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EFFECTS OF DIFFERENTIATION ON COLLEGE STUDENT DRINKING

By

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ABSTRACT

EFFECTS OF DIFFERENTIATION ON COLLEGE STUDENT DRINKING

By

Christopher R. Latty

This study examined if Bowen's theory of differentiation was related to general alcohol use (GAU) and binge drinking among college students. It was hypothesized that students with lower levels of differentiation would be more likely to have greater amounts of general alcohol consumption and a higher prevalence of binge drinking. It was also predicted that students with lower levels of differentiation would have greater amounts of general alcohol use and binge drinking to the extent that they had greater: perceptions of other Michigan State University (MSU) student's alcohol use, perceptions of their best friend at MSU's use, expectations of alcohol use as a tension reducer and social lubricant, and were a child of an alcoholic (COA).

A total of 447 participants (246 females, 201 males) between the ages of 18 and 22 were analyzed for this study. Due to a high level of skewness in the continuous variables, GAU and binge drinking were each transformed into four categories. The GAU categories were Abstainers, Low Drinkers, Moderate Drinkers, and Higher Drinkers; the binge drinking categories were Abstainers, Nonbinging Drinkers, Occasional Binge Drinkers, and Frequent Binge Drinkers.

Overall, the hypotheses received little support from the logistic regression analyses. The hypothesis of differentiation and GAU was only supported in the Drinkers versus Abstainers comparison for males. Following the hypothesized relationship, as levels of differentiation increased in males the likelihood they drank alcohol decreased.

The differentiation hypothesis was not supported by any of the binge drinking comparisons.

Again, the majority of the moderator hypotheses were not supported by the model. Additionally, when significant interactions were found it was interpreted that differentiation acted as a moderating variable. The only significant interaction in the GAU analyses was with differentiation and perception of MSU student alcohol use. This interaction was significant for the High versus Moderate Drinker comparison (males) and the High versus Low Drinker comparison (females). In relation to binge drinking the only significant interactions were for the female analyses. There was a significant interaction between perceptions of MSU student use with Frequent Binge Drinkers versus Nonbinging Drinkers. For these interactions it was interpreted that higher levels of differentiation served as a protective factor against the disparate risk factors analyzed, as students with lower levels of differentiation were more vulnerable to being in the higher drinking category in relation to the risk factor.

The other significant interaction was with COA status in the Frequent versus Occasional Binge Drinking comparison. Paradoxically, high levels of differentiation appeared to be a risk factor with COAs, as females were nearly two-and-a-half times more likely to be Frequent versus Occasional Binge Drinkers when they had higher levels of differentiation. Explanations for the respective interactions, clinical implications and recommendations for future research are provided.

This work is dedicated to Sarah and Olivia.

Your patience, love, and support allowed me to complete a long and wonderful journey.

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Chapter One

Introduction

Alcohol consumption has a high rate of prevalence among college students. Estimates indicate that around 81 percent of college students will drink alcohol during the current year, and approximately 66 percent of these students will have consumed alcohol in the past month (Johnston, O'Malley, Bachman, & Schulenberg, 2004). Additionally, many of these students will consume alcohol to the point of intoxication. According to Woltersdorf (1997), anywhere from 26 to 48% of college students drink to intoxication during any given month. Moreover, he asserts that nearly 4% of college students drink daily. Furthermore, it is estimated that within the past 2 weeks over 40% of college students will have engaged in binge drinking (Wechsler, Lee, Kuo, et al., 2002). Estimates indicate around 31% of college students have a DSM-IV diagnosis of abuse, and 6% have a diagnosis of dependence (Knight et al., 2002). This high prevalence of abuse puts students at greater risk for academic problems, sexual abuse, risky sexual behaviors, physical injury, assault, violence, and death.

As college students are in a period of developmental transition into young adulthood, it is important to understand the continued relationship college students have with their families of origin. This study sought to understand how the relationship with one's parents affects the decision-making processes of alcohol consumption. Central constructs to this study were Bowen's (1966) concepts of differentiation and triangling. Differentiation exists on inter- and intrapersonal levels. Intrapersonally, differentiation refers to a person's ability to remain clear-minded and objective in the face of anxiety rather than becoming emotionally reactive. It is also an interpersonal dynamic reflecting

an individual's ability to maintain a sense-of-self while remaining emotionally connected in relationships. Individuals with low levels of differentiation struggle to form identities with convictions and are more likely to adopt the beliefs and values of those for whose approval and closeness they yearn. Moreover, they are dependent on others for validation and often lack a firm foundation of self belief and approval. Therefore, when there is some form of relational anxiety (e.g., a criticism) individuals with lower levels of differentiation are not able to tolerate this stress and become emotionally reactive. When emotional disequilibrium occurs in a dyad, poorly differentiated individuals are likely to triangle in other people or things to diffuse this anxiety. For example, a couple on the cusp of fighting about themselves may channel this energy into a conflict about their children. Moreover, individuals may triangle things such as work or alcohol as a means to diffuse the relational tension building in the relationship, resulting in a couple having conflict over the object rather than over their relationship. Patterns of differentiation are acquired in families and influence how anxiety is tolerated and whether triangulation will serve as a dysfunctional means to alleviate the anxiety. Accordingly, the more differentiated individuals are, the more likely they are to tolerate anxiety. Greater levels of differentiation result in greater potential to objectively respond to anxiety, decreasing the likeliness that an individual will need to triangle someone or something to regulate anxiety. *The central hypothesis of this study is that there is a relationship between differentiation and alcohol consumption in college students.*

It is crucial to understand the relationship between differentiation and alcohol consumption for this population for two reasons. First, college students experience a unique push-pull with their families of origin as they are likely geographically separated

from their family for the first time. At this time, college students are at a developmental point of transition from adolescence to young adulthood and may not be able to tolerate the relational anxiety with their parents while at school. Secondly, college students may not be able to tolerate the anxiety of interpersonal relationships with peers and may triangle alcohol consumption, particularly via abuse and binge drinking, to manage their anxiety. As millions of students attend universities every year, the seriousness of this issue points to the necessity to understand ecological influences on their decisions to consume alcohol. This is especially true for those that acquire drinking as a means to cope with the new stressors of higher education. Attitudes and behavior towards alcohol, adopted while at college, may set a stage for a lifetime of dysfunctional usage and addiction.

Statement of the Problem

This study investigated the relationship between levels of differentiation and alcohol use for college students. Additionally, moderating effects on the relationship between differentiation and alcohol use were investigated for the following variables: status of being a child of an alcoholic (COA), perceptions of the average Michigan State University (MSU) student's alcohol use, perceptions of best friend at MSU's use, and the expectations of alcohol use as a tension reducer and social lubricant.

General Alcohol Use

Specifically, this model will investigate the following:

1. the relationship between differentiation, as measured by the Differentiation of Self Inventory–Revised (DSI-R, Skowron & Schmitt, 2003), and general

alcohol consumption, as measured by quantity and frequency of alcohol use over the past 30 days

2. the relationship between the four factors of the DSI-R (Emotional Reactivity, I Position, Emotional Cutoff, and Fusion with Others) with general alcohol use
3. the moderating effects of COA status, as measured by parent-specific versions of the Children of Alcoholics Screening Test (Jones, 1983), on the relationship between differentiation and general alcohol use
4. the moderating effects of perceptions of the average MSU student's alcohol use, as measured by students' perceptions of the quantity and frequency of alcohol use over the past 30 days for the average MSU student, on the relationship between differentiation and general alcohol use
5. the moderating effects of perceptions of their best friend at MSU's alcohol use, as measured by students' perceptions of the quantity and frequency of alcohol use over the past 30 days for their best friend at MSU, on the relationship between differentiation and general alcohol consumption
6. the moderating effects of expectations of alcohol serving as a tension reducer, as measured by the Tension reduction subscale (Kushner, Sher, Wood, & Wood, 1994), on the relationship between differentiation and general alcohol consumption
7. the moderating effects of expectations of alcohol serving as a social lubricant, as measured by the Social Lubrication subscale (Kushner et al., 1994), on the relationship between differentiation and general alcohol consumption

Binge Drinking

The outcome of binge drinking will also be investigated using the same seven points of investigation as mentioned for general alcohol use.

Importance of the Problem

This project is innovative in that it incorporates the systemic concept of differentiation with one's family of origin to individual decision-making processes, which has not been previously applied to the understanding of alcohol consumption. If the hypothesized relationship between levels of differentiation and alcohol consumption exists, not only will it prove to be a unique contribution to the alcohol consumption literature, but will also yield a greater understanding of how to further understand the decision-making processes of college students. Additionally, mental health professionals working with adolescents and adolescent substance use will gain empirical evidence for concepts comprising Bowen Theory.

Theoretical Framework

Human Ecological Theory

Human ecological theory and a systemic perspective consider how an individual, a family, and their total environment are intimately intertwined with one another (Andrews, Bubolz, & Paolucci, 1980; Bristor, 1995; Bronfenbrenner, 1977, 1999; Bubolz, Eicher, & Sontag, 1979; Bubolz & Sontag, 1993; Griffore & Phenice, 2001; von Bertalanffy, 1980). The family ecosystem is comprised of a collection of interdependent people interacting, sharing resources, goals, and space (Andrews et al., 1980; Bubolz &

Sontag, 1993; Griffore & Phenice, 2001). As children within the family ecosystem mature, they are greatly influenced by familial subsystems (e.g., parents, siblings) and the respective rules, roles, boundaries, hierarchy, patterns of interaction, perceptions, and expectations of the greater family system (Andrews et al., 1980; Bristor, 1995; Bubolz & Sontag, 1993; Griffore & Phenice, 2001). Just as an individual's development is interconnected with other members of her family ecosystem, they individual shares a connection with her surrounding environment and contexts (Andrews et al., 1980; Bronfenbrenner, 1977, 1999; Bubolz et al., 1979; Bubolz & Sontag, 1993; Lerner, 1991, 1992, 1993; Lerner & Galambos, 1998; Lerner & Lerner, 1987, 1989; von Bertalanffy, 1980). The development and wellbeing of individuals is greatly influenced by these unique contextual relationships.

Although the field of alcohol research has become more systemically oriented, it only became commonplace within the past decade, both for the general population and specific to college students (Baer, 2002; Zucker, Fitzgerald, & Moses, 1995) (see Schulenberg & Maggs, 2002, for an ecological review of empirical studies for adolescent and young adults). This absence of ecological context is evident due to an emphasis on a minimal number of variables, absence of multivariate or interactive models, and a lack of consideration of multiple developmental pathways to differing types of alcoholisms (Fitzgerald, Zucker, Puttler, Caplan, & Mun, 2000; Zucker, 1994; Zucker et al., 1995; Zucker, Reider, Ellis, & Fitzgerald, 1997). Consequently, while it is important to understand the role of individual variables on college students' drinking, Zucker, Fitzgerald, and Moses (1995) suggest that risk for alcohol use be considered as a dynamic process consisting of varying degrees of risk for usage throughout the lifespan.

Bowen Theory

Around the time von Bertalanffy published his general systems theory in 1968, Murray Bowen was honing his systems theory of emotional systems in 1966 and 1967 (published as Anonymous in 1972). Bowen's theory is grounded in four interconnected concepts: differentiation, triangles, emotional system, and the multigenerational transmission process.

Differentiation. The driving force of Bowen's theory is the concept of differentiation. As an intra-psychic construct, differentiation refers to the relationship between being able to utilize one's cortex (thinking clearheadedly and objectively) over the limbic system (emotionally reactive) in the presence of anxiety. Accordingly, reactivity is inversely related to objectivity (Friedman, 1991). By maintaining a differentiated position, individuals can objectively think about stress and respond to it with a variety of clearheaded options, rather than merely being emotionally reactive.

In the context of relationships, differentiation refers to how individuals and dyads maintain a sense of self while remaining connected to others. The ability to maintain a sense of self (basic-self) is described as having a firm notion of personal beliefs and values that will not be surrendered in the context of a relationship. Conversely, an undifferentiated individual makes decisions based on what feels like the right thing to do at the time rather than on a reasoned principle. The undifferentiated person has an inability to form and develop his own convictions and will adopt those of significant others or popular ideologies. Unlike a differentiated person, who is able to generate unique "I believe" statements, an undifferentiated person will evidence laws or religion to define his dogma (Anonymous, 1972; Becvar & Becvar, 1993; Bowen, 1966). In the

struggle between a desire for connectedness and separateness, an undifferentiated person fails to recognize where he ends and others begin, whereas a differentiated person is able to maintain independent thoughts and feelings within relationships (Wetchler & Piercy, 1996). At the crux of the struggle to remain differentiated is the ability to maintain a connection with others while at the same time being able to maintain individuality. Titelman (2003) describes this balance as "the ability to act for oneself without being selfish and the ability to act for others without being selfless" (p. 20).

Bowen conceptualized differentiation as existing on a continuum with the outcome of complete differentiation as not realistically obtainable (Anonymous, 1972; Bowen, 1966). Individuals in the upper half of the continuum possess an increased ability to differentiate between objective reality and feelings and they primarily can function in ways that remain true to their sense of self--although some decisions are based on feelings in order to not risk disapproval from significant others. Finally, these individuals are much less reactive to praise and criticism as they have a much more firm identity, whereas people with lower levels of differentiation are highly dependent on others for external validation.

Theoretically, people tend to couple with others who share similar levels of differentiation. When these levels are low, the two individuals become fused with one another and little differentiation of self remains for the individuals. Individuals with low levels of differentiation are dependent on others for approval and validation for a sense of self. Thus, they are more susceptible to have dysfunctional relationships and symptoms to the extent that they experience disrupted emotional equilibrium and individual comfort levels through criticism, conflict, or relational anxiety from others (Bowen, 1966).

Individuals are at greater risk for developing depressed, somatic, or alcohol related symptoms to the extent that they have lower levels of differentiation; conversely they can tolerate more intense anxiety as their differentiation levels increase (Friedman, 1991; Skowron & Friedlander, 1998). In a well differentiated relationship, each member of the couple "is more of an autonomous self: there is less emotional fusion in close relationships, less energy is needed to maintain self in the fusions, more energy is available for goal-directed activity, and more satisfaction is derived from the directed activity" (Anonymous, 1972, p. 119). As anxiety or tension exceeds the comfort level of a relational dyad, it is more likely that another person or thing (e.g., alcohol or work) will be triangled into the relationship as a means of shifting the tension away from the dyad (Bowen, 1966; Friedman, 1991; McGoldrick & Carter, 2001; Titelman, 1998).

Triangles. According to Bowen (1966, Anonymous, 1972), dyads within emotional systems are naturally unstable and will form a triangle, with another person (people) or object(s), when under an unmanageable amount of stress. The intensity of the triangle relationship is dependent on the level of differentiation as well as the importance of the relationship that is experiencing the anxiety (Anonymous, 1972). In the context of an extended family or a work environment, the system is comprised of multiple interlocking triangles. The push-and-pull forces of the desire for togetherness and individuality in a relationship create varying levels of stress and anxiety for dyads. As mentioned, when this anxiety or tension exceeds the comfort level of a relational dyad, it is more likely that a triangle will be brought into the relationship as a means of shifting the tension away from the dyad (Bowen, 1966; Friedman, 1991; McGoldrick & Carter, 2001; Titelman, 1998). Some of the ways in which a dyad could triangle in another

person or object are: changing the conversation by talking about a third party, one or both individuals may bring another person in to take sides, one person continually venting her frustrations through a third person rather than directly with the other, one person shifting her energy to work or alcohol rather than toward the conflict with the other. No matter what the method of triangling is, the ultimate goal is to reduce the amount of tension, at the expense of dealing with it directly, as the ability to remain objective and nonreactive is lost. Although occasional triangling is not necessarily a dysfunctional behavior, it becomes problematic when it is utilized as a constant diversion that prevents individuals and couples from directly dealing with their problems.

The emotional system. This concept, originally termed undifferentiated ego mass (Bowen, 1966), refers to the overall level of differentiation, or fusion, in a system (e.g., the nuclear family emotional system) (Anonymous, 1972). As this concept is interrelated with differentiation, the extent of emotional fusion between spouses is a product of the level of differentiation within the individuals. Bowen (1966, Anonymous, 1972) identified three ways symptoms from undifferentiated parental couples can be expressed in a nuclear family: marital conflict, projection to a child(ren), or dysfunction in a parent/spouse. Families vary greatly regarding which of the areas receive the dysfunction and in the degree to which it is shared across the areas. For example, if one member of the parental dyad merges his identity into the couple's identity–losing his sense of self–then he would be likely to experience some form of dysfunction (e.g., developing depression, somatic illness, or alcoholism), which may in turn prevent dysfunction from occurring in marital conflict or from being projected onto the children.

Multigenerational transmission. The concepts of differentiation and triangles operate in concert within families through multigenerational transmission. As parents triangle children in order to diffuse anxiety within the marital relationship, children may be inducted into multigenerational transmission of fused relationships. As children become more mature, they are consequently faced with the task of becoming more differentiated from their family in order to become higher functioning individuals (Titelman, 1998). Children who are frequently triangled at a young age into their parents' relationship may develop lower levels of differentiation than their parents due to their stunted development as triangled individuals. If this child later marries, it will theoretically be to someone sharing a similar level of differentiation (Anonymous, 1972; Bowen, 1966) and he will have a child that may have an even lower level of differentiation. However, children are not automatically destined to be at lower levels of differentiation than their parents, other factors may disrupt this inevitably. In addition, greater levels of differentiation can be obtained via a lifelong process.

Research with Bowen theory. Although this can be an important lens through which to view symptom formation, few studies have explored this postulated relationship in college students by examining the degree to which differentiation influences disparate types of psychopathology, including alcohol use. Protinsky and Gilkey (1996) found a relationship between females' sense of individuation and self-esteem, personal health, and grade point average. Bartle-Haring, Rosen, and Stith (2002) found that possessing lower levels of differentiation with one's mother was related to increased psychological symptoms and increased reports of stressful life events. Research has also found consequences of triangulation within families to be related to intimacy and academic

difficulties in young adults, and substance abuse in adolescents (Larson & Wilson, 1998). Studies evidence that individuals with higher levels of differentiation have been found to be more flexible, better able to cope with stress, and have less chronic anxiety (Larson & Wilson, 1998; Skowron & Friedlander, 1998). Additionally, Elieson and Rubin (2001) found that college students with depression had lower levels of differentiation than did traditional student groups. These reports indicate a need to further examine how individuation in college students influences personal health, particularly how well-being is compromised through decisions to triangle alcohol as a means to cope with anxiety.

Conceptual Models

The model for this study is grounded in the concepts of Bowen theory via two essential constructs relevant to this study–differentiation and triangulationDifferentiation influences how an individual tolerates anxiety, whereas triangling is a dysfunctional means to alleviate the anxiety. According to this theory, the more differentiated individuals are, the more likely they are to tolerate anxiety, resulting in greater potential for an objective response to anxiety. More differentiated individuals will be less likely to exhibit a need to triangle someone or something to regulate anxiety. Therefore, the general model of this study is that individuals with higher levels of differentiation will be less likely to triangle alcohol as a means to diffuse their anxiety. The relationship between differentiation and alcohol use is also expected to be moderated by child of an alcoholic (COA) status, perceptions of the average MSU student's alcohol consumption, and the perception of best friend at MSU's alcohol consumption, expectations of alcohol as a tension reducer, and expectations of alcohol as a social lubricant.

It is expected that children of alcoholics will be more likely to triangle alcohol as they will possess a history of having parents model alcohol use as a triangle to tolerate anxiety. The moderating effect of being a COA is further based upon the premise of multigenerational transmission. As Bowen theory suggests, children have similar levels of differentiation as their parents; it is assumed that individuals with low levels of differentiation have parents who also have low levels of differentiation. It is expected that alcoholic parents with low levels of differentiation chose alcohol as a triangle, therefore providing a model of managing stress. COA students who are away from home may feel comfortable triangling alcohol in relation to parent modeling and due to alcohol's role as an integral part of the college culture.

It is expected that less-differentiated students will generally consume greater amounts of alcohol to the extent that they perceive greater amounts of student use presenting as normative means by which to diffuse anxiety. Finally, it is expected that students possessing lower levels of differentiation will have greater amounts of general alcohol consumption to the extent that they have higher expectations that alcohol will serve as a social lubricant or a tension reducer as a means to help tolerate relational anxiety (see Figure 1, p. 14, and Figure 2, p. 15).

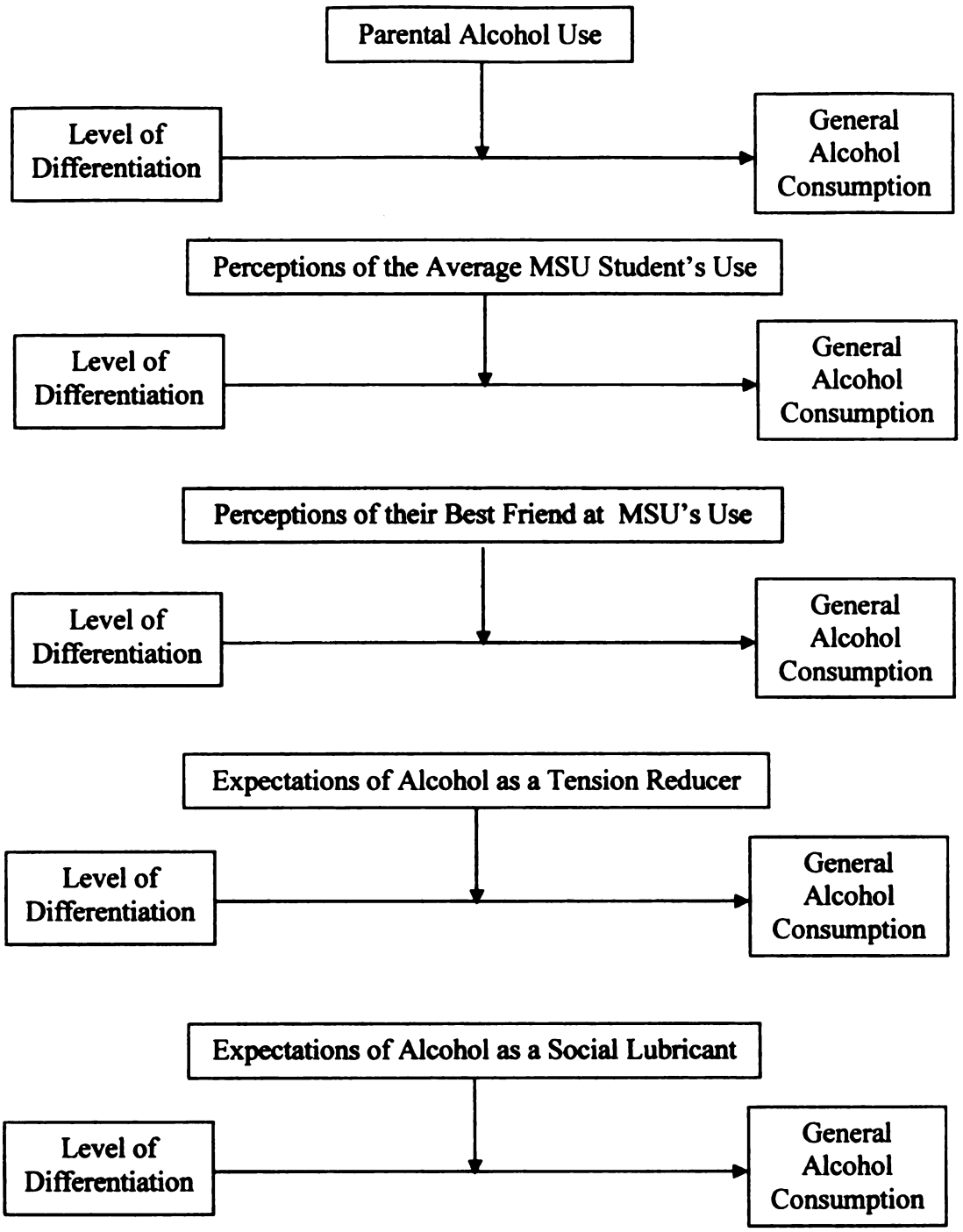

Figure 1. Conceptual model for college students' general alcohol use.

