone, & Mudar, 1992; Feil & Hasking, 2008), but few (if any) have studied how high extraversion individuals, specifically, cope with daily stressors and how the strategies utilized to reduce stress may leave them predisposed to alcohol use. Using a daily diary methodology, this study aims to address the
types of coping strategies used by those high in extraversion, and whether these strategies can be used as potential determinants of alcohol consumption.

**PERSONALITY**

The majority of personality research over the past twenty years has focused on the Five Factor Model (FFM) of personality (McCrae & Costa, 1987). This model defines personality along five independent dimensions: openness to experience (O), conscientiousness (C), extraversion (E), agreeableness (A), and neuroticism (N). These factors have been described as stable and enduring (trait-like), biological rooted (Connor-Smith & Flachsbart, 2007) and have been shown to provide an accurate depiction of what individuals are like (Carver & Connor-Smith, 2010). Openness to experience has been linked to high levels of creativity, having diverse interests and hobbies, and to some degree intelligence. Conscientious individuals have been portrayed as thoughtful, reliable, and trustworthy (O’Brien & DeLongis, 1996). Those high in E are often seen as the “life of the party”. These individuals are sociable, gregarious, excitement seekers (McCrae & Costa, 1987). While the literature is less substantial, those high on the Agreeableness factor are described as helpful, trusting, and courteous (Lee-Baggley, Preece, & DeLongis, 2005; O’Brien & DeLongis, 1996). In contrast to those open to experience, neurotic individuals are seen as being more closed off and reserved as well as more fearful, anxious, and depressed. Indeed, there is a sizeable amount of literature solely devoted to understanding the Neurotic individual (Gunthert, Cohen, & Armelli, 1999; Suls & Martin, 2005).

Of the five major personality dimensions the most widely examined in modern coping research have been neuroticism and extraversion (de Raad, 2000 as cited by Morossanova, 2003). This is due, in part, to the opposing nature of the two dimensions. While N has been associated with negative affect and maladaptive emotion regulation strategies (David & Suls, 1999; Lee-Baggley et al., 2005; O’Brien & DeLongis, 1996), E is most often related to positive emotionality, vibrancy, and proactive coping (McCrae, 1992; Robinson, Solberg, Vargas, & Tamir, 2003). These differences are not only apparent in how individuals react to situations, but how they view and approach the world. As stated by Lucas and Baird (2004), “the strongest correlates of long-term levels of positive and negative affect are the personality traits of extraversion and neuroticism, respectively.” That is, N and E can be
used to not only predict one’s current state, but also future states as well. Eysenck and Eysenck (1985) proposed that observed differences in reactivity to stressors are a product of individual arousal. High E individuals have under-aroused nervous systems therefore must actively seek out external stimuli (Acton, 2003), whereas those high in N are typically more reserved as a result of being over-aroused, and seek to reduce their anxiety causing states by withdrawing from situations and others (Acton, 2003).

Individuals who score high on scales measuring the personality dimension of extraversion are typically described as sociable, energetic, cheerful, and assertive, they tend to experience more positive emotions, and employ more direct forms of coping with stressors (Amirkhan, Risinger, & Swickert, 1995; McCrae, 1992). According to Amirkhan and colleagues (1995), high E individuals tend to appraise situations as challenges rather than threats, and are more likely to approach challenges with a more optimistic outlook rather than avoiding them. Unlike those high in N, high E individuals show increased sensitivity to the behavioral activation system, or BAS (Gray, 1981 as cited by Suls & Martin, 2005). Gray (1981) posits that those high in E are more sensitive to signals of reward, thus leading to more sensation seeking and impulsive behaviors. Larsen and Ketelaar (1991) were able to expand this theory by providing experimental evidence showing that those high in E differ significantly from low E individuals in their reactivity to positive-mood induction in a laboratory setting. Additionally, individuals high in E tend to engage in more positive coping strategies when dealing with stressors (e.g., problem focused), and utilize fewer maladaptive forms (e.g., avoidance; Amirkhan et al., 1995; Lee-Baggley et al., 2005). The ability of those high in E to effectively interact and socialize with others goes a long way towards promoting positive affect, as studies have shown that positive and healthy social relationships lead to higher life satisfaction and greater subjective well-being (Hotard, McFatter, McWhirter, & Stegall, 1989).

**Motivations to Drink**

In an effort to clarify the complex relationship between alcohol consumption and personality, researchers began looking at the underlying motivations for individuals to drink and evaluating personality differences in that regard (e.g., Cooper, 1994; Gonzalez, Bradizza, & Collins, 2009; Greeley & Oei, 1999; Hussong, 2003; Stewart & Devine, 2000). Cox and
Klinger’s (1988) Motivational Model of Alcohol use broke drinking motives down into two
distinct dimensions: (1) valence (positive or negative), where people either consume alcohol
to achieve positive effects (i.e. drink as positive reinforcement) or to avoid a potential
negative effect (i.e., negative reinforcement); and (2) source (internal or external), where
individuals either drink to feel the enhancing effects of alcohol (internal) or drink as a means
of obtaining social approval (external). These dimensions were further broken down into
four categories of drinking motives; (1) Enhancement (internal-positive) which promotes
positive affect, (2) Social (external-positive) which facilitates social interaction, (3) Coping
(internal-negative) which serves to reduce negative affect, and (4) Conformity (external-
negative) which is aimed at avoiding social rejection (Cooper, 1994).

While subjectively associated with positive outcomes, those who drink to feel the
promotional effects of alcohol (i.e., to enhance) tend to drink in higher quantities (Cooper et
al., 1992; Hussong, 2003), and report higher incidence of alcohol related problems (Cooper,
1994; Cooper et al., 1992; Hussong, 2003). However, studies that have statistically
controlled for heavy drinking have shown enhancement motives to be unrelated to alcohol
problems (Cooper, 1994; Cooper et al., 1992; Stewart & Chambers, 2000). Individuals high
in E, who have consistently been linked to enhancement drinking motives (Baer, 2002;
Brennan, Walfish, & AuBuchon, 1986; Hussong, 2003; Stewart & Devine, 2000), tend to
have increased BAS sensitivity, and exhibit greater impulsivity and fun-seeking behaviors
(Suls & Martin, 2005). This drive to drink as a means of receiving immediate, short-term
gratification occurs often at the expense of potential long-term consequences (Feil &
Hasking, 2008). Cooper et al. (1995) explained that the propensity to seek out added
stimulation drives individuals to find new and novel forms of stimulation, thus making them
prone to drinking to enhance. Those who drink to enhance often times do so as a means of
facilitating social interaction and frequent environments where heavy drinking is condoned
(e.g., parties, bars, with same-sex friends) thus further reinforcing an association between
their own positive affect and alcohol use (Cooper, 1994; Cooper et al., 1992; Stewart &
Devine, 2000).

