PROCESSES UNDERLYING DYSFUNCTIONAL INTERPERSONAL BEHAVIOR
AND THE PREDICTION OF DRINKING OUTCOMES

by

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The present study tested a theoretically-derived model of several proposed underlying processes of dysfunctional interpersonal behavior (impulsivity, compulsivity, emotion dysregulation and rejection sensitivity) and the relationships among dysfunctional interpersonal behavior, low social support and problem alcohol use. Support was found for three of the proposed underlying processes of dysfunctional interpersonal behavior- emotion dysregulation, rejection sensitivity and compulsivity were found to statistically predict dysfunctional interpersonal behavior in the expected direction. However, impulsivity was found to be associated with dysfunctional interpersonal behavior in the direction opposite to that which was hypothesized. Support was also found for the hypothesized relationship between dysfunctional interpersonal behavior and low social support, though social support was associated with problem drinking in the direction opposite to that which was hypothesized. Limitations of this study included the restricted nature of the sample (all college students), the atypical racial composition of the sample, and the cross-sectional design of the study. Future studies should examine the proposed model in a clinical sample of individuals with Alcohol Use Disorders. Such studies should also utilize longitudinal designs and incorporate multiple measures of constructs.
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Introduction

The excessive use of alcohol is a major social and public health problem in the United States. Alcohol is the third leading cause of preventable death, behind tobacco use and poor diet/lack of exercise (Mokdad, Markus, Stroup, Gerberding, 2004; NIAAA, 2008). Alcohol use disorders (AUDs) are the fifth most costly type of mental health disorder to employers (Goetzel, Hawkins, Ozminkowski & Wang, 2003), and the cost to society has been estimated at $185 billion annually (NIAAA, 2008). Miller, Levy, Cohen and Cox (2006) estimated that roughly 60% of crimes committed in the U.S. were related to alcohol or other drug use. Despite the enormous social and health cost of excessive alcohol use, rates of AUDs remain high. Grant, Dawson, Stinson, Chou, Dufour and Pickering (2006), based on data from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC), found twelve month rates of alcohol abuse and dependence in the United States to be 4.65 and 3.81%, respectively. Understanding the factors that predict, cause, maintain and aid in the resolution of alcohol problems, with the ultimate goal of mitigating the impact of alcohol use on society, is therefore an important use of resources.

The role of the social network in AUDs has been an important area of interest and research. A number of interpersonal variables have been found to be associated with drinking outcomes (Hunter-Reel, McCrady & Hildebrandt, 2009), and interventions that target the social network have been found to be effective (McCrady, 2004; McCrady, Epstein, Cook, Jensen, & Hildebrandt, 2009; McCrady, Epstein & Sell, 2003). However, the literature on social networks and drinking is lacking in two important ways: (a) it does not include research on dysfunctional interpersonal behavior, a potential process
underlying the development and maintenance of the social network, and (b) it has focused entirely on individuals with alcohol problems who are in treatment. To address these gaps in the literature, the current study tested a proposed model of the relationship of interpersonal behavior to problem alcohol use. This study had two primary aims - first, to examine several potential underlying processes (or proximal predictors) of dysfunctional interpersonal behavior: impulsivity, compulsivity, emotion dysregulation and rejection sensitivity, and second, to examine the association among dysfunctional interpersonal behavior, social support, and problem alcohol use in a large, non treatment-seeking sample of college students.

Research to date on the influence of the social network on problem alcohol use, the influence of the individual on the social network, and the proposed underlying processes of dysfunctional interpersonal behavior are reviewed briefly below. Next, the proposed model of interpersonal dysfunction and problem alcohol use that was tested in this study is presented.

**The Influence of the Social Network on Problem Alcohol Use**

Social support has been defined as “the perceived or actual availability of both affective and instrumental support, exemplified by the provision and exchange of a sense of belonging, enhancement of self-esteem, and tangible and intangible aid given via money, goods, services, or information” (Beattie & Longabaugh, 1999, pg. 593). Social support has long been viewed as an important environmental factor in positive psychotherapy outcomes (Roehrle & Strouse, 2008). Indeed, social support has been found to predict positive outcomes across a variety of disorders, including anxiety disorders (e.g., Eurelings-Bontekoe, Diekstra, & Verschuur, 1995; Steketee, 1993),
depression (e.g., Cappiliez, 2000; Eurelings-Bontekoe, Diekstra, & Verschuur, 1995; Ogroniczuk, Piper, Joyce, McCallum, & Rosie, 2002; Poessel, Baldus, Horn, Groen, & Hautzinger, 2005), and eating disorders (e.g., Binford, Mussell, Crosby, Peterson, Crow, & Mitchell, 2005) as well as AUDs (see below).

Within the alcohol treatment field, a great deal of research has focused on the influence of the social network on the individual with regard to drinking outcomes. As a result, there is substantial evidence that social networks are related to treatment outcomes for AUDs. General social support (i.e. how generally supportive individuals perceive their networks to be) has been found to predict drinking outcomes of those being treated for AUDs (Beattie, 2001; Havassy, Hall, & Wasserman, 1991). The degree of general social support available from the most supportive person in the network has been found to be a key variable in predicting drinking outcomes (Barber & Crisp, 1995) and the number of supportive relationships a person has also predicts abstinence (Booth, Russell, Soucek & Laughlin, 1992; Gordon & Zrull, 1991; Humphreys, Moos, & Finney, 1996; Zywiak, Longabaugh & Wirtz, 2002). Further, greater social investment (defined as having a larger social network, more contact with the social network, and greater subjective value of social network members) predicts positive outcomes (Beattie & Longabaugh, 1997; Havassy, Hall, & Wasserman, 1991; Zywiak et al., 2002). General social support from the network has been shown to be associated with better drinking outcomes among individuals in recovery who are both unemployed and unmarried (Booth et al., 1992; Gordon & Zrull, 1991; Humphreys, Moos, & Finney 1996), but social support is less important for those who have one or both roles (employee or spouse).
Specific support for abstinence from the social network has been found to be a good predictor of drinking outcomes (Beattie, Longabaugh, & Fava, 1992; Havassy, Hall, & Wasserman, 1991). Greater support for abstinence is associated with lower risk of relapse (Beattie & Longabaugh, 1999; Havassy, Hall, & Wasserman, 1991; Longabaugh, Wirtz, Beattie, Noel, & Stout, 1995), and encouragement for abstinence from network members important to the recovering individual has been found to be significantly related to the number of days on which heavy drinking occurs (Beattie & Longabaugh, 1997).

Findings have been mixed with regard to support for drinking. Using the Project MATCH dataset Longabaugh, Wirtz, Zweben, & Stout (1998) found that support for drinking from the social network was directly associated with poorer outcomes. However, in the same sample, support for drinking from the four most important people in the network was not found to be related to outcome (Zywiak, Longabaugh, & Wirtz, 2002). This finding suggests that the influence of the entire social network could be more important than the influence of those closest to the drinker, who may be the least supportive of drinking.

While greater specific support for abstinence is associated with greater abstinence, this effect is more pronounced when general support also is high (Beattie & Longabaugh, 1999). Abstinence support is consistently correlated with percentage of days abstinent, but when general support is high the correlation is higher. General support is more highly correlated with percentage of days abstinent when encouragement for abstinence is low.

Having a family that provides support and assurance of worth and capability has been associated with lower risk of relapse (Booth et al., 1992; Gordon & Zrull, 1991;
Humphreys, Moos, & Finney, 1996). Further, good family adjustment has been found to be associated with better drinking outcomes (Beattie, 2001), and drinkers with families that are cohesive, have an active, shared recreational focus and are lower in conflict, control and disagreement have more positive treatment outcomes (Moos, Bromet, Tsu, & Moos, 1979).

Having a spouse has been found to be a predictor of positive outcomes (Havassy, Hall, & Wasserman, 1991). However, Beattie (2001) found that being married was associated with both the best and the worst outcomes, and that the positive effects of marriage were more pronounced for men. Having a better functioning marriage and higher levels of marital happiness prior to treatment both have been found to predict lower drinking intensity (McCrady, Hayaki, Epstein, & Hirsch, 2002). Also, abstinence and marital happiness have been found to be positively correlated after treatment (McCrady, Epstein, & Kahler, 2004). Stressful marital interactions have been found to be related to more problem alcohol use and to relapse after treatment, and events in the marriage and factors involving the spouse are the reasons most frequently cited by male alcoholics as reasons for relapse (Maisto, O’Farrell, Connors, McKay, & Pelcovits, 1998). Chronic use of alcohol outside the home has been found to be correlated with lower marital satisfaction for the spouses of those with AUDs (Dunn, Jacob, Hummon, & Seilhamer, 1987; Fals-Stewart, O’Farrell, Birchler, Cordova, & Kelley, 2005), and stressful marital interactions have been shown to be related to higher rates of relapse (Fals-Stewart et al., 2005; Maisto et al., 1998).

Certain specific spouse behaviors have been found to predict outcome. While unsupportive behaviors of family members (such as withdrawing from the drinker,
avoiding dealing with drinking and tolerating drinking) have been associated with poorer outcomes (McCrady et al., 2002), the use of positive marital behaviors (e.g. using an Antabuse contract, negotiating, communicating in a positive way, engaging in pleasant activities together) by couples in behavioral couple therapy were found to be correlated with the percentage of days the husband was abstinent (O’Farrell, Choquette, Cutter, Brown, & McCourt, 1993). Further, an increase in relationship-related skills on the part of the alcoholic and spouse has been associated with less intense drinking (O’Farrell et al., 1993). McCrady et al. (2003) reported that more active/assertive coping and providing specifically anti-alcohol messages were associated with reductions in drinking, and that spouse behaviors such as problem solving and seeking social support predicted a lower frequency of drinking. Further, high levels of expressed emotion from spouses (talking about the afflicted person in a critical, hostile, or emotionally over-involved way) has been found to predict higher relapse risk, shorter time to relapse and a greater percentage of drinking days (O’Farrell, Hooley, Fals-Stewart, & Cotter, 1998).