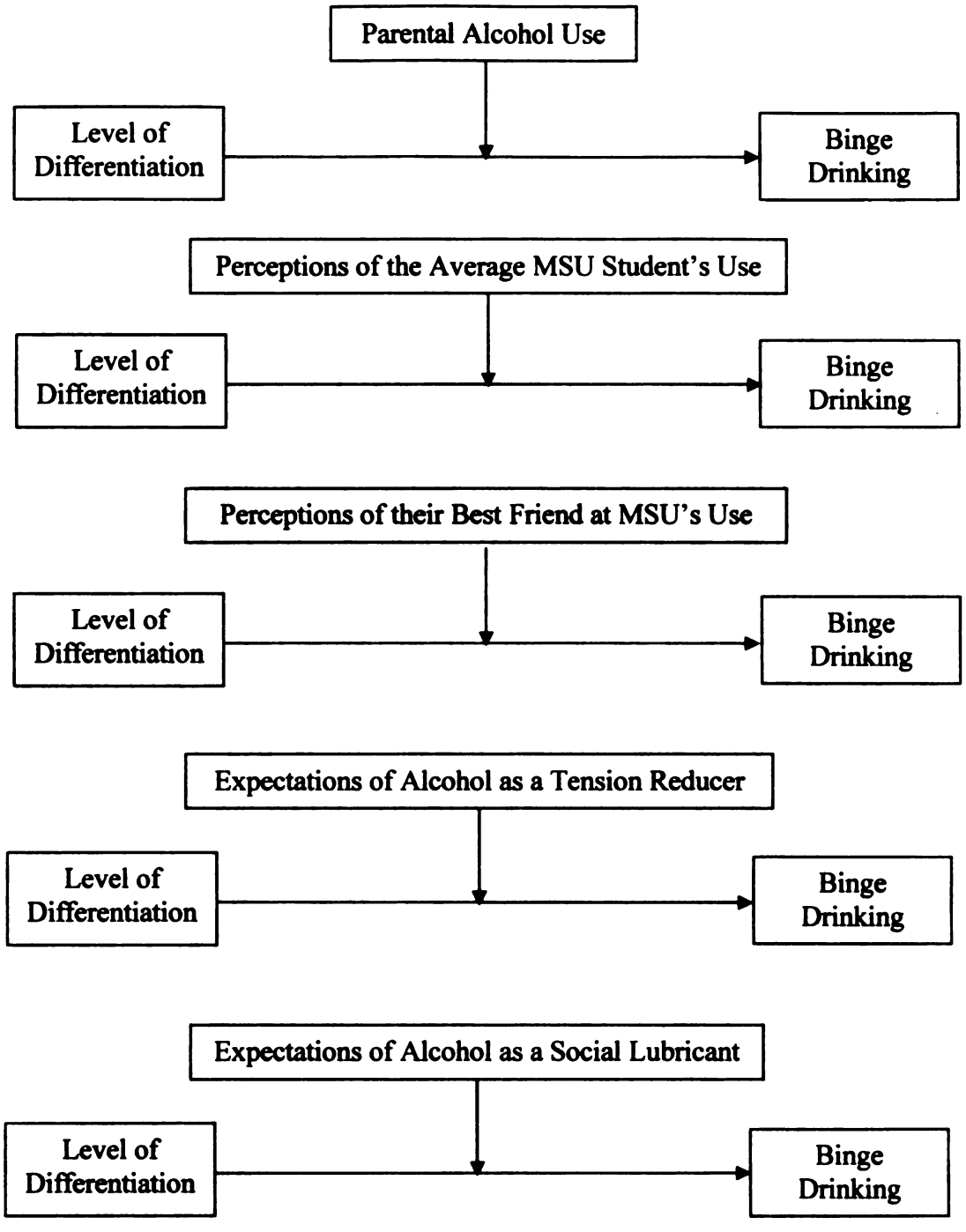

Figure 2. Conceptual model for college students' binge drinking

Research Questions

The overarching research questions for this study are based on two models. The review of literature in Chapter Two will support and guide the relationships for the models to be tested.

General Alcohol Use for College Students

Is there a significant relationship between differentiation and general alcohol consumption for college students? Are there moderating effects on the relationship between differentiation and general alcohol consumption for the following variables: COA status, perceptions of the average MSU student's alcohol consumption, perceptions of best friend at MSU's alcohol consumption, expectations that alcohol will serve as a tension reducer or a social lubricant?

Binge Drinking for College Students

Is there a significant relationship between differentiation and binge drinking for college students? Are there moderating effects on the relationship between differentiation and binge drinking for the following variables: COA status, perceptions of the average MSU student's alcohol consumption, perceptions of best friend at MSU's alcohol consumption, expectations that alcohol will serve as a tension reducer or a social lubricant?

Chapter Two

Chapter Two presents a review of literature regarding general trends for college student alcohol consumption and provides a description of the concept and consequences of binge drinking. The role of individual and ecological factors will be considered along with the role of anxiety and stress. Additionally, evidence will be provided for the inclusion of the moderating variables of COA status, perceptions of others' alcohol use, and expectations of alcohol use for this study's models.

Literature Review

College Student Drinking

Adolescence is a time when many individuals are at risk for developing problematic drinking behaviors. This is particularly true for adolescents who are attending college. Not only are many of these students away from parental supervision for the first time, but also there is an increased availability of alcohol to be found at college compared to high school, even for those who are legally underage (Dreer, Ronan, Ronan, Dush, & Elliott, 2004; Wechsler, Lee, Nelson, & Kuo, 2002; Zucker et al., 1997). At most colleges and universities, there is a normative component in the student culture involving alcohol consumption for reasons to socialize, relax, celebrate, and for pleasure (Demers et al., 2002; Dreer et al., 2004; Schulenberg & Maggs, 2002; Wechsler, Davenport, Dowdall, Moeykens, & Castillo, 1994; Wechsler, Isaac, Grodstein, & Sellers, 1994; Zucker et al., 1997). Many students will normatively drink alcohol and will never experience consequences of drinking beyond a hangover. Unfortunately, some students' alcohol consumption may evolve into dangerous levels of consumption, result in various negative consequences, or begin a pattern for a life-long battle with dependence.

Beyond the potential long-term consequences of addiction or continued abuse, students are at risk for short-term effects of driving while intoxicated, experiencing a blackout, suffering an injury, poor academic performance, skipping class, dropping out, getting into fights, doing something they regretted, getting arrested, participating in unsafe sex, experiencing/initiating unwanted sexual activity, attempting/committing suicide, and unintentional death (Bishop, Lacour, Nutt, Yamada, & Lee, 2004; Coll, Shott, & Morris, 1999; Kaplowitz & Campo, 2004; Larimer, Lydum, Anderson, & Turner, 1999; Presley, Meilman, & Lyerla, 1994; Smith, Wells, & Abdul-Salaam, 1997; Waite-O'Brien, 1992; Woltersdorf, 1997). Unfortunately, there appears to be a negative cycle between drinking and consequences as the more you drink the more likely you are to experience a consequence, and not knowing about the health risks of drinking is related to greater consumption (Jones, Harel, & Levinson, 1992). Furthermore, although everyone who drinks is susceptible to consequences, men are reported to experience them more often (Benton et al., 2004; Billingham, Wilson, & Gross, 1999).

Binge Drinking

Binge drinking has historically been defined as five or more drinks in a row at one sitting (Presley et al., 1994; Wechsler, Isaac, et al., 1994). However, after comparing odds ratios in the consequences of binge drinking with the traditional five drink standard, Wechsler, Dowdall, Davenport, and Rimm (1995) assert a more equitable standard of four or more drinks be considered as binge drinking for females. This would account for differences in body mass and metabolism, and avoid the underreporting of binge drinking women. The standard for female binge drinking at four drinks in a row per setting has since been adopted in multiple studies (Benton et al., 2004; Wechsler, Davenport, et al.,

1994; Wechsler, Dowdall, Davenport, & Castillo, 1995; Wechsler, Dowdall, Maenner, Gledhill-Hoyt, & Lee, 1998; Wechsler, Lee, Kuo, & Lee, 2000; Wechsler, Lee, Kuo, et al., 2002; Wechsler, Lee, Nelson, et al., 2002).

Binge drinking is prevalent in nearly half of all college students. A series of national studies, covering 140 four-year colleges, have shown about 44% of college students binge drink--a stable percentage spanning 1993 (44%, Wechsler, Davenport, et al., 1994), 1997 (42.7%, Wechsler et al., 1998), 1999 (44%, Wechsler et al., 2000), and 2001 (44.4%, Wechsler, Lee, Kuo, et al., 2002). Although a similar rate of 42% was found in a national study by Presley (1994), this figure likely reflects an underestimated total of female binge drinkers as the study used the 5-drink standard for both genders.

Although the overall percentage of college students that binge drink remains static over time, there are individual shifts in binging. Studying the changes of drinking behaviors during the transition of first- to second-year attendance at a Massachusetts college, Wechsler, Isaac, et al. (1994) found that 78% of males and 63% of females who consumed at binge levels during their first year continued to do so in their second year. Additionally, 37% of men and 19% of women who were nonbinge drinkers began to drink at binge levels during their second year of attendance. The authors report that the overwhelming majority of the first-year binge drinkers were also binge drinkers in high school (62% of the females and 77% of the males). Although this may suggest a developmental trend for all adolescents, it appears to be specifically disturbing for college students. There is trend for college bound students to binge drink at lesser rates than non-college bound peers until they enter college, at which point they will binge drink at greater rates than their peers not attending college (Schulenberg et al., 2001).

This trend for increased prevalence of binge drinking with the transition into college was illustrated by Wechsler, Davenport, et al. (1994) as 10% of high school binge drinkers were no longer binging in college, while 22% of non-bingeing high school students started in college.

Some of the documented consequences associated with binge drinking include: fighting, damaging property, experiencing blackouts, driving while intoxicated, being a passenger in a car with an intoxicated driver, doing something they regretted, missing class, acquiring a sexually transmitted infection, experiencing a sexual assault, having unplanned or unprotected sex, lower grade point average, and trouble with police (Benton et al., 2004; Clapp & McDonnell, 2000; Presley et al., 1994; Smith et al., 1997; Wechsler, Davenport, et al., 1994; Wechsler, Dowdall, Davenport, & Castillo, 1995; Wechsler et al., 1998; Wechsler et al., 2000; Wechsler, Lee, Kuo, et al., 2002). It is crucial to understand the prevalence of binge drinking among college students as Smith, Wells, et al. caution that there is a high risk of experiencing the consequences associated with binge drinking even if a person only has an isolated episode.

Similar to alcohol consumption in general, infrequent binge drinking for college students has been described as a normative part of the university culture (Bladt, 2002). Nevertheless, some individuals may be at greater risk for this behavior than others. The 2001 estimates of Wechsler, Lee, Kuo, et al. (2002) indicate that the 40.9% of college females and 48.6% of college males binge drank at some level during the year and these gender differences do not appear to differ across races (O'Malley & Johnston, 2002). Underage students were reported to drink less frequently but were more likely to binge when they drank (57.8% of underage men to 41.9% of-age; 53% underage women to

37.2% of-age) (Wechsler, Lee, Nelson, et al., 2002). Additionally, regardless of age, students living in fraternity or sorority houses were more likely to binge drink than those living in any other type of residence (Wechsler et al., 1998; Wechsler, Lee, Nelson, et al., 2002). Caucasian students have been shown to be the most likely to binge drink, followed by Hispanic students, with African American students binging at much lower levels (O'Malley & Johnston, 2002). Frequent heavy binge drinkers have 19 times greater odds of meeting the DSM-IV criteria for dependence (Knight et al., 2002) than those who drink at lesser levels.

Although it has never been studied specifically through a Bowenian lens, it can be inferred that people with lower levels of differentiation may be at greater risk for binging. Bladt (2002) examined mental health in first-semester college students that were classified as being abstainers, drinkers without binge behaviors, infrequent binge drinkers (1 or 2 times in a 2-week period), and frequent binge drinkers (3 or more times in a 2-week period). Frequently binging female students had significantly lower self-esteem than females in the other categories. Additionally, female frequent binge drinkers had a significantly greater feeling of insecure attachment than females who abstained from drinking and male frequent binge drinkers. The author describes individuals with high levels of insecure attachment as having a strong and conflicted desire for closeness, consequently leaving them vulnerable to become enmeshed and concerned with abandonment. This study's results are in concert with Bowen's theory as individuals who are emotionally fused with significant others—being afraid of criticism and abandonment, without being able to validate their own sense-of-self—would be unable to form secure attachments with others as they constantly react to others' compliments and

criticisms. Consequently, these people would then be more likely to triangle someone or something, such as alcohol, as a means to tolerate inter- and intrapersonal anxiety.

Ecological Influences on College Student Drinking

Individual factors. Overall, college students appear to have a higher prevalence of drinking than their same age peers who are not attending college (O'Malley & Johnston, 2002). The most reported individual factor for the amount of alcohol consumed by college students is being male (Allgood-Merten, Lewinsohn, & Hops, 1990; Benton et al., 2004; Camatta & Nagoshi, 1995; Cooney & Nonnamaker, 1992; Cotton, 1979; Demers et al., 2002; Dreer et al., 2004; Gisske & Adams, 1988; Grant et al., 1994; Harford, Wechsler, & Seibring, 2002; Johnson & Pandina, 2000; Jones et al., 1992; Lo, 1995; O'Malley & Johnston, 2002; Perkins & Berkowitz, 1986; Pullen, 1994; Sax, 1997; Sher, Walitzer, Wood, & Brent, 1991; Woltersdorf, 1997; Zucker et al., 1995). However, Demers et al. (2002) concluded that "the relationship between the frequency of drinking and the consumption per occasion is stronger for female than for male students" (p. 421). Moreover, recent changes in some methodologies have demonstrated that the gender gap may be smaller than typically reported when considering body weight and alcohol metabolism. Furthermore, as previously mentioned, after an analysis of the odds ratios of negative consequences with binge drinking, Wechsler, Dowdall, Davenport, and Rimm (1995) suggested changing the binge drinking criteria in women from 5 drinks (the same standard as men) to 4 drinks in a row per sitting for a more equitable standard. The change makes it more likely that binge drinking women will be accurately identified rather than be underreported in studies. Lange and Voas (2001) studied 18- to 33-year-old pedestrians returning from a night of drinking in Tijuana, Mexico. The authors found that

men and women had similar levels of mean blood alcohol concentration. Although females may be consuming less quantities of alcohol than males, they nevertheless may be drinking to similar levels of intoxication (Korcuska & Thombs, 2003) or possibly higher levels of intoxication and drinking problems (Fitzgerald, Zucker, Mun, Puttler, & Wong, 2002; Waite-O'Brien, 1992).

Space and location influences. Additionally, the ecological consideration of location of dwelling place and where one drinks alcohol has an effect on consumption. College students who live away from their parents or are campus residents are more likely to consume alcohol (Cooney & Nonnamaker, 1992; Demers et al., 2002; Harford et al., 2002; Jones et al., 1992). Additionally, Harford et al. found that compared to women, men are more likely to attend dorm parties and off-campus parties and are less likely to attend off-campus bars. Interestingly, although a lower proportion of students attended fraternity/sorority parties than attended off-campus parties and bars, higher proportions of students attending fraternity/sorority parties chose to drink. Similarly, there is an incredible prevalence of binging for those who live in fraternity/sorority houses (83.4% in 1993 decreasing to 75.4% in 2001, see Wechsler, Lee, Kuo, et al., 2002).

Family of origin influences. Fifteen percent of the nation's children under 17 are estimated to live in a household with at least one adult with an abuse or dependence diagnosis over the past year (Grant, 2000; Zucker & Wong, in press). Studies indicate that approximately one-fifth (Rodney, 1995) to one-third (Landers & Hollingdale, 1988) of college students have at least one alcoholic parent.

Although most children of alcoholics (COAs) will be resilient to the risks of being raised in an alcoholic family (O'Sullivan, 1992), many will experience a variety of

consequences. Ellis, Zucker, and Fitzgerald (1997) presented the importance of considering the roles of alcohol-specific and non-alcohol-specific risk factors on the lives of COAs. Research on non-alcohol-specific risk factors for COAs has revealed evidence of a long list of issues that include: learning disabilities, poorer intellectual functioning, conduct disorders, eating disorders, antisocial behavior, truancy, stress-related illnesses, anxiety, depression, increased rates of psychopathology, suicide attempts, inability to trust, denial of or inability to express feelings, an excessive sense of responsibility, poor communication, difficulty developing peer relationships, greater involvement in other drug use, experiencing sexual abuse, experiencing emotional neglect, experiencing family violence and conflict, having less cohesive families, greater levels of social isolation, having to undertake a greater number of parenting responsibilities, having greater parental marital instability, having parents with impaired cognitive abilities and comorbid psychopathology, and marrying someone who is an alcoholic (Black, Bucky, & Wilde-Padilla, 1986; Ellis et al., 1997; Garbarino & Strange, 1993; Hewes & Janikowski, 1998; Jones & Kinnick, 1995; Lawson, 1992; Marlatt et al., 1998; O'Sullivan, 1992; Poon, Ellis, Fitzgerald, & Zucker, 2000; Rodney, 1995; Sher, Gershuny, Peterson, & Raskin, 1997; Yeatman, Bogart, Geer, & Sirridge, 1994; Zucker et al., 2000).

A strong alcohol-specific consequence of being a COA also exists, as there is a relationship of COAs having drinking patterns closely related to their parents and greater alcohol usage than non-COAs (Ellis et al., 1997; Gisske & Adams, 1988; Gotham, Sher, & Wood, 2003; Jones & Kinnick, 1995; Yeatman et al., 1994), though this relationship was not supported by Engs (1990). This relationship also appears to transcend ethnicities as the transmission has also been illustrated in a sample of African American students

(Rodney, 1995). Although the prevalence rates have some variability across studies, in a seminal review of 39 studies of COAs, Cotton (1979) found that alcoholics are more likely to have an alcoholic relative than nonalcoholics and that about 30% of any sample of alcoholics will have at least one alcoholic parent.

A number of studies focus on the genetic heritability of alcoholism, however, some of the psychosocial variance related to multigenerational transmission of alcoholism in families has been described to be a learned behavior through modeling parental behaviors and adopting respective expectations of alcohol and its use (Ellis et al., 1997).

Family of origin influences through a Bowenian lens. Reports demonstrate that COAs have less communication with their parents, have witnessed more family arguments (Sher et al., 1991), and have less social support and less healthy family environments (Rodney, 1995). From a Bowenian framework, this lack of support and inability to tolerate anxiety and manage conflict results in a need to triangle an outside entity in order to diffuse interpersonal conflicts. Perhaps the triangled item of choice in many alcoholic families is alcohol itself, which then is modeled for future generations to observe as an appropriate coping mechanism. In the case of alcoholic families, the ability to maintain a differentiated sense-of-self would seem to be stymied by the typically inadequate responsive caregiving, retarded development of affect regulation, and poor self-esteem maintenance found in many COAs (Bladt, 2002). Furthermore, Clair and Genest (1987) found that COAs tended to use more emotion-focused, rather than problem-focused, strategies in coping with their problems. As poorly differentiated individuals lack the ability to maintain an objective presence in the face of anxiety, they

become more emotionally reactive and may have a need to triangle a person/object to alleviate their anxiety. COAs may be more apt to triangle alcohol as they having witnessed and adopted their parents' coping strategies and attitudes of alcohol consumption in their own lives (Archambault, 1992; Howard, 1992).

Ellis et al. (1997) surmise that increased conflict in alcoholic families may be the result of the combined poorer problem-solving skills and communication that are prevalent in so many of these families. This corresponds with Bowen's theory that a lack of a differentiated position in families will result in poorer conflict management and an inability to remain objective in the face of anxiety or stress. Similarly, Garbarino and Strange (1993) found that adult COAs had less family expressiveness and high degrees of family conflict. The inability to maintain a differentiated sense of self is illustrated in their finding that COAs have difficulty expressing or identifying feelings.

Karwacki and Bradley (1996) examined correlations between drinking motivation, coping responses, goal expectations, and family-of-origin drinking problems with college students' alcohol use. Their findings lend support to social learning theory and conclude that family models make significant contributions to excessive alcohol use in college students. Social learning theory is consistent with a Bowenian lens as children may observe their parents, with low levels of differentiation, triangle alcohol in order to shift the existing tension/anxiety away from the marital dyad. In turn, these children would then choose alcohol as a triangle to aid in their own anxiety tolerance.

It is prudent to also consider how the concept of differentiation can be a useful lens through which to view familial influence on triangling alcohol for college students who may not necessarily be COAs. Haemmerlie, Steen, and Benedicto (1994)

investigated the role of conflictual independence (CI), adjustment to college, and consumption of alcohol by college students. The construct of conflictual independence was measured from the Psychological Separation Inventory, which purports to delineate having a relationship with one's parents that is free from excessive guilt, anxiety, anger, and resentment--all key Bowen concepts. A significant main effect was found for CI-Mother, as subjects with high drinking had lower CI-Mother scores than did subjects with low drinking scores. There were no significant findings for CI-Father or CI-Total. Additionally, when compared to how well students were adjusting to college, a significant positive relationship between CI-Total was found with the overall scores of Student Adaptation to College Questionnaire. A significant correlation was also found between CI-Mother and CI-Father and the personal-emotional scores on the Student Adaptation to College Questionnaire. The authors concluded that lower CI from both parents was linked to the use of alcohol as a means to relieve emotional pressure. This relationship supports the concept of differentiation, as students with lower levels of conflictual independence were more likely to triangle alcohol as a way to tolerate their emotional anxiety.

Role of anxiety and stress on drinking. As previously mentioned, the consumption of alcohol in the student population does not remain static throughout their academic career. Marlatt et al. (1998) report that expectancies for alcohol use may mediate peer and normative influences at this time. Expectancies of alcohol have been reported to have a mediating relationship in how COAs internalize parental drinking with their decisions about drinking (Reese, Chassin, & Molina, 1994). However, Ellis et al. (1997) state that little is known about the formation of positive or negative expectancies with the severity

of parental alcoholism. Nonetheless, multiple studies have looked at the role of alcohol consumption related to anxiety.

Essential to the framework of Bowen Theory is how an individual or dyad, acts in the face of anxiety. It is especially prudent to consider the role of anxiety tolerance for college students as Jones et al. (1992) state that perceived stress is greater for college students compared to their same age peers who are not enrolled in college. Bartlett (2002) reported on the adjustment of first year college students and showed 44.3% of students felt overwhelmed by the demands college had on their time (compared to 31.6% at the beginning of the year), 16% reported depressive symptoms (compared to 8.2%), and 44.9% rated their emotional health as being above average (compared to 52.4%). These reports indicate a trend for maladjustment for a large portion of students. Students with low levels of problem-solving abilities may struggle with managing the unique stressors of college including handling situations when consuming alcohol, such as knowing when to stop drinking, drinking and driving, and binge drinking (Dreer et al., 2004). Williams and Kleinfelter (1989) found that students possessing greater confidence in their problem-solving skills reported less use of alcohol to escape responsibilities and to cope with negative emotions. This finding, which highlights an inverse relationship between increased confidence and decreased alcohol use, supports Bowen's theory of triangling in order to alleviate emotional overload.

McCormack (1996) asked students to indicate if it was acceptable for a student to use alcohol for the following situations: academic pressure, financial problems, family problems, peer pressure, enhance sexual pleasure, at a party, on a date, to relax, and when under stress in general. After comparing this to a 1990 survey with a similar list, the

author found an increased percentage (23% to 36%) of students advocated drinking when under stress. Additionally, Lecci, MacLean, and Croteau (2002) found that drinking to cope occurred to help reduce the level of perceived distress toward attaining life goals. Other studies have found small effects (Camatta & Nagoshi, 1995) or no significant relationship (Jones et al., 1992) for alcohol consumption and stress, concluding that college students may be drinking more for socialization than for the alleviation of stress.

Specific to the role of triangling alcohol as a means to tolerate anxiety are studies that focus on tension reduction theory (TRT). The premise of TRT is that alcohol is used to reduce stressful states. Kushner et al. (1994) tested the prediction that this theory would be evidenced with a strong correlation between anxiety and alcohol use as they related to alcohol outcome expectancies. Their sample showed females scored significantly higher in interpersonal sensitivity and general anxiety, while males were significantly higher on the quantity/frequency of alcohol consumption and heavy drinking composite. Men and women did not differ in terms of their perceived levels of alcohol tension reduction expectancies. Additionally, males with higher tension reduction expectancies had stronger associations between level of anxiety and alcohol consumption.

Similarly, Pullen (1994) sought to find the relationships between alcohol abuse and psychological/demographic variables, including anxiety. The author found that students with high state anxiety abused alcohol more than students with low state anxiety. Similarly, those with high trait anxiety, compared to low trait anxiety, also abused alcohol more significantly. Students who reported abusing alcohol were more likely to be from alcoholic families. Finally, the model that explained 59% of the variance in alcohol

abuse contained the following predictive variables: family abuse of alcohol, depression, low levels of self-esteem, state anxiety, assertiveness, and having a lower grade point average.