Alcohol consumption as a means of coping with negative affect has received
considerably more attention in the literature. According to the Tension-Reduction
Hypothesis (Conger, 1956), alcohol consumption allows for temporary relief from daily
stressors, thereby reinforcing certain faulty coping strategies (Mohr et al., 2001). Furthermore, consuming alcohol in an attempt to regulate negative affect (i.e., to cope) has been linked with solitary drinking, heavy episodic drinking, avoidance drinking, and more alcohol related problems. Continued use of alcohol to cope with one’s negative affect has been shown to deteriorate adaptive coping skills and lead to future alcohol dependence (Cooper, 1994; Cooper et al., 1995; Gonzalez et al., 2009; Stewart & Devine, 2000). Among college students, research has not only observed more alcohol related problems among those who drink to cope than those who drink for enhancement or social motives (Kassel, Jackson, Shannon, & Unrod, 2000), but also higher quantities of drinks being consumed per occasion as well (Britton, 2004). Additionally, Gonzalez et al., (2009) demonstrated a significant association between drinking to cope and suicidal ideation. Their study showed that by using alcohol to manage their negative affect, individuals with suicidal ideation became more vulnerable to their already recurrent problems (Gonzalez et al., 2009). Studies have indicated that when challenged with a stressor, those who drink to cope may have a heightened susceptibility to alcohol related cues in their environment, thus leaving them predisposed to drink more when stressed (Field & Quigley, 2009). Traditionally, research has shown that those high in N are more likely use alcohol to cope (Greeley & Oei, 1999; Hussong, 2003; Stewart & Devine, 2000). Others have hypothesized a relationship between low E (introversion) and coping-anxiety motives for drinking, but failed to establish a link (Mezquita, Stewart, & Ruipérez, 2010).

**PERSONALITY AND COPING**

Coping has been defined simply as any attempt at regulating one’s emotional state, regardless of the effectiveness of the attempts (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986). Early attempts at uncovering the relationship between personality and coping were centered around the psychodynamic theory which viewed personality and coping as linked and described several unconscious defense mechanisms individuals utilize to confront stressors in an ongoing attempt to reduce internal anxiety (Suls & David, 1996). Vaillant (as cited by Suls & David, 1996), an avid proponent of psychodynamic theory, outlined four levels of defense mechanisms as being maladaptive (i.e., psychotic, immature, neurotic) or adaptive (i.e., mature). Maladaptive defense strategies
include denial of a problem, acting out against others, repression or simply ignoring the issue, while adaptive/mature strategies include cognitive restructuring and use of humor. Later attempts at explaining this association distinguished between the unconscious and stable defense mechanisms and conscious coping mechanisms. Rather than being seen as a rigid process derived from past experiences, coping was seen as conscious, purposeful process aimed not only at reducing current anxious states, but also preventing future problems as well (Suls & David, 1996).

Along those lines, the transactional theory of stress and coping views coping as a conscious, thought out process that varies with the demands of a given situation (context or stressor) (Connor-Smith & Flachsbart, 2007). However, unlike psychodynamic theory, transactional theorists placed less importance on trait-based (i.e., personality) dispositional forms of coping and focused on the process of how individuals attend, appraise, and react to a given stressor (Suls & David, 1996). Rather than viewing coping as an enduring facet of the individual, transactional theorists viewed coping as a fluid process that may fluctuate depending on mood and situation (David & Suls, 1999). Events perceived as controllable denote more proactive attempts at dealing with stressors (problem-focused coping) and are characterized by direct action towards removing a stressor, while events seen as uncontrollable yield attempts to modify how one responds to a stressor (emotion-focused coping), characterized by behaviors such as relaxation, support seeking, emotional venting (e.g., crying, screaming), and emotional rumination (i.e., dwelling) (Carver & Connor-Smith, 2010; David & Suls, 1999; Lee-Baggley et al., 2005). As stated by Lazarus (2006), it is important to note that these strategies are not always in competition. In fact, effective use of emotion-focused coping may reduce stress and facilitate future problem-focused coping (Carver & Connor-Smith, 2010).

Researchers began to revisit personality in relation to coping in the 1980s (see Kenrick & Funder, 1988 as cited by Suls & David, 1996). While maintaining transactional theory’s model of problem and emotion-focused focused coping, modern research now distinguishes between engagement and disengagement coping – the propensity of an individual to either approach or avoid a stressor respectively, as well as primary and secondary control coping – attempts to change either the emotions associated with a stressor or the stressor itself, and attempts to adapt to a stressful situation respectively (Conner-Smith...
Research has established personality as a stable predictor of how one copes in adolescence (Gomez, Holmberg, Bounds, Fullarton, & Gomez, 1998) and into adulthood (Bolger & Zuckerman, 1995; Vollrath, Torgersen, & Alnaes, 1995). While no coping strategy can be assigned a label of good or bad with full certainty, problem-focused, engagement, and primary and secondary control coping are most often associated with positive outcomes (Conner-Smith & Flachsbart, 2007).

In their recent meta-analysis of the relationship between personality and coping, Connor-Smith and Flachsbart (2007) discussed a potential weakness in a majority of literature assessing the nature of the personality/coping relationship. They argued that most studies have looked primarily at dispositional measures of coping (trait-based coping) which are prone to reporting biases and “do not reflect the transactional nature of stress and coping.” That is, these broad based measures of coping do not accurately reflect the nuances and impacts of daily stressors, and relationships that should exist are often overshadowed (Connor-Smith & Flachsbart, 2007). Studies measuring daily reports of stress and coping are less likely to contain these biases, and yield more accurate results in regards to the relationship between coping and personality (Connor-Smith & Flachsbart, 2007; David & Suls, 1999; Suls & Martin, 2005). In addition, daily reports of mood have been showed to be resistant to mood-carryover from previous days (David, Green, Martin, & Suls, 1997).