A more recent line of research is that of “social contagion”. In addition to the influence of social support, recent work has focused on spread of alcohol use behavior among members of social groups. Health risk behaviors, including smoking and obesity, have been shown to spread almost contagiously throughout social networks (Christakis & Fowler, 2007; Christakis & Fowler, 2008). Recent work by Rosenquist, Murabito, Fowler, & Christakis (2010) has shown that changes in alcohol consumption by an individual’s network members have a significant impact on subsequent alcohol consumption of the individual, both in terms of increasing and decreasing consumption. Further, these changes do not appear to be related merely to selective formation of ties
with other drinkers, but rather reflect social influence, as changes in the consumption of an individual’s relatives and friends significantly predicted similar changes in the individual’s consumption at subsequent time points. This line of research therefore reflects that social networks and social network members may have a more direct influence on alcohol use and the development of problem drinking than was previously thought.

In sum, both general and alcohol-specific social support from a variety of network members, as well as specific behaviors on the part of the social network, have been found to be associated with drinking and drinking outcomes among those being treated for AUDs. However, research to date has focused almost exclusively on the influence of the network on the individual’s drinking behavior. Very little work has focused on the role that the individual may play in the construction and maintenance of either supportive or unsupportive social networks. Further, the extant research has focused almost exclusively on the influence of the social network on the drinking outcomes of those in treatment, and has not examined the role of the social network in the development of alcohol related problems.

The Influence of Individual Characteristics on the Social Network

Although much research has focused on the role of the social network in predicting drinking, very limited research has focused on how individuals influence the establishment and maintenance of their social networks. We therefore have very little information or developed theory about the role of the individual in shaping their social environment. However, several factors have been examined as predictors of social network development, including optimism, perceived similarity to social network
members, negative perceptions of family environment, psychological distress, agreeableness, extraversion, social competence, and emotional reliance.

Trunzo and Pinto (2003) found that optimism, which they defined as the disposition to expect favorable outcomes, predicted the development of greater perceived affective social support (i.e. perceiving the social network as being loving, caring and affectionate), which in turn predicted lower distress in cancer survivors. Srivastava, McGonigal, Richards, Butler, & Gross (2006) similarly found that optimists and their partners had greater relationship satisfaction, perceived each other as being more constructive in times of conflict, and saw their partners as more supportive. This perceived support also predicted whether the relationship was intact one year later.

Lakey, Lutz and Scoboria (2004) conducted a study in which undergraduates judged the supportiveness of four videotaped targets. They found that students judged those they perceived to be more similar to themselves in personality as more supportive. Neely et al. (2006) conducted a study in which undergraduates interacted with one another on five separate occasions and were then asked to rate how supportive they perceived the other participant to be. They also found that perceived similarity predicted perceived support.

Lakey and Dickinson (1994) examined a number of predictors of social support in incoming college students who had moved away from home. They found that the students who had worse perceptions of their family’s functioning, more distress, and were lower in agreeableness and extraversion had lower levels of perceived support over the course of their first semester. Lakey and Dickinson further found that greater social competence (measured, for instance, by how often participants said “no” when they felt
like it, or maintained long conversations) predicted greater social network development at the trend level. Lakey (1989) earlier had found that social competence positively predicted development of supportive social networks.

Ryan, La Guardia, Solky-Butzel, Chirkov, and Kim (2005) found that emotional reliance, which they defined as willingness to turn to others in emotionally salient situations, was positively associated with subjective well-being, and they replicated this finding across several samples from both individualistic and collectivistic societies. They also found that individuals relied emotionally only on network members they perceived as supporting their needs for autonomy, competence and relatedness. These findings appear to indicate a bidirectional relationship between characteristics of the social network and characteristics of the individual.

In summary, while we have little theory and few empirical findings about the role of the individual in developing their social networks, optimism, agreeableness, extraversion, and emotional reliance have been found to be associated with more supportive social networks. Negative perceptions of family environment and psychological distress have been found to be associated with less supportive social networks. However, to date no studies have specifically examined the role of dysfunctional interpersonal behavior in relation to social support.

**Dysfunctional Interpersonal Behavior**

Dysfunctional interpersonal behavior is conceptualized here as behavior that may pull the individual away from the network or may push the network members away from individual. In this context, the term “interpersonal” refers to behavior of the individual toward the social network. Such definition is in line with Horney’s (1945) triadic group
of interpersonal behavior: “moving toward” (e.g., prosocial behavior), “moving away,” and “moving against” (two types of dysfunctional interpersonal behavior). Such dysfunction has not been previously defined in the research literature per se, although it has been indirectly referred to as “interpersonal problems” or “interpersonal difficulty”, and typically has been discussed under the rubric of Interpersonal Theory.

**Interpersonal Theory.** Interpersonal Theory has evolved over the last sixty-five years, drawing on the work of Horney (1945), Sullivan (1953), Leary (1957), and Horowitz & de Sales French (1979). According to Interpersonal Theory, interpersonal problems are “characteristic difficulties that an individual experiences in relating to others” (Gurtman, 1996; pg. 241). Interpersonal theory typically organizes problematic interpersonal behavior in the form of a circumplex, which provides a comprehensive description of a broad range of interpersonal behavior, both adaptive and maladaptive (Keisler, 1996; Leary, 1957).

The circumplex model (see Figure 1) depicts interpersonal behavior in terms of a circular continuum, bisected by two axes. The vertical axis is a control dimension, typically referred to as “Dominate vs. Submit”. The horizontal axis is an affiliation dimension, typically referred to as “Love vs. Hate” or “Friendly vs. Hostile”. The circumplex is then divided into four vectors: Hostile Dominant (typified by scolding behavior), Hostile Submissive (typified by sulking behavior), Friendly Dominant (typified by advising behavior) and Friendly Submissive (typified by deferring behavior; Horowitz, Rosenberg, & Bartholomew, 1993). Interpersonal Theory asserts that an individual may be located at a point in the circular space by their interpersonal behavior. Dysfunctional interpersonal behavior is represented by behavior which is more extreme,
or lies further from the center of the circumplex.

Figure 1.

*Interpersonal Theory Circumplex*
**Communication Theory.** In addition to Interpersonal Theory as a framework for dysfunctional interpersonal behavior, Communication Theory has linked individuals’ behavior to disrupted social function. Communication Theory, which is based on Attachment Theory, also provides an explanation of the genesis and maintenance of dysfunctional interpersonal behavior (Stuart & Robertson, 2003). Within Attachment Theory, attachment styles have been described as “secure”, and “insecure” (including both “anxious-insecure” and “avoidant-insecure”), and these most recently have been conceptualized as dimensional constructs (Fraley & Shaver, 2000). Individuals with secure attachment styles have been found to be more autonomous, resourceful, empathic, sociable, and communal than those with insecure attachment styles (Diehl, Elnick, Bourbeau, & Labouvie-Vief, 1998). McCrae & Costa (1989) reported that individuals with secure attachment styles were more extroverted, more agreeable and less neurotic than those with insecure attachment styles.

Communication Theory posits that individuals have different ways of communicating their interpersonal needs (Stuart & Robertson, 2003). While Attachment Theory is broad, Communication Theory focuses on interpersonal functioning on a more basic level - insecure attachment styles are expressed in interpersonal communications that elicit behavior from social network members that may be contrary to the desired behavior. For example, an individual with an anxious attachment style may communicate desire for care in a hostile fashion. Such behavior is likely to push the person away and result in less affiliation, the opposite of the desired response.

Several recent studies have found mixed support for the hypothesis that early attachment experiences influence later social functioning (Shoda, Tiernan, & Mischel,
Gallo, Smith and Ruiz (2003) conducted a review of research through the year 2000 and concluded that early interpersonal experiences predicted adult attachment style. In support of this conclusion, Crowell and colleagues (1999) and Fraley & Shaver (2000) found that childhood attachment was moderately predictive of adult romantic attachments. Priel and Shamai (1995) found that undergraduates who were securely attached were less depressed and anxious than those who were insecurely attached, had more perceived social support, and were more satisfied with their social networks.

**Interpersonal Dysfunction and Alcohol Use Disorders.** There is some evidence that individuals with AUDs have poorer interpersonal functioning than the general population, as indicated by poorer emotional facial expression processing as well as elevated scores on the Inventory of Interpersonal Problems (IIP) scales measuring problems with assertiveness, sociability, submissiveness, intimacy, and responsibility (Kornreich et al., 2002). College student non-drinkers, compared to moderate and heavy drinkers, have reported significantly more friendly and loving behavior and less hateful behavior toward social network members (Parish & Parish, 1992). Further, alcohol and drug abusing veterans have been found to have higher scores on measures of social withdrawal, avoidance of responsibility, and mistrust of others in comparison to a normative veteran sample (Turner & Mayr, 1990). Doumas, Blasey & Thacker (2005) found that individuals with domineering and vindictive interpersonal styles as measured by the IIP had greater attrition from AUD treatment. Similarly, Lovaglia & Matano (1994) found that AUD individuals with poorer interpersonal functioning as measured by the IIP total score had higher dropout rates from treatment. Given the relative paucity of research on the relationship between interpersonal dysfunction and problem alcohol use,
the present study aims in part to assess the relationship between dysfunctional interpersonal behavior and problem alcohol use.

**Interpersonal Dysfunction and Other Psychopathology.** In addition to being related to AUDs, dysfunctional interpersonal behavior has been linked to treatment outcomes for other kinds of problems. Interpersonal functioning has been found to predict negative outcomes as well to be improved by treatment. In a naturalistic study, Ruiz et al. (2004) found that a variety of negative interpersonal behaviors, as measured by the IIP, predicted treatment outcomes of clients being treated for various problems by general mental health practitioners. Elevated overall scores on the IIP, as well as elevated hostility and submissiveness scores, were negatively related to treatment duration. In the context of brief cognitive therapy for anxiety and/or depression, Muran, Segal, Samstag, and Crawford (1994) reported that patients’ high scores on the friendly and submissive IIP scales predicted positive therapeutic alliance, and patients’ high scores on the hostile and dominant scales negatively predicted therapeutic alliance. Crits-Christoph, Gibbons, Narducci, Schamberger, & Gallop (2005) found, in the context of brief dynamic therapy and supportive psychotherapy for generalized anxiety disorder (GAD), that large reductions from pre- to post-treatment in patients’ maladaptive interpersonal behaviors as measured by the IIP were frequent, and were significantly associated with improvement in GAD symptoms. Vittengl, Clark, & Jarrett (2003) reported a decrease in participants’ interpersonal distress and an increase in positive social adjustment over the course of cognitive therapy for depression. Horowitz, Rosenberg, & Bartholomew (1993) reported that certain interpersonal problems as measured by the IIP (e.g., exploitability) often improved during brief dynamic
psychotherapy within a Health Maintenance Organization, but that others (e.g.,
domineeringness, vindictiveness and coldness) were unlikely to improve. However, there
is no research to date on the role of interpersonal behavior in the development,
maintenance or resolution of problem alcohol use.