In a longitudinal study of Canadian students, Sadava and Pak (1993) investigated the conditions under which stress can lead to substance abuse. Their findings showed that alcohol use was related to stress, external locus of control, coping functions of drinking, perceived support or sanctions for alcohol use, and the absence of social support.

Stewart, Karp, Pihl, and Peterson (1997) conducted two studies that examined students' use of substances in response to anxiety sensitivity, which was defined as perceiving symptoms of anxiety as signs of catastrophic consequence. The first study focused on substance use in general (non-specific to alcohol) and found female substance users had a positive correlation between anxiety sensitivity scores and the use of alcohol/drugs for reasons related to anxiety, while males also had non-significant positive correlations. The second study focused on specific substances and found a significant positive correlation among female alcohol users, regarding anxiety sensitivity scores and drinking primarily for coping reasons. A similar pattern was found for men, but it did not reach statistical significance.

In studying the various expectations students had towards alcohol consumption, Sher, Walitzer, Wood, and Brent (1991) found that men had greater expectations for activity enhancement, performance enhancement, and social lubrication with their drinking than did women. Additionally, COAs reported stronger tension reduction, performance enhancement, and social lubrication expectations than did non-COAs. Moreover, students were found to drink more frequently if they had a greater motivation

to drink in order to increase comfort with others and for those who supported drinking in social situations (Williams & Kleinfelter, 1989).

Although these studies showed a significant relationship, Noel and Cohen (1997) did not find a significant relationship between stress and alcohol consumption. The authors assessed how college students reacted to a specific time of stress by measuring self-reported substance use during the week before exams and during a typical week in the semester. Students reported drinking a lesser average of Standard Drinks per day during the week before exams (1.06) compared to a typical week (1.48). This decrease contradicts tension reduction theory by illustrating a negative correlation between drinking and anxiety. The authors speculate that studying, which requires sobriety, serves as an effective technique for managing the anxiety related to exam performance.

The increasingly large population of college students and their families will undoubtedly face new stressors and anxieties throughout their academic careers. The literature implies individuals with high levels of differentiation are more successful at coping with college adjustment stressors. Johnson and Pandina (2000) found that students who used avoidant strategies in the face of stress had greater levels of alcohol consumption than those with active coping styles.

It is crucial to discover how the differentiation process interacts with levels of anxiety and how alcohol is triangled as a dysfunctional coping strategy to assist college students and their families with this life period. Specifically, Goluke, Landeen, and Meadows (1983) detail the processes through which coping to stressors via alcohol can eventually snowball into alcoholism. Although periodic use of alcohol to alleviate stress may not be a risk factor for developing alcoholism, the gateway to addiction may be more

prevalent for students with low levels of differentiation, as they may become more reliant on using alcohol as they have a restricted ability to react objectively to stressors.

Perceptions of others' alcohol use. Multiple studies have illustrated that the perceptions students have towards the amount of alcohol their peers drink is related to the amount that they themselves drink (Clapp & McDonnell, 2000; Demers et al., 2002; Korcuska & Thombs, 2003; Perkins & Berkowitz, 1986; Perkins & Wechsler, 1996). Perkins and Wechsler found that if a student believes normative student consumption of alcohol is in heavy amounts, they are more likely to become involved in alcohol abuse. Yet if a student personally feels very strongly about abstinence or restrained drinking, then perception of other students' drinking has very little effect. This dynamic relates to Bowen's notion of having a stable sense-of-self, as students choose behaviors based on prevailing group norms and dogma, rather than from their own convictions.

Unfortunately, many students overestimate the amount of alcohol their friends drink (Korcuska & Thombs, 2003; Perkins & Berkowitz, 1986; Perkins & Wechsler, 1996). Additionally, there seems to be a tendency to overestimate the amount of alcohol students consume the more removed the comparison group is from the student. For example, Korcuska and Thombs illustrated that students perceive their same-sex peers to consume more alcohol than they do themselves and that the average same-sex student consumes more than their same-sex peers. An immediate consequence of maintaining this misperception is the greater tendency to consume more alcohol relative to the perceived norm. For example, students that binge drink have been show to report higher perceptions of fellow student alcohol consumption (Dreer et al., 2004). This highlights the notion that even perceptions of one's environment have a strong ecological influence on individuals.

Although there does not appear to be gender-based differences in levels of perceived alcohol consumption (Demers et al., 2002), the effect of having a higher perception related to greater alcohol consumption has been reported to be stronger in men (Korcuska & Thombs, 2003). There is also evidence that drinking behaviors of males and females may be quite similar as there is a stronger association between drinking behaviors to perceived same-sex peer norms than differences in consumption based solely on gender (Fromme & Ruela, 1994).

Fromme and Ruela (1994) studied the perceptions and actual alcohol use of undergraduate students along with their parents and friends. The authors found that the quantity of alcohol students consumed per drinking occasion was positively correlated to the actual quantity mothers' consumed per drinking occasion, the students' perceptions of the mothers' alcohol consumption, the students' perceptions of fathers' alcohol consumption, but not to the actual quantity of alcohol per drinking occasion. Positive correlations were also found between students' consumption and their friends' actual quantity of alcohol consumed per drinking occasion, frequency of days consuming alcohol per week, and the total amount of alcohol consumed per week. Similar to other research, positive correlations were also found for students' actual use and their perceptions of their friends' use for actual quantity of alcohol consumed per drinking occasion, frequency of days consuming alcohol per week, and the total amount of alcohol consumed per week. These findings indicate both direct (actual use) and indirect (perceptions) effects for student alcohol consumption. This suggests that important individuals are modeling alcohol use, and that students' perceptions regarding alcohol consumption of important others is influential in their own use of alcohol. In terms of

Bowen Theory, the perceptions college students have about the normative use of alcohol by family and friends may make it more likely that they choose alcohol as a means to diffuse anxiety (a triangle) than some other method (i.e., other illicit substances).

Summary

Although no studies to date have directly examined the relationship between Bowen's theory of differentiation and alcohol use, inferences related to some of the fundamental principles have been demonstrated in the literature. Evidence has been presented to support the proposed model of study. Additionally, the literature also suggests that effects of COA status (modeling triangle behaviors via alcohol consumption) and perceptions of others' use (the normative acceptance to triangle alcohol as opposed to other substances) and expectations of alcohol reducing anxiety (triangles) will influence the relationship between differentiation and alcohol consumption and will also provide significant paths in the proposed model.

Chapter Three

Chapter Three provides conceptual and operational definitions of the variables studied, along with the research objectives and hypotheses that described the predicted relationship of these variables. Additionally, the sampling procedure, data collection, and the measurements used will be described.

Methods

Conceptual and Operational Definitions

Dependent variables.

- General alcohol consumption

  Conceptualization: The amount of alcoholic drinks generally consumed by the student.

  Operationalization: This was acquired through a self-report measure. The total amount of general alcohol consumption was the product of the number of times the student drank in the past 30 days and the average amount of alcohol consumed per occasion. One drink was equal to a 12-oz beer, a 4-oz glass of wine, a 12-oz wine cooler, or a 1.25-oz shot of liquor, either straight or in a mixed drink.

- Binge drinking

  Conceptualization: Binge drinking is a behavior in which males have 5 or more alcoholic drinks per occasion and females have 4 or more.

  Operationalization: This was acquired through self-report. The frequency of binge drinking consisted of the number of times over the past 2 weeks that the student consumed 5 or more (if male, otherwise 4 or

more) drinks per occasion. One drink was equal to a 12-oz beer, a 4-oz glass of wine, a 12-oz wine cooler, or a 1.25-oz shot of liquor, either straight or in a mixed drink.

Independent variables.

- Differentiation

  Conceptualization: An individual's emotional reactivity, ability to take an "I" position, their degree of emotional cutoff from their family-of-origin, and their degree of fusion with others in the face of anxiety/stress.

  Operationalization: Measured by the Differentiation of Self Inventory–Revised. The DSI-R is a 46 item, six-point Likert scale with increasing scores reflecting higher levels of differentiation.

- Gender

  Operationalization: Measured by self-report.

- Age

  Operationalization: Measured by self-report. Participation was restricted to those who were between the ages of 18-22.

- Ethnicity/Race

  Operationalization: Measured by self-report.

- BMI

  Conceptualization: An index used in the medical community for assessing if an individual is within normal or obese ranges will be used as an estimate for the body's ability to metabolize alcohol.

Operationalization: Height and weight was measured by self-report. The value of BMI was derived by dividing weight in pounds by height in inches squared and multiplying that product by 703 [BMI = (lb/in^2)703] (Centers for Disease Control and Prevention, 2004).

Moderator variables.

- Parental alcoholism

  Conceptualization: The student's feelings or perceptions that his mother or father was an alcoholic.

  Operationalization: Measured by an investigator created gender-specific version of the Children of Alcoholics Screening Test. Both the mother (M-CAST) and father (F-CAST) versions consisted of 29 yes/no questions. The presence of 6 positive responses indicated the presence of an alcoholic parent.

- Perceptions of normative student drinking

  Conceptualization: The amount of alcohol believed to be consumed by the average student at MSU.

  Operationalization: This was acquired through self-report. The total amount of general alcohol perceived to be consumed was the product of what the participant believed to be the number of times the average student drank in the past month and the average amount of alcohol the average student consumed per occasion. One drink was equal to a 12-oz beer, a 4-oz glass of wine, a 12-oz wine cooler, or a 1.25-oz shot of liquor, either straight or in a mixed drink.

- Perceptions of best friend's use

  Conceptualization: The amount of alcohol believed to be consumed by their best friend attending MSU.

  Operationalization: This was acquired through self-report. The total amount of general alcohol perceived to be consumed was the product of what the participant believed to be the number of times her best friend at MSU drank in the past month and the average amount of alcohol consumed per occasion. One drink was equal to a 12-oz beer, a 4-oz glass of wine, a 12-oz wine cooler, or a 1.25-oz shot of liquor, either straight or in a mixed drink.

- Expectations of alcohol as a tension reducer

  Conceptualization: The student's belief that consuming alcohol will relieve tension and anxiety.

  Operationalization: The Tension reduction subscale was from Kushner et al. (1998). Higher scores on the 9 item, 5-point Likert scale, indicated greater expectations of tension reduction.

- Expectations of alcohol as a social lubricant

  Conceptualization: The student's belief that consuming alcohol will aid in social interactions.

  Operationalization: The social lubricant subscale is from Kushner et al. (1998). Higher scores on the 8 item, 5-point Likert scale, indicated greater expectations of social lubrication.

Control variables.

- Traditional student

  Conceptualization: Participating students will be within the traditional age range of starting college after high school and graduating within five years.

  Operationalization: As previously mentioned, participation was restricted to those who were between the ages of 18-22. Screened for by listing this as a restriction on the online version and verbally when students were recruited in classrooms for paper-and-pencil versions.

- Student is a U.S. citizen

  Conceptualization: The student must be a U.S. citizen whose family lives in the U.S.

  Operationalization: Screened for by listing this as a restriction on the online version and verbally when students were recruited in classrooms for paper-and-pencil versions.

Research Objectives

The overall objective of this research was to investigate the relationship between levels of differentiation and alcohol use for undergraduate students. In order to reach this objective it was necessary to understand the interactions between differentiation and moderating variables. The following research objectives began with the goal of gaining knowledge of the relationship between differentiation and alcohol use and then proceeded with understanding the interaction relationship between differentiation and the potential moderating variables.

Differentiation and General Alcohol Use and Binge Drinking

1. To identify the relationship with differentiation and general alcohol use and binge drinking.

Four Factors of the DSI-R (Emotional Reactivity, "I" Position, Emotional Cutoff, And Fusion with Others) with General Alcohol Use and Binge Drinking

2. To identify the relationship of the four factors of the DSI-R with general alcohol and binge drinking.

Moderating Effects on the Relationship between Differentiation and General Alcohol Use and Binge Drinking for College Students

3. To identify the moderating effects of COA status on the relationship between differentiation and general alcohol use and binge drinking.
4. To identify the moderating effects of perceptions of the average MSU student's alcohol use on the relationship between differentiation and general alcohol use and binge drinking.
5. To identify the moderating effects of perceptions of best friend at MSU's alcohol use on the relationship between differentiation and general alcohol use and binge drinking.
6. To identify the moderating effects of expectations of alcohol serving as a tension reducer on the relationship between differentiation and general alcohol use and binge drinking.

7. To identify the moderating effects of expectations of alcohol serving as a social lubricant on the relationship between differentiation and general alcohol use and binge drinking.

Hypotheses

The following hypotheses of alcohol consumption were predicted based upon the Bowenian concepts of differentiation and triangling and the literature related to COA status, perceptions of alcohol use, and expectations of alcohol use as a tension reducer or a social lubricant.

Differentiation and General Alcohol Use and Binge Drinking

Ha1: It was expected that college students with lower levels of differentiation would be more likely to have greater amounts of general alcohol and greater amounts of binge drinking consumption when controlling for BMI and age.

Four Factors of the DSI-R (Emotional Reactivity, "I" Position, Emotional Cutoff, and Fusion with Others) with General Alcohol Use and Binge Drinking

Ha2: It was expected that college students with lower levels of the four factors of the DSI-R would be more likely to have greater amounts of general alcohol consumption and greater levels of binge drinking when controlling for BMI and age. Further it was predicted that the interpersonal subscales (emotional cutoff and fusion with others) would provide the greatest amount of explained variance in alcohol use for males as it was thought they would have a greater tendency to drink for social reasons. Additionally, it was predicted that the intrapersonal subscales (emotional reactivity and "I" position) would provide the greatest amount of explained variance in

alcohol use for females as it was thought they would have a greater tendency to drink due to problem-solving and for coping reasons.

Moderating Effects on the Relationship between Differentiation and General Alcohol Use and Binge Drinking

Ha3: It was predicted that having an alcoholic parent would have a moderating effect on the relationship between differentiation and general alcohol use and binge drinking. Students that possessed lower levels of differentiation would have greater amounts of alcohol consumption to the extent that they had a greater number of alcoholic parents. It was thought COAs would have a history of parents modeling alcohol use as a triangle to tolerate anxiety.

Ha4: Perceptions of the average MSU student's alcohol use would have a moderating effect on the relationship between differentiation and general alcohol use and binge drinking. Students who had lower levels of differentiation would have greater amounts of alcohol consumption to the extent that they had greater amounts of perceived student use, presenting as a normative means by which to diffuse anxiety.

Ha5: Perceptions of student's best friend at MSU's alcohol use would have a moderating effect on the relationship between differentiation and general alcohol use and binge drinking. Students who had lower levels of differentiation would have greater amounts of alcohol consumption to the extent that they had greater amounts of perceived best friend use, presenting as a normative means to diffuse anxiety.

Ha6: Expectations of alcohol serving as a tension reducer would have a moderating effect on the relationship between differentiation and general alcohol use and binge drinking. Students who had lower levels of differentiation would have greater amounts of alcohol consumption to the extent that they had higher expectations that alcohol would alleviate anxiety.

Ha7: Expectations of alcohol serving as a social lubricant would have a moderating effect on the relationship between differentiation and general alcohol use and binge drinking. Students who had lower levels of differentiation would have greater amounts of alcohol consumption to the extent that they had higher expectations that alcohol would serve as a social lubricant as a means to help tolerate relational anxiety.

Decision Rule: A chance probability of .05 or less ($p < .05$) was required to reject the null hypotheses.

Research Design

Individual undergraduate college students were the unit of analysis for this cross-sectional, survey research. The dependent variables studied were college student alcohol consumption (averaged Quantity X Frequency over a 30 day period) and frequency of binge drinking (over a 2 week period). A minimum of 500 students were to be sampled as this number would exceed Cohen's (1992) criteria for a medium effect size with an alpha value of .05 if there were a need to analyze males and females separately.

Measures

Differentiation

The Differentiation of Self Inventory-Revised (DSI-R) measured the degree of differentiation for college students (see Appendix A). The DSI-R was chosen as it is one of the few self-report scales that broadly cover the construct of differentiation. The original DSI scale (Skowron & Friedlander, 1998) was a 43 item, six-point Likert instrument consisting of four subscales: Emotional Reactivity (ER), I Position (IP), Emotional Cutoff (EC), and Fusion with Others (FO). Estimates of internal consistency reliability using Cronbach's alpha yielded high values for the DSI full scale (α = .88) and each of the subscales (ER α = .84, IP α = .83, EC α = .82, FO α = .74). The DSI was revised to improve the psychometrics of the Fusion with Others (FO) subscale (Skowron & Schmitt, 2003). The revised FO scale changed from 9 items to 12, resulting in a 46 item scale. The internal consistency reliabilities improved for both the FO subscale (α = .86) and the DSI-R full-scale (α = .92). Each item in the DSI-R presents a 6-point Likert scale ranging from "not at all true of me" to "very true of me." After reversing the responses on select questions, scores on the subscales and total DSI-R are obtained by summing the respective raw scores and dividing by the total number of items per scale. For example, the DSI-R full-scale is obtained by summing all of the values and dividing by 46, with scores reflect a range of 1 (low differentiation) to 6 (higher differentiation).

The DSI and DSI-R were originally tested with a sample that was 25-years old and older. After analyzing the four-factor structure with the college students in this study, three of the items (#11 from the "I" Position subscale, #32 from the Emotional Cutoff subscale, and #38 from the Emotional Reactivity subscale), were omitted in order to

maintain a significant four-factor structure for both males and females when analyzed separately (see Appendix B for detailed analysis of the DSI-R with college students). The full-scale and subscale Cronbach's alpha values remained similar to the earlier studies (ER α = .86; IP α = .77; EC α = .80; FO α = .69; DSI-R α = .90), with the exception of the FO subscale which was .17 lower than the Skowron & Schmitt (2003) sample.

Parental History of Alcohol Use

A minimally altered version of the Children of Alcoholics Screening Test (CAST) (see Appendix C for the original CAST) was used to assess parental alcoholism. The CAST is a 30-item instrument that asks about perceptions regarding parental alcohol consumption. The total number of questions to which subjects reply "yes," yields a total score that can range from 0 to 30. Scores of six or more indicate the subject is likely the child of an alcoholic (Jones, 1983; Kelly & Myers, 1996; Yeatman et al., 1994). The CAST has demonstrated high alpha coefficients with studies of randomly selected adolescents (0.95 - males, 0.97 - females, and 0.96 - combined gender, Dinning & Berk, 1989) as well as for adolescents who were selected from intact alcoholic families (0.90 and 0.88, Clair & Genest, 1992). Charland and Côté (1992) found an extremely high test-retest reliability (k = .83) and concurrent validity with the Structured Clinical Interview for the DSM-III-R (SCID) and high CAST scores (k = .78). Additionally, Charland and Côté's study with 376 college students illustrated that the CAST yielded a false-negative rate of 9.3% and a false-positive rate of 1.2%. In a study of adolescent offspring of alcoholic fathers, Clair and Genest (2002) found test-retest reliability coefficient of .88 after a period of 8 weeks.

As this study is interested in examining the effects of the number of alcoholic parents, the CAST was reworded to create a specific version for the mother (M-CAST, see Appendix D) and the father (F-CAST, see Appendix E). The revised inventory replaced the CAST's terminology of "a parent" used throughout the inventory to "mother" and "father" respectively. There are two questions on the CAST related to specific parent use ("Did you ever think your father was an alcoholic?"/"Did you ever think your mother was an alcoholic?"). The question for the father was omitted on the M-CAST and the question for the mother was omitted on the F-CAST. The creation of separate inventories afforded a more specific analysis for perceptions in which the mother, the father, or both parents had a history with alcoholism. The total number of alcoholic parents (0, 1, or 2) was indicated by the presence of six positive responses on the M- and F-CASTs.

General Alcohol Use

Subjects were asked about their alcohol use over the past month in terms of frequency and quantity (see Appendix F, questions 18 and 19). Subjects reported how many times they drank in the past 30 days and the average amount of drinks they consumed per occasion. One drink was defined as a 12-oz beer, a 4-oz glass of wine, a 12-oz wine cooler, or a 1.25-oz shot of liquor, either straight or in a mixed drink. A total average of drinks-per-month was calculated by multiplying the number of days by the average number of drinks.

Binge Drinking

Male subjects were asked on how many occasions over the past 2 weeks they consumed 5 or more beverages, while females were asked on how many occasions they

consumed 4 or more beverages (see Appendix F, questions 20 and 21). These numbers reflected criteria for binge drinking according to Wechsler, Lee, Nelson, et al. (1991).

Expectancies of Alcohol as a Tension Reducer and Social Lubricant

Kushner et al.'s (1994) measure of alcohol outcome expectancies was used to evaluate motivation for drinking (see Appendix G). Sher et al. created the scale after being dissatisfied with other expectation measures that solely used dichotomous criteria by including questions from various measures into 12 a priori domains and running a factor analysis to streamline their scale. The current scale consists of 35 questions using a 5-point scale that load on the following four factors: Tension Reduction (9 items; questions 1-9), Social Lubrication (8 items; questions 10-17), Performance Enhancement (9 items), and Activity Enhancement (9 items), where higher sums of scores reflect greater prevalence of respective expectations. The subscales have a common variance ranging from .54 to .70 (Kushner et al., 1994). For the purposes of this study, the Tension Reduction ($\alpha = .89$) and Social Lubrication ($\alpha = .88$) subscales were used in the analyses.

Perception of the Average Michigan State Student's Alcohol Use

Subjects were asked how much alcohol over the past month in terms of frequency and quantity they believed the average Michigan State student consumed (see Appendix F, questions 24 and 25). A total average of drinks-per-month was calculated by multiplying the number of days by the average number of drinks.

Perception of Their Best Friend at Michigan State's Alcohol Use

Subjects were asked about how much alcohol over the past month in terms of frequency and quantity they believed their best friend at Michigan State consumed (see

Appendix E, questions 28 and 29). A total average of drinks-per-month was calculated by multiplying the number of days by the average number of drinks.

Demographic Information

In addition to the measurements, subjects completed a demographic sheet recording their gender, age, race, grade level, body mass index, and living location (see Appendix F).

Sample

It was originally proposed that 500 subjects would be recruited from the Department of Psychology's Human Subjects Pool to voluntarily complete the battery online for extra credit in their respective courses. Due to a high number of studies taking place during the semester, a recruiting restriction was set by the department and permission was given to recruit 162 subjects. In order to meet Cohen's (1992) criteria for a medium effect size, undergraduate students were then recruited from Family and Child Ecology (FCE) undergraduate courses to anonymously complete paper-and-pencil versions of the battery. Students were instructed that they could only complete the measure once, so that if they had completed it from another class they were told not to complete another one. As a recruiting incentive, six of the paper-and-pencil subjects were randomly selected to win one of six $50 prizes. After recruiting subjects from the Human Subjects Pool and FCE courses, there was a shortage of males so additional subjects were recruited from two courses in the Department of Computer Science. At the same time as the Computer Science students were being recruited, the restrictions imposed by the Human Subjects Pool were lifted and additional subjects were recruited online. All subjects read and agreed with the consent form prior to participation (see Appendix H).

Additionally, debriefing information regarding the nature of the study and instructions for contacting the researcher and the University Committee on Research Involving Human Subjects was provided (see Appendix I). Responses to all measures were anonymous.

The proposal to University Committee on Research Involving Human Subjects (UCRIHS) stated that efforts would be made to keep the total number of subjects recruited to be around the range of 500 students. The data from the Computer Science courses were never entered into the data set as they were the last to be recruited and their paper-and-pencil forms were returned after the total number of subjects was extending beyond the target range. Although the student responses were not entered into the data set, their names were entered into the $50 prize lottery. All data collected from the FCE courses were entered into the data set. Since it was a goal to recruit an approximately equal number of males and females, the second wave of females recruited from the Human Subjects Pool were omitted from the data set as the maximum number of female subject had already been reached.

A total of 447 subjects (246 females, 201 males) were analyzed for this study after omitting 39 subjects for missing data, 23 for having impossible or incongruent information (e.g., what they reported their gender to be differed from the gender-specific question related to binge drinking, or 17 days of binge drinking over the past 2 weeks), and 13 for being outside of the 18-22-year old age range, The final sample exceeded Cohen's (1992) criteria for a medium effect size. A total of 256 individuals (102 females, 154 males) completed the online version of the battery via the Human Subjects Pool and 191 students (144 females, 47 males) from six FCE courses completed the paper-and-pencil version of the battery.