Generally speaking, those high in the dimension of extraversion are more likely (than those lower in E) to display problem-focused and engagement coping styles (e.g., seek out social support, utilize problem-solving strategies, think positively) and less likely to engage in avoidant coping methods (Amirkhan et al., 1995; Carver & Connor-Smith, 2010; Lee-Baggley et al., 2005; Swickert, Rosentreter, Hittner, & Mushrush, 2002), although studies using daily diary methodology have yielded varying results, particularly when controlling for other dimensions FFM (David & Suls, 1999; O’Brien & DeLongis, 1996). In a 1996 study, Gallagher found a significant association between how those high in E cope and subsequent academic performance. He observed that low E participants (i.e., more introverted) who tended to distance themselves from others (avoidance coping) performed significantly higher on academic exams than did their high E counterparts (Gallagher, 1996). In addition to lower academic performance, the inability to self-regulate seen in high E individuals may
play a role in the development in future substance abuse (Miller & Brown, 1991 as cited by Martsh & Miller, 1997).

Additionally, Connor-Smith and Flachsbart (2007) noted that personality can influence coping effectiveness either directly or indirectly. Personality may have a direct impact on coping based on biological differences, or an indirect impact through certain personality differences. Sociable, high E individuals who are sensitive to reward cues (Suls & Martin, 2005), may be more likely to seek out the support of others while their low E counterparts may be more likely to withdraw. Researchers have often argued as to which coping domain social support falls under (problem-focused or emotion-focused), however in a recent review of personality and coping research, Carver & Connor-Smith (2010) argue this distinction may be context dependent. Social support seeking may be considered problem-focused if the goal is to obtain advice regarding how to approach a problem/stressor, or emotion-focused if the goal is to obtain emotional support following a problem/stressor (Carver & Connor-Smith, 2010). Moreover, high E individuals experience fewer stressors overall and do not react as strongly when they do (Connor-Smith & Flachsbart, 2007; Gunthert et al., 1999; Suls & Martin, 2005). The relative infrequency of major stressful events paired with an ability to react appropriately allows those high in E to feel more comfortable approaching others in times of duress.

**EXTRAVERSION, COPING, AND ALCOHOL CONSUMPTION**

In a 1998 longitudinal study, McCreary and Sadava followed 288 individuals for six years following their graduation date in an effort to track behavioral changes in an important transitionary period of life (college to working world). They observed that those individuals who employed more direct forms of coping (i.e., those who approached the stressor and took action towards alleviating it) reported fewer alcohol related problems over the course of the project. This trend was particularly evident in those who also had fewer daily hassles. Similar results were found in those who perceived that they had a strong social support system. Problems associated with alcohol can range from the seemingly innocuous to the severe and are typically characterized by arguments with family and friends, hangovers, or feeling unmotivated, missing days of work, getting in trouble with the law, financial problems, injury or even death related to alcohol use. As noted in previous sections,
individuals high in E are more likely (than those low in E) to employ more direct, problem-focused coping strategies (Amirkhan et al., 1995; Carver & Connor-Smith, 2010; Lee-Baggley et al., 2005), thus placing them at lower risk for experiencing these alcohol related problems. However, studies have noted that measures of alcohol related problems and actual alcohol use are only modestly correlated (Lewis et al., 2008; McCreary & Sadava, 1998), and while they may experience fewer alcohol problems, results have shown those high in E tend to drink more heavily in environments where drinking is condoned (Cooper et al., 1992; Hussong, 2003). Recent evidence revealed that the expectancy for social facilitation moderated the relationship between E and drinking, such that drinking rates were highest among high E participants with a high expectancy for social facilitation (Fischer, Smith, Anderson, & Flory, 2003). Moreover, the impulsive nature of those high in E and their propensity for sensation seeking have been shown to be highly predictive of alcohol consumption (Grau & Ortet, 1999). Additionally, high levels of BAS fun-seeking behaviors were associated with increased incidence of drinking (but not necessarily problems) (Feil & Hasking, 2008). This is not surprising given that researchers have shown enhancement and social motives for drinking to be found most often in individuals high in E (Hussong, 2003; Kuntsche, von Fischer, & Gmel, 2008). These excitement seekers are motivated by social relationships, and alcohol consumption may act as a form of “social lubrication” and provide a springboard for engaging others and forming new relationships (Lewis et al., 2008). This is particularly evident among young adults and college students. That is not to say high E individuals only drink as a means of fulfilling their social meter; in a 2008 study, Feil and Hasking discussed a significant interaction between emotion-focused coping and BAS fun-seeking (positive association) predicting alcohol use. Those who employ more emotion-focused strategies (occasionally seen in high E individuals, see David & Suls, 1999) and report high levels of BAS-fun seeking behavior drank more frequently. Moreover, these behaviors may “override” the use of more adaptive coping strategies (Feil & Hasking, 2008). These relationships reveal a complex link between coping usage and personality type predicting alcohol consumption and related problems.
PRESENT STUDY

As stated in previous sections, the Tension-Reduction Hypothesis posits that alcohol consumption may provide temporary relief from daily stressors (Conger, 1956). There have been inconsistencies in past research linking personality and alcohol, with some arguing that reduction in perceived stress may vary as a function of the situation (e.g., who a person is with at the time, where they are, type of stressors they have been exposed to) (Sayette, 2000). Furthermore, Cooper et al. (1995) state that stress-reduction oriented drinking is likely to be determined by the situation. However, Bolger and Zuckerman (1995) argued that exposure to varying types of stressors are not as strong predictors of outcomes as are how individuals react in the presence of stressors (Bolger & Schilling, 1991). According to Bolger and Zuckerman’s (1995) differential coping choice-effectiveness model, individuals may be more reactive to stressors for two reasons;

1. They may employ less adaptive coping strategies (i.e. coping choice)
2. They choose strategies that are inappropriate given the stressor (i.e., coping effectiveness).

Measuring affect as an outcome, Bolger and Zuckerman found significant evidence to support a mediational model where coping mediated the relationship between personality and affect. Their model proposes that individuals (based on personality dimension) are predisposed to cope in certain ways, and those strategies are associated with specific outcomes. To date, a majority of research in this area has continued to focus largely on the dimension of neuroticism, while information in regards to extraversion has been both scarce and inconsistent. However, recent research has attempted to reconcile the relationship between E and coping (e.g., E being unrelated to support seeking behavior in some studies) research by measuring coping in situ using a daily diary methodology (e.g., DeLongis & Holtzman, 2005; Lee-Baggley et al., 2005). Evidence from these studies provide support for a model of coping as a state-based (in situ) contextually-dependent process, and highlight the importance of measuring associations between extraversion, coping choice, and outcomes (i.e., alcohol use).