**Potential Processes Underlying Dysfunctional Interpersonal Behavior.** While
there is some indication that developmentally early traits such as attachment and
temperament are distal predictors of later interpersonal dysfunction, there is very limited
research on more proximal predictors, that is, variables related to adult personality and/or
behaviors that may result in maladaptive interpersonal behavior. Four trait variables -
impulsivity, compulsivity, emotion dysregulation, and rejection sensitivity- are proposed
here to be potential underlying processes, or mechanisms of dysfunctional interpersonal
behavior. In this context the term processes refers to underlying traits that may ultimately
manifest in dysfunctional interpersonal behavior. Preliminary research linking each of
these variables to interpersonal dysfunction is presented briefly below.

**Impulsivity.**  Impulsivity has been defined as the tendency to respond quickly and
without reflection (Barratt & Patton, 1983), the inability to inhibit behavior when
inhibition is the appropriate response (Schachar & Logan, 1990), and the inability to
delay gratification when tolerance of delays produces a less risky or aversive outcome
(Dolan & Fullam, 2004; Flory et al., 2006). Enticott and Ogloff (2006) delineated the
general features of impulsive behavior - rapid, spontaneous, ill-planned, excessive and
maladaptive. Whiteside and Lynam (2001) argue that the impulsivity is best defined as
“behavior committed without due consideration of consequence and involving action
without reflection.” In their model, an inhibitory executive process, which typically
prevents impulsive behavior, is missing or deficient. Supporting this hypothesis is the finding that cognitive-behavior therapy often is successful in decreasing impulsive behavior by promoting forethought (Enticott & Ogloff, 2006). Some researchers have suggested that impulsivity is caused by a general cognitive emphasis on the present, a failure to consider the future, and a lack of organization; others have asserted that impulsivity results from an aversion to the delay of gratification (see Enticott & Ogloff, 2006). It also has been suggested that attention control may make up one factor of a general self-regulation capability that aids in affect regulation and prevents impulsive behaviors (Ayduk et al., 2000). Attention control may therefore be relevant for coping with affect arousing situations. Moeller, Barratt, Dougherty, Schmitz, & Swann (2001) provided a definition of impulsivity that sought to incorporate several of these facets: “Impulsivity is defined here as a predisposition toward rapid, unplanned reactions to internal or external stimuli without regard to the negative consequences of these reactions to the impulsive individual or others” (pg. 1784).

**Correlates of impulsivity.** Impulsivity has been associated with several psychological disorders including Antisocial Personality Disorder (ASPD), Attention-Deficit Hyperactivity Disorder (ADHD), Borderline Personality Disorder (BPD), eating disorders (EDs), and substance use disorders (SUDs), as well as suicide (Dolan, Anderson, & Deakin, 2001; Enticott & Ogloff, 2006; Plutchik & van Praag, 1990; Rachlin, 1974; Stein, Hollander, & Liebourit, 1993).

Verbal skills deficits and low IQ also have been correlated with impulsive aggression (Barratt, Stanford, Kent, & Felthous, 1997; Mungas, 1988; Vitiello, Behar, Hunt, Stoff & Ricciuti, 1990). Dolan and Fullum (2004) reported that individuals with
high scores on measures of impulsivity had significantly higher aggression scores and lower IQ scores than those who scored low on measures of impulsivity.

*Impulsivity and dysfunctional interpersonal behavior.* There is some preliminary evidence that impulsivity may manifest in dysfunctional interpersonal behavior. People with an inability to regulate in one domain (e.g., smoking, drinking, overeating) have been found to have difficulties regulating themselves in other areas (Baumeister & Heatherton, 1996), and thus may also have difficulties in regulating behavior related to effective interpersonal functioning.

Newman, Caspi, Moffit and Silva (1997) studied predictors of adult interpersonal functioning and found they were able to predict interpersonal functioning at age 21 from temperament assessed at age three. At age three, they divided the children into five distinct groups based on behavioral observations: well-adjusted, undercontrolled, reserved, confident, and inhibited. The well-adjusted, reserved, and confident children were found to have normal adult interpersonal behavior. Children classified as inhibited at age three had lower levels of support in their social networks and in their homes, but had normal levels of support at work and in romantic relationships. The undercontrolled children were found to have lower levels of adjustment and greater interpersonal conflict as adults. Given this preliminary evidence that impulsivity may be related to later interpersonal dysfunction, it is proposed that such lack of behavioral control will extend to inability to curb dysfunctional interpersonal behavior.

*Compulsivity.* As discussed above, research to date has shown that the construct “impulsivity” is associated with risk for a variety of problems. A related construct is that of compulsivity. Compulsivity has been defined as “the performance of repetitive
behaviors with the goal of reducing or preventing anxiety or distress, not to provide pleasure or gratification” (Grant & Potenza, 2006). Compulsivity is characterized by hyper-vigilance, harm avoidance, and ritualistic behaviors that function to relieve anxiety, while impulsivity is characterized by risk-seeking behavior, and trying to maximize pleasure, arousal or gratification (Galanti, Gluck, & Geliebter, 2007).

Impulsivity and compulsivity share a number of characteristics, including deviant behavior regulation, urgency or pressure preceding behaviors, and the inability to modify behaviors even when they are acknowledged as problematic (Vaughn & Salzman, 1996). However, the distinction of compulsivity from impulsivity is that while impulsivity is thought to be pleasure or arousal seeking driven, compulsivity is thought to be anxiety reduction driven (Hollander & Allen, 2006). While the constructs appear to be opposites, these two terms often are used interchangeably (Bancroft & Vukadinovic, 2004). For example, problematic sexual behavior, shopping, and substance use may all be referred to as “compulsive” with little regard as to whether the underlying cause of the behavior is impulsive, compulsive or may be attributed to some other underlying process.

*Compulsivity and impulsivity in behavioral dyscontrol.* The construct of compulsivity, with regard to behavioral dyscontrol, often has been subsumed into theories of impulsivity and has received little independent attention. For example, Enticott and Ogloff (2006) refer to impulsivity as described in DSM-IV-TR (American Psychiatric Association, 2000) as situational/environmental variables causing elevated emotional arousal, which is relieved by engaging in “impulsive” behaviors, resulting in tension reduction and relief. However, this model seems to fit more closely with compulsivity than impulsivity.
Compulsivity and dysfunctional interpersonal behavior. Dysfunctional interpersonal behavior may be one class of behaviors driven at least in part by impulsivity, compulsivity, or both. There is some limited evidence of a relationship between compulsivity and dysfunctional interpersonal behavior. Slaney, Pincus, Uliaszek, & Wang (2006) found that “maladaptive perfectionists”, those who set high standards for themselves that they believed they were unable to meet, had profiles on the IIP that were elevated in hostile-dominant and friendly-submissive problems. The “adaptive perfectionists” (those who set high standards they reported being able to meet) showed low levels of dysfunctional social behavior. Maladaptive perfectionism also was associated with low relationship satisfaction, interpersonal avoidance, and anxiety. Clifton, Turkheimer and Oltmans (2005) found that having an Obsessive/Compulsive/Self-Sacrificing interpersonal style (assessed by both self and peer report) was associated with dysfunctional interpersonal behavior. Given these findings, it appears that compulsivity is a plausible mechanism of dysfunctional interpersonal behavior, and was therefore examined as one potential underlying process of dysfunctional interpersonal behavior.

Rejection Sensitivity. Rejection sensitivity is a construct that describes individuals’ reactions to expectations and perceptions of social rejection. Rejection sensitivity is defined as a proneness to “perceive intentional rejection in the minor or imagined insensitivity of their significant others and overreact in ways that compromise their relationships and well-being” (Downey & Feldman, 1996). Downey and Feldman found that people who are overly sensitive to and anxiously anticipate social rejection easily perceive intentional social rejection in others’ ambiguous behavior. They further found
that people who enter romantic relationships anticipating rejection more frequently perceive intentional rejection from new partners. They also reported that rejection sensitive individuals and their partners reported greater relationship dissatisfaction, and that jealousy on the part of rejection sensitive men and hostility on the part of rejection sensitive women partly explained this dissatisfaction.

*Rejection sensitivity and impulsivity.* Ayduk et al. (2000) reported an interaction between rejection sensitivity and delay of gratification. Individuals high in rejection sensitivity and ability to delay gratification were better functioning socially and had greater well-being than those who were high in rejection sensitivity and low in delay of gratification ability. Highly rejection sensitive individuals with greater ability to delay gratification were not significantly different from low rejection sensitive individuals. Rejection sensitivity may interact with impulsivity and/or emotion dysregulation to produce dysfunctional interpersonal behavior.

*Emotion Dysregulation.* Emotion regulation reflects how well individuals are able to effectively manage their affect and subsequent behavior in stressful situations. The effective regulation of negative arousal may enable the inhibition of desire to engage in problematic behaviors caused by stress, and may aid in the engagement of executive problem-solving strategies (Ayduk & Mischel, 2002). Self-regulation and attention control may enable the impulse control, planning, and “cooling operations” that aid in an individuals’ ability to cope (Ayduk & Mischel, 2002). A good deal of research has suggested that emotion regulation is comprised of the ability to endure stressful situations by means of attention control - preventing oneself from focusing attention on the aversive stimulus (Baumeister & Heatherton, 1996).
**Emotion regulation and rejection sensitivity.** Rejection sensitivity and emotion regulation likely play an interactive role in predicting maladaptive interpersonal behavior. In interpersonal situations that may cause anxiety in rejection sensitive individuals, the goal should be to arrest the initial “hot” (i.e. impulsive) response in favor of engaging in socially productive behavior (Ayduk, Mischel, & Downey, 2002). Effective coping in such interpersonal situations involves suppressing arousal to inhibit dysfunctional interpersonal behavior in the service of longer term goals (Ayduk et al., 2000). Successful emotion regulation may thus enable such behavior regulation in interpersonal situations.

**Study Aims**

Although there has been some research suggesting that the variables impulsivity, compulsivity, rejection sensitivity, and emotion dysregulation may lead to dysfunctional interpersonal behavior, the psychological mechanisms underlying interpersonal dysfunction have not been well elucidated. Further, to date there is no published research on the relationship between interpersonal functioning and social network variables in individuals with AUDs, and the research on the relationship between interpersonal functioning and drinking has been sparse. Therefore the present study sought to evaluate a model of the factors underlying dysfunctional interpersonal behavior, the relationship of dysfunctional interpersonal behavior to the social network and the association of perceived social support and drinking. Although there has been some preliminary support for each of the paths within these proposed models, the proposed study is the first to examine all of the paths simultaneously.
Proposed Model.