Data Analysis

Once data entry into SPSS 13.0 was completed, the data were cleaned making sure all values were within the appropriate ranges, omitting cases for missing data, and examining outliers prior to running analyses.

Examination of the frequency distribution of general alcohol use (GAU) and binge drinking outcome variables indicated the data were both positively skewed and were subsequently transformed into categorical variables (see Appendix J). Males and females were tested for differences in alcohol consumption with the respective categories. The chi-square test of association indicated that males and females were different in binge drinking behavior and therefore were analyzed separately for the remaining analyses in order to avoid interpreting possible three-way interaction effects (see Appendix K).

All of the variables were centered around their means prior to running the regressions in order to minimize multicollinearity. Following the variance inflation factor protocol (von Eye & Schuster, 1998), diagnosis for multicollinearity was implemented prior to all regression analyses by regressing all of the predictors in the respective models onto each other (see Appendix K). There were no issues of multicollinearity discovered between the variables.

The hypotheses were tested through a series of logistic regression analyses. In order for the differentiation and four factor models to be considered significant, the overall model had to be significant ($p < .05$, for example see Equation 1) and the respective variables had to significantly alter the odds of drinking classification (Wald statistic was significant at $p < .05$), regardless of the magnitude of the odds ratio. As a

guide for the magnitude of effect size, Hopkins (2002) reports that an odds ratio of 1.50 is considered small, 3.5 is moderate and 9.0 is large.

$$GAU = b_0 + b_1\text{Differentiation} + b_2\text{BMI} + b_3\text{Age} \quad (1)$$

When testing the moderating hypotheses the overall models and individual interaction terms had to be significant. Additionally, in order to preserve the most parsimonious model, the Interaction Model (for example see Equation 3) had to show a significant block improvement over the Additive Model (for example see Equation 2) or the Basic Model (if the Additive Model did not show a significant improvement over the Basic Model) to justify adding additional variables.

$$GAU = b_0 + b_1\text{Differentiation} + b_2\text{BMI} + b_3\text{Age} + b_4\text{COA} \quad (2)$$

$$GAU = b_0 + b_1\text{Differentiation} + b_2\text{BMI} + b_3\text{Age} + b_4\text{COA} + b_5(\text{Differentiation X COA}) \quad (3)$$

Logistic regression does not possess an equivalent to the OLS R^2. Although, pseudo R^2 estimates are available, they do not describe the proportion of variance explained by the predictors nor do they compare directly to other R^2 measures. The Cox and Snell R^2 ($R^2_{\text{Cox \& Snell}}$) and Nagelkerke's R^2 ($R^2_{\text{Nagelkerke}}$) are provided. The $R^2_{\text{Cox \& Snell}}$ attempts to create a value similar to the OLS R^2 but the maximum range is typically below 1, while

the $R^2_{\text{Nagelkerke}}$ manipulates the $R^2_{\text{Cox \& Snell}}$ so that the value ranges from 0 to 1. Both R^2 are provided for the significant analyses.

Chapter Four presents the results of the logistic regressions as they relate to the respective hypotheses. Complete analyses, including non-significant results, can be found in Appendices L and M.

Chapter Four

This chapter presents the results of the logistic regression analyses for general alcohol use (GAU) and binge drinking as they relate to the specific hypotheses. Only results specifically related to the hypotheses are presented. For a more detailed presentation of the logistic regressions, including the main effects found in the Additive Models, see Appendix L for GAU analyses and Appendix M for binge drinking analyses.

Analyses of General Alcohol Use

As previously described, the continuous General Alcohol Use (GAU) measure (30 day Quantity X Frequency) was converted into a categorical variable consisting of 4 levels: Abstainers, Low Drinkers, Moderate Drinkers, and High Drinkers (see Appendix J). As the four categories reflect increasing degrees of alcohol consumption, the nature of this study's originally stated hypotheses for a continuous dependent variable (e.g., students with lower levels of differentiation will be more likely to have greater amounts of general alcohol consumption) was maintained with the categorical analyses (e.g., students with lower levels of differentiation will be more likely to have a greater relationship with High Drinkers than Low Drinkers when controlling for BMI and age).

As logistic regression is based on a dichotomous dependent variable, the four GAU categories were contrasted in ways such that four unique outcome dichotomies were created:

1. Drinkers (Low, Moderate, High) versus Abstainers
2. Moderate Drinkers versus Low Drinkers
3. High Drinkers versus Low Drinkers
4. High Drinkers versus Moderate Drinkers

In each instance, the variable with the greater amount of alcohol consumption was coded as a "1" in SPSS 13.0 and the lesser category was coded as a "0." For example, in the Drinkers versus Abstainers analyses, all persons in the Low, Moderate, and High Drinking categories were coded as a "1" and Abstainers were coded as a "0."

The analyses began by testing the hypotheses of differentiation and the four-factor model on levels of alcohol consumption for each of the four dichotomies. The regression equation that consists of differentiation, age, and BMI is referred to as the Basic Model (see Equation 1, p. 51). The second step was to simply add the moderating variable of interest to the regression equation, creating the Additive Model (see Equation 2, p. 51). Thirdly, the Interaction Model was tested by adding the interaction term to the regression equation (see Equation 3, p. 51). The moderating hypotheses were then tested with each of the dichotomies with the criteria that the overall models and individual interaction terms had to be significant. Additionally, in order to preserve the most parsimonious model, the Interaction Model had to show a significant block improvement over the Additive Model (simply controlling for the added variable) or the Basic Model (if the Additive Model did not show a significant improvement over the Basic Model) to justify adding additional variables. Finally, a Comprehensive Model was created by adding all of the variables into one regression equation which was compared to the Basic Model for a significant block improvement.

Differentiation and GAU

It was hypothesized that college students with lower levels of differentiation would be more likely to have greater amounts of general alcohol consumption when controlling for BMI and age.

Males. There were differing levels of support for the hypotheses across the drinking category comparisons. In the Drinkers versus Abstainers category the Basic Model was significant ($\chi^2(3) = 18.00, p < .001, R^2_{\text{Cox \& Snell}} = .09, R^2_{\text{Nagelkerke}} = .20$). Differentiation had a significant negative coefficient indicating that the odds of drinking were multiplied by .190 (95% CI = .068, .530) with a one unit difference in differentiation -- an 81% (1 - .19) decrease. As differentiation levels increased the likelihood these male students would drink decreased, which was predicted in the hypothesis. Additionally, age was significant as students were more likely to drink as they got older.

The hypothesis was not supported in the comparisons of Moderate versus Low Drinkers ($\chi^2(3) = 2.92, p = .405$), High versus Low Drinkers ($\chi^2(3) = 2.21, p = .530$), and High versus Moderate Drinkers ($\chi^2(3) = 5.85\ p = .119$) as the Basic Model failed to reach a level of significance.

Females. The differentiation hypothesis was not supported in any of the comparisons for females. All of the models failed to reach a level of significance: Drinkers versus Abstainers ($\chi^2(3) = 6.91, p = .08$), Moderate versus Low Drinkers ($\chi^2(3) = 2.62, p = .45$), High versus Low Drinkers ($\chi^2(3) = 2.06, p = .56$), and High versus Moderate Drinkers ($\chi^2(3) = 4.10, p = .25$). However, although the overall model was not significant in relation to the population, differentiation was a significant predictor in changing the odds of being a Drinker versus Abstainer for the sample by .510 (95% CI = .268, .970) for every one unit increase in differentiation.

Four-Factors of the DSI-R with GAU

It was hypothesized that college students with lower levels of the four factors of the DSI-R (Emotional Reactivity, "I" Position, Emotional Cutoff, and Fusion with Others) would be more likely to have greater amounts of general alcohol consumption when controlling for BMI and age. It was also predicted that the interpersonal subscales (emotional cutoff and fusion with others) would provide the greatest amount of explained variance in general alcohol use for males as there would be a greater tendency to drink for social reasons. Additionally, it was predicted that the intrapersonal subscales (emotional reactivity and "I" position) would provide the greatest amount of explained variance in general alcohol use for females as there would be a greater tendency to drink due to problem solving and coping reasons.

Males. There were differing levels of support for the four-factor hypotheses across the drinking category comparisons. The Four-Factor Model was supported in the High versus Moderate Drinker comparison ($\chi^2(6) = 16.35, p = .012, R^2_{\text{Cox \& Snell}} = .13, R^2_{\text{Nagelkerke}} = .17$). Although the interpersonal subscales (emotional cutoff and fusion with others) were predicted to provide the greatest contribution for male drinking; the intrapersonal subscales (emotional reactivity and "I" position) emerged as the significant individual predictors. A one unit increase in Emotional Reactivity (being less emotionally reactive) increased the likelihood of being a High Drinker (OR = 1.928, 95% CI = .999, 3.720), whereas increasing the "I" Position value by one unit decreased the likelihood of being a High versus a Moderate Drinker (OR = .374, 95% CI = .198, .706). For males it appears that maintaining a sense-of-self ("I" Position) made it less likely that one would

escalate into the High Drinking category, while remaining less emotionally reactive to stress increased the likelihood of being a High versus a Moderate Drinker.

The overall models were not significant for the Moderate versus Low Drinkers or the High versus Low Drinkers comparisons. Although the Drinkers versus Abstainers comparison was significant as an overall model, none of the four factors significantly changed the odds of group membership.

Females. The four-factor hypothesis was not supported in any of the comparisons. Each of the models failed to reach a level of significance: Drinkers versus Abstainers ($\chi^2(6) = 9.21, p = .162$), Moderate versus Low Drinkers ($\chi^2(6) = 2.97, p = .813$), High versus Low Drinkers ($\chi^2(3) = 3.41, p = .757$), and High versus Moderate Drinkers ($\chi^2(6) = 4.49, p = .610$).

Moderator Hypotheses

It was hypothesized that students with lower levels of differentiation would have greater amounts of general alcohol use to the extent that they had greater perceptions of others' use (the average MSU student's use and best friend at MSU's use), greater expectations of alcohol as a tension reducer and social lubricant, and if they were a child of an alcoholic (COA). The male or female analyses failed to provide support for the perceptions of best friend at MSU's use, COA status, tension reduction, or social lubricant interaction hypotheses as the interaction term failed to reach a level of significance across all of the comparison groups. The perception of MSU student use was partially supported by both the males and females.

Males. The High versus Moderate Drinkers comparison did provide support for the interaction hypothesis as the Interaction Model was significant ($\chi^2(5) = 13.21, p =$

.022, $R^2_{\text{Cox \& Snell}} = .10$, $R^2_{\text{Nagelkerke}} = .14$) and showed a block improvement over the Basic Model ($\chi^2(2) = 7.36, p = .025$), as the Additive Model failed to reach significance. The interaction of differentiation and perception of MSU student use was a significant individual predictor with individuals being .978 (95% CI = .957, .999) times as likely to be a High Drinker versus a Moderate Drinker (see Table 1 and Figure 3, p. 60, for illustration of the interaction effect). Subjects with a standard deviation difference (20.25) of the interaction were .63 times as likely to be a High Drinker versus a Moderate Drinker.

The overall Interaction Model failed to reach a level of significance for the Moderate to Low Drinkers model. Although the overall models were significant for the Drinkers versus Abstainers and the High versus Low Drinkers comparisons, neither had a significant block improvement over the Additive Model nor had a significant interaction term.

Table 1

Logistic Regression Predicting Male Students that are High versus Moderate Drinkers – Perceptions of MSU Student Use

Interaction Model	*b*	SE	Wald	OR	95% CI	
DSI-R	-0.23	0.40	0.34	0.798	0.375	1.699
BMI	0.11	0.07	2.28	1.116	0.968	1.288
Age	0.12	0.16	0.56	1.124	0.827	1.528
MSU Use	0.01	0.01	1.43	1.006	0.996	1.017
DSI-R X MSU Use	-0.02	0.01	4.23*	0.978	0.957	0.999

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Females. The High versus Low Drinkers comparison was significant as an overall model ($\chi^2(5) = 18.01, p = .003$, $R^2_{\text{Cox \& Snell}} = .11$, $R^2_{\text{Nagelkerke}} = .15$) and had a significant block improvement over the Additive Model ($\chi^2(1) = 4.59, p = .032$). The interaction of

differentiation with perception of MSU student use was significant with an odds ratio of .983 (95% CI = .967, .999) for every unit increase in the interaction term (see Table 2 and see Figure 4, p. 62, for illustration of the interaction effect). Subjects with a standard deviation difference (21.57) of the interaction were .65 times as likely to be High versus Low Drinkers.

The overall Interaction Model failed to reach a level of significance for the Drinkers versus Abstainers and Moderate versus Low Drinkers comparisons. Although the Interaction Model was significant as an overall model in the High versus Moderate Drinkers comparison, the interaction term failed to reach a level of significance and the model did not demonstrate a significant block improvement over the Basic Model.

Table 2

Logistic Regression Predicting Female Students that are High versus Low Drinkers – Perceptions of MSU Student Use

	b	SE	Wald	OR	95% CI	
Interaction Model						
DSI-R	-0.03	0.30	0.01	0.968	0.539	1.741
BMI	-0.05	0.05	0.89	0.951	0.858	1.055
Age	0.05	0.14	0.14	1.056	0.797	1.398
MSU Use	0.02	0.01	9.85**	1.015	1.006	1.025
DSI-R X MSU Use	-0.012	0.01	4.34*	0.983	0.967	0.999

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

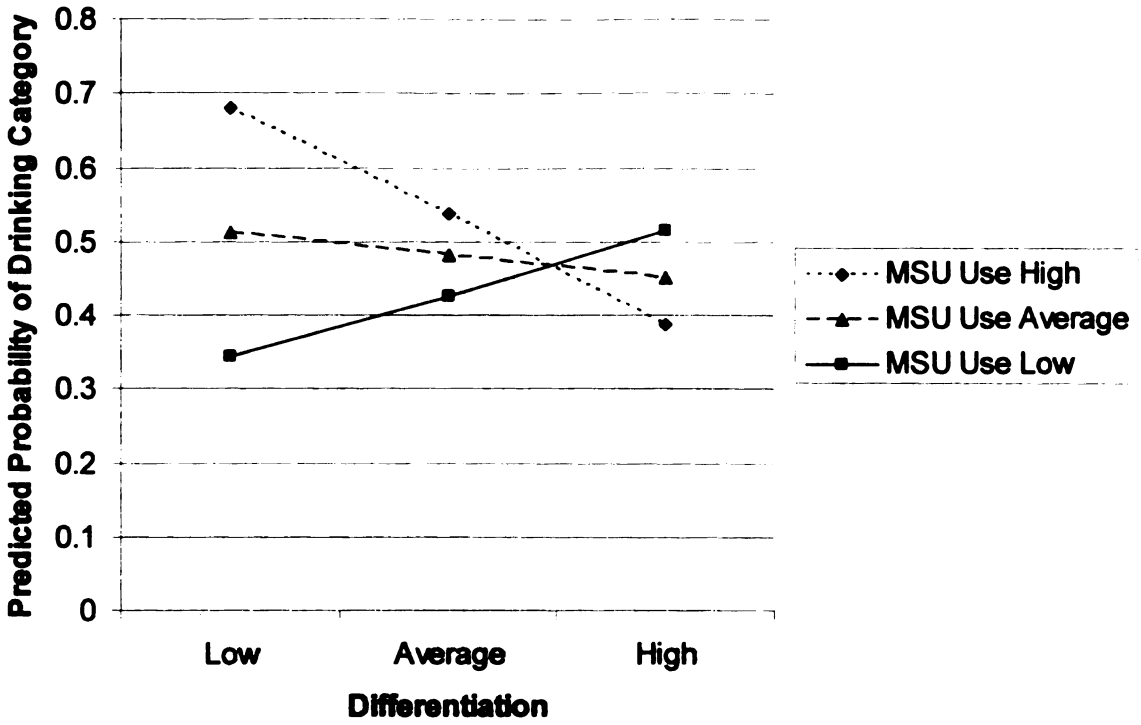

Figure 3. The differentiation and perception of MSU student alcohol use interaction for the comparison of male High versus Moderate Drinkers. Note: Predicted probability scores > .50 indicate a greater probability for being a High Drinker and < .50 indicate a greater probability for being a Moderate Drinker. Values are when controlling for BMI and age.

The Comprehensive Model

All of the variables of interest were entered simultaneously into a logistic regression in order to identify significant contributions of individual variables while controlling the influence of the remaining variables. All of the Comprehensive Models showed a significant improvement over the Basic Model.

Males. Each of the comprehensive models was significant: Drinkers versus Abstainers ($\chi^2(13) = 66.18, p < .001, R^2_{\text{Cox \& Snell}} = .28, R^2_{\text{Nagelkerke}} = .66$), Moderate versus Low Drinkers ($\chi^2(13) = 34.99, p = .001, R^2_{\text{Cox \& Snell}} = .24, R^2_{\text{Nagelkerke}} = .33$), High versus Low Drinkers ($\chi^2(13) = 86.95, p < .001, R^2_{\text{Cox \& Snell}} = .51, R^2_{\text{Nagelkerke}} = .68$), High versus Moderate Drinkers ($\chi^2(13) = 51.44, p < .001, R^2_{\text{Cox \& Snell}} = .34, R^2_{\text{Nagelkerke}} = .46$) (see Table 3, p. 64). Interestingly, there were no individual predictors in this model that significantly changed the odds of being a Drinker versus Abstainer. Perceptions of best friend use (OR = 1.020) and expectations of tension reduction (OR = 1.109) significantly improve the odds of being classified as a Moderate Drinker versus a Low Drinker. Perception of best friend usage improved the likelihood of being classified as a high drinker (OR = 1.037) while being a COA actually decreased the likelihood of being a High Drinker versus Low Drinker (OR = .188). Perception of best friend use was the only significant individual variable in the comparison of High versus Moderate Drinkers (OR = 1.026).

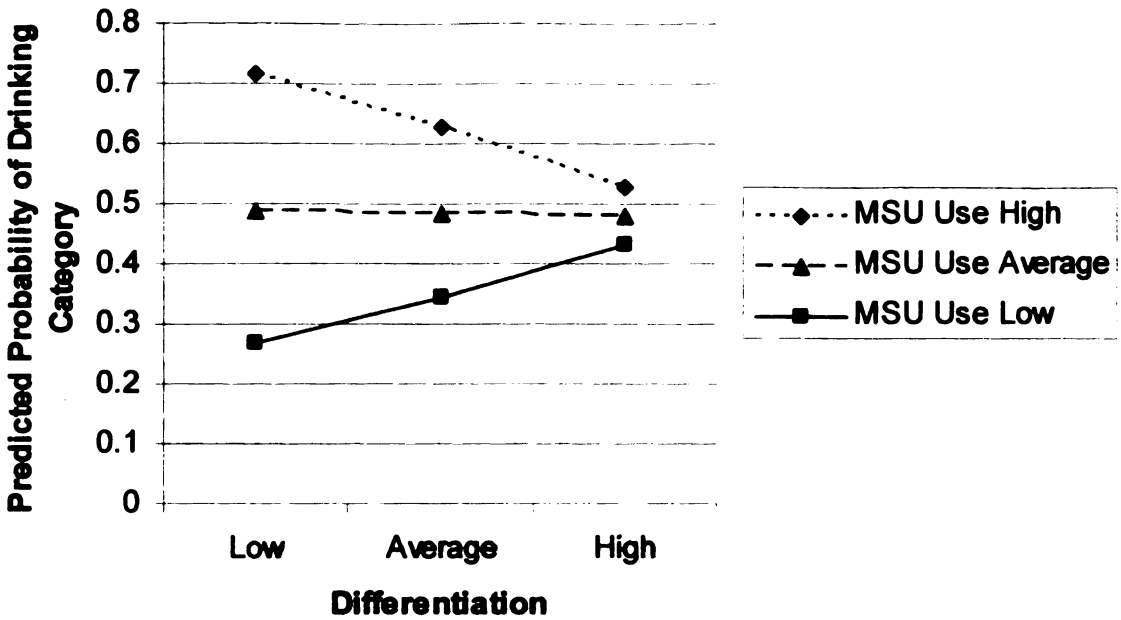

Figure 4. The differentiation and perception of MSU student alcohol use interaction for female High versus Low Drinkers. Note: Predicted probability scores > .50 indicate a greater probability for being a High Drinker and < .50 indicate a greater probability for being a Low Drinker. Values are when controlling for BMI and age.

Females. The Comprehensive Model was significant for each of the female comparisons: Drinkers versus Abstainers ($\chi^2(13) = 90.70, p < .001$, $R^2_{\text{Cox \& Snell}} = .31$, $R^2_{\text{Nagelkerke}} = .57$), Moderate versus Low Drinkers ($\chi^2(13) = 45.72, p < .001$, $R^2_{\text{Cox \& Snell}} = .28$, $R^2_{\text{Nagelkerke}} = .38$), High versus Low Drinkers ($\chi^2(13) = 88.84, p < .001$, $R^2_{\text{Cox \& Snell}} = .45$, $R^2_{\text{Nagelkerke}} = .60$), High versus Moderate Drinkers ($\chi^2(13) = 23.41, p = .037$, $R^2_{\text{Cox \& Snell}} = .16$, $R^2_{\text{Nagelkerke}} = .21$) (see Table 4, p. 65). Only the tension reduction variable showed an individual level of significance in changing the odds of being a Drinker versus Abstainer (OR = 1.237). Age (OR = 1.461), perceptions of best friend use (OR = 1.028), and expectations of tension reduction (OR = 1.118) were significant in changing the likelihood of being classified as a Moderate versus Low Drinker. Perceptions of MSU student use (OR = 1.016), perceptions of best friend use (OR = 1.048), and the interaction between differentiation and the perception of best friend use (OR = .970, see Figure 5, p. 66) and tension reduction (OR = 1.135) were significant for the High versus Low Drinker comparison. No individual predictors in this model significantly changed the odds of being a High Drinker versus a Moderate Drinker.