Using a daily diary approach, the present study will test the applicability of the differential coping choice model in a sample of undergraduate college students. In general, we expect high E individuals (relative to low E) will be more likely to employ problem
focused strategies and seek the support of their social network when faced with stressful events. Additionally, measuring alcohol consumption as our primary outcome, we expect to find evidence that coping mediates the relationship between E and alcohol use: More specifically, we believe individuals high in E (relative to those lower in E) who report using problem focused coping will also report lower frequency of alcohol use. Conversely those high in E (relative to those lower in E) who use social support should report higher frequency of alcohol use.
CHAPTER 2

METHOD

PARTICIPANTS

Participants were college students recruited from a large western university. Three hundred and sixty-six participants completed all target measures (described below). There were more female than male participants (68.5% vs. 31.5%) and their ages ranged from 17 to 25 years ($M = 20.14, SD = 2.10$). This multiethnic sample was composed of Caucasians (37.6%), Asian Americans (30.6%), Hispanics/Latinos (20.7%), African Americans (9.1%), and individuals who were either biracial or some other ethnic group (2%). The sample also represented a cross-section of majors at the university, with larger percentages of Business (24.0%) and Psychology (15.9%) majors, respectively. Moreover, 51% of the participants were 1st year students.

MEASURES

Daily diary pages assessed three primary variables: stress, coping, and alcohol consumption. Personality and demographic variables were completed at one administration point.

Perceived Stress/Controllability

Participants were asked to first describe the most stressful or bothersome event that had occurred to them during each day using an open-ended format. These events were classified according to type of stressful event (e.g., academic, peer relationship, parent relationship). Next the participants rated the perceived stressfulness of the event using a 5-point rating scale ($1 = \text{very slightly}$ to $5 = \text{extremely}$). Additionally, participants were asked their level of perceived controllability over this stressful experience (“How much do you feel you can control the outcome of this event?”), on a 5-point scale ($1 = \text{no control}$ to $5 = \text{absolute control}$).
Coping

Daily coping was assessed with 28 items reflecting 14 specific coping strategies using a 4-point rating scale (1 = not at all to 4 = a lot). These items were taken from Brief COPE (Carver, 1997), the Children's Coping Strategies Checklist and the How I Coped Under Pressure Scale (Ayers & Sandler, 2000) and the Responses to Stress Questionnaire (Connor-Smith, Compas, Wadsworth, Thomsen, & Saltzman, 2000). Two daily coping variables were used in the current study based on a recent multilevel factor analysis (Roesch et al., 2010, for a full exposition of the use of this technique and derivation of the factors): (1) Social Support (mean $\alpha = .77$; composed of problem-focused and emotion-focused support items; e.g., talked to my friends about how I was feeling); and (2) Problem-Focused Coping (mean $\alpha = .80$; composed of problem solving and cognitive decision making items; e.g., thought about what I need to know to solve the problem).

Alcohol Consumption

The total number of standard drinks consumed per day was calculated from daily reports of the number of drinks consumed (i.e., beer, wine, liquor, other). The scale was modeled after Armeli, Feinn, Tennen, and Kranzler's (2006) daily measure of alcohol consumption. Prior to initiating daily reports, participants were familiarized with the concept of a standard drink and instructed about the volumes of different beverages and their equivalents to a standard drink (i.e., 12-oz beer, 4-oz glass of wine, or 1-oz glass of spirits). For convenience, instructions were also provided to participants on the daily questionnaire. From these data, two daily criterion measures were created: any drinking (0 = no drinking; 1 = any drinking) and heavy drinking days (0 = no drinking; 1 = heavy drinking, defined as 5 drinks in a day for men and 4 drinks in a day for women).

Personality Questionnaire

To assess the E dimension of the FFM, the 10-item E scale from the International Personality Item Pool (IPIP) (Goldberg, 1999) was used. The instructions asked participants to rate how accurately each of the items described them using a 5-point scale ranging from 1 = very inaccurate to 5 = very accurate ($\alpha = .88$).
PROCEDURE

Participants were recruited via flyers, course/club presentations, and university seminars. Once an individual agreed to participate they received instructions (via email) on how to complete the internet-based daily diary page over the course of five days. Potential participants signed an electronic informed consent form prior to participating in the study. Once the consent form was signed, participants completed the IPIP and the demographic questionnaire. Next, participants were given instructions on how to complete the internet-based daily diary page over the next 5 consecutive days. Participants were given a username and password (that they could change) to access the secured website in order to complete the diary page. These procedures are consistent with recent Internet-based daily diary studies (Nezlek, 2005; Park, Armeli, & Tennen, 2004). Compliance with the diary page at the end of the day was high, with the modal response time of reporting being 9:43 PM and over 85% of observations reported after 7 PM. Participants were paid $25 at the completion of the study.

PRELIMINARY DATA ANALYSES

After preliminary data screening and cleaning, multilevel modeling was be used to analyze the data according to the particular hypotheses specified (Nezlek, 2001; Raudenbush & Bryk, 2002). The primary analyses was conducted on two-level models. The measures of alcohol consumption, and coping from the daily diary page are considered lower-level (level-1) variables, whereas personality is considered higher-level (level-2) variables. Level-1 predictor variables (coping) were group-mean centered. Thus, aggregate versions of the target level-1 predictors were also added to the intercept equation at level-2 to account for between-individual variance. Time of day, day of week, generational status, gender, and perceived stress (from the daily diary page) were evaluated for use as covariates in the target analyses. All analyses were conducted using HLM 6.06.
CHAPTER 3

RESULTS

DESCRIPTIVE STATISTICS

A total of 1,760 daily diary observations were completed for the 365 participants, with close to 30% of observations falling on a weekend (defined as Friday through Sunday). Participants in this study had a mean extraversion score of 3.36 ($SD = .74$). Exposure to daily stressors yielded an average perceived stressfulness of 3.57 ($SD = 1.08$) while the mean perceived controllability of those events was 2.91 ($SD = 1.18$). Of the coping strategies of interest (i.e., problem-focused and seeking social support), participants primarily used problem-focused coping ($M = 2.63$, $SD = 0.84$) with lesser use of social support strategies ($M = 1.88$, $SD = 0.82$). One-hundred sixty five participants (approximately 45%) reported consuming alcohol at least once during the five reporting days. Students consumed alcohol 322 of the 1,760 total reporting days (approximately 18% of observed days) with an average number of drinks consumed per occasion of 3.73 ($SD = 3.26$).