In the proposed model (see Figure 2) it was hypothesized that emotion dysregulation, impulsivity, compulsivity, and rejection sensitivity are all associated with dysfunctional interpersonal behavior, which in turn is associated with low perceived social support, and that low perceived social support statistically predicts problem alcohol use. Gender and ethnicity are entered into the model as statistical predictors of problems with alcohol, as these have previously been identified to be strongly associated with alcohol use in college samples (see O’Malley & Johnston, 2002; Presley, Meilman, & Cashin, 1996).
Proposed Model: Impulsivity, Compulsivity, Rejection Sensitivity and Emotion

Dysregulation Underlie Dysfunctional Interpersonal Behavior

Note: Latent variables are represented by circles; observed variables are represented by rectangles.
Method

Participants

Participants were 403 undergraduates who participated in research for course credit in several psychology courses. There were no exclusion criteria for this study. Access to some participants was gained through the Rutgers University General Psychology subject pool. These students signed up for participation through the Psychology Department website by logging in and clicking on a link to be a participant in a study called “Validating the Interpersonal Behavior Scale.” If students signed up through the Rutgers University psychological participants pool website, they received course credit. Additional participants were recruited from the psychology courses Quantitative Methods, Cognitive Lab, Sensation and Perception Lab, and Infant and Child Development Lab using announcements made in class offering extra credit in exchange for participation in the study.

Procedure

Students participated in this study through one of two mechanisms. Data for this study were collected either at the Center of Alcohol Studies at Rutgers University or in the classroom of the course for which participants were receiving extra credit. Students who signed up for extra credit through the psychological participants’ pool website were instructed to come to the Center of Alcohol Studies. Students who signed up for extra credit through other classes either completed the questionnaire during or after class, or were given the option to complete the questionnaire at the Center of Alcohol Studies.

Each participant was given a packet containing an informed consent form and the questionnaires. Participants were instructed to read the informed consent, sign the form
if they agreed to participate, carefully read the instructions for each of the questionnaires, and complete each question to the best of their ability. Once the packet of questionnaires was completed, participants handed the packet to the researcher or her assistant, who reviewed to verify a signature on the informed consent form, completion of all items, and to clarify any responses that were unclear. Once the packet was completed and reviewed, participants were thanked and dismissed. There was a second wave of data collection, completed through the mail, which was not used for the current study. Participants were given course credit after the second wave of data collection through the psychological participants’ pool website or the instructors for the course for which they participated for extra credit were notified by email.

Packets of questionable validity were discarded. Four participants’ packets were discarded - three because they were talking, laughing and comparing responses during data collection, and a fourth because the participant completed the questionnaire within only a few minutes and had no variability in responses. Data were entered by two undergraduate student assistants using the statistical program SPSS (SPSS Inc., 2007).

Measures

**Demographic Questionnaire.** A questionnaire was created for this study to gather data on age, gender, marital status, racial/ethnic background, and primary language (English versus other).

**The Inventory of Interpersonal Problems (IIP-64).** The IIP-64 (Horowitz, Alden, Wiggins & Pincus, 2000) is a 64-item inventory that assesses problems in a broad range of interpersonal domains. Each item is rated on a 5-point scale from not at all (0) to extremely (4). The IIP-64 consists of eight subscales: Domineering, Vindictive, Cold,
Socially Avoidant, Nonassertive, Exploitable, Overly Nurturant, and Intrusive. Each subscale and a total score are derived by summing the items. The IIP-64 has established test-retest reliability and internal consistency (Horowitz et al., 2000), as well as good convergent validity with other measures of interpersonal problems (Horowitz et al., 2000).

**Behavioral Inhibitions System/Behavioral Activation System Scales (BIS/BAS Scales).** The BIS/BAS Scales (Carver & White, 1994; 36 items) yield four subscales: BIS (to measure compulsivity), BAS Drive, BAS Fun Seeking, and BAS Reward Responsiveness. Each of the three BAS scales measures a separate facet of impulsivity. Each item is rated on a 4-point scale from (1) “very true for me” to (4) “very false for me.” Scores are derived by removing four filler items (one for each subscale), reverse scoring all but two of the items and then summing each subscale. The internal consistency (Carver & White, 1994) and convergent and discriminant validity of the BIS/BAS scales have been found to be good (Campbell-Sills, Liverant & Brown, 2004; Carver & White, 1994).

**Difficulties in Emotion Regulation Scale (DERS).** The DERS (Gratz & Roemer, 2004) includes 36 items that make up one total score (DERS Total Score) and six subscales: Non-Acceptance of Emotional Responses, Difficulties Engaging in Goal-Directed Behavior, Impulse Control Difficulties, Lack of Emotional Awareness, Access to Emotion Regulation Strategies, and Lack of Emotional Clarity. Participants rate how often statements such as “I feel at ease with my emotions” apply to them, where 1 is “almost never (0–10%),” 2 is “sometimes (11–35%),” 3 is “about half the time (36–65%),” 4 is “most of the time (66–90%),” and 5 is “almost always (91–100%).” To derive
scale and total scores all of the items (0-5) are summed. The measure has been found to have high internal consistency, good test–retest reliability, and adequate construct and predictive validity (Gratz & Roemer, 2004; Whiteside et al., 2007).

**Rejection Sensitivity Measure.** Rejection sensitivity was assessed using three items (Ayduk & Mischel, 2002). The items are: “I often worry about being abandoned by others”, “I often worry that my partner won’t stay with me”, and “I often worry that my partner really doesn’t love me.” Each of these items is rated on a 9-point rating scale ranging from 1 (strongly disagree) to 9 (strongly agree).

**Social Provision Scale (SPS).** The SPS (Cutrona & Russell, 1987) is a 24 item measure that assesses six facets of perceived social support: Guidance, Reassurance of Worth, Social Integration, Attachment, Nurturance, and Reliable Alliance. The facet scores are derived by reverse scoring several of the items and then summing the items representing each of the subscales. This measure and the subscales have been found to have acceptable internal consistency (Cutrona & Russell, 1987; Zaki, 2009) and convergent validity (Zaki, 2009).

**Michigan Alcohol Screening Test (MAST).** A modified (22-item) version of the MAST was used (National Council on Alcoholism and Drug Dependence, retrieved December, 2008). The MAST is a screening instrument for alcohol problems. For this 22-item version of the measure participants respond either “yes” or “no” to a series of questions about alcohol use and related consequences. Several items are given a point of 1 for no; the rest of the items are given a point of 1 for yes and 0 for no. A total score for the modified MAST is then derived by summing each of the items for a total possible score of 22. Other similar versions of the MAST have been used and have been found to
have excellent reliability and validity (Storgaard, Nielsen & Gluud, 1994). A cutoff score of 6 or more indicates problem drinking (National Council on Alcoholism and Drug Dependence, retrieved December, 2008).

**Alcohol Use Disorder Identification Test (AUDIT).** The AUDIT (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001) is a 10-item screening instrument for alcohol problems. It has been shown to have good validity and excellent internal consistency (Allen, Litten, Fertig, Babor, & 2006). Some items are rated on a scale with a range of 0 to 4; the remaining items are rated as 0, 2 or 4. Items are summed to create a total score of drinking problem severity, and the total possible score is 40. A cutoff score of 8 is recommended as an indicator of problem drinking and possible alcohol dependence (Babor et al., 2001). While the AUDIT typically uses a time frame of the past year, no time frame was used for the current study.

**Results**

**Data Screening**

The data screening steps recommended by Kline (1998) were followed. The accuracy of data was first verified at the time of collection by the researcher and her research assistants to ensure that all items in each questionnaire were complete and that responses were logical. Research assistants identified logical inconsistencies and suspicious entries, logged these cases, and discussed them with the researcher, who developed decision rules to deal with these cases prior to data entry. Next, descriptive information for each variable (i.e. number of cases, frequency distributions and indices of skew and kurtosis) was examined to identify missing observations, out-of-range values outliers and non-normality. Cases of out-of-range values were checked against written
questionnaire data and corrected. Less than 1% of data was missing for the subscale items. Missing data were coded as missing in SPSS, and were treated as zeros when calculating sum scores.

The normal distribution of variables is one of the assumptions of SEM, though SEM is thought to be relatively robust to violations of normality (Hoyle, 1995). Frequency distributions and indices of skew and kurtosis were examined to determine which variables, if any, needed to be transformed. Histograms were examined visually, and variables with skewness or kurtosis of one or greater were transformed. For each of these variables (Rejection Sensitivity, BAS Reward, MAST, DERS Non-acceptance, DERS Impulsivity, SPS Strategies, SPS Guidance SPS Reassurance of Worth, SPS Social Integration, SPS Attachment, and SPS Reliable Alliance) both square root and Log 10 transformations were conducted. Whichever resulted in a more normal distribution for any particular variable was used. If variables were negatively skewed they were also reflected, which is recommended for data that is negatively skewed (Pallant, 2007).

Descriptive Results

Participant characteristics are shown in Table 1. The mean age of participants was approximately 20 years of age. The majority of the sample (99%) was never married. Just over half of the sample (51.9%) was white, and the remainder of the sample was of minority descent, the largest sub-group of which was of Asian descent (30.2%), followed by Black (7%), Multiracial (6%), and Hispanic/Latino (5%). The majority of participants (94.3%) reported English was their primary language.

Descriptive statistics and internal consistencies for construct variables are presented in Table 2 for the total sample. Alphas for the Difficulties with Emotion
Regulation Scale subscales ranged from .808 to .910. The Rejection Sensitivity Scale had an alpha of .860. The Behavioral Activation Scales had alphas ranging from .722 to .806, and the Behavioral Inhibition Scale had an alpha of .757. The Dysfunctional Interpersonal Behavior Scale had alphas ranging from .729 to .863. Alphas for the Social Provisions Scale ranged from .646 to .772. The Michigan Alcohol Screening Test had an alpha of .575 and the Alcohol Use Disorders Identification Test had an alpha of .792.