Table 3

Comprehensive Models for Male GAU Categories

	Drinkers to Abstainers		Moderate Drinkers to Low Drinkers		High Drinkers to Low Drinkers		High Drinkers to Moderate Drinkers	
	Wald	OR	Wald	OR	Wald	OR	Wald	OR
DSI-R	1.54	7.852	0.21	1.349	0.00	0.970	1.90	0.446
BMI	0.01	0.994	0.57	0.950	0.05	0.982	2.97	1.173
Age	3.78	2.117	0.06	0.953	0.09	1.080	0.17	1.087
MSU Perceptions	0.17	1.007	2.21	1.012	2.41	1.022	0.04	0.999
DSI-R X MSU Perceptions	0.82	0.978	0.26	1.007	0.05	0.995	3.03	0.976
Best Friend	0.11	0.997	7.48**	1.020	20.30**	1.037	18.64**	1.026
DSI-R X Best Friend	0.08	1.004	0.20	1.006	1.58	1.018	0.45	0.992
COA	0.00	0.000	0.03	0.887	4.10*	0.188	3.40	0.313
DSI-R X COA	0.00	2.829	0.12	1.478	0.95	4.251	1.33	3.747
Tension Reduction	3.46	1.266	5.45*	1.109	2.92	1.104	0.49	1.037
DSI-R X Tension Reduction	0.77	1.205	0.31	0.956	0.02	0.986	0.90	1.115
Social Lubrication	2.37	1.194	0.04	0.991	0.07	0.985	0.96	0.948
DSI-R X Social Lubrication	0.04	1.038	0.13	1.031	0.05	1.026	0.23	0.941

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 4

Comprehensive Models for Female GAU Categories

	Drinkers to Abstainers		Moderate Drinkers to Low Drinkers		High Drinkers to Low Drinkers		High Drinkers to Moderate Drinkers	
	Wald	OR	Wald	OR	Wald	OR	Wald	OR
DSI-R	1.07	3.166	0.02	0.929	0.16	1.232	0.14	1.197
BMI	0.04	0.991	0.59	0.950	0.14	0.967	0.81	0.940
Age	0.32	1.126	4.13*	1.461	0.12	1.072	1.96	0.792
MSU Perceptions	0.07	0.998	0.83	1.006	5.30*	1.016	1.98	1.008
DSI-R X MSU Perceptions	0.07	1.003	1.14	0.988	2.55	0.982	1.73	0.984
Best Friend	2.69	1.018	8.80**	1.028	20.83**	1.048	2.93	1.009
DSI-R X Best Friend	0.19	1.007	0.42	0.990	4.27*	0.970	0.27	1.005
COA	0.32	1.393	0.00	0.966	0.10	0.827	0.35	0.735
DSI-R X COA	0.03	1.171	0.42	1.892	0.42	1.849	1.38	3.596
Tension Reduction	9.17**	1.237	9.28**	1.118	10.55**	1.135	2.32	1.055
DSI-R X Tension Reduction	0.01	1.007	3.10	0.877	0.06	0.982	1.07	1.081
Social Lubrication	3.06	1.142	0.69	1.031	0.29	1.024	0.31	1.021
DSI-R X Social Lubrication	0.76	1.108	1.93	1.116	0.19	1.036	0.63	0.946

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

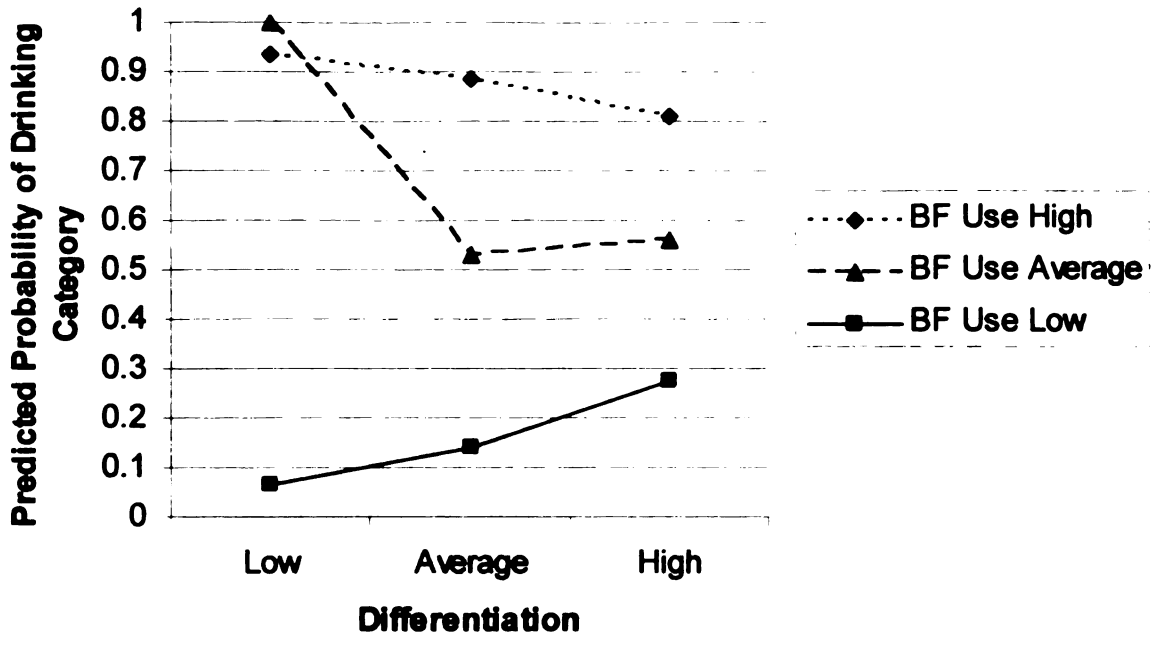

Figure 5. The differentiation and perception of best friend at MSU's alcohol use interaction for female High versus Low Drinkers. Note: Predicted probability scores > .50 indicate a greater probability for being a High Drinker and < .50 indicate a greater probability for being a Low Drinker. Values are when controlling for all other variables in the Comprehensive Model.

Analyses of Binge Drinking

As was done with the General Alcohol Use measure, the continuous Binge Drinking variable (number of days in the past 14 days the subject drank at binge levels - - 5 drinks per occasion for males, 4 drinks per occasion for females) was converted into a categorical variable consisting of 4 levels of use: Abstainers (those that did not drink), Nonbinging Drinkers (subjects that consumed alcohol, but not at binge levels), Occassional Binge Drinkers (1 or 2 times in the past 2 weeks), and Frequent Binge Drinkers (3 or more times in the past 2 weeks) (see Appendix J). As the four categories reflect increasing degrees of alcohol consumption, the nature of this study's hypotheses which were stated for a continuous dependent variable (e.g., students' lower levels of differentiation will be more likely to have greater amounts of general alcohol consumption) was maintained with the categorical analyses (e.g., students' lower levels of differentiation will be more likely to have a greater relationship with High Drinkers than Low Drinkers when controlling for BMI and age).

The four General Alcohol Use categories were contrasted in ways such that four unique outcome dichotomies were created:

1. Binge Drinkers (Occasional & Frequent Bingers) versus Nonbinging Drinkers
2. Occasional Binge Drinkers versus Nonbinging Drinkers
3. Frequent Binge Drinkers versus Nonbinging Binge Drinkers
4. Frequent Binge Drinkers versus Occasional Binge Drinkers

The identical coding procedure and process of analysis from the General Alcohol Use tests were implemented with the Binge Drinking analyses.

Differentiation and Binge Drinking

It was hypothesized that college students with lower levels of differentiation would be more likely to have greater amounts of binge drinking when controlling for BMI and age.

Males. The differentiation hypothesis was not supported in any of the comparisons. All of the Basic Models failed to reach a level of significance: Binge Drinker versus Nonbinging Drinkers ($\chi^2(3) = .75, p = .861$), Occasional Binge Drinkers versus Nonbinging Drinkers ($\chi^2(3) = .50, p = .929$), Frequent Binge Drinkers versus Nonbinging Drinkers ($\chi^2(3) = 2.48, p = .479$), Frequent Binge Drinkers versus Occasional Binge Drinkers ($\chi^2(3) = 6.83, p = .078$).

Females. The differentiation hypothesis was not supported in any of the comparisons. All of the Basic Models failed to reach a level of significance: Binge Drinker versus Nonbinging Drinkers ($\chi^2(3) = 3.38, p = .337$), Occasional Binge Drinkers versus Nonbinging Drinkers ($\chi^2(3) = 1.40, p = .705$), Frequent Binge Drinkers versus Nonbinging Drinkers ($\chi^2(3) = 5.81, p = .121$), Frequent Binge Drinkers versus Occasional Binge Drinkers ($\chi^2(3) = 4.59, p = .205$).

Four-Factors of the DSI-R with Binge Drinking

It was hypothesized that college students with lower levels of the four factors of the DSI-R (Emotional Reactivity, "I" Position, Emotional Cutoff, and Fusion with Others) would be more likely to have greater amounts of binge drinking when controlling for BMI and age. Further it was predicted that the interpersonal subscales (emotional cutoff and fusion with others) would provide the greatest amount of explained variance in binge drinking for males as there would be a greater tendency to drink for social reasons.

Additionally, it was predicted that the intrapersonal subscales (emotional reactivity and "I" position) would provide the greatest amount of explained variance in binge drinking for females as there would be a greater tendency to drink due to problem solving and coping reasons.

Males. The four-factor hypothesis was partially supported in the binge drinking comparisons for males. The Four-Factor Model was supported in the Frequent versus Occasional Binge Drinkers comparison ($\chi^2(6) = 15.82$, $p = .015$, $R^2_{\text{Cox \& Snell}} = .10$, $R^2_{\text{Nagelkerke}} = .13$). Interestingly, it was predicted the interpersonal subscales (emotional cutoff and fusion with others) would provide the greatest contribution for male drinking; however, the "I" Position subscale was the only significant predictor of binge drinking categories, while the Emotional Cut-off subscale approached significance ($p = .056$). Students who had a one unit higher "I" Position score were .488 (95% CI = .268, .889) times more likely to be Frequent Binge Drinkers versus Occasional Binge Drinkers (see Table 5). This finding indicates that as students become more competent in the development of an "I" position, they are less likely to be Frequent Binge drinkers in comparison to Occasional Binge Drinkers.

Table 5

Logistic Regression Predicting Male Students that are Frequent Bingers versus Occasional Bingers – Four Factors

	b	SE	Wald	OR	95% CI	
Emotional Reactivity	0.42	0.31	1.91	1.524	0.839	2.769
"I" Position	-0.72	0.31	5.50*	0.488	0.268	0.889
Emotional Cutoff	-0.50	0.26	3.67	0.606	0.363	1.012
Fusion with Others	-0.14	0.41	0.12	0.868	0.389	1.937
BMI	-0.05	0.05	0.96	0.952	0.862	1.051
Age	0.20	0.15	1.91	1.222	0.920	1.623

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

The overall model was not significant for the Binge Drinker versus Nonbinging Drinkers ($\chi^2(6) = 1.327, p = .970$), Occasional Binge Drinkers versus Nonbinging Drinkers ($\chi^2(6) = 2.77, p = .838$), Frequent Binge Drinkers versus Nonbinging Drinkers comparisons ($\chi^2(6) = 3.78, p = .706$).

Females. The four-factor hypothesis was not supported in any of the comparisons. All of the Four-Factor Models failed to reach a level of significance: Binge Drinker versus Nonbinging Drinkers ($\chi^2(6) = 4.99, p = .546$), Occasional Binge Drinker versus Nonbinging Drinkers ($\chi^2(6) = 4.58, p = .599$), Frequent Binge Drinkers versus Nonbinging Drinkers ($\chi^2(6) = 7.39, p = .286$), and Frequent Binge Drinkers versus Occasional Binge Drinkers ($\chi^2(6) = 9.05, p = .171$).

Moderator Hypotheses

It was hypothesized that the students with lower levels of differentiation would have greater amounts of binge drinking to the extent that they had greater perceptions of others use (the average MSU student use and best friend at MSU's use), greater expectations of alcohol as a tension reducer and social lubricant, and they were COAs. The male or female analyses failed to provide support for the perceptions of best friend at MSU's use, tension reduction, or social lubricant interaction hypotheses as the interaction term failed to reach a level of significance across all of the comparison groups.

Although the perception of MSU student use interaction hypothesis was not supported by males, it was partially supported by the females. The Frequent Binge Drinkers versus Nonbinging Drinkers comparison had a significant Interaction Model ($\chi^2(5) = 14.01, p = .016, R^2_{\text{Cox \& Snell}} = .10, R^2_{\text{Nagelkerke}} = .13$) and had a significant block improvement over the Additive Model ($\chi^2(1) = 6.16, p = .013$). The differentiation X

perception of MSU student use interaction term was the only significant individual predictor (see Table 6 and Figure 6, p. 73 for interaction effect). Students with a one unit higher interaction value were .975 (95% CI = .955, .996) times more likely to be a Frequent Binge Drinker than a Nonbinging Drinker. Students who had a difference in the interaction term equivalent to one standard deviation (21.57) were .58 times more likely to be a Frequent Binge Drinker than a Nonbinging Drinker.

Table 6

Logistic Regression Predicting Female Students that are Frequent Bingers versus Nonbingers – Perceptions of MSU Student Use

Interaction Model	*b*	SE	Wald	OR	95% CI	
DSI-R	-0.24	0.34	0.48	0.790	0.403	1.546
BMI	-0.12	0.07	3.38	0.884	0.776	1.008
Age	0.09	0.15	0.35	1.096	0.810	1.482
MSU Use	0.01	0.01	2.03	1.008	0.997	1.019
DSI-R X MSU Use	-0.03	0.01	5.48*	0.975	0.955	0.996

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Similarly, the COA status interaction was not supported for males, but was partially supported for females. The overall Interaction Model for Frequent versus Occasional Binge Drinkers was significant ($\chi^2(5) = 11.19, p = .048$, $R^2_{\text{Cox \& Snell}} = .07$, $R^2_{\text{Nagelkerke}} = .10$). The only significant predictor was the interaction between differentiation and COA status. Students with a one unit higher interaction value were 6.773 (95% CI = 1.209, 37.949) times more likely to be a Frequent Binge Drinker than an Occasional Binge Drinker (see Table 7, p. 72, and Figure 7, p. 74, for interaction effect).

Table 7

Logistic Regression Predicting Female Students that are Frequent Bingers versus Occasional Bingers – COA Status

	b	SE	Wald	OR	95% CI	
Interaction Model						
DSI-R	-0.27	0.34	0.61	0.767	0.395	1.489
BMI	-0.12	0.06	3.75	0.887	0.786	1.001
Age	-0.08	0.15	0.28	0.926	0.697	1.231
COA	0.35	0.46	0.58	1.413	0.579	3.447
DSI-R X COA	1.91	0.88	4.73*	6.773	1.209	37.949

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

The Comprehensive Model

All of the variables of interest were entered simultaneously into a logistic regression in order to identify significant contributions of individual variables while controlling the influence of the remaining variables.

Males. The Occasional Binge Drinkers versus Nonbinging Drinkers failed to reach a level of significance when all of the predictor variables were entered into one model ($\chi^2(13) = 19.27, p = .115$). The overall models were significant for the Binge Drinkers versus Nonbinging Drinkers ($\chi^2(13) = 41.11, p < .001$, $R^2_{\text{Cox \& Snell}} = .20$, $R^2_{\text{Nagelkerke}} = .34$), Frequent Binge Drinkers versus Nonbinging Drinkers ($\chi^2(13) = 64.24$, $p < .001$, $R^2_{\text{Cox \& Snell}} = .40$, $R^2_{\text{Nagelkerke}} = .60$), and Frequent Binge Drinkers versus Occasional Binge Drinkers ($\chi^2(13) = 46.11, p < .001$, $R^2_{\text{Cox \& Snell}} = .26$, $R^2_{\text{Nagelkerke}} = .35$) (see Table 8, p. 78). Perceptions of best friend use (OR = 1.019) was the only individual variable to significantly improve the odds of being classified as a Binge Drinker versus a

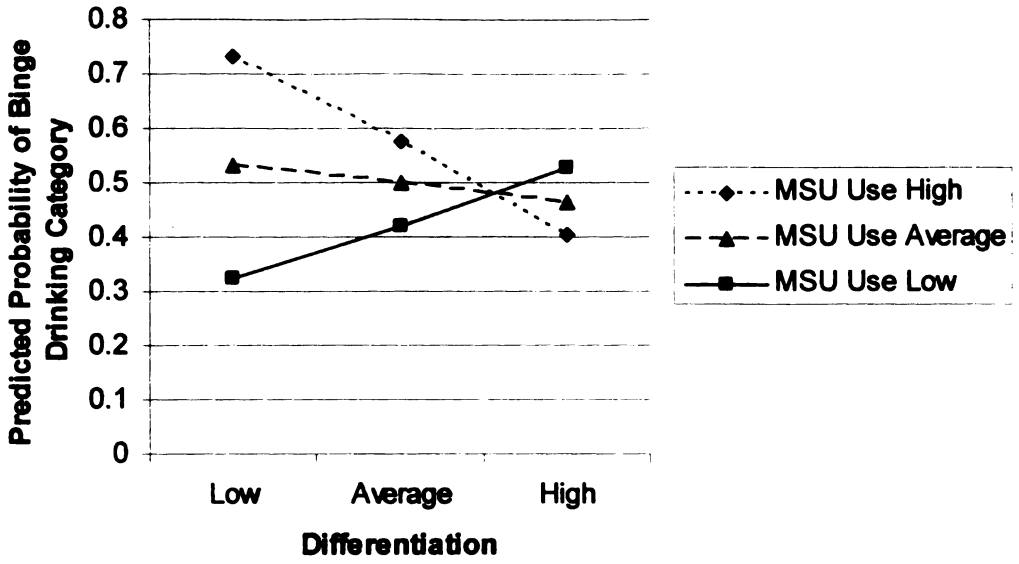

Figure 6. The differentiation and perception of MSU student alcohol use interaction for female Frequent Binge Drinkers versus Nonbinging Drinkers. Note: Predicted probability scores > .50 indicate a greater probability for being a Frequent Drinker and < .50 indicate a greater probability for being a Nonbinging Drinker. Values are when controlling for BMI and age.

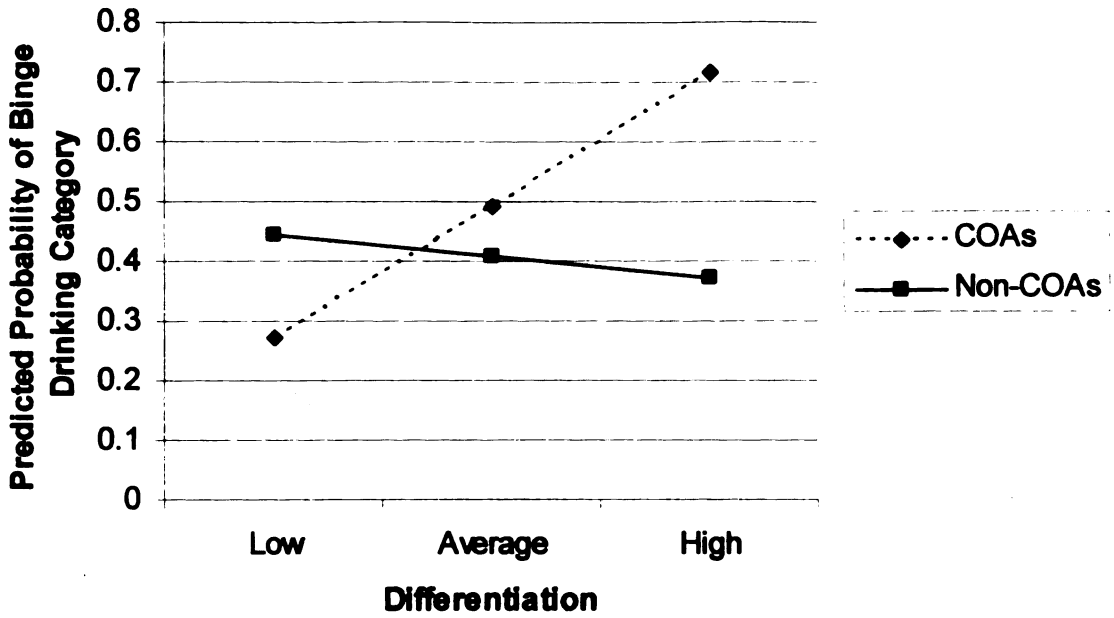

Figure 7. The differentiation and COA status interaction for female Frequent versus Occasional Binge Drinkers. Note: Predicted probability scores > .50 indicate a greater probability for being a Frequent Drinker and < .50 indicate a greater probability for being an Occasional Binge Drinker. Values are when controlling for BMI and age.

Nonbinging Drinker. Age (OR = 2.431) and perceptions of best friend use (OR = 1.040) were the only individual variables to significantly improve the odds of being classified as a Frequent Binge Drinker versus a Nonbinging Drinker. Age (OR = 2.43), perceptions of best friend use (OR = 1.018), and the differentiation X expectations of tension reduction (OR = .826, see Figure 8, p. 77, for interaction) were the only individual variables to significantly improve the odds of being classified as a Frequent Binge Drinker versus an Occasional Binge Drinker.

Females. The Binge Drinkers versus Nonbinging Drinkers ($\chi^2(13) = 85.81, p < .001$, $R^2_{\text{Cox \& Snell}} = .33$, $R^2_{\text{Nagelkerke}} = .47$) , Occasional Binge Drinkers versus Nonbinging Drinkers ($\chi^2(13) = 45.05, p < .001$, $R^2_{\text{Cox \& Snell}} = .27$, $R^2_{\text{Nagelkerke}} = .36$), Frequent Binge Drinkers versus Nonbinging Drinkers ($\chi^2(13) = 100.54, p < .001$, $R^2_{\text{Cox \& Snell}} = .52$, $R^2_{\text{Nagelkerke}} = .69$), and Frequent Binge Drinkers versus Occasional Binge Drinkers ($\chi^2(13) = 39.46, p < .001$, $R^2_{\text{Cox \& Snell}} = .24$, $R^2_{\text{Nagelkerke}} = .32$) comparisons were each significant as overall models (see Table 9, p. 79). Perceptions of best friend use (OR = 1.037), expectations of tension reduction (OR = 1.166), and the differentiation X expectations of tension reduction interaction (OR = .862, see Figure 9, p. 80, for interaction) were the only individual variables to significantly improve the odds of being classified as a Binge Drinker versus a Nonbinging Drinker. Perceptions of best friend use (OR = 1.030), expectations of tension reduction (OR = 1.147), and the differentiation X expectations of tension reduction (OR = .861, see Figure 10, p. 81, for interaction) significantly improved the odds of being classified as an Occasional Binge Drinker versus a Nonbinging Drinker. Perceptions of best friend use (OR = 1.050) and expectations of tension reduction (OR = 1.251) were the only individual variables to significantly improve the

odds of being classified as a Frequent Binge Drinker versus a Nonbinging Drinker. Perceptions of best friend use (OR = 1.019) and expectations of tension reduction (OR = 1.081) were the only individual variables to significantly improve the odds of being classified as a Moderate Drinker versus a Low Drinker.

Overall, few hypotheses received support from the disparate analyses. As an individual predictor, differentiation only changed the odds of group membership in the male Drinkers versus Abstainers comparison (see Table 10, p. 82). The differentiation X MSU perceptions interaction for the female high versus low drinker comparison indicated that differentiation moderated the main effect of MSU perceptions, which was contrary to the proposed hypothesis (see Table 10). Additionally, although there were significant interactions for male High versus Moderate drinkers, female frequent Binge Drinkers versus Nonbinging Drinkers, and female frequent versus Occasional Binge Drinkers, in each instance there was no significant main effect in either the differentiation variable or the other respective interaction variable (see Table 10). Chapter Five provides a more thorough discussion of the key findings.

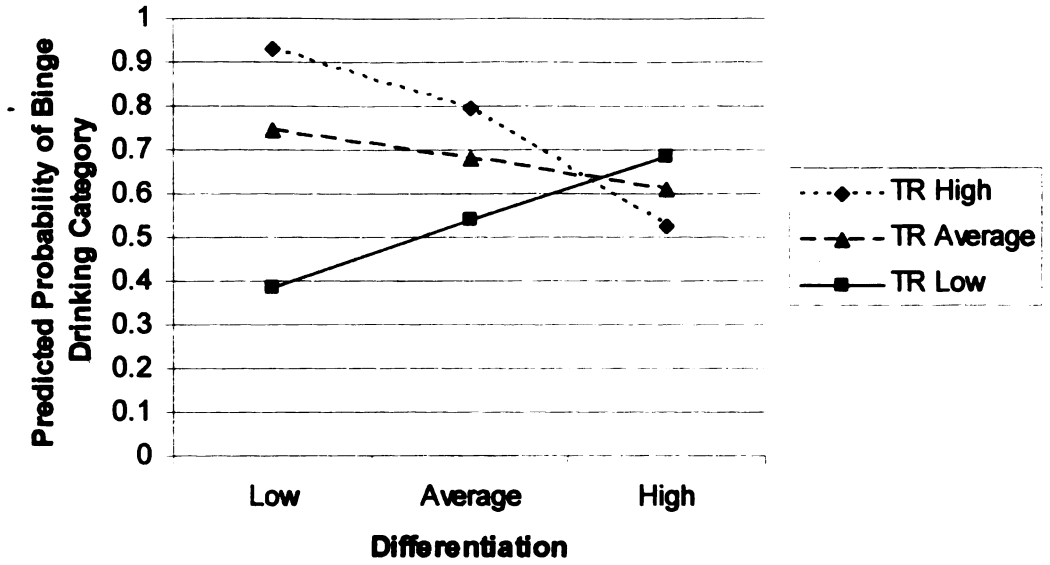

Figure 8. The differentiation and expectations of tension reduction interaction for male Frequent versus Occasional Binge Drinkers. Note: TR = Tension reduction. Predicted probability scores > .50 indicate a greater probability for being a Frequent Drinker and < .50 indicate a greater probability for being an Occasional Binge Drinker. Values are when controlling for all other variables in the Comprehensive Model.