MULTILEVEL REGRESSION MODELS

Bivariate analyses were conducted to test for significant covariates with the target outcome variable (alcohol). Level-1 predictors included the day of assessment, perceived control over stressor, perceived stressfulness, and a dummy-coded variable comparing weekday vs. weekend (weekday referent group). Level-2 included dummy-coded versions of gender (male as referent group), ethnic comparisons of minority groups (Asian, Hispanic/Latino, African American) to Caucasians, and also age. All continuous covariate variables were grand mean centered and treated as fixed effects. A multilevel Poisson model was used given that alcohol is a count variable with a positive skew ($M = 0.67$, $SD = 1.99$). A log-link function with an over-dispersion parameter was used due to the high standard deviation. Table 1 shows that at the individual level, male gender, Caucasians (relative to African Americans, Hispanic/Latinos, or Asian Americans), and older age are predictive of greater alcohol consumption among undergraduates. Only weekend (vs. weekday) was
Table 1. Individual and Daily-Level Predictors of Alcohol Consumption from Bivariate Multilevel Models

<table>
<thead>
<tr>
<th>Predictor</th>
<th>$B$ ($SE$)</th>
<th>$p$</th>
<th>Event rate [95% CI]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>-0.04 (0.03)</td>
<td>.176</td>
<td>0.96 [0.91, 1.02]</td>
</tr>
<tr>
<td>Perceived control</td>
<td>0.01 (0.04)</td>
<td>.866</td>
<td>1.01 [0.93, 1.09]</td>
</tr>
<tr>
<td>Perceived stress</td>
<td>-0.05 (0.04)</td>
<td>.223</td>
<td>0.95 [0.87, 1.03]</td>
</tr>
<tr>
<td>Weekend vs. Weekday</td>
<td>1.23 (0.09)</td>
<td>&lt;.001</td>
<td>3.42 [2.84, 4.12]</td>
</tr>
<tr>
<td>Gender</td>
<td>-0.35 (0.15)</td>
<td>.017</td>
<td>0.70 [0.53, 0.94]</td>
</tr>
<tr>
<td>Ethnic comparisons (vs. Caucasian)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Af. American</td>
<td>-0.77 (0.21)</td>
<td>&lt;.001</td>
<td>0.46 [0.31, 0.70]</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>-0.54 (0.15)</td>
<td>.001</td>
<td>0.58 [0.44, 0.78]</td>
</tr>
<tr>
<td>Asian American</td>
<td>-0.60 (0.19)</td>
<td>.002</td>
<td>0.55 [0.37, 0.80]</td>
</tr>
<tr>
<td>Age</td>
<td>0.11 (0.03)</td>
<td>.002</td>
<td>1.11 [1.04, 1.18]</td>
</tr>
</tbody>
</table>

significantly associated with daily alcohol consumption. These statistically significant covariates, then, were included in all subsequent predictive models of alcohol consumption.

In order to reveal the mediational effects of coping on the extraversion/alcohol consumption relationship, we first tested a direct link between extraversion and alcohol consumption which controlled for the effects of the significant covariates (i.e., gender, ethnicity, age, and the day of diary entry). Table 2 shows a significant main effect for extraversion such that those high on the scale of extraversion drank significantly more relative to those lower on extraversion, event rate (ER) = 1.35, 95% CI [1.11, 1.66], $p = .004$, controlling for the significant effects of weekend (vs. weekday), gender, age, and ethnic comparisons. This effect can be interpreted by evaluating the exponentiated log-link function of the regression equation.

$$\ln(Alcohol') = B_0 + B_1E$$

$$e^{\ln(Alcohol')} = e^{(-.570 + .304E)}$$
This equation allows for the prediction of how much alcohol an individual consumes based on their score from the extraversion scale. For example, a participant with an extraversion score of 4.1 (one standard deviation above the mean), is predicted to consume approximately two drinks per occasion (1.97), while someone with an extraversion score of 2.62 (one standard deviation below the mean) is predicted to drink approximately 1.25 drinks per occasion.

This same set of covariates was used to test the second portion of our mediational model, the association between our coping variables (i.e., problem-focused coping and seeking social support) and extraversion (antecedent to mediator paths). Table 3 shows that none of the individual-level predictors were associated with increased usage of problem-focused coping. While daily-level predictors such as higher perceived controllability and higher perceived stress were associated with greater use of daily problem-focused coping, use of this strategy actually decreased over the five assessment days. When E was added to the model, results indicate that those higher on the scale of extraversion used problem-focused coping significantly more than those lower on extraversion, over and above the other predictors (see Table 4). Alternatively, female gender predicted greater individual-level social support seeking, while lower perceived control and greater perceived stress were associated with daily social support seeking. Similar to problem-focused coping, use of
social support decreased over the five days of assessment. Results show those higher on extraversion use social support significantly more frequently than those lower on extraversion. In summary, the antecedent to mediator paths from both E to problem-focused coping and social support, respectively, were statistically significant.

Finally, to test whether or not the mediator (problem-focused coping, social support) to outcome relationships were statistically significant, a final model was tested. Both individual level coping variables were specified as predictors of alcohol consumption; the
The corresponding aggregate (mean-level) versions of coping were simultaneously entered into the model predicting alcohol consumption to remove any between-person variability. Thus, the individual level coping variables representing daily use (rather than aggregate use) of coping were included in these analyses. E was also added as a level 2 predictor of alcohol consumption. Daily coping variables were entered into the Level-1 equation (group-mean centered) while the corresponding aggregate variables were entered at Level-2 (grand-mean centered). For full mediation to occur, coping variables should have remained significantly associated with alcohol consumption, while the previously established link between extraversion and alcohol consumption should fall to nonsignificance (see Figure 1 for a full description of effects).

![Diagram](image)

**Figure 1.** Mediational pathway: Extraversion predicting alcohol mediated by problem-focused and social coping. *Significant at the .01 level **Significant at the .001 level.
As shown in Table 5, significant individual level predictors included gender, all ethnic comparisons, age, and extraversion (ER = 1.40, 95% CI [1.16, 1.69], p = .001), while mean-level problem-focused and social support coping were not significant (p = .542 and .100 respectively). There was a statistically significant and negative association between daily level use of problem-focused coping predicting alcohol consumption for this sample ER = .79, 95% CI [.678, .921], p = .003. Conversely, the association of social support seeking with alcohol consumption yielded a marginally significant and positive relationship (ER = 1.16, 95% CI [.998, 1.35], p = .054.