A series of t-tests was conducted to determine if there were statistically significant differences in means between males and females, and between Whites and non-Whites. Descriptive statistics and t-tests are reported in Table 3 by gender. T-tests revealed statistically significant differences on several variables. Men were found to be higher on the IIP Dominating subscale and on the AUDIT than females. Females were found to be higher on the IIP Overly Accommodating subscale, and on all of the SPS subscales. Descriptive statistics and t-tests are reported in Table 4 for Whites and non-Whites separately. T-tests revealed that Whites scored significantly higher on the SPS Reliable Alliance subscale and the AUDIT.
Table 1. Sample Demographics

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<th>Age (M, SD)</th>
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<th>Marital Status (N, %)</th>
<th>Race (N, %)</th>
<th>Primary Language (N, %)</th>
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Note: SD = Standard Deviation; N = Number of Participants
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*Note: SD = Standard Deviation; N = Number of Participants; * indicates variables excluded due to low internal consistency*
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<tr>
<td>Reward (5-20)</td>
<td>17.48 (2.60)</td>
<td>17.03 (2.72)</td>
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<tr>
<td><strong>Compulsivity</strong></td>
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<tr>
<td>Behavioral Inhibition Scale (7-28)</td>
<td>20.87 (4.09)</td>
<td>20.26 (3.57)</td>
<td>7.79</td>
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<tr>
<td><strong>Dysfunctional Interpersonal Behavior (Inventory of Interpersonal Problems)</strong></td>
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<tr>
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<td>8.55 (6.43)</td>
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<td>Scale</td>
<td>Mean (SD)</td>
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<tr>
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<tr>
<td>Social Support (Social Provisions Scale)</td>
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<tr>
<td>Guidance (4-16)</td>
<td>14.94 (1.69)</td>
<td>4.13*</td>
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<tr>
<td>Reassurance of Worth (4-16)</td>
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<td>1.95*</td>
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<td>14.42 (2.04)</td>
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<td>12.94 (2.00)</td>
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<tr>
<td>Problem Alcohol Use</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Michigan Alcohol Screening Test (0-22)</td>
<td>1.61 (1.57)</td>
<td>0.28</td>
<td>399</td>
<td></td>
</tr>
<tr>
<td>Alcohol Use Disorders Identification Test (0-40)</td>
<td>5.33 (4.45)</td>
<td>2.62*</td>
<td>399</td>
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</tr>
</tbody>
</table>

Note: SD = Standard Deviation; N = Number of Participants; * = t-tests revealed differences at p < .05
### Table 4. Race Differences in Constructs Measured

<table>
<thead>
<tr>
<th>Scale</th>
<th>White (N=208) Mean (SD)</th>
<th>Non-White (N=193) Mean (SD)</th>
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<td>Emotion Dysregulation (Difficulties with Emotion Regulation Scale)</td>
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<td>Goals (5-25)</td>
<td>15.75 (5.07)</td>
<td>15.61 (5.52)</td>
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<tr>
<td>Impulsivity (6-30)</td>
<td>10.48 (4.25)</td>
<td>10.32 (4.27)</td>
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<tr>
<td>Awareness (6-30)</td>
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<td>Strategies (9-45)</td>
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<tr>
<td>Rejection Sensitivity</td>
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<td>Rejection Sensitivity Scale (3-27)</td>
<td>11.03 (6.05)</td>
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<td>Impulsivity (Behavioral Activation Scale)</td>
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<td>Drive (4-16)</td>
<td>10.34 (2.60)</td>
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<tr>
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<td>17.35 (2.73)</td>
<td>17.28 (2.56)</td>
<td>0.25</td>
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<tr>
<td>Compulsivity</td>
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<td></td>
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<tr>
<td>Behavioral Inhibition Scale (7-28)</td>
<td>20.87 (4.09)</td>
<td>20.26 (3.57)</td>
<td>1.56</td>
<td>399</td>
</tr>
<tr>
<td>Dysfunctional Interpersonal Behavior (Inventory of Interpersonal Problems)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Dominating (0-32)</td>
<td>6.37 (4.96)</td>
<td>6.41 (5.22)</td>
<td>0.09</td>
<td>399</td>
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<tr>
<td>Vindictiveness (0-32)</td>
<td>7.05 (5.24)</td>
<td>7.10 (5.50)</td>
<td>0.10</td>
<td>399</td>
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<tr>
<td>Coldness (0-32)</td>
<td>7.79 (6.46)</td>
<td>7.76 (6.42)</td>
<td>0.06</td>
<td>399</td>
</tr>
<tr>
<td>Inhibited (0-32)</td>
<td>10.26 (6.45)</td>
<td>10.24 (6.09)</td>
<td>0.03</td>
<td>399</td>
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<tr>
<td>Nonassertive (0-32)</td>
<td>12.11 (7.05)</td>
<td>11.46 (6.41)</td>
<td>0.96</td>
<td>399</td>
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<tr>
<td>Overly Accommodating (0-32)</td>
<td>11.26 (6.28)</td>
<td>11.48 (5.79)</td>
<td>0.36</td>
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<td>Measure</td>
<td>Mean 1</td>
<td>Mean 2</td>
<td>Mean Difference</td>
<td>N</td>
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<td>--------</td>
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</tr>
<tr>
<td>Sacrificing (0-32)</td>
<td>11.62 (5.83)</td>
<td>12.06 (5.75)</td>
<td>0.44 (5.79)</td>
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<tr>
<td>Intrusiveness (0-32)</td>
<td>9.46 (5.49)</td>
<td>8.65 (5.41)</td>
<td>0.81 (5.73)</td>
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<td><strong>Social Support (Social Provisions Scale)</strong></td>
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<td>Guidance (4-16)</td>
<td>14.77 (1.93)</td>
<td>14.53 (2.02)</td>
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<td>13.15 (2.28)</td>
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<td>Social Integration (4-16)</td>
<td>14.33 (1.70)</td>
<td>14.35 (1.81)</td>
<td>0.02 (1.83)</td>
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<td>Attachment (4-16)</td>
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<td>13.79 (2.54)</td>
<td>0.22 (2.57)</td>
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<td>Nurturance (4-16)</td>
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<td>12.80 (2.17)</td>
<td>0.16 (2.25)</td>
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<td>Reliable Alliance (4-16)</td>
<td>14.94 (1.70)</td>
<td>14.58 (1.89)</td>
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<tr>
<td><strong>Problem Alcohol Use</strong></td>
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<td></td>
</tr>
<tr>
<td>Michigan Alcohol Screening Test (0-22)</td>
<td>1.72 (1.80)</td>
<td>1.03 (0.70)</td>
<td>0.69 (0.77)</td>
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<td>Alcohol Use Disorders Identification Test (0-40)</td>
<td>6.97 (4.92)</td>
<td>1.54 (1.51)</td>
<td>5.43 (1.56)</td>
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</tr>
</tbody>
</table>

*Note: SD = Standard Deviation; N = Number of Participants; * = t-tests revealed differences at p<.01*
Drinking Patterns.

**Frequency.** Frequency of drinking across the entire sample is shown in Figure 3. Approximately 16% of the sample reported never drinking, 21.5% reported drinking monthly or less, 36% reported drinking between two and four times per month, 24% reported drinking two to three times per week, and 2.5% reported drinking four or more times per week.

Figure 3.

*Drinking Frequency (Percentages)*

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Count (N)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>64 (15.9%)</td>
<td>16%</td>
</tr>
<tr>
<td>Monthly or Less</td>
<td>87 (21.6%)</td>
<td>21.5%</td>
</tr>
<tr>
<td>2-4 Times a Month</td>
<td>145 (36.0%)</td>
<td>36%</td>
</tr>
<tr>
<td>2-3 Times a Week</td>
<td>97 (24.1%)</td>
<td>24%</td>
</tr>
<tr>
<td>4 or More Times a Week</td>
<td>10 (2.5%)</td>
<td>2.5%</td>
</tr>
</tbody>
</table>
**Drinks per Occasion.** Typical number of drinks consumed on a drinking day is shown in Figure 4. Approximately 35% of the sample reported drinking two or fewer drinks per occasion, 31% reported drinking three or four drinks per occasion, 22% reported five or six drinks per occasion, 9% reported drinking 7 to 9 drinks per occasion, and 3% of the sample reported drinking ten or more drinks per occasion.

Figure 4.

*Number of Drinks Typically Consumed per Occasion*
**Binge Drinking.** Frequency of consumption of six or more drinks per occasion is shown in Figure 5. Approximately 38.5% of the sample reported never drinking six or more drinks per occasion, 32% reported drinking six or more drinks per occasion less than monthly, 19.5% reported drinking six or more drinks per drinking occasion monthly, 10% drinking six or more drinks per occasion weekly.

![Frequency of drinking six or more drinks per drinking occasion](image-url)

**Figure 5.**

*Frequency of drinking six or more drinks per drinking occasion*

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>N=155</td>
<td>(38.5%)</td>
</tr>
<tr>
<td>Less than Monthly</td>
<td>N=129</td>
<td>(32%)</td>
</tr>
<tr>
<td>Monthly</td>
<td>N=78</td>
<td>(19.4%)</td>
</tr>
<tr>
<td>Weekly</td>
<td>N=41</td>
<td>(10.2%)</td>
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</table>
AUDIT Scores. A number of recommendations have been made about appropriate cutoffs for problem alcohol use. Kokotailo et al. (2004) recommend a cutoff of 6 as an indicator of high-risk drinking due to its maximization of sensitivity and specificity in a college sample. In the current sample, 46.4% of participants had AUDIT of six or higher. The World Health Organization (Babor et al., 2001) recommends a cutoff score of eight as a screening instrument for problem drinking, and a cutoff score of ten to maximize specificity in screening for problem drinking. In the current sample, 30.3% of the sample reported AUDIT scores of eight or higher, and 20.6% reported scores of ten or higher.

Donovan et al. (2006) organized AUDIT scores into four zones, with zone one indicating few or no problems with alcohol, zones two and three indicating problem alcohol use and probable AUD, and zone four indicating severe alcohol dependence. The distribution of AUDIT scores across these zones is shown in Figure 6 for all participants and in Figure 7 for only those participants who reported drinking. Zone one consists of scores ranging from 0-7, 69.7% of the entire sample, and 64.2% of the drinkers fell into this range. Zone two consists of scores ranging from 8-15, 26.1% of the entire sample, and 30.8% of drinkers fell into this range. Zone three consists of scores ranging from 16-19, 3.2% of the entire sample, and 3.9% of drinkers fell into this range. Zone four consists of scores ranging from 20-40, .7% of the entire sample, and 1.2% of drinkers fell into this range. Because the distribution of AUDIT scores was comparable across the entire sample and the sample of drinkers only, the entire sample was used in the analyses in order to maximize power.
Figure 6.