Table 8

Comprehensive Models for Male Binge Drinking Categories

	Binge Drinkers versus Nonbinging Drinkers		Frequent Binge Drinkers versus Nonbinging Drinkers		Frequent Binge Drinkers versus Occasional Binge Drinkers	
	Wald	OR	Wald	OR	Wald	OR
DSI-R	1.28	2.154	0.68	1.977	1.40	0.572
BMI	0.01	1.007	0.94	0.909	1.25	0.930
Age	0.76	1.201	7.32**	2.431	4.78*	1.472
MSU Perceptions	1.29	1.011	0.47	1.008	0.31	1.003
DSI-R X MSU Perceptions	0.32	1.008	0.02	1.003	2.99	0.978
Best Friend	5.74*	1.019	11.20**	1.040	12.59**	1.018
DSI-R X Best Friend	0.05	1.003	1.74	1.024	3.12	1.018
COA	2.30	0.342	2.34	0.248	0.75	0.637
DSI-R X COA	0.30	1.938	1.27	4.559	0.07	1.338
Tension Reduction	1.92	1.066	2.46	1.092	2.65	1.070
DSI-R X Tension Reduction	0.70	1.069	0.03	0.979	4.59*	0.826
Social Lubrication	1.90	1.074	2.07	1.114	0.27	0.978
DSI-R X Social Lubrication	0.01	0.990	0.61	1.102	2.85	1.159

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 9

Comprehensive Models for Female Binge Drinking Categories

	Binge Drinkers versus Nonbinging Drinkers		Occasional Binge Drinkers versus Nonbinging Drinkers		Frequent Binge Drinkers versus Nonbinging Drinkers		Frequent Binge Drinkers versus Occasional Binge Drinkers	
	Wald	OR	Wald	OR	Wald	OR	Wald	OR
DSI-R	0.07	0.883	0.52	0.686	0.05	0.860	1.27	1.778
BMI	1.29	0.933	0.73	0.949	2.27	0.810	3.34	0.874
Age	1.31	1.208	1.45	1.232	0.43	0.843	0.01	0.985
MSU Perceptions	0.33	1.003	0.73	1.005	0.35	0.994	0.42	0.996
DSI-R X MSU Perceptions	2.30	0.985	0.92	0.991	2.87	0.969	0.53	0.992
Best Friend	17.45**	1.037	9.24**	1.030	15.92**	1.050	10.65**	1.019
DSI-R X Best Friend	1.16	0.985	0.57	0.991	0.82	0.980	0.11	1.003
COA	2.88	0.428	1.69	0.501	0.22	0.674	0.05	0.891
DSI-R X COA	0.00	0.982	0.16	0.681	1.23	7.595	2.63	5.235
Tension Reduction	18.67**	1.166	13.83**	1.147	13.68**	1.251	4.42*	1.081
DSI-R X Tension Reduction	4.73*	0.862	4.11*	0.861	1.14	0.888	0.35	0.956
Social Lubrication	0.15	0.986	0.44	0.976	0.35	0.964	1.13	1.039
DSI-R X Social Lubrication	0.97	1.068	0.53	1.056	0.64	1.104	0.15	1.029

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

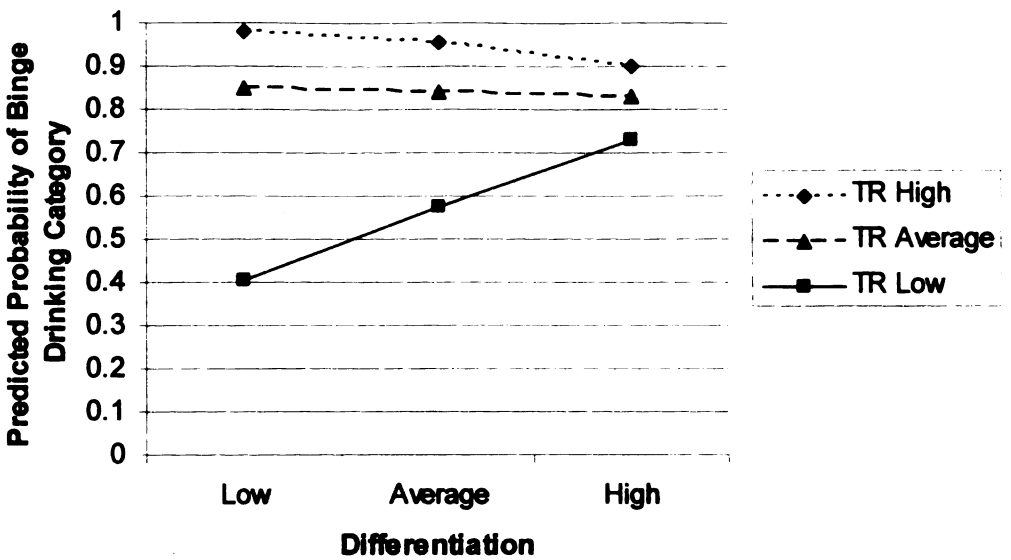

Figure 9. The differentiation and expectations of tension reduction interaction for female Binge Drinkers versus Nonbinging Drinkers. Note: TR = Tension reduction. Predicted probability scores > .50 indicate a greater probability for being a Binge Drinker and < .50 indicate a greater probability for being a Nonbinging Drinker. Values are when controlling for all other variables in the Comprehensive Model.

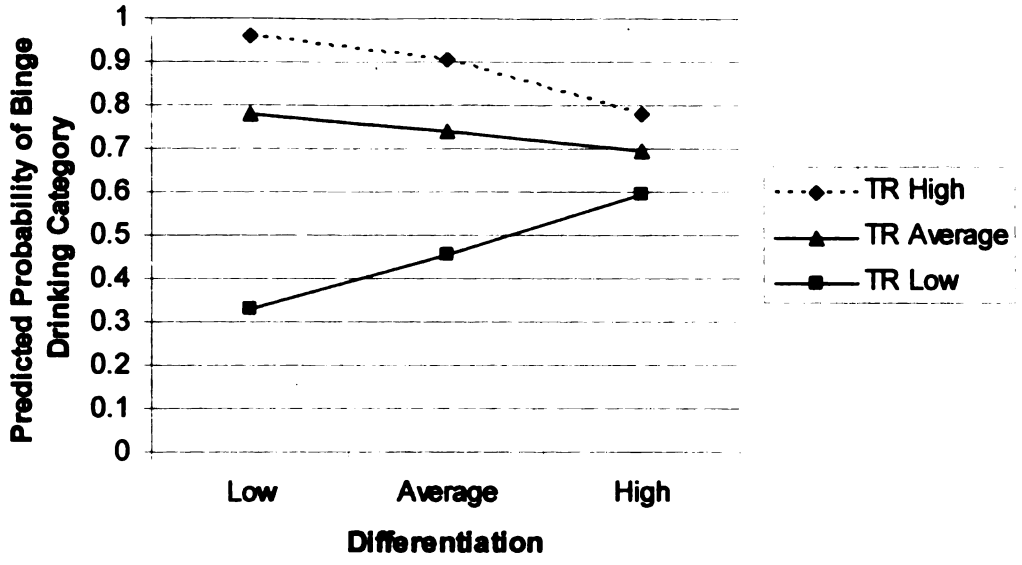

Figure 10. The differentiation and expectations of tension reduction interaction for female Occasional Binge Drinkers versus Nonbinging Drinkers. Note: TR = Tension reduction. Predicted probability scores > .50 indicate a greater probability for being an Occasional Binge Drinker and < .50 indicate a greater probability for being a Nonbinging Drinker. Values are when controlling for all other variables in the Comprehensive Model.

Table 10

Summary of the Significant Individual Predictors Specifically Related to Differentiation for GAU

	Males				Females			
	Drinkers versus Abstainers	Moderate versus Low Drinkers	High versus Low Drinkers	High versus Moderate Drinkers	Drinkers versus Abstainers	Moderate versus Low Drinkers	High versus Low Drinkers	High versus Moderate Drinkers
Basic Model (DSI-R term only)	- -							
Individual Interaction Models								
DSI-R X MSU Perceptions				- [a]			-	
DSI-R X COA								
DSI-R X Best Friend								
DSI-R X Tension Reduction								
DSI-R X Social Lubrication								
	Bingers versus Nonbinging Drinkers	Occasional Bingers versus Nonbinging Drinkers	Frequent Bingers versus Nonbinging Drinkers	Frequent versus Occasional Bingers	Bingers versus Nonbinging Drinkers	Occasional Bingers versus Nonbinging Drinkers	Frequent Bingers versus Nonbinging Drinkers	Frequent versus Occasional Bingers
Basic Model (DSI-R term only)								
Individual Interaction Models								
DSI-R X MSU Perceptions							- [a]	
DSI-R X COA								+ [a]
DSI-R X Best Friend								
DSI-R X Tension Reduction								
DSI-R X Social Lubrication								

+ significantly increased the odds of being in the higher drinking category at $p < .05$ (two-tailed)
- - significantly decreased the odds of being in the higher drinking category at $p < .01$ (two-tailed)
- significantly decreased the odds of being in the higher drinking category at $p < .05$ (two-tailed)
a = Although the interaction variable was significant, there were no main effects of either variable.
Note: The individual predictors are marked only when the Basic Model was significant as an overall model or when the Interaction Model illustrated a block improvement warranting the addition of additional variables.

Chapter Five

This chapter provides a discussion of the results and an interpretation of the interaction effects, as well as a discussion on the limitations and implications of this study.

Discussion of Results

This study sought to understand the role of differentiation on college student alcohol consumption in order to address a lack of empirically validated studies regarding the validity of the tenets of Bowen theory. Additionally, this project's incorporation of differentiation with one's family of origin as a predictor in understanding individual decision-making processes had not been previously applied to the understanding of alcohol consumption. A series of logistic regression analyses were conducted to investigate the relationship of differentiation with general alcohol use (GAU) and binge drinking. Additionally, five variables that have been linked to college student alcohol consumption (perceptions of peer use, perception of best friend use, COA status, expectations of alcohol as a tension reducer or as a social lubricant) were examined for potential moderating effects on the relationship between differentiation and alcohol consumption.

Overall the sample was comprised of a high number of students that drank alcohol and drank in high quantities. In a review of five national longitudinal studies, O'Malley and Johnston (2002) reported that in the 1990s around 85% of college students drank in the past year, approximately 70% drank in the past 30 days, and 40% had binge drinking experiences over the past two weeks. In this study, 89% of the subjects reported drinking in the past 30 days, which was not only higher than the longitudinal ranges for 30 day

use, but exceeded the levels of annual use. Additionally, the percentage of students that drank at binge levels (67% for the total sample, over 76% for males, and over 59% for females) exceeded the longitudinal studies' ranges as well. Particularly striking was the fact that nearly half of the males (46.8%) drank at binge levels 3 or more times in the past two weeks. Comparatively, Hembroff and Kothari (2004) conducted a health assessment study of students at Michigan State University. A total of 88.8% of the 1329 students in the survey (six did not answer the question) reported consuming alcohol in the past 30 days. This study again points to the overwhelming use of alcohol by students attending Michigan State University. Additionally, students were asked how many times they had consumed five or more drinks at a sitting in the past two weeks. Forty seven percent of the respondents reported drinking at that level at least once in the previous two weeks. Although this figure is much closer to the 44% prevalence rates of national studies, it may still be an underestimate as females were screened with the five-drink criteria rather than the gender adjusted four-drink rate. However, the discrepancy between the two Michigan State populations may highlight that the students in this study were higher drinkers or more prone to report higher drinking than in previous studies.

Differentiation and Alcohol Consumption

The predicted relationship between levels of differentiation and alcohol consumption received very little support. The only GAU comparison that had differentiation as a significant predictor of level of alcohol consumption was the male Abstainers versus Drinkers. The odds ratio supported the predicted effect of differentiation that students with lower levels of differentiation would be more likely to consume greater amounts of alcohol. This same relationship was found in the female

Abstainer versus Drinker comparison, although the model was not significant. The findings indicate that, by itself as a risk/protective factor, differentiation only contributes in the decision to drink (or not) for males, and does not contribute to the likelihood that a student will be in one particular level of drinking category versus another.

The differentiation hypothesis was not supported by any of the binge drinking comparisons. The results of the binge drinking analyses echo what was found in the GAU analyses, in that by itself differentiation contributes little as a risk or protective factor for how much alcohol students consume per drinking occasion.

Four Factors of the DSI-R and Alcohol Consumption

A closer examination of differentiation with alcohol consumption was implemented using the DSI-R's subscales as separate predictor variables for each of the comparisons. Again, this model was very poorly supported by the analyses. The only significant comparisons for the Four-Factor Model were in the two comparisons of extreme versus moderate drinking in males: High versus Moderate Drinkers and Frequent versus Occasional Binge Drinkers. Interestingly, taken as a full-scale, the DSI-R did not significantly predict either drinking category membership, yet the "I" Position subscales did predict both GAU and binge drinking categories, while Emotional Reactivity predicted GAU membership. Males with a greater sense of self, "I" Position, were less likely to be High Drinkers than those with a less developed sense of self. Similarly, males with a greater "I" position were less likely to be Frequent Binge Drinkers than Occasional Binge Drinkers. This finding indicates that individuals who have a more highly developed set of personal beliefs, values, and convictions are more likely to maintain a sense of moderation when they are drinking. These individuals with a more highly

developed sense of self drank five or more alcoholic beverages per drinking occasion once or twice in the previous two-week period. It can be interpreted from the GAU and binge drinking results that regardless of one's level of "I" Position, one is no more likely to be a drinker or abstainer; however, when one does drink, he is more likely to do so in moderation in terms of monthly use (Moderate versus High Drinkers) and amount consumed per occasion (Occasional versus Frequent Binge Drinking). This suggests that maintaining a high sense of self could serve as a protective factor for consuming alcohol in more normative terms versus in extreme amounts.

Surprisingly and counter intuitively, males who were more emotionally reactive were more likely to be Moderate versus High Drinkers. According to Bowen Theory, individuals who are more emotionally reactive are more likely to triangle something or someone in order to tolerate anxiety rather than deal with it directly. According to the results of this study, males who are more emotionally reactive are no more likely to be drinkers than not, but rather are more likely to stay within a parameter of moderate consumption than heavy usage. As the drinking categories were based on a Quantity X Frequency measure, it may still be true that students who were more emotionally reactive turned to alcohol more frequently but chose to drink less per drinking occasion. There appears to be a relationship supporting this notion as individuals who were more emotionally reactive were more likely to be Occasional versus Frequent Binge Drinkers; however, the odds of membership were not statistically significant in the model due to a large range in the odds ratio confidence interval (students were anywhere from .84 to 2.77 times likely to be a Frequent Binge Drinker). This suggests that emotionally reactive students may indeed drink more often, but at lesser amounts per drinking occasion.

Moderator Hypotheses

Although there was very little support for the moderator hypotheses and alcohol consumption, some interesting interactions did occur. The only significant Interaction Models in the GAU analyses for males and females was for the interaction of differentiation with perception of MSU student alcohol use. For males, the interaction was significant for the High versus Moderate Drinker Comparison and for females it was in the High versus Low Drinker comparison.

Taken by itself, as perceptions of MSU student consumption increased it was more likely that females were categorized as being High versus Low Drinkers. However, as the differentiation and MSU perception interaction term increased (high levels of each), it became less likely that the females were categorized as High Drinkers (Figure 4, p. 62). The effect of high or low perceptions of MSU student use only appears to be significant for females with low or average levels of differentiation. This indicates that as differentiation increases, there appears to be a protective factor against having high perceptions of use. Interestingly, as females with lower levels of perception achieve a higher level of differentiation, the likelihood they will be Low Drinkers diminishes, yet they retain an overall probability of remaining Low Drinkers. This suggests that as females become more highly differentiated they are more likely to drink at levels independent of what they feel is normative use. The nature of this interaction was different from what was hypothesized in that differentiation appears to moderate the relationship of perceptions of MSU student use.

Similarly for the males, when perceptions of MSU student consumption were considered by themselves, it was more likely that students were High versus Moderate

Drinkers as their perceptions increased. This effect only appeared to be significant for males with lower levels of differentiation, although it remained minimally true with average levels of differentiation as they were 1.16 times more likely to be High Drinkers (Figure 3, p. 60). When males with high perceptions transitioned from average to higher levels of differentiation they actually become more likely to be Moderate Drinkers, indicating increased differentiation serves as a protective factor against high levels of alcohol consumption. Additionally, there was a trend for students with lower perceptions to be more likely to be High Drinkers as their levels of differentiation improved from average to high; although, this was a very minimal effect (they were only 1.05 times more likely when having a one standard deviation higher level of perception). Nevertheless, there is a unique relationship for males in that they are more vulnerable to be more extreme, rather than moderate, drinkers if they have higher perceptions of others' use and low levels of differentiation. Moreover, as students obtain higher levels of differentiation there is a much lowered effect of their perceived level of student alcohol use. As was the case with females, the interaction was in the reverse order hypothesized in that differentiation appears to moderate the relationship of perceptions of MSU student use. These findings indicate that students with low levels (and moderate for females) of differentiation are more vulnerable to their conceived notions of how much alcohol the average student at MSU consumes. It is impossible to discern if the students create a reality of the MSU culture that fits their own established drinking behaviors or if their behavior matches what they feel is normative consumption. Nevertheless, having higher levels of differentiation appears to be a protective factor as there is a very minimal effect of perceptions in terms of students' own drinking behaviors.

While there were significant interactions for both males and females in terms of monthly alcohol use, there were only significant interactions for females in relation to binge drinking. The interaction of differentiation and perception of MSU student use had the same relationship for female Frequent Binge Drinkers versus Nonbinging Drinkers as it did for High versus Low Drinking females. Females with high perceptions were more likely to be Frequent Binge Drinkers when they had low levels of differentiation and actually reached a point where they were more likely to be Nonbinging Drinkers when they had high levels of differentiation (Figure 6, p. 73). Females with low levels of perception became slightly more likely to be Frequent Bingers when they had high levels of differentiation, although this effect was minimal in terms of predicting drinking categories. Again, this supports the notion that students with higher levels of differentiation drink independently of what they perceive to be normative use. Interestingly, the interaction did not fit the hypothesized relationship between the variables as neither was significant as an individual variable (according to the Wald statistic) and one variable did not significantly moderate the other.

The other female binge drinking analysis that showed a significant interaction with differentiation was COA status in the Frequent versus Occasional Binge Drinking comparison. Similar to the previously described interaction, neither variable was significant by itself in terms of predicting binge drinking categories. The non-COA females had a greater likelihood to be in the Occasional Binge Drinking category regardless of level of differentiation (Figure 7, p. 74). Female COAs were two-and-a-half times more likely to be Frequent versus Occasional Binge Drinkers when they had higher levels of differentiation. In terms of the theory of differentiation and triangling alcohol it

would be more congruent if COAs with higher levels of differentiation would binge drink less frequently as they had an ability to adopt different coping strategies than their alcoholic parents had. However, this hypothesized relationship purports that students are binge drinking in response to stress based on levels of differentiation rather than drinking for social reasons. Perhaps these students have normalized levels of acceptable use modeled by their parents and are not drinking as a means to alleviate anxiety. As there was no COA interaction for monthly use, another explanation for why COAs with higher differentiation may be more likely to be more extreme bingers is due to a perceived freedom from their families-of-origin and are more apt to drink at higher levels (as modeled by an alcoholic parent) as they have afforded themselves greater freedom to consume more per drinking occasion.

As previously described, there has traditionally been a shortage of ecological studies regarding college student alcohol consumption. In order to test the effects of multiple variables and the context of varying degrees of differentiation all of the logistic regression equations were analyzed utilizing all of the variables of interest. As would be expected with the number of variables included in the analysis, all of the comparisons were significant with the exception of the male Occasional Binge Drinkers versus Nonbinging Drinkers. The most commonly occurring variable across the models was that students with higher levels of perception regarding their best friend at MSU's alcohol consumption were more likely to be in the higher drinking category for the following: Moderate to Low Drinkers, High to Low Drinkers, Higher to Moderate Drinkers (males only), and in all of the binge drinking comparisons. When controlling for all of the other variables, differentiation failed to be a significant predictor of drinking category when

considered independently. However, there was an interaction effect for perceptions of best friend usage (High versus Low Drinkers - females) and for tension reduction (Frequent versus Occasional Binge Drinkers - males; Binge Drinkers and Nonbinging Drinkers - females; Occasional versus Nonbinging Drinkers - females). Interestingly, the previously described interactions of perceptions of MSU student use and COA status were no longer significant when controlling for the other variables in the Comprehensive Model.

There was an interesting interaction between differentiation and perceptions of best friend at MSU's use as females had extreme probabilities of being a High or Low Drinker if they had low levels of differentiation (see Figure 5, p. 66). Females with high or average perceptions are almost always a High Drinker and those with low perceptions are almost always Low drinkers. As differentiation levels increase, students with average perceptions are only slightly more likely to be High Drinkers, while females with high perceptions are likely to remain High Drinkers and those with low perceptions are likely to remain Low Drinkers. The main effect of having high or low perceptions is minimally altered based on degree of differentiation, while increasing levels of differentiation appears to serve as a protective factor for females with moderated levels of perception as they are almost as likely to be Low Drinkers as High Drinkers. As students with low levels of differentiation are extremely likely to either be a High or Low Drinker based on their perceptions of what their best friend drinks, it appears that these students have an inability to drink at differing levels than their immediate peer group. The probability of being in a particular drinking category became slightly less certain as levels of differentiation increased, regardless of level of perception.

Females with high and average expectations of alcohol as a tension reducer were always more likely to be a Binge Drinker versus Nonbinging Drinker (Figure 9, p. 80) or an Occasional Binge Drinker versus a Nonbinging Drinker (Figure 10, p. 81), regardless of their level of differentiation. This makes sense in a tension reduction framework as individuals would be more likely to drink at higher levels when they believed alcohol would help alleviate the anxiety. Although this study did not directly measure current levels of anxiety, the ability to tolerate anxiety was measured via differentiation. As students with high or average expectations exhibited increased abilities to tolerate anxiety increased (higher levels of differentiation) they were slightly less likely to be Binge Drinkers versus Nonbinging Drinkers (although minimal) or Occasional Binge Drinkers versus Nonbinging Drinkers, indicating a lesser prevalence of relying on binge drinking as a means cope with anxiety. Contrary to the tenets of differentiation, females with low tension reduction expectations in both comparison groups had an increased prevalence of binge drinking as their levels of differentiation increased; however, they consistently remained less likely than those with moderate to high expectations. One explanation of this relationship is that these students are merely drinking for the sake of drinking, rather than as a reaction to anxiety tolerance. As these students have low expectations that alcohol actually reduces tension, it is unlikely that they would rely on it is a means to cope with anxiety. Therefore, the increased prevalence of binge drinking based on increased levels of differentiation may be more attributable to a greater sense of freedom that they have afforded themselves to drink more beverages when they chose to drink.

The identical trend of tension reduction just described for females was applicable to the males. Gender differences demonstrated that in more highly differentiated males,

those with low tension reduction expectations have a greater likelihood to be a Frequent versus Occasional Binge Drinker, while males with high expectations are almost as likely to be in either particular category (Figure 8, p. 77). For females, the relationship of differentiation and high expectations of tension reduction were based on the comparisons at the lower end of the spectrum of binge drinking behaviors. For males this interaction was significant only for the more problematic and moderate categorical comparison. These gender differences indicate that differentiation as a potential protective factor may work differently for males and females. For females, increased differentiation may serve as a protector from escalating into binge drinking behavior as a coping mechanism. For males, greater differentiation may protect them from a gateway to frequent incidents of heavy drinking as a means of coping.

Limitations

One limitation of the study is related to self-reporting of alcohol use. As students knew the purpose of the study was to understand how variables were related to alcohol use, there may have been a tendency to misreport their level of alcohol consumption. However, there were no differences between categories of GAU or binge drinking for those that took the survey online or the paper-and-pencil version for either males or females. This finding suggests that the likelihood to over-report might be marginal as those who did not have contact with the researcher reported similar levels of use as those who did have contact.

Another limitation for this study is the limited generalizability of the results to other populations. First, the sample was predominately Caucasian, which restricts the understanding of how the relationship differentiation has with drinking applies to a more

diverse population. Additionally, this sample appeared to be comprised of more drinkers than have been found in other studies. As mentioned, 89% of the subjects reported drinking in the past 30 days, which was not only higher than the longitudinal ranges for 30 day use, but exceeded the levels of annual use. Additionally, the percentage of students that drank at binge levels (67% for the total sample, over 76% for males, and over 59% for females) exceeded the longitudinal studies' ranges as well. This may suggest that the sample may not be representative of other university students across the nation. This may also indicate that trends for use are much higher than the past or that MSU has a unique culture of high alcohol consumption. Additionally, the effects of differentiation may have been masked with such a high drinking sample.

Recommendations for Future Research

Although there was not overwhelming evidence supporting the role differentiation plays in college student drinking, the relationships that were significant may warrant future research to better understand this dynamic. It appears that differentiation by itself does not play a substantial role in the varying levels of alcohol consumption and binge drinking behaviors. Findings indicated that differentiation had significant interactions with perceptions of peer use, best friend use, COA status, and expectations of tension reduction. These interactions indicate that differentiation does indeed have some implications for college student drinking. Future studies should further explore the interaction of gender differences with differentiation as a risk/protective factor for alcohol use as well as for other behavioral coping strategies.