**Table 5. Predictions of Alcohol Consumption from Coping and Extraversion in Bivariate Multilevel Models**

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B (SE)</th>
<th>p</th>
<th>Event rate [95 % CI]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekend vs. Weekday</td>
<td>1.27 (0.10)</td>
<td>&lt;.001</td>
<td>3.54 [2.93, 4.28]</td>
</tr>
<tr>
<td>Gender</td>
<td>-0.40 (0.15)</td>
<td>.009</td>
<td>0.67 [0.50, 0.90]</td>
</tr>
<tr>
<td>Ethnic comparisons (vs. Caucasian)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Af. American</td>
<td>-0.72 (0.20)</td>
<td>.001</td>
<td>0.48 [0.33, 0.72]</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>-0.48 (0.14)</td>
<td>.001</td>
<td>0.62 [0.47, 0.81]</td>
</tr>
<tr>
<td>Asian American</td>
<td>-0.58 (0.19)</td>
<td>.003</td>
<td>0.56 [0.39, 0.82]</td>
</tr>
<tr>
<td>Age</td>
<td>0.14 (0.03)</td>
<td>&lt;.001</td>
<td>1.15 [1.07, 1.23]</td>
</tr>
<tr>
<td>Extraversion</td>
<td>0.34 (0.10)</td>
<td>.001</td>
<td>1.40 [1.16, 1.69]</td>
</tr>
<tr>
<td>Daily Problem-Focused Coping</td>
<td>-0.24 (0.08)</td>
<td>.003</td>
<td>0.79 [0.68, 0.92]</td>
</tr>
<tr>
<td>Daily Social Support</td>
<td>0.15 (0.08)</td>
<td>.054</td>
<td>1.16 [1.00, 1.35]</td>
</tr>
<tr>
<td>Person-level problem-focused coping</td>
<td>-0.08 (0.13)</td>
<td>.542</td>
<td>0.92 [0.72, 1.19]</td>
</tr>
<tr>
<td>Person-level social support</td>
<td>0.17 (0.10)</td>
<td>.100</td>
<td>1.19 [0.97, 1.45]</td>
</tr>
</tbody>
</table>

The following effects were estimated to provide a practical interpretation of the relationship for extraversion, problem-focused coping, and social support predicting alcohol consumption. While controlling for the linear effects of coping, someone who scored one standard deviation above the mean on extraversion (4.1) is predicted to drink 2.51 drinks per occasion, whereas someone who scored one standard deviation below the mean (2.62) is predicted to drink 1.54 drinks per occasion.

\[ e^{\ln(\text{Alcohol'})} = e^{(-.446 + .335E)} \]
Increased usage of problem-focused coping resulted in fewer drinks consumed. A score of 3.47 (one standard deviation above the mean) on the daily problem-focused measure is associated with .30 drinks being consumed per occasion while a lower score of 1.79 (one standard deviation below the mean) is associated with slightly elevated levels of alcohol consumption, about .42 drinks per occasion.

\[ e^{\ln(\text{Alcohol})} = e^{(-.446 + -.236 PF)} \]

Finally, daily use of social support coping was such that a score one standard deviation above the mean (2.7) was associated with approximately one drink being consumed per occasion (.96) while a score one standard deviation below the mean was associated with slightly less alcohol consumption (about .75 drinks per day).

\[ e^{\ln(\text{Alcohol})} = e^{(-.446 + .149 SS)} \]
Results from this daily diary study add further to the literature suggesting a complex relationship between the personality dimension of extraversion, coping strategies (i.e., problem-focused coping and social support seeking), and alcohol consumption. Individuals who can typically be described as “extraverted” (i.e., those who score high on extraversion scales) are typically sociable, energetic, cheerful, optimistic, and assertive (Amirkhan et al., 1995; Lucas & Baird, 2004; McCrae, 1992; O’Brien & DeLongis, 1996). While these positive personality qualities can typically predict positive outcomes (e.g., greater subjective well-being, greater life satisfaction; Hotard et al., 1989), they may mask certain behaviors which leave those high in extraversion susceptible to risky behaviors. In the past, researchers have explained two primary traits of high extraversion which contribute to differing levels of alcohol consumption as well as the development of substance use: impulsivity and sociability (Acton, 2003). Moreover, impulsivity, or the inability to regulate one’s basic urges and behaviors with regard to the consequences, has been shown to be a vulnerability factor for alcohol use in both experimental and cross-sectional studies (Acton, 2003; Cooper, Agocha, & Sheldon, 2000; Grau & Ortet, 1999; Mezquita et al., 2010). Gray (1981) argued that a biological sensitivity to reward signals could explain the tendency for high extraversion individuals to display these impulsive and sensation-seeking behaviors. Overall, results from this study coincide with previous research in that individuals who reported higher levels of extraversion consumed more alcohol per day relative to those reporting lower levels of extraversion (Acton, 2003; Amirkhan et al., 1995; Baer, 2002; Fischer et al., 2003; Martsh & Miller, 1997).

In general, those high in extraversion tend to appraise stressful events as less threatening than those low in extraversion (Amirkhan et al., 1995; Carver & Connor-Smith, 2010). This appraisal of stressful events as challenges or obstacles to be overcome is associated with more optimistic outlooks on how stress can be reduced as well as positive perceptions as to the resources one has to cope with stress (Carver & Connor-Smith, 2010).
Taken together, positive appraisals of stress and the resources to defend against it suggest those high in extraversion are more likely to employ more problem-focused coping styles. These strategies are typified by direct action and engagement coping strategies and are associated with positive outcomes (Amirkhan et al., 1995; Carver & Connor-Smith, 2010; David & Suls, 1999; Lee-Baggley et al., 2005).

As discussed previously problem-focused coping measures in this study were developed in accordance with Roesch et al. (2010) which found that problem-focused strategies were composed of problem-solving and cognitive decision making items. As predicted, scores on the extraversion scale were positively associated with the use of these problem-focused strategies to cope with daily stressors. Additionally, these strategies had a direct and negative association with alcohol consumption suggesting the use of problem-focused coping strategies at the daily level predict lower levels of same-day alcohol consumption (average or trait problem-focused coping failed to predict alcohol consumption). Conceptually, this finding makes practical sense as problem-focused coping strategies have typically been characterized by direct action towards diminishing stress (Amirkhan et al., 1995; Carver & Connor-Smith, 2010; Connor-Smith & Flachsbart, 2007; David & Suls, 1999; Lee-Baggley et al., 2005). While evidence for full-mediation of the extraversion to alcohol relationship by coping was not supported by this thesis, these results indicate that problem-focused coping partially mediates this relationship while controlling for statistically significant covariates (e.g., gender, ethnicity, age, and weekend vs. weekday) and suggest that daily or ongoing use of this strategy may act as a protective factor against alcohol consumption for high extraversion individuals.