Distribution of AUDIT Scores for Entire Sample
Figure 7.

Distribution of AUDIT Scores for Drinkers
Measurement Model Construction

Prior to building models, internal consistency was assessed by examining alpha coefficients (see Table 2). Those scales found to have an alpha coefficient of less than .70 were excluded from analyses (Iacobucci & Duhachek, 2003; Nunnally & Bernstein, 1994). These variables included the SPS Worth and Nurturance Subscales, and the MAST score. Due to the large number of items in the MAST, a factor analysis was conducted to determine whether multiple subscales with perhaps higher internal consistencies could be identified. While four subscales were identified, none of the subscales were found to have acceptable alpha levels.

The data were then imported into AMOS 17.0, and all structural equation modeling path analyses were conducted using this program. AMOS’ Regression (Maximum Likelihood) imputation was first conducted. The AMOS program completes this imputation by initially calculating model parameters and then using the estimated parameters to predict the unobserved variables.

Structural equation modeling using Maximum Likelihood estimation was then conducted. A unitary measurement model including all latent constructs was first constructed. This model was built progressively, beginning with the Dysfunctional Interpersonal Behavior and Emotion Regulation constructs, as these constructs had the highest number of indicators and were therefore most likely to be stable and identified (as the more indicators that are present in the model, the more likely the model will be able to be estimated). Model trimming was then conducted iteratively, and as the model fit improved subsequent constructs were added to the model. Prior to modeling, observed variables were linearly transformed to achieve roughly equal variances.

To trim the measurement model, indicator variables with non-significant relationships to the latent constructs were first eliminated. Variables trimmed for this
reason included IIP Dominance and DERS Awareness. A small number of residual terms were then allowed to correlate based on high modification indices and conceptual meaningfulness. In the final measurement model, a total of five residual terms (of 280 total possible) were allowed to covary (see Fig. 2).

Next, high modification indices that indicated cross-loadings were allowed. Cross-loadings indicate that a single indicator shares variance with two different latent constructs. A total of five secondary loadings (of 125 total possible) of small, but significant magnitude were present in the final model (see Fig. 2). These secondary loadings were of smaller magnitude than the primary loadings, and did not change the pattern of relationships, but did serve to improve overall model fit. This small number of secondary loadings of indicators was not unexpected, given the hypothesized and conceptual overlap between the constructs.

Finally, variables with low squared multiple correlations (i.e., indicators who had very little variance in common with their latent construct) were removed. These variables included IIP Vindictive, IIP Cold, IIP Instrusive, and BIS19 (I feel worried when I do poorly). Each strategy was employed with one variable, or variable pair, at a time and model fit was examined following each iteration to ensure the change had improved the fit of the conceptual model to the data. Gender and race were then added to the model as indicators of each of the latent constructs, and further model trimming was conducted. In the final model, gender was an indicator of social support such that males reported greater perceived social support, and of compulsivity such that females reported more compulsivity.

Model fit was assessed using the Comparative Fit Index (CFI) and the Root Mean Square Error of Approximation (RMSEA). CFI is a goodness-of-fit measure of the amount of variance and covariance in the data set accounted for by the implied model
(Hoyle, 1995). A model with a CFI of .9 or above is considered of acceptable fit (Kenny, 2010). RMSEA can be used to compute a confidence interval. A RMSEA of .05 or less is considered to indicate good model fit, and RMSEA under .10 is considered in the acceptable range (Kenny, 2010). The fit of the final model was in the acceptable to good range (CFI=.93, RMSEA=.05).

Most of the latent variables were found to be inter-related. Low perceived social support was associated with dysfunctional interpersonal behavior ($\beta = .179$, $p<.01$), emotion dysregulation ($\beta = .448$, $p<.001$), low impulsivity ($\beta = .203$, $p<.01$), and rejection sensitivity ($\beta = .231$, $p<.001$). Dysfunctional interpersonal behavior was associated with emotion dysregulation ($\beta = .368$, $p<.001$), low impulsivity ($\beta = .388$, $p<.001$), rejection sensitivity ($\beta = .265$, $p<.001$), and compulsivity ($\beta = .340$, $p<.001$). Emotion dysregulation was associated with rejection sensitivity ($\beta = .461$, $p<.001$), compulsivity ($\beta = .512$, $p<.001$), and low impulsivity ($\beta = .138$, $p<.05$). Low impulsivity was associated with compulsivity ($\beta = .208$, $p=.01$) and rejection sensitivity ($\beta = .131$, $p<.05$). Compulsivity was associated with rejection sensitivity ($\beta = .346$, $p<.001$). The only pair of variables not associated was perceived social support and impulsivity. The measurement model is depicted in Figure 3.
Figure 8. *Measurement Model*

Note: Circles represent latent variables, rectangles represent observed variables; curved lines indicate correlations, straight lines indicate significant regression paths; all relationships shown are statistically significant at $p<.01$
Path Model

The path model was then tested by entering problem alcohol use into the model and examining the relationship of each of the latent constructs to alcohol (see Fig. 3). Model fit remained the same, in the acceptable to good range (CFI=.93, RMSEA=.05).
Figure 9. Final Path Model

Note: Circles represent latent variables, rectangles represent observed variables; curved lines indicate correlations, straight lines indicate significant regression paths; all relationships shown are statistically significant at p<.01.
Model Interpretation

The final model was examined in terms of its consistency with the theoretical model. In support of the model, three of the four underlying constructs were found to be associated with dysfunctional interpersonal behavior in the expected direction, including emotion dysregulation ($\beta = .370$, $p < .001$), rejection sensitivity ($\beta = .264$, $p < .001$), and compulsivity ($\beta = .336$, $p < .001$). However, impulsivity was found to be associated with dysfunctional interpersonal behavior in the direction opposite to that which was predicted. Low impulsivity was positively associated with dysfunctional interpersonal behavior ($\beta = .387$, $p < .001$). Also in support of the model, dysfunctional interpersonal behavior was found to be associated with low perceived social support ($\beta = .178$, $p < .001$). Perceived social support statistically predicted problem alcohol use, although in the direction opposite to that which was expected ($\beta = -.249$, $p < .001$); low perceived social support was associated with less problem alcohol use. Both gender and race were found to statistically predict problem alcohol use, in support of the hypothesized model. White students had higher levels of problem drinking than minority students ($\beta = -.253$, $p < .001$), and males had higher levels of problem drinking than females ($\beta = .131$, $p < .05$). Figure 4 represents the components of the model that were supported and those that were not supported.
Figure 10.

*Components of the Proposed Model Supported by Model Tests*

*Note:* Circles represent latent variables, rectangles represent observed variables; dotted lines represent hypothesized relationships not supported by the model test results, lines in bold represent statistically significant relationships and paths; curved lines represent correlations, straight lines represent regression paths.
Discussion

The present study examined a theoretical model of the underlying personality characteristics of dysfunctional interpersonal behavior and its relationship to perceived social support, and the relationship of perceived social support to problem alcohol use. The findings partially supported the theoretical model. Support was found for three of the proposed underlying processes of dysfunctional interpersonal behavior. Emotion dysregulation, rejection sensitivity and compulsivity were found to statistically predict dysfunctional interpersonal behavior in the expected direction. However, impulsivity was found to be associated with dysfunctional interpersonal behavior in the direction opposite to that which was hypothesized. Low impulsivity was associated with more dysfunctional interpersonal behavior. Support was also found for the hypothesized relationship between dysfunctional interpersonal behavior and low perceived social support, though perceived social support was associated with problem drinking in the direction opposite to that which was hypothesized. More perceived social support was associated with more problem alcohol use. The intra-individual personality variables of emotion dysregulation, rejection sensitivity and compulsivity were associated with dysfunctional interpersonal behavior of the individual, which is in turn was associated with perceived low perceived social support.

Social Support. Consistent with the proposed model, dysfunctional interpersonal behavior was found to be associated with perceived low perceived social support. The relationship between dysfunctional interpersonal behavior and social consequences is important in establishing concurrent and predictive validity of dysfunctional interpersonal behavior. “Dysfunctional” interpersonal behavior, by definition, should result in negative
social consequences. The present findings provide evidence of construct validity for dysfunctional interpersonal behavior.

This finding also provides preliminary support for the idea that the behavior of the individual may indeed influence the behavior of the social network, and suggests that interventions aimed at improving interpersonal functioning may be beneficial in increasing social support. Such treatments have become increasingly popular in recent years. Interpersonal Psychotherapy, a treatment focused on building interpersonal skills in order to improve interpersonal relationships, has been found to be effective for a variety of disorders, including depression, dysthymia, marital problems, bipolar disorder and pregnancy-related depression (see Weissman, Markowitz, & Klerman, 2000). The current findings provide some evidence for the theory underlying Interpersonal Psychotherapy. That is, that an individual’s behavior may influence the social support provided by the network.

**Emotion Dysregulation.** Emotion dysregulation was found to be associated with all of the variables in the model. It was related to dysfunctional interpersonal behavior, low perceived social support and problem alcohol use, as well as each of the other proposed underlying factors (rejection sensitivity, low impulsivity and compulsivity). Emotion dysregulation has been linked to a host of behavioral problems including aggression (Cohn, Jakupcak, Seibert, Hildebrandt, & Zeichner, 2010; Shields, Ryan, & Cicchetti, 2001), Attention-Deficit Hyperactivity Disorder (Martel, 2009), anxiety disorders (Mennin, Heimberg, Turk, & Fresco, 2005; Turk, Heimberg, & Luterek, Mennin, & Fresco, 2005), binge eating and Bulimia Nervosa (Buckholdt, Parra, & Jobe-Shields, 2009; Hayaki, 2009; Whiteside et al., 2007), Bipolar Disorder (Green, Cahill, &
Malhi, 2007), Borderline Personality Disorder (Chapman, Leung, & Lynch, 2008, Glenn, & Klonsky, 2009; Gratz, Rosenthal, Tull, Lejuez, & Gunderson, 2009; Gratz, Tull, Baruch, Bornovalova, & Lejuez, 2008; Glenn, & Klonsky, 2009; Putnam & Silk, 2005), Conduct Disorder (Cappadocia, Desrocher, Pepler, & Schroeder, 2009), intimate partner violence (Gratz, Paulson, Jakupcak, & Tull, 2009), nightmares (Levin, & Nielsen, 2009), panic attacks (Tull, 2006), Post-traumatic Stress Disorder (Hopper, Frewen, van der Kolk, & Lanius, 2007), relationship problems (Kim, Pears, Capaldi, & Owen, 2009), self-harm (Gratz & Roemer, 2008), alcohol and substance abuse (Fox, Axelrod, Paliwal, Sleeper, & Sinha, 2007; Fox, Hong, Sinha, 2008; Gratz, Tull, Baruch, Bornovalova, & Lejuez, 2008). Several recent treatment developments have focused on treating emotion dysregulation as the primary treatment target (Fruzzetti & Iverson, 2006; Kirby & Baucom, 2007; Gratz, 2007; Linehan, 1993; Linehan, Bohus, & Lynch, 2007). Future longitudinal studies may help in further clarifying the potentially primary etiological role of emotion dysregulation in the dysregulation of behavior, including alcohol use and social behavior.