Future work with differentiation and college students should also incorporate longitudinal designs. As mentioned in the review of literature, the college culture is

unique in that a majority of students who drink at higher levels will drink at lesser amounts after graduation. However, for others, drinking behaviors in college may be a gateway to a lifetime of misuse or abuse. It would seem that differentiation would be one stable factor that would contribute to maintaining drinking behaviors beyond college. A person's level of differentiation is unlikely to change without concerted effort on the part of the individual. Therefore, if an individual has a low level of differentiation in college she is likely to have a low level after college. It would be intriguing to examine the contexts in which levels of differentiation would continue to be risk or protective factors for students while they are in college as well as after graduation.

Overall there was very little effect of COA status across all of the GAU and binge drinking analyses. This finding suggests that COAs attending college may have a greater sense of resiliency than non-college attending COAs. Another reason for a lack of a significant effect of COA status may be due to just screening for parental alcoholism rather than the contextual variation of parental alcoholism. Perhaps differentiation acts differently as a risk/protective factor under different circumstances. For example, a male COA with low levels of differentiation might be at greater risk if he had an antisocial alcoholic father with a 15 year history of alcoholism than he would be if he had a high functioning alcoholic mother with a recent onset of alcoholism. Future research should include typology of parental alcoholism, gender of the alcoholic parent, a gender of alcoholic parent-gender of COA interaction, the comorbidity of other mental health illness in the alcoholic parent, the presence of abuse either witnessed by or perpetrated on the COA, approximate number of years the parent has been drinking at alcoholic levels, and if the parent is in remission or is an active alcoholic. Higher levels of differentiation

may serve as a protective factor with these dynamics just as low levels of differentiation may be an additional risk factor.

Not only are more comprehensive studies with types of alcoholics warranted, future research should incorporate a more ethnically diverse sample to enhance understanding of the relationship between differentiation and alcohol consumption, as well as the concept of differentiation in general. The DSI-R was normed on a predominately Caucasian sample and the few psychometric changes implemented in this study were with a predominately Caucasian sample. Future research with differentiation needs to examine if different ethnic groups are influenced in the same way by the various theoretical tenets of differentiation. Different ethnic groups may react quite differently from one another in their struggle for togetherness and individuality, anxiety tolerance, and triangling behaviors. Although Bowen states that it is theoretically universal to all cultures, there needs to be empirical validation of this assumption.

Perhaps the most surprising discovery in the Comprehensive Model was the change in significance of individual variables. When controlling for all of the other variables the interactions between differentiation and perceptions of MSU student use and COA status were no longer significant. Additionally, the interactions between differentiation and perception of best friend use and expectations of tension reduction emerged as being significant contributors to the prediction of drinking categories. Although evidence has been provided for differentiation serving as a risk/protective factor, further research needs to analyze contexts in which differentiation remains a significant factor.

Clinical Implications

Although the results minimally supported for the differentiation hypotheses, certain clinical implications can be understood. Many universities offer or require alcohol counseling for students who misuse alcohol while they are residents of the university dormitories. Although there is a time limited nature to these counseling sessions, implementing a family-of-origin component might prove to be beneficial. If the scope of addressing the relationships between students and their families-of-origin is outside of the time parameters or the clinical training of the counselor, referral to a campus-based family or psychology clinic or a community-based family therapist might best serve the short- and long-term needs of students. As indicated by the various interactions in the analyses, levels of differentiation have a unique effect on risk factors for college drinking. If students become more aware of how their relationships with their families-of-origin are continuing to effect how they respond to anxiety tolerance while they are at school, they have a greater likelihood to respond in more objective than reactive ways.

Family therapists and psychologists trained in family systems can be excellent resources for maintaining the overall well-being of university students. The psychotherapy literature refers to dynamic change process as being comprised of first- and second order change. First order change refers to the alleviation of symptomatology. In the case of alcohol misuse, this would be evidenced in a change of drinking behaviors. Second order change deals with addressing the dynamics involved in individuals' lives that illicit symptomatic behavior. A treatment modality that emphasizes second order change might be particularly beneficial for college students based on the unique combination of stressors that they face: adjusting to living away from their family-of-

origin for the first time, a disparate number of demands in order to obtain academic success, balancing financial struggle of limited resources and paying tuition, living with peers, and becoming acclimated to the university culture. Students will react to these pressures in a myriad of ways. It is crucial that college counselors be aware of deeper motivations for problematic behaviors, such as alcohol abuse. If the first order goal of reduction in alcohol abuse is met, some students may simply develop a new form of psychopathology as a result of family relationships and coping styles learned in family contexts. As previously mentioned, a parental dyad can diffuse the relational anxiety by triangling their child. Although this may result in long-term consequences for the child, it brings short-term stability to the family. A consequence of parents triangling the child might be a deflated sense of self. Although being away at college may be a cathartic healing experience for some, it may be an overwhelming period for others. By gaining an understanding of students' contextual dynamics, therapists, psychologists, and counselors will be able to help them adjust to university life.

Summary

The significant main effects of perception of the average MSU student's use and expectations of alcohol as a tension reducer indicate that universities have the power to take a proactive stance in providing education regarding misperceptions that students may have about alcohol. One mechanism for providing reliable information about alcohol and how much is typically consumed is through various first year orientation programs. Additionally, information can be disseminated to the residence halls at various times throughout the year through student affairs programming or by providing information through campus newspapers as a way to educate both on- and off-campus students. The

focus of any of these educational programs should be on clarifying misperceptions regarding peer use as well as providing suggestions of coping strategies outside of alcohol use. As alcohol consumption is a normative part of the college culture, the university has an obligation to provide appropriate and factual information to its students regarding the use and misuse of alcohol. It is clear from the high numbers of students consuming alcohol that this problem could plague university life.

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Appendix A

Differentiation of Self Inventory – Revised (DSI-R)

Differentiation of Self Inventory – Revised (DSI-R)

"These are questions concerning your thoughts and feelings about yourself and relationships with others. Please read each statement carefully and decide how much the statement is *generally true* of you on a 1 (not at all) to 6 (very) scale. If you believe that an item does not pertain to you (e.g., you are not currently married or in a committed relationship, or one or both of your parents are deceased), please answer the item according to your best guess about what your thoughts and feelings would be in that situation. Be sure to answer every item and try to be as honest and accurate as possible in your responses."

1. People have remarked that I'm overly emotional.

1	2	3	4	5	6
Not at all					Very

2. I have difficulty expressing my feelings to people I care for.

1	2	3	4	5	6
Not at all					Very

3. I often feel inhibited around my family.

1	2	3	4	5	6
Not at all					Very

4. I tend to remain pretty calm even under stress.

1	2	3	4	5	6
Not at all					Very

5. I usually need a lot of encouragement from others when starting a big job or task.

1	2	3	4	5	6
Not at all					Very

6. When someone close to me disappoints me, I withdraw from him/her for a time.

1	2	3	4	5	6
Not at all					Very

7. No matter what happens in my life, I know that I'll never lose my sense of who I am.

1	2	3	4	5	6
Not at all					Very

8. I tend to distance myself when people get too close to me.

1	2	3	4	5	6
Not at all					Very

9. I want to live up to my parents' expectations of me.

1	2	3	4	5	6
Not at all					Very

10. I wish that I weren't so emotional.

1	2	3	4	5	6
Not at all					Very

11. I usually do not change my behavior simply to please another person.

1	2	3	4	5	6
Not at all					Very

12. My spouse/partner could not tolerate it if I were to express to him/her my true feelings about some things.

1	2	3	4	5	6
Not at all					Very

13. When my spouse/partner criticizes me, it bothers me for days.

1	2	3	4	5	6
Not at all					Very

14. At times my feelings get the best of me and I have trouble thinking clearly.

1	2	3	4	5	6
Not at all					Very

15. When I am having an argument with someone, I can separate my thoughts about the issue from my feelings about the person.

1	2	3	4	5	6
Not at all					Very

16. I'm often uncomfortable when people get too close to me.

1	2	3	4	5	6
Not at all					Very

17. I feel a need for approval from virtually everyone in my life.

1	2	3	4	5	6
Not at all					Very

18. At times I feel as if I'm riding an emotional roller-coaster.

1	2	3	4	5	6
Not at all					Very

19. There's no point in getting upset about things I cannot change.

1	2	3	4	5	6
Not at all					Very

20. I'm concerned about losing my independence in intimate relationships.

1	2	3	4	5	6
Not at all					Very

21. I'm overly sensitive to criticism.

1	2	3	4	5	6
Not at all					Very

22. I try to live up to my parents' expectations.

1	2	3	4	5	6
Not at all					Very

23. I'm fairly self-accepting.

1	2	3	4	5	6
Not at all					Very

24. I often feel that my spouse/partner wants too much from me.

1	2	3	4	5	6
Not at all					Very

25. I often agree with others just to appease them.

1	2	3	4	5	6
Not at all					Very

26. If I have had an argument with my spouse/partner, I tend to think about it all day.

1	2	3	4	5	6
Not at all					Very

27. I am able to say "no" to others even when I feel pressured by them.

1	2	3	4	5	6
Not at all					Very

28. When one of my relationships becomes very intense, I feel the urge to run away from it.

1	2	3	4	5	6
Not at all					Very

29. Arguments with my parent(s) or sibling(s) can still make me feel awful.

1	2	3	4	5	6
Not at all					Very

30. If someone is upset with me, I can't seem to let it go easily.

1	2	3	4	5	6
Not at all					Very

31. I'm less concerned that others approve of me than I am in doing what I think is right.

1	2	3	4	5	6
Not at all					Very

32. I would never consider turning to any of my family members for emotional support.

1	2	3	4	5	6
Not at all					Very

33. I often feel unsure when others are not around to help me make a decision.

1	2	3	4	5	6
Not at all					Very

34. I'm very sensitive to being hurt by others.

1	2	3	4	5	6
Not at all					Very

35. My self-esteem really depends on how others think of me.

1	2	3	4	5	6
Not at all					Very

36. When I'm with my spouse/partner, I often feel smothered.

1	2	3	4	5	6
Not at all					Very

37. When making decisions, I seldom worry about what others will think.

1	2	3	4	5	6
Not at all					Very

38. I often wonder about the kind of impression I create.

1	2	3	4	5	6
Not at all					Very

39. When things go wrong, talking about them usually makes it worse.

1	2	3	4	5	6
Not at all					Very

40. I feel things more intensely than others do.

1	2	3	4	5	6
Not at all					Very

41. I usually do what I believe is right regardless of what others say.

1	2	3	4	5	6
Not at all					Very

42. Our relationship might be better if my spouse/partner would give me the space I need.

1	2	3	4	5	6
Not at all					Very

43. I tend to feel pretty stable under stress.

1	2	3	4	5	6
Not at all					Very

44. Sometimes I feel sick after arguing with my spouse/partner.

1	2	3	4	5	6
Not at all					Very

45. I feel it's important to hear my parents' opinions before making decisions.

1	2	3	4	5	6
Not at all					Very

46. I worry about people close to me getting sick, hurt, or upset.

1	2	3	4	5	6
Not at all					Very

Appendix B

Analysis of the DSI-R with College Students

Description of the DSI-R

Differentiation was measured by scores on the Differentiation of Self Inventory-Revised (DSI-R). Subscale and full-scale scores from the DSI-R were obtained by averaging the six-point Likert responses for each of the respective scales after reverse coding the appropriate items. Full- and subscale scores reflect a range from 1 (low differentiation) to 6 (higher differentiation).

Descriptive Statistics

The means for the subscales ranged from 3.37 to 4.57 and the DSI-R full-scale mean was 3.89 (see Table 11, p. 117). Each of the full-scale-subscale correlations ranged from moderate (.66) to high (.86) and were significant at $p < .001$ (see Table 12, p. 117). Additionally, each of the subscale intercorrelations ranged from low (.29) to moderate (.65) and were all significant at $p < .001$. The full-scale and subscale measures each illustrated high internal consistency reliabilities based on Cronbach's alpha values (ER α = .86; IP α = .77; EC α = .81; FO α = .69; DSI-R α = .90).

Each of the subscales and full-scale showed significantly different scores for males and females, although the relative effect sizes indicate these differences may be relatively trivial. The Emotional Reactivity scores of females (3.46) were significantly lower than males (3.72) ($t(445) = -3.11$, $p = .002$) with a low effect size ($d = .30$, $r^2_{pb} = 0.02$) illustrating that only around 2% of the variance in ER scores can be explained by

Table 11.

Means and Distribution for the Total DSI-R and Subscales

	Total Sample			Males			Females		
	Mean	SD	Range	Mean	SD	Range	Mean	SD	Range
ER	3.58	0.90	1.00 – 6.00	3.72**	0.87	1.00 – 5.91	3.46**	0.90	1.18 – 6.00
IP	4.04	0.71	1.36 – 5.91	4.15**	0.72	2.09 – 5.91	3.96**	0.69	1.36 – 5.91
EC	4.57	0.74	2.08 – 6.00	4.43**	0.75	2.08 – 6.00	4.68**	0.72	2.67 – 6.00
FO	3.37	0.62	1.58 – 5.67	3.49**	0.59	2.17 – 4.92	3.27**	0.63	1.58 – 5.67
DSI-R	3.89	0.56	2.13 – 5.41	3.95*	0.55	2.34 – 5.37	3.84*	0.56	2.13 – 5.41

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 12.

Correlations for the Total DSI-R and Subscales

	ER	IP	EC	FO
ER	—	—	—	—
IP	.52**	—	—	—
EC	.35**	.35**	—	—
FO	.65**	.38**	.29**	—
DSI-R	.86**	.74**	.66**	.75**

** $p < .001$, two-tailed

gender differences. "I" Position scores of females (3.96) were significantly lower than males (4.15) (t (445) = -2.91, p = .004, d = .28, r^2_{pb} = 0.02). Emotional Cutoff scores of females (4.68) were significantly higher than males (4.43) (t (445) = 3.56, p < .001, d = .34, r^2_{pb} = 0.03). Fusion with Others scores of females (3.27) were significantly lower than males (3.49) (t (445) = -3.66, p < .001, d = .35, r^2_{pb} = 0.03). Finally, the total DSI-R scores of females (3.84) were significantly lower than males (3.95) (t (445) = -1.99, p = .047, d = .19, r^2_{pb} = 0.01)

Four-Factor Model

Confirmatory factor analyses were run separately for males and females as well as with both genders combined in order to gain a comprehensive understanding of the four-factor structure of the DSI-R with college students. The methods used in Skowron and Friedlander (1998) in the creation of the DSI were replicated for this analysis. Individual questions from the scale were clustered into meta-items for each of the four subscales (Emotional Reactivity = ER, "I" Position = IP, Emotional Cutoff = EC, and Fusion with Others = FO), with each meta-item containing a total of 3 to 4 items. For example, the 11 items in the ER subscale yielded indicators ER_1, ER_2, and ER_3, each containing 3 to 4 items. A total of 12 indicators were created (3 per subscale). Although the items in Skowron and Friedlander (1998) were randomly assigned to the respective meta-item cluster, this study will use the identical clusters for ER, IP, and EC used in their study (ER_1 = DSI-R items 1, 14, 26, 38; ER_2 = DSI-R items 6, 18, 30, 40; ER_3 = DSI-R items 10, 21, 34; IP_1 = DSI-R items 4, 15, 27, 41; IP_2 = DSI-R items 7, 19, 31, 43; IP_3 = DSI-R items 11, 23, 35; EC_1 = DSI-R items 2, 12, 24, 36; EC_2 = DSI-R items 3, 16, 28, 39; EC_3 = DSI-R items 8, 20, 32, 42). As the items for the FO scale were revised in the DSI-R

(Skowron & Schmitt, 2003) only three of the original questions remained. Although the wording for these items changed, their respective order in the inventory remained the same; therefore the item numbers were entered into the same meta-items from the original DSI with the three added questions (items 44, 45, 46) randomly assigned to the indicator groups (FO_1 = DSI items 5, 17, 29, 44; FO_2 = DSI items 9, 22, 33, 45; FO_3 = DSI items 13, 25, 37, 46). The intercorrelations for the 12 indicators used in the confirmatory factor analysis are presented in Table 13 (p. 121).

Following the original protocol, each of the indicators was permitted to load freely on its respective factor and was constrained to 0 on the other factors. Each latent variable was scaled to the first indicator by fixing its value to 1.00. The fit indices used to evaluate the model were also replicated from the original study: A chi-square to degrees of freedom ratio ($\chi^2/df < 2.0$); goodness-of-fit index (GFI > .90); adjusted goodness-of-fit index (AGFI > .80); and the root mean squared of the residuals (RMR < .10).

The four-factor model is illustrated in Figure 11 (p. 125).The model showed a good fit of maintaining a four-factor structure ($\chi^2(48)$, N = 447) = 177.71, $p <$ .001, $\chi^2/df = 3.70$, GFI = .94, AGFI = .90, RMR = .04). Although the significant chi-square and chi-square-to-degrees of freedom ratio values indicated a poor fit, there has been debate about the problematic nature of these analyses as related to sample size and has resulted in the development of various other goodness-of-fit measures including the others in this analysis (Byrne, 2001; Shorey, Snyder, Yang, & Lewin, 2003).
The four-factor model maintained a good fit for when females were analyzed separately ($\chi^2(48, N = 246) = 129.54, p < .001$, $\chi^2/df = 2.70$, GFI = .92, AGFI = .87, RMR = .04); however, it fell below the specified fit criteria for males ($\chi^2(48, N = 201) = 214.40, p <$

.001, $\chi^2/df = 4.47$, GFI = .86, AGFI = .77, RMR = .10). The model with differentiation as a higher order latent factor (Figure 12, p. 126) indicated that the DSI-R was a single and multidimensional construct for the combined sample ($\chi^2(50, N = 447) = 189.22, p < .001$, $\chi^2/df = 3.78$, GFI = .93, AGFI = .90, RMR = .05) as well as separately for females ($\chi^2(50, N = 246) = 132.19, p < .001$, $\chi^2/df = 2.64$, GFI = .92, AGFI = .87, RMR = .04) but not for males ($\chi^2(50, N = 201) = 144.89, p < .001$, $\chi^2/df = 2.90$, GFI = .89, AGFI = .83, RMR = .06).

After analyzing the male data, one item from the Emotional Reactivity (#38), "I" Position (#11), and Emotional Cutoff (#32) subscales were omitted after exploring their respective effects on their standard errors and covariance estimates. In addition to making the necessary changes to the confirmatory factor meta-item clusters (ER_1, IP_3, EC_3), item #15 was randomly chosen to move from IP_1 to IP_3 so that the later indicator would maintain a mean of three items.

The means for the subscales ranged from 3.37 to 4.52 and the DSI-R full-scale mean remained 3.89 (see Table 14, p. 123). Each of the full-scale-subscale correlations ranged from moderate (.68) to high (.86) and were all significant at $p < .001$ (see Table 15, p. 123). Additionally, each of the subscale intercorrelations ranged from low (.20) to moderate (.66) and were all significant at $p < .001$. The full-scale and subscale Cronbach's alpha values were not altered with the deletion of the three items (ER α = .86; IP α = .77; EC α = .80; FO α = .69; DSI-R α = .90). The intercorrelations for the revised 12 indicator used in the confirmatory factor analysis are presented in Table 16 (p. 124).

Table 13

Correlation Matrix for the DSI-R Item Clusters

	ER_1	ER_2	ER_3	IP_1	IP_2	IP_3	EC_1	EC_2	EC_3	FO_1	FO_2
ER_1	—	—	—	—	—	—	—	—	—	—	—
ER_2	.72**	—	—	—	—	—	—	—	—	—	—
ER_3	.69**	.67**	—	—	—	—	—	—	—	—	—
IP_1	.33**	.28**	.41**	—	—	—	—	—	—	—	—
IP_2	.39**	.35**	.49**	.60**	—	—	—	—	—	—	—
IP_3	.39**	.37**	.51**	.49**	.53**	—	—	—	—	—	—
EC_1	.26**	.28**	.27**	.26**	.25**	.28**	—	—	—	—	—
EC_2	.23**	.30**	.32**	.22**	.26**	.32**	.58**	—	—	—	—
EC_3	.21**	.25**	.29**	.19**	.25**	.23**	.65**	.62**	—	—	—
FO_1	.58**	.57**	.60**	.28**	.33**	.39**	.27**	.26**	.234**	—	—
FO_2	.30**	.30**	.24**	.13**	.01	.07	.13**	.02	-.001	.39**	—
FO_3	.49**	.40**	.53**	.34**	.29**	.38**	.33**	.23**	.242**	.48**	.35**

Note: ER = Emotional Reactivity; *IP* = "I" Position; EC = Emotional Cutoff; FO = Fusion with Others. ER_1 = DSI-R items 1, 14, 26, 38; ER_2 = DSI-R items 6, 18, 30, 40; ER_3 = DSI-R items 10, 21, 34; IP_1 = DSI-R items 4, 15, 27, 41; IP_2 = DSI-R items 7, 19, 31, 43; IP_3 = DSI-R items 11, 23, 35; EC_1 = DSI-R items 2, 12, 24, 36; EC_2 = DSI-R items 3, 16, 28, 39; EC_3 = DSI-R items 8, 20, 32, 42; FO_1 = DSI-R items 5, 17, 29, 44; FO_2 = DSI-R items 9, 22, 33, 45; FO_3 = DSI-R items 13, 25, 37, 46.

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

As was the case with the original analysis, the subscales and full-scale showed significantly different scores for males and females with minimal effect sizes (see Table 14, p. 123). The Emotional Reactivity scores of females (3.54) were significantly lower than males (3.81) (t (445) = -3.12, p = .002) with a low effect size (d = .30, r^2_{pb} = 0.02) illustrating that only around 2% of the variance in ER scores can be explained by gender differences. "I" Position score of females (3.98) were significantly lower than males (4.19) (t (445) = -3.03, p = .003, d = 0.29, r^2_{pb} = 0.02). Emotional Cutoff scores of females (4.63) were significantly higher than males (4.39) (t (445) = 3.24, p = .001, d = 0.31, r^2_{pb} = 0.02). Fusion with Others scores of females (3.27) were significantly lower than males (3.49) (t (445) = -3.657, p < .001, d = 0.35, r^2_{pb} = 0.03). Finally, the total DSI-R scores of females (3.84) were significantly lower than males (3.96) (t (445) = -2.106, p = .036, d = 0.20, r^2_{pb} = 0.01).

The revised four-factor model is illustrated in Figure 13 (p. 127).The model showed a good fit of maintaining a four-factor structure in general(χ^2(48, N = 447) = 171.42, p < .001, χ^2/df = 3.57, GFI = .94, AGFI = .90, RMR = .04) as well as separately for females (χ^2(48, N = 246) = 150.79, p < .001, χ^2/df = 3.14, GFI = .91, AGFI = .85, RMR = .05) and males (χ^2(48, N = 201) = 106.48, p < .001, χ^2/df = 2.22, GFI = .91, AGFI = .86, RMR = .05). The revised model with differentiation as a higher order latent factor (Figure 14, p. 128) indicated that the DSI-R is a single and multidimensional construct for the combined sample (χ^2(50, N = 447) = 181.83, p < .001, χ^2/df = 3.64, GFI = .94, AGFI = .90, RMR = .04) as well as separately for females (χ^2(50, N = 246) = 153.37, p < .001, χ^2/df = 3.07, GFI = .91, AGFI = .85, RMR = .05) and males (χ^2(50, N = 201) = 122.74, p < .001, χ^2/df = 2.46, GFI = .90, AGFI = .85, RMR = .05).