Along with displaying more problem-focused strategies, researchers have consistently shown that those high in extraversion tend to also display more social support seeking coping behaviors (Amirkhan et al., 1995; Connor-Smith & Flachsbart, 2007; Swickert et al., 2002;). The overall social and energetic nature of high extraversion individuals is not only associated with having more frequent contact with those in their social network, but also having more resources (i.e., people) to call upon in general (Swickert et al., 2002). Having a strong social network from which one can draw upon tends to facilitate this support seeking among those high in extraversion.
Our social support factor was developed in a similar fashion to our problem-focused factor. According to Roesch et al. (2010), social support coping was comprised primarily of problem-focused and emotion-focused support strategies. As was predicted, scores on the extraversion scale were positively associated with the use of social support seeking strategies to cope with daily stressors. Although the use of social support coping and social engagement have most often been associated with positive outcomes, including better health outcomes (Ozer & Benet-Martínez, 2006), for this study, the use of social support strategies to cope with stress on a daily level was (marginally) associated with increased frequency of alcohol consumption (average or trait social support coping failed to predict alcohol consumption). Results suggest that although this effect failed to meet traditional statistical significance standards, it may be of practical importance as research has shown that peers provide a strong influence on drinking patterns, particularly among college students (Baer, 2002). Although not measured directly, given the college environment, this marginal effect may be at least partially indicative of a motivation to socialize with others rather than a desire to alleviate stress, per se, although investigation of this theory is beyond the scope of the present thesis. Along these lines, LaBrie, Hummer, and Pederson (2007) have argued that social interaction and camaraderie yield stronger associations to alcohol use relative to tension-reduction drinking. Future research would benefit from the measurement of these motivations with the goal of teasing apart individual motivations for drinking from actuarial coping habits.

While the primary focus of this thesis was to present new evidence regarding how extraversion specifically relates to both coping and alcohol outcomes, future research may profit from evaluating all five dimensions of personality (openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism) to gain a broader portrait of how personality relates to coping and alcohol outcomes. While many cross-sectional studies measuring coping at one time-point have failed to find an association between openness and coping, daily studies have had more success (David & Suls, 1999; Lee-Baggley et al., 2005). Individuals high in openness, who tend to be creative, untraditional and diverse thinkers (Carver & Connor-Smith, 2010; Lee-Baggley et al., 2005; O’Brien & DeLongis, 1996), are more likely to cope using humor, engagement and planful problem-solving strategies, and while they do not report significantly higher levels of social support seeking, they have been
shown to display lower levels of distancing from others (Carver & Connor-Smith, 2010; DeLongis & Holtzman, 2005; Lee-Baggley et al., 2005). This paints a picture of those high in openness as being problem-solvers adept at making direct but creative strides to reduce stress, and thus may be less likely to consume alcohol when stressed (Connor-Smith & Flachsbart, 2007).

Individuals high in conscientiousness are typically portrayed as organized, thoughtful, reliable, disciplined, and achievement oriented (Carver & Connor-Smith, 2010; DeLongis & Holtzman, 2005; Lee-Baggley et al., 2005; O’Brien & DeLongis, 1999). These individuals show more problem solving, social support and cognitive restructuring, which have been associated with increased positive affect and decreased negative affect (Connor-Smith & Flachsbart, 2007; O’Brien & DeLongis, 1996; Roesch, Aldridge, Vickers, & Helvig, 2009), and report lower levels of denial, negative emotion-focused coping, and less substance use, including alcohol (Connor-Smith & Flachsbart, 2007). However, DeLongis and Holtzman (2005) indicated strong situational determinants with regard to self-blame. When facing a marital stressor, those high in conscientiousness were more likely to use self-blame, whereas when faced with child misbehavior, high conscientiousness predicted less self-blame (DeLongis & Holtzman, 2005). Overall, high conscientiousness individuals are adept at more direct approaches toward coping with stress and thus may be less likely to consume alcohol as a result (Connor-Smith & Flachsbart, 2007). However, Mezquita et al. (2010) state that low levels of conscientiousness paired with high levels of neuroticism interact to predict increased alcohol consumption, suggesting further that all dimensions of the Five Factor Model in studies assessing the relationship between personality, coping, and alcohol consumption.

Those high in agreeableness tend to be helpful, trusting of others, and courteous (David & Suls, 1999; Lee-Baggley et al., 2005; O’Brien & DeLongis, 1996). Although some mixed results exist regarding how those high in agreeableness typically cope, in general these individuals tend to use more problem solving, social support, cognitive restructuring, and religious coping (Carver & Connor-Smith, 2010; Connor-Smith & Flachsbart, 2007; David & Suls, 1999) with lower levels of negative emotion-focused coping and substance use (Connor-Smith & Flachsbart, 2007). DeLongis and Holtzman (2005) explained that this dimension’s role in the coping process may be specific to interpersonal stressors. While a
tenuous link between levels of agreeableness and coping exists, research indicates that those high in agreeableness tend to display more problem-focused strategies (e.g., problem solving, cognitive restructuring). Although they share a similar propensity to seek out the support of others with those high in extraversion, they do not share the impulsivity features which are typically present in high extraversion individuals (Acton, 2003; Feil & Hasking, 2008; Grau & Ortet, 1999), thus may be less likely to consume alcohol when stressed (Connor-Smith & Flachsbart, 2007)

Those high in neuroticism, which has been a focus in many coping studies (Bolger & Schilling, 1991; Bolger & Zuckerman, 1995; David et al., 1997; Gomez et al., 1998; Gunthert et al., 1999), are typically more closed off and reserved, while also fearful and self-conscious. Of the dimensions in the Five Factor Model, high levels of neuroticism are most typically associated with the worst outcomes such as depression, anxiety, negative affect, and alcohol use (Bolger & Zuckerman, 1995; Cooper, 1994; Greeley & Oei, 1999; Hussong, 2003; O’Brien & DeLongis, 1996; Stewart & Devine, 2000). These individuals are not only more reactive to stressors (Bolger & Zuckerman, 1995; Mroczek & Almeida, 2004) but typically cope with stress through distraction, disengagement strategies (e.g., avoidance, denial, wishful thinking), and also substance use (Carver & Connor-Smith, 2010; Connor-Smith & Flachsbart, 2007; Cooper, 1994; Gunthert et al., 1999; Mezquita et al., 2010), while utilizing fewer adaptive strategies such as problem solving, social support, and cognitive restructuring. Thus, high neuroticism individuals, already predisposed to the utilization of maladaptive forms of coping, may more likely (than those low in neuroticism) to consume alcohol to cope with stress.