**Rejection Sensitivity.** Rejection sensitivity showed a similar pattern to that of emotion dysregulation in that it was related to dysfunctional interpersonal behavior, low perceived social support and problem alcohol use, as well as each of the other proposed underlying factors (emotion dysregulation, low impulsivity and compulsivity). While it has previously been associated with negative social consequences (Ayduk et al., 2000) the current study is the first in which rejection sensitivity has been explicitly linked to the social behavior of the individual (i.e. dysfunctional interpersonal behavior).
In addition to being related to dysfunctional interpersonal behavior and low perceived social support, rejection sensitivity was found to be associated with compulsivity, emotion dysregulation, low impulsivity, and was a statistically significant predictor of problem alcohol use. While previous studies have not examined the link between rejection sensitivity and compulsivity, this finding is consistent with the conceptual overlap between these constructs. Rejection sensitivity is defined as the proneness to perceive intentional rejection in the ambiguous behavior of others, which may be closely related to our measure of compulsivity. For instance, two of the indicators of compulsivity were specifically related to social compulsivity, including “Criticism or scolding hurts me quite a bit” and, “I feel pretty worried or upset when I think or know somebody is angry at me.”

The positive relationship of rejection sensitivity and emotion dysregulation is consistent with Ayduk and Mischel’s (2002) assertion that there is likely an interrelation between rejection sensitivity and emotion regulation, that in situations which may activate rejection sensitivity, successful emotion regulation is needed to inhibit the initial “hot” (impulsive) response. However, the positive relationship of rejection sensitivity and low impulsivity found in the present study is not consistent with this theorized relationship, and further supports the notion that the present study may have tapped an adaptive, rather than maladaptive, facet of impulsivity.

It is of note that rejection sensitivity positively predicted problem alcohol use, despite the presence of a possible suppressor effect operating through perceived social support (rejection sensitivity positively predicted low perceived social support, though low perceived social support negatively predicted problem alcohol use). Perhaps
rejection sensitivity is an unexpected but important marker of psychopathology related to problem alcohol use. Social Anxiety Disorder (SAD) is characterized by persistent, excessive fear of being exposed to social scrutiny (APA, 2000), and consistently has been associated with alcohol problems (see Morris, Stewart, & Ham, 2005). It may be the rejection sensitivity is a marker for SAD or for a subset of individuals with SAD who may be at increase risk to develop problems with alcohol.

**Impulsivity.** Impulsivity was found to be associated with dysfunctional interpersonal behavior and perceived social support, such that low impulsivity was associated with more dysfunctional interpersonal behavior and less perceived social support. Low impulsivity was also positively associated with each of the other proposed underlying factors of dysfunctional interpersonal behavior including emotion dysregulation, rejection sensitivity, and compulsivity. The relationship between low impulsivity and high compulsivity it consistent with the measurement model, given that low impulsivity shared two indicators in common with compulsivity: having many fears and sensitivity to reward. However, unlike emotion dysregulation and rejection sensitivity, low impulsivity was not shown to be associated with problem alcohol use.

These findings suggest that the assessment instrument used may have tapped a facet of impulsivity that may be functional in a college campus life context. Impulsivity has variously been defined as the tendency to respond quickly and without reflection (Barratt & Patton, 1983), the inability to inhibit behavior when inhibition is appropriate (Schachar & Logan, 1990) and the inability to delay gratification (Dolan & Fullam, 2004; Flory et al., 2006). Enticott and Ogloff (2006) delineated the general features of impulsive behavior: rapid, spontaneous, ill-planned, excessive and maladaptive.
Impulsivity also has been referred to as an artificial umbrella term for four constructs: lack of premeditation, urgency, lack of perseverance, and sensation seeking (Whiteside and Lynam, 2001), suggesting that impulsivity is a multidimensional construct or several discrete constructs. Alternately, Gullo & Dawe (2008) asserted that there are essentially two facets of impulsivity: Reward Drive (sensitivity to reward/thrill seeking/surgency) and Rash Impulsiveness (acting without thinking). Examination of the item content of the Behavioral Activation Scale suggested that the present study may have tapped Reward Drive facet. While not predicted, these results are consistent with some findings suggesting that some aspects of impulsivity might be adaptive. Whiteside and Lynam’s (2001) found that thrill-seeking covaried positively with educational attainment, which also covaried with the Five Factor (Costa & McCrae, 1992) personality facet Openness to Experience. High scorers on the Openness to Experience scale tend to score higher on measures of IQ and to be unconventional, curious and open to experiencing novel ideas and behaviors (Costa & McCrae 1992). Gullo & Dawe (2008) argued that researchers often overlook the potentially adaptive role of this facet of impulsivity. Shiner (2000) reported that children scoring highly on measures of surgency at age ten were more intelligent, articulate, attentive, dominant, expressive, self-reliant, and outgoing, and were more socially and academically competent. Shiner (2003) reported that these children had better relationships with friends and romantic partners at age 30. It may be that these individuals are also high on adaptive social behavior.
This notion of “adaptive impulsivity” has not received a large amount of interest within the human behavior literature, though it has been developed considerably more in the animal behavior literature. For example, Steven and Stephens (2010) discussed the potential benefits of impulsivity from an evolutionary perspective with respect to feeding and foraging behavior, and suggest that the same adaptive value of impulsivity may apply to fleeing, fighting and reproduction. They concluded that, “a preference for immediate rewards appears not impulsive but adaptive in a naturally occurring behavioral situation” (pg. 14). Similarly, individuals who are impulsive may more readily seek out rewarding social experiences which may result in the construction and maintenance of supportive social networks.

**Compulsivity.** As predicted, compulsivity was found to be associated with dysfunctional interpersonal behavior and perceived social support, as well as the other proposed underlying factors, although it was not directly associated with perceived social support. It is interesting that high compulsivity and low impulsivity were each associated with dysfunctional interpersonal behavior. While impulsivity and compulsivity share the common elements of urgency and the inability to modify behavior in the light of negative consequences, they are differentiated by the presence of positive versus negative affect. While impulsive behavior is performed with the function of increasing positive affect, compulsive behavior is performed with the function of decreasing negative affect (Hollander & Allen, 2006; Vaughan & Salzman, 1996). That is, it is anxiety driven.

This presence of negative (as opposed to positive) affect may result in negative social consequences. This idea is supported by theory and empirical evidence supporting a relationship between depression and dysfunctional interpersonal behavior. Erickson
and Newman (2007) elegantly summarized the conclusions from this body of work, stating the individuals with depression are more likely to form “problematic expectations about social interactions (that) may lead to behavior or emotional expression that affects others negatively, engendering dismissive or subtly hostile responses that, in turn, may be interpreted to confirm dysfunctional views about one’s interpersonal impact” (pg. 364).

Similar theory has developed more recently around individuals with Generalized Anxiety Disorder (GAD), who have been found to have similar such maladaptive thinking about social interactions (see Erickson & Newman, 2007; Roemer, Molina, & Borkovec, 1997), and to have levels of social problems similar to depressed individuals including marital problems (Hunt, Issakidis, & Andrews, 2002; Whisman, Sheldon, & Goering, 2000), having few friends (Whisman, Sheldon, & Goering, 2000), and poor family functioning (Ben-Noun, 1998). The performance of compulsive behavior or the presence of rigid, obsessive-compulsive personality traits may also engender hostile or avoidant behavior from others, causing alienation of the compulsive individual.

**Problem Alcohol Use.** A relationship was found between perceived social support and problem alcohol use, though in the direction opposite to that which was hypothesized. As outlined in the introduction, many previous studies have found significant relationships between low perceived social support and problem drinking. However, many of these studies have focused on clinical samples, rather than samples of largely non problem drinking college students. It may be that the relationship between low perceived social support and problem drinking emerges only as people develop chronic, problematic patterns of drinking.
In a college sample, heavy drinking may indeed be indicative of prosocial behavior. College students have been found to frequently drink for social facilitation purposes, and drinking for this motive has been linked with negative consequences of drinking (Beck, Arria, Caldeira, Vincent, O’Grady & Wish, 2008). Previous research has linked social involvement in college and problem alcohol use (Vaisman-Tzachor & Lai, 2008), and being involved in athletics and Greek life is a vulnerability factor for the development of problem drinking (Theall, DeJong, Scribner, Mason, Schneider, & Simonsen, 2009).

Gender was found to be a predictor of problem alcohol use. Males had a mean AUDIT score of 6.64 in comparison to the females’ mean score of 5.33. This finding is consistent with a great deal of previous literature (see O’Malley & Johnston, 2002; Vaisman-Tzachor & Lai, 2008) that males drink more and have more problem drinking than females.

Race was found to be a strong predictor of problem alcohol use. Whites had a mean AUDIT score of 6.97 in comparison to the non-Whites’ score of 1.54, and nearly half of the sample (48.1%) was non-White. This finding is consistent with previous findings that, in comparison to racial/ethnic minorities (excepting for Native Americans), White students drink more than their peers of ethnic minority status (Bachman et al., 1991; Price, Risk, Wong, & Kinglee, 2002; Wallace et al., 2002). This finding is particularly true when comparing White students to Asian and Black students, both groups that have been found to drink significantly less than White students (Price, Risk, Wong, & Kinglee, 2002; Wallace et al., 2002), and which made up 30% and 7% of this sample, respectively.
Limitations

The present study has three primary limitations. The first is that all data were collected at one time-point. Thus, the cross-sectional design of the study did not allow for strong tests of causal mediation.

The second limitation is related to the sample. While the use of a college-age sample is a good first step in this line of research, the results may not generalize to younger or older individuals, individuals with lower levels of education and socio-economic status, or individuals with AUDs. Further, having an ethnically diverse sample can be beneficial in terms of increasing the generalizability of results. The ethnic composition of the current sample did not closely reflect that of the United States as a whole (Greico & Cassidy, 2001). The 2000 U.S. Census (Greico & Cassidy, 2001) found that 75.1% of the U.S. population identified as White (compared to 51.9% in the current sample), and that 3.6% of the population as a whole identified as Asian (compared to 30.2% of the current sample). Thus, Asians were over-represented in the current sample, which may have biased the results, as students of Asian descent are known to drink less than whites. The low levels of drinking and problem drinking relative to a clinical sample limits the generalizability of the current findings. Almost 40% of the sample reported drinking monthly or less often, 35% reported drinking two or fewer drinks per drinking occasion, and 69.7% of the total sample fell into the non-problematic AUDIT range. The pattern of findings may differ in a sample of individuals with clinically significant problem drinking. Therefore, the pattern of results found in the current study may not be replicable in a clinical study.
The third limitation is related to the measurement of two key constructs: social support and impulsivity. Social support has historically been measured differently in college student and clinical AUD populations. In college student samples, such as the current sample, it has typically been measured using self-report scales such as the SPS. However, in clinical AUD samples the Important People and Activities Interview, which provides a map of the social network and the degree to which individuals in that network are more or less generally supportive and specifically supportive of abstinence. This difference in measurement of general social support may further limit the generalizability of the current findings to a clinical sample.

**Future Directions**

Future studies should examine the hypothesized model in clinical samples with AUDs. Much of the research on which the theoretical model was formulated relied on findings from such clinical samples, particularly with regard to the relationship of low perceived social support to high problem alcohol use. This association was not found in the present study; instead, low perceived social support was negatively associated with problem alcohol use). Thus, it will be important to compare the results with the results of similar studies with other populations. Further, the utilization of longitudinal and developmental designs will be key in determining how these relationships may change over time or change as a result of development and maturation, as well as of treatment. Accordingly, these phenomena should be studies in samples as they age from childhood to adulthood, and as they many change as a function of treatment.

Future studies may benefit from incorporating multiple measures of constructs, particularly with regard to impulsivity. In fact, the notion that impulsivity is one unitary
construct has been questioned. Whiteside and Lynam (2001) argued that the term “impulsivity” is an artificial umbrella term for four constructs: lack of premeditation, urgency, lack of perseverance, and sensation seeking. This suggests that impulsivity is a multidimensional construct or perhaps several discrete constructs. Incorporating multiple measures of impulsivity in future studies may help to better tease apart which facets/aspects of impulsivity are functional and perhaps related to prosocial behavior, and which are dysfunctional, or perhaps drive dysfunctional behavior.

Further, the inclusion of multiple types of measures of social support and interpersonal behavior, including interview, self-report, and collateral techniques in one study will be key in understanding these constructs more fully, as well as the relationship between the social network and the individual functioning in that network.

Implications

A great deal of importance has been placed on understanding the mechanisms underlying behavior regulation and behavior change. Understanding the pattern of relationships among the personality constructs underlying dysfunctional interpersonal behavior, and the relationships among dysfunctional interpersonal behavior, social support and drinking in college samples as well as general population, clinical and treatment samples may be of use. If these are variables that serve to cause and/or maintain problem behaviors, including problem alcohol use, understanding the mechanisms of the causal pathways may allow us to augment and/or bolster current prevention and treatment programs to target key causal variables. As such, caution is warranted in interpreting the present results until they are replicated with other samples, and using additional measures of these constructs.
If the relationships of the underlying factors to dysfunctional interpersonal behavior, and dysfunctional interpersonal behavior to social support are supported in future research with clinical samples, this will provide evidence that the individual’s interpersonal behavior may be a primary influence on the social network. Therefore, dysfunctional interpersonal behavior may be an important treatment target for individuals with clinically significant AUDs. In addition to focusing on the social network as a target of treatment, clinicians may improve treatment efficacy by training individuals with methods demonstrated to enhance social relationships in the service of achieving and maintaining abstinence. While treatments such as Network Support Therapy (Litt, Kadden, Kabela-Cormier & Petry, 2007; Litt, Kadden, Kabela-Cormier & Petry, 2009) and Twelve Step Facilitation (Project MATCH Research Group, 1997), have focused on supporting client involvement with Alcoholics Anonymous in order to build network support for abstinence, such treatments could be augmented and perhaps improved by treating dysfunctional interpersonal behavior. Such an addition may improve efficacy by allowing individuals to more effectively build social networks which provide general social support as well as abstinence specific social support.

Summary

The present study tested a theoretically-derived model of several proposed underlying processes of dysfunctional interpersonal behavior, including impulsivity, compulsivity, emotion dysregulation and rejection sensitivity. Further, the relationships among dysfunctional interpersonal behavior, low perceived social support and problem alcohol use was examined. Support was found for some, but not all of the elements of the hypothesized model. Support was found for three of the proposed underlying
processes of dysfunctional interpersonal behavior. Emotion dysregulation, rejection sensitivity and compulsivity were found to statistically predict dysfunctional interpersonal behavior in the expected direction. However, impulsivity was found to be associated with dysfunctional interpersonal behavior in the direction opposite to that which was hypothesized. Support also was found for the hypothesized relationship between dysfunctional interpersonal behavior and low perceived social support, although perceived social support was associated with problem drinking in the direction opposite to that which was hypothesized. Limitations of this study included the restricted nature of the sample (all college students), the atypical racial composition of the sample, and the cross-sectional design of the study. A more definitive test of the proposed model would be accomplished in a clinical sample of individuals with AUDs, utilizing a prospective design and incorporating multiple measures of constructs.


Lakey, B., Lutz, C. J., & Scoboria, A. (2004). The information used to judge supportiveness depends on whether the judgment reflects the personality of perceivers, the objective characteristics of targets, or their unique relationships. Journal of Social & Clinical Psychology, 23, 817-835.


Curriculum Vita

DORIAN HUNTER REEL

I. EDUCATION

2006-2011  
**Doctor of Philosophy**, Clinical Psychology, Rutgers University

2008  
**Master of Science**, Clinical Psychology, Rutgers University

2003  
**Bachelor of Science**, Psychology, University of Washington

II. RESEARCH EXPERIENCE

2006-present  
**NIAAA Training Fellow**, Dr. Barbara McCrady, Dr. Elizabeth Epstein, Center of Alcohol Studies, Rutgers University, Piscataway, NJ

2006-present  
**Graduate Research Assistant**, Dr. Barbara McCrady, Dr. Elizabeth Epstein, Rutgers Women’s Treatment Projects II and III, Center of Alcohol Studies, Rutgers University, Piscataway, NJ

2003 - 2006  
**Treatment Coordinator**, Dr. Marsha Linehan, Behavioral Research and Therapy Clinics, Department of Psychology, University of Washington, Seattle, WA

2003 - 2006  
**Research Therapist**, Dr. Mary Larimer, Department of Psychiatry and Behavioral Sciences, University of Washington, Seattle, WA

2003 - 2006  
**Research Interviewer**, Dr. Alan Marlatt, Addictive Behaviors Research Center, Department of Psychology, University of Washington, Seattle, WA

2003  
**Research Project Manager**, Dr. Marsha Linehan, Behavioral Research and Therapy Clinics (BRTC), Department of Psychology, University of Washington, Seattle, WA

2001-2003  
**Research Assistant**, Dr. Marsha Linehan, Behavioral Research and Therapy Clinics, Department of Psychology, University of Washington, Seattle, WA

2001  
**Research Assistant**, Dr. Jonathan Brown, Department of Psychology, University of Washington, Seattle, WA
### III. Clinical Experience

<table>
<thead>
<tr>
<th>Year Range</th>
<th>Activity</th>
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<tbody>
<tr>
<td>2006-present</td>
<td><strong>Assessment and Treatment of Women with Alcohol Use Disorders</strong></td>
</tr>
<tr>
<td>2008-present</td>
<td><strong>Evaluating Applications for Bar Examination Disability Accommodations</strong></td>
</tr>
<tr>
<td>2009-present</td>
<td><strong>Co-Leader of a Mindfulness Group for Parents of Children with Autism</strong></td>
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<tr>
<td>2009-present</td>
<td><strong>Learning Disorder and Attention-Deficit Hyperactivity Disorder Evaluation Practicum</strong></td>
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<td>2008-2009</td>
<td><strong>Clinical Practicum at Rutgers University Eating Disorders Clinic</strong></td>
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<td>2008-2009</td>
<td><strong>Clinical Practicum at Rutgers University Anxiety and Aging Clinic</strong></td>
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<tr>
<td>2007-2008</td>
<td><strong>Clinical Practicum at Rutgers University Program for Addiction Consultation and Treatment (PACT)</strong></td>
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<tr>
<td>2007-2008</td>
<td><strong>Clinical Practicum at Rutgers University Psychological Clinic</strong></td>
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<td>2005-2006</td>
<td><strong>Assessor of Chronic Public Inebriates</strong></td>
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<tr>
<td>2003-2006</td>
<td><strong>Motivational Interviewing Therapist</strong></td>
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<tr>
<td>2003</td>
<td><strong>DBT Consultation Team at the Behavioral Research and Therapy Clinics</strong></td>
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<td>2002-2003</td>
<td><strong>Coding DBT Skills Group Therapy Sessions</strong></td>
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<tr>
<td>2001</td>
<td><strong>Typing Summaries of Clinical Interviews with Suicidal Women with BPD</strong></td>
</tr>
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<td>2000-2001</td>
<td><strong>Seattle Mental Health Clinical Intern</strong></td>
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</table>
IV. Teaching/Supervision Experience

2007 - 2009  **Instructor**
Department of Psychology, Rutgers University
“Drugs, Society and Human Behavior” and “General Psychology”

2007-2009  **“Getting Into Graduate School” Seminar**
Department of Psychology, Rutgers University

2007  **Supervision of Honors Theses**
Department of Psychology, Rutgers University

2003-2006  **Supervising Undergraduate Research Assistants**
BRTC, University of Washington

2001  **Undergraduate Teaching Assistant for Dr. Christy Kimpo**
Department of Psychology, University of Washington

V. Publications