Although how these additional dimensions may contribute to our understanding of the personality-alcohol relationship is purely skeptical at this point, past research has shown that differences in how these dimensions present themselves and interact across situations may provide important substantive insight into the relationship between personality, coping, and alcohol use

Minority groups (relative to Caucasians) did not differ significantly in their use of daily problem-focused or social support coping. However, while information regarding ethnic/racial differences in personality remains scarce (Goldberg, Sweeney, Merenda, & Hughes, 1998), given the more collectivistic nature of African-American, Hispanic/Latino,
and Asian-American cultures, one might expect levels of social support seeking behaviors among high extraversion individuals in these groups to surpass that of Caucasians (Kaniasty & Norris, 2000), whereas more individualistic Caucasians high in extraversion may be more likely to display problem-focused strategies than these ethnic/racial minority groups.

Male participants were shown to consume significantly more alcohol per day than their female counterparts, which is consistent with previous findings for similar college samples (Engs & Hanson, 1990; O’Malley & Johnston, 2002). Also consistent with past research were the associations between gender and coping usage. Whereas men were more likely to use problem-focused strategies (Lengua & Stormshak, 2000; Tamres, Janicki, & Helgeson, 2002), women were more likely to seek out social support (Cohen, 1992; Lengua & Stormshak, 2000; Tamres et al., 2002). Although speculative at this point, given data from our current model, this might suggest the use of problem-focused coping may protect against stress-related alcohol consumption, particularly among high extraversion men. Moreover, the use of social support coping might be a particularly salient risk factor for stress-related alcohol consumption among high extraversion women. Future researchers may seek to investigate the role of gender within similar frameworks.

Age was also predictive of daily alcohol consumption such that older participants consumed significantly more alcohol relative to younger participants (Centers for Disease Control and Prevention, 2011), but not of differing use of the coping strategies. Finally and not surprisingly, more alcohol was consumed on reporting days which fell on a weekend relative to reports from weekdays.

**LIMITATIONS**

Given the focused nature of the research questions asked in this thesis, several limitations should be addressed. One limitation of this study arose from its single measure of alcohol consumption. Although the total number of standard drinks consumed per occasion was modeled after a validated measure of alcohol consumption (Armeli et al., 2006), it may have benefitted from additional measures related to overall alcohol use (e.g., frequency of past month use, number of binge days, alcohol related problems). Numerous tests and measures pertaining to alcohol use exist which are available to researchers. Similar studies have measured alcohol involvement (i.e., alcohol related problems, alcohol abuse, alcohol
dependence) using screening tests like the Michigan Alcoholism Screening Test (Hussong, 2003; Littlefield, Sher, & Wood, 2009), the Young Adult Alcohol Consequences Questionnaire (Gonzalez et al., 2009; Lewis et al., 2008), and the Alcohol Use Disorders Identification Test (Field & Quigley, 2009) among others. Despite this limitation, levels of alcohol consumption are not necessarily predictive of alcohol related problems, particularly as it relates to college samples (Baer, 2002).

While the state-based effects of perceived stressfulness and controllability of stress were statistically controlled for in this study, the impact of their effects was not interpreted. These factors have been shown to play a role in the utilization of different coping strategies. Studies by Folkman et al. (1986) and David and Suls (1999) have argued that the more control one has over the stressor being experienced, the more likely they are to employ more direct and problem-focused coping strategies. Moreover, the type of stressor (e.g., interpersonal, academic, financial, work-related) encountered may play a crucial role in the selection of coping strategy and its resulting effectiveness. Cutrona and Russell (1990) argued that the benefits of the social support provided are maximized when the support coincides with the demands of the stressor. Furthermore (and consistent with current coping assessments), Cutrona’s matching model of social support states that stressful events perceived as controllable are best reduced through instrumental or problem-focused support while uncontrollable stressful events are best reduced through emotion-focused support (Cutrona, Shaffer, Wesner, & Gardner, 2007). When the type of support provided does not match or is inappropriate given the stressor one is exposed to, social support may become ineffective or maladaptive, leading to certain risky behaviors including alcohol consumption (Thoits, 1995). Future research should be mindful of the impact of these factors and may benefit by testing for their role as potential moderators of the coping-alcohol relationship. Future research should be mindful of the impact of these factors and may benefit by testing for their role as potential moderators of the coping-alcohol relationship.

In addition, coping researchers have been divided as to whether coping behaviors should be measured as trait-based vs. state-based. Recently, Connor-Smith and Flachsbart (2007) made an argument that the inconsistencies of relationships observed in studies utilizing trait-based measures can be explained by the assessment of coping itself. These trait-based measures of coping are prone to reporting biases from participants having to recall
how they have coped previously. Recall biases in the measurement of coping behaviors make it difficult to detect and observe how one typically copes, thus can overshadow certain associations we expect to observe (i.e., relationships between coping and alcohol consumption). Future research might also benefit from the inclusion of these state-based items assessing contextual as well as motivational factors which may interact to predict varying levels of alcohol consumption. This focus on context and situation has been implemented by researchers like Mohr, Brannan, Mohr, Armeli, and Tennen (2008) who discussed how drinking at home or alone is linked with increased use of alcohol to cope with stress and one’s own negative affect (Christiansen, Vik, & Jarchow, 2002; Cooper, 1994), whereas drinking elsewhere (e.g., at a party or bar) is most typically associated with enhancement and social motives for drinking (Cooper, 1994; Cooper et al., 1992; Hussong, 2003; MacLean & Lecci, 2000).

Another potential source of bias in this thesis was its use of self-report measures. However, according to Chan (2009), these reports are necessary to evaluate self-referential perceptions (e.g., how one has coped) although could be supplemented by additional measures. Finally, the generalizability of these results to different samples should also be considered. Participants in this study represent a limited age range and demographic (college students), and thus cannot be generalized to the population at large.

**CONCLUSION**

Overall, these findings add to the growing literature measuring coping on a day to day basis. While there is an abundance of literature pertaining to college drinking patterns, there is less information available regarding how these patterns are influenced by how one copes with daily stressors and even less as to how this relates to those who score high on extraversion specifically. Personality traits are enduring features which influence individual outlooks, beliefs, and behaviors. These “social-butterflies” have been depicted in a relatively positive light in personality and coping research, and indeed, according to this study effective use of problem-focused strategies towards diminishing stress may serve to reduce alcohol consumption among college students high in extraversion. However, those who tend to seek out the company of friends while stressed may be predisposed to engage in certain risky behaviors, including increased alcohol consumption. Results from this study may be used to
inform interventions and programs geared toward reducing college drinking. Particularly as it relates to those high in extraversion, these interventions should not only emphasize and promote problem-focused coping skills such as planful problem-solving or proactive coping strategies to diminish stress-related drinking but also provide support and guidance for regulating more impulsive behaviors which may supersede adaptive behaviors and lead to more stress related drinking.
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