Table 14

Means and Distribution for the Revised Total DSI-R and Subscales

	Total Sample			Males			Females		
	Mean	SD	Range	Mean	SD	Range	Mean	SD	Range
ER	3.66	0.94	1.00 – 6.00	3.81**	0.90	1.00 – 6.00	3.54**	0.95	1.20 – 6.00
IP	4.07	0.74	1.40 – 5.90	4.19**	0.75	2.10 – 5.90	3.98**	0.72	1.40 – 5.90
EC	4.52	0.76	1.91 – 6.00	4.39**	0.76	1.91 – 6.00	4.63**	0.75	2.45 – 6.00
FO	3.37	0.62	1.58 – 5.67	3.49**	0.59	2.17 – 4.92	3.27**	0.63	1.58 – 5.67
DSI-R	3.89	0.57	2.21 – 5.49	3.96*	0.56	2.42 – 5.44	3.84*	0.58	2.21 – 5.49

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 15

Correlations for the Revised Total DSI-R and Subscales

	ER	IP	EC	FO
ER	—	—	—	—
IP	.47**	—	—	—
EC	.43**	.38**	—	—
FO	.66**	.20**	.35**	—
DSI-R	.86**	.68**	.73**	.73**

** $p < .001$, two-tailed

Table 16

Correlation Matrix for the Revised DSI-R Item Clusters

	ER_1	ER_2	ER_3	IP_1	IP_2	IP_3	EC_1	EC_2	EC_3	FO_1	FO_2
ER_1	—	—	—	—	—	—	—	—	—	—	—
ER_2	.71**	—	—	—	—	—	—	—	—	—	—
ER_3	.70**	.67**	—	—	—	—	—	—	—	—	—
IP_1	.34**	.24**	.41**	—	—	—	—	—	—	—	—
IP_2	.42**	.35**	.49**	.60**	—	—	—	—	—	—	—
IP_3	.42**	.42**	.54**	.52**	.55**	—	—	—	—	—	—
EC_1	.26**	.28**	.27**	.26**	.25**	.29**	—	—	—	—	—
EC_2	.21**	.30**	.32**	.24**	.26**	.29**	.58**	—	—	—	—
EC_3	.19**	.26**	.27**	.17**	.20**	.18**	.63**	.57**	—	—	—
FO_1	.56**	.57**	.60**	.28**	.33**	.41**	.27**	.26**	.25**	—	—
FO_2	.30**	.30**	.24**	.11**	.01	.12*	.13**	.02	.08	.39**	—
FO_3	.46**	.40**	.53**	.32**	.29**	.39**	.33**	.23**	.24**	.48**	.35**

Note: Items in bold reflect cluster changes in the revised analysis. ER = Emotional Reactivity; I*P* = "I" Position; EC = Emotional Cutoff; FO = Fusion with Others. **ER_1** = DSI-R items 1, 14, 26; ER_2 = DSI-R items 6, 18, 30, 40; ER_3 = DSI-R items 10, 21, 34; **IP_1** = DSI-R items 4, 27, 41; IP_2 = DSI-R items 7, 19, 31, 43; **IP_3** = DSI-R items 15, 23, 35; EC_1 = DSI-R items 2, 12, 24, 36; EC_2 = DSI-R items 3, 16, 28, 39; **EC_3** = DSI-R items 8, 20, 42; FO_1 = DSI-R items 5, 17, 29, 44; FO_2 = DSI-R items 9, 22, 33, 45; FO_3 = DSI-R items 13, 25, 37, 46.

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

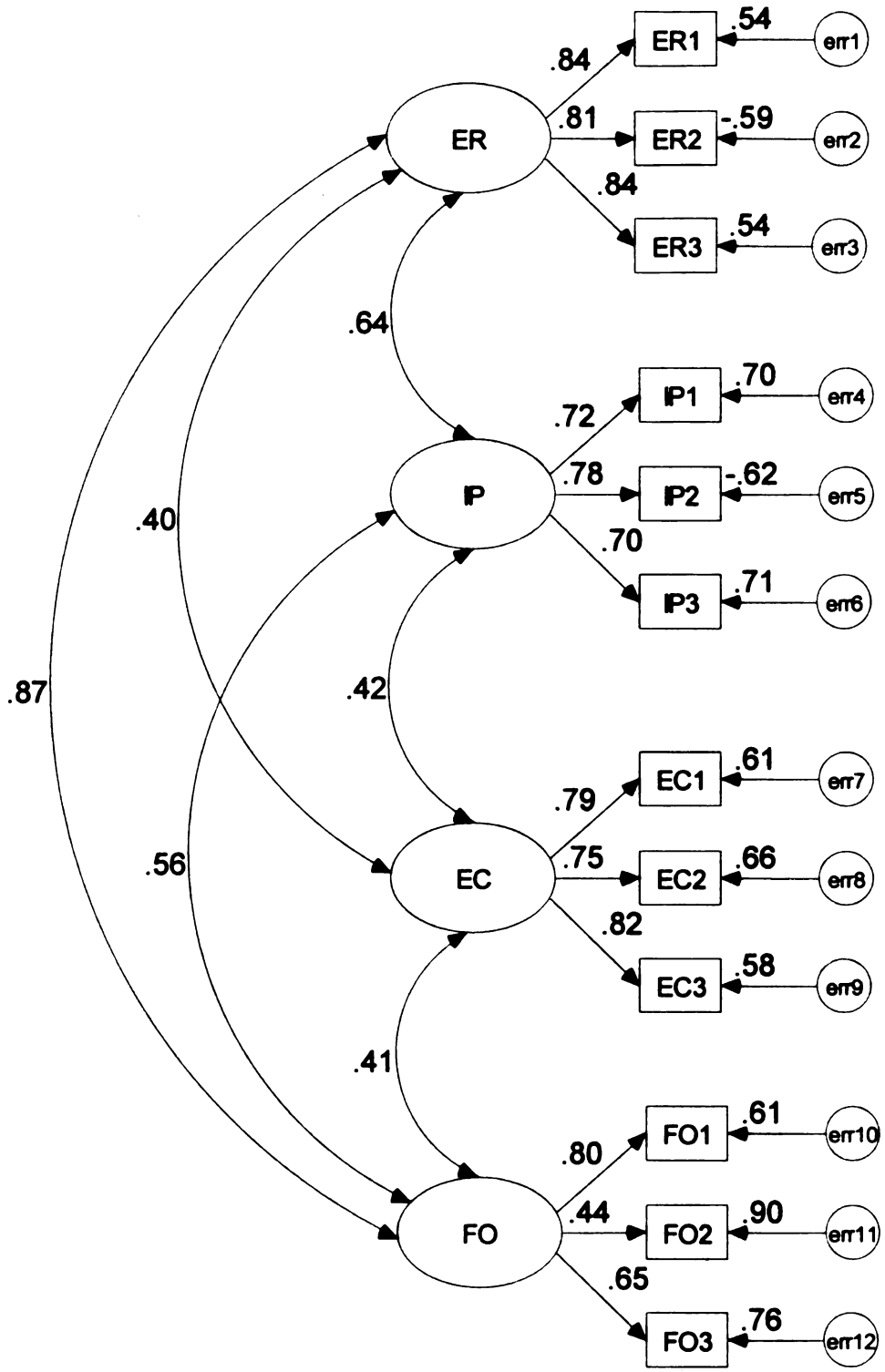

Figure 11. Four-Factor analysis of the DSI-R with males and females.

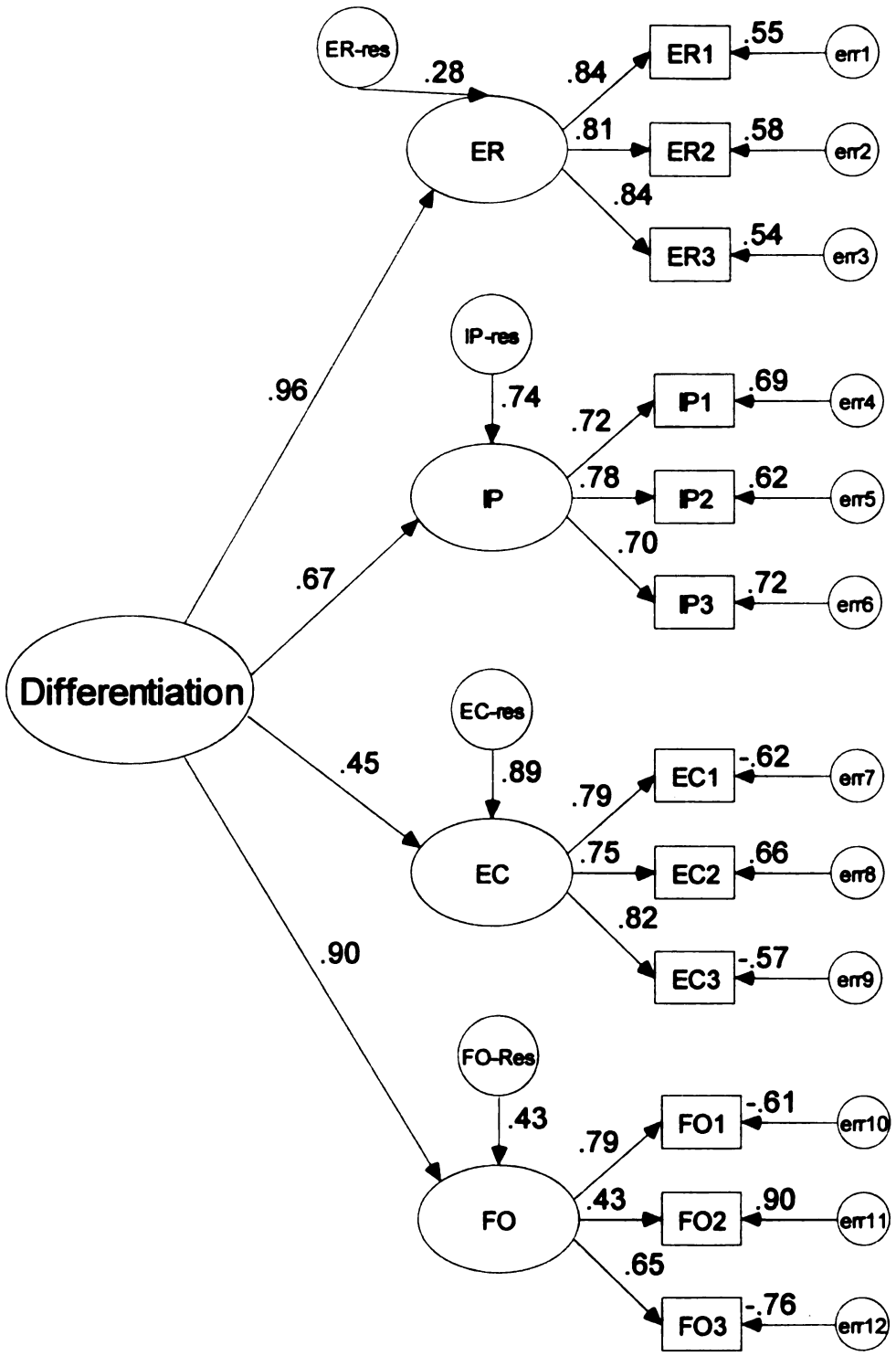

Figure 12. Differentiation as a higher order latent factor with males and females.

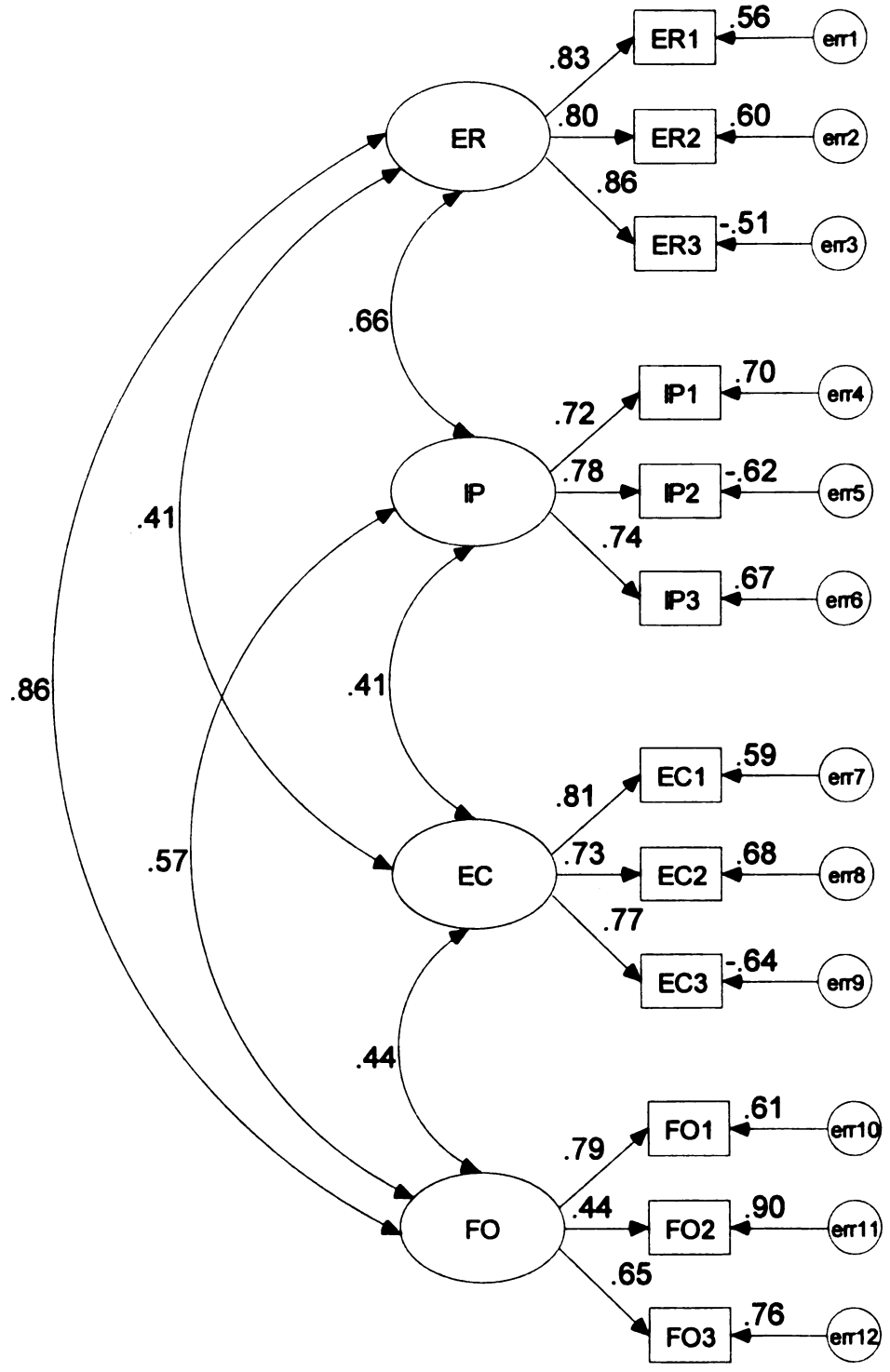

Figure 13. Four-factor analysis of the Revised DSI-R with males and females.

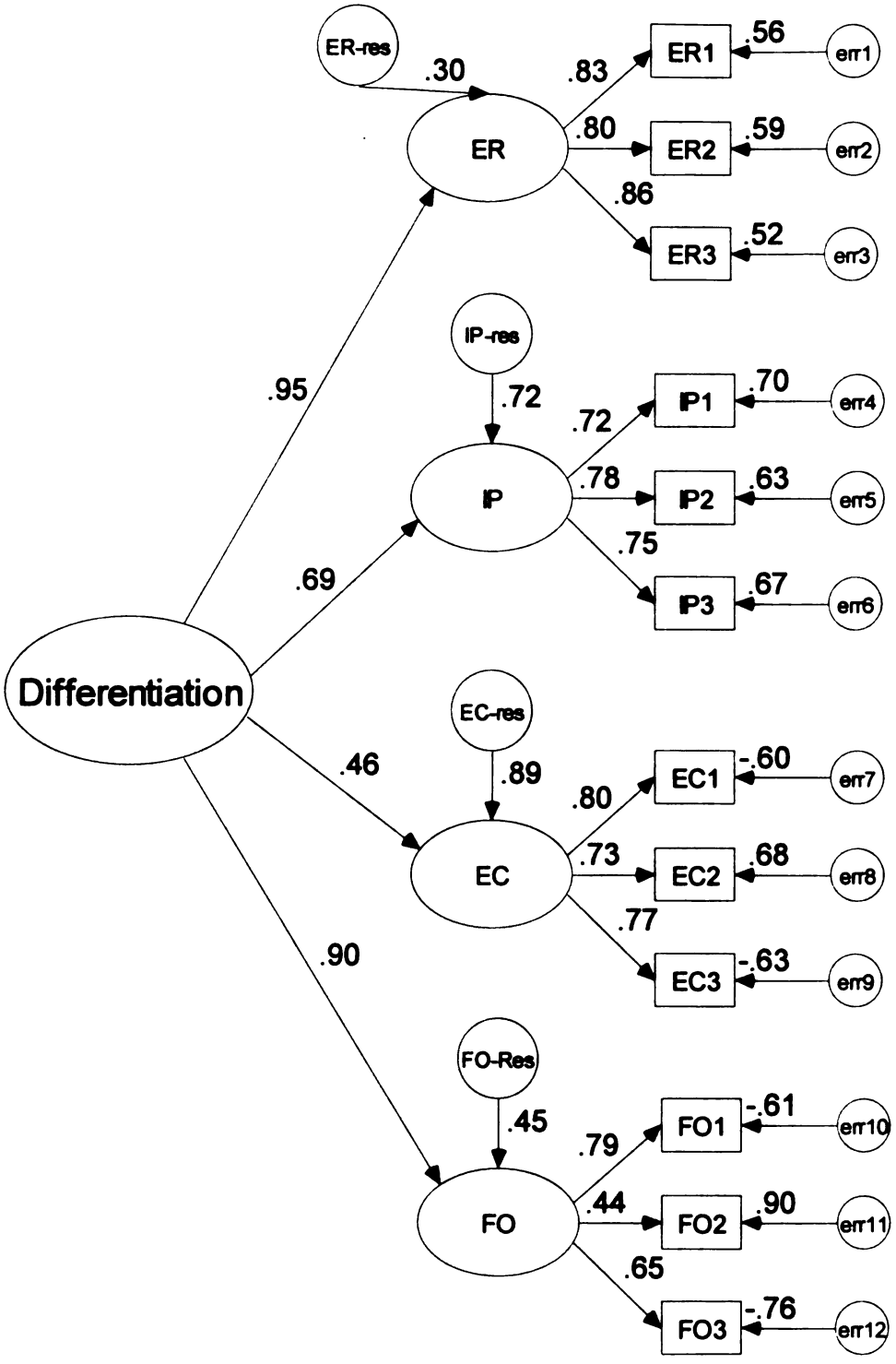

Figure 14. Differentiation as a higher order latent factor with males and females in the Revised DSI-R.

Appendix C

Children of Alcoholics Screening Test (CAST)

1. Have you ever thought that one of your parents had a drinking problem? 1. Yes 2. No
2. Have you ever lost sleep because of a parent's drinking? 1. Yes 2. No
3. Did you ever encourage one of your parents to quit drinking? 1. Yes 2. No
4. Did you ever feel alone, scared, nervous, angry or frustrated because a parent was not able to stop drinking? 1. Yes 2. No
5. Did you ever argue or fight was a parent when he or she was drinking? 1. Yes 2. No
6. Did you ever threaten to run away from home because of a parent's drinking? 1. Yes 2. No
7. Has a parent ever yelled at or hit you or other family members when drinking? 1. Yes 2. No
8. Have you ever heard your parents fight when one of them was drunk? 1. Yes 2. No
9. Did you ever protect another family member from a parent who was drinking? 1. Yes 2. No
10. Did you ever feel like hiding or emptying a parent's bottle of liquor? 1. Yes 2. No
11. Do many of your thoughts revolve around a problem drinking parent or difficulties that arise because of his or her drinking? 1. Yes 2. No
12. Did you ever wish that a parent would stop drinking? 1. Yes 2. No
13. Did you ever feel responsible for or guilty about a parent's drinking? 1. Yes 2. No
14. Did you ever fear that your parents would get divorced due to alcohol misuse? 1. Yes 2. No
15. Have you ever withdrawn from and avoided outside activities and friends because of embarrassment and shame over a parent's drinking problem? 1. Yes 2. No
16. Did you ever feel caught in the middle of an argument or fight between a problem drinking parent and your other parent? 1. Yes 2. No
17. Did you ever feel that you made a parent drink alcohol? 1. Yes 2. No
18. Have you ever that a problem drinking parent did not really love you? 1. Yes 2. No
19. Did you ever resent a parent's drinking? 1. Yes 2. No
20. Have you ever worried about a parent's health because of his or her alcohol use? 1. Yes 2. No
21. Have you ever been blamed for a parent's drinking? 1. Yes 2. No
22. Did you ever think your father was an alcoholic? 1. Yes 2. No
23. Did you ever wish you home could be more like the homes of your friends who did not have a parent with a drinking problem? 1. Yes 2. No

24. Did a parent ever make promises to you that he or she did not keep because of drinking? 1. Yes 2. No

25. Did you ever think your mother was an alcoholic? 1. Yes 2. No

26. Did you ever wish that you could talk to someone who could understand and help the alcohol-related problems in your family? 1. Yes 2. No

27. Did you ever fight with your brothers and sisters about a parent's drinking? 1. Yes 2. No

28. Did you ever stay away from home to avoid the drinking parent or your other parent's reaction to the drinking? 1. Yes 2. No

29. Have you ever felt sick, cried, or had a "knot" in your stomach after worrying about a parent's drinking? 1. Yes 2. No

30. Did you ever take over any chores and duties at home that were usually done by a parent before he or she developed a drinking problem? 1. Yes 2. No

Appendix D

Children of Alcoholics Screening Test - Mother (M-CAST)

1. Have you ever thought that your mother had a drinking problem? 1. Yes 2. No
2. Have you ever lost sleep because of your mother's drinking? 1. Yes 2. No
3. Did you ever encourage your mother to quit drinking? 1. Yes 2. No
4. Did you ever feel alone, scared, nervous, angry or frustrated because your mother was not able to stop drinking? 1. Yes 2. No
5. Did you ever argue or fight when she was drinking? 1. Yes 2. No
6. Did you ever threaten to run away from home because of your mother's drinking? 1. Yes 2. No
7. Has your mother ever yelled at or hit you or other family members when drinking? 1. Yes 2. No
8. Have you ever heard your parents fight when your mother was drunk? 1. Yes 2. No
9. Did you ever protect another family member from your mother who was drinking? 1. Yes 2. No
10. Did you ever feel like hiding or emptying your mother's bottle of liquor? 1. Yes 2. No
11. Do many of your thoughts revolve around a problem drinking mother or difficulties that arise because of her drinking? 1. Yes 2. No
12. Did you ever wish that she would stop drinking? 1. Yes 2. No
13. Did you ever feel responsible for or guilty about your mother's drinking? 1. Yes 2. No

14. Did you ever fear that your parents would get divorced due to your mother's alcohol misuse? 1. Yes 2. No

15. Have you ever withdrawn from and avoided outside activities and friends because of embarrassment and shame over your mother's drinking problem? 1. Yes 2. No

16. Did you ever feel caught in the middle of an argument or fight between a problem drinking parent (mother) and your other parent? 1. Yes 2. No

17. Did you ever feel that you made your mother drink alcohol? 1. Yes 2. No

18. Have you ever thought a problem drinking parent (mother) did not really love you? 1. Yes 2. No

19. Did you ever resent your mother's drinking? 1. Yes 2. No

20. Have you ever worried about your mother's health because of her alcohol use? 1. Yes 2. No

21. Have you ever been blamed for her drinking? 1. Yes 2. No

22. Did you ever wish your home could be more like the homes of your friends who did not have a mother with a drinking problem? 1. Yes 2. No

23. Did your mother ever make promises to you that she did not keep because of drinking?

    1. Yes 2. No

24. Did you ever think your mother was an alcoholic? 1. Yes 2. No

25. Did you ever wish that you could talk to someone who could understand and help the alcohol-related problems of your mother? 1. Yes 2. No

26. Did you ever fight with your brothers and sisters about your mother's drinking? 1. Yes 2. No

27. Did you ever stay away from home to avoid your drinking mother or your father's reaction to her drinking? 1. Yes 2. No

28. Have you ever felt sick, cried, or had a "knot" in your stomach after worrying about your mother's drinking? 1. Yes 2. No

29. Did you ever take over any chores and duties at home that were usually done by your mother before she developed a drinking problem? 1. Yes 2. No

Appendix E

Children of Alcoholics Screening Test – Father (F-CAST)

1. Have you ever thought that your father had a drinking problem? 1. Yes 2. No
2. Have you ever lost sleep because of your father's drinking? 1. Yes 2. No
3. Did you ever encourage your father to quit drinking? 1. Yes 2. No
4. Did you ever feel alone, scared, nervous, angry or frustrated because your father was not able to stop drinking? 1. Yes 2. No
5. Did you ever argue or fight when he was drinking? 1. Yes 2. No
6. Did you ever threaten to run away from home because of your father's drinking? 1. Yes 2. No
7. Has your father ever yelled at or hit you or other family members when drinking? 1. Yes 2. No
8. Have you ever heard your parents fight when your father was drunk? 1. Yes 2. No
9. Did you ever protect another family member from your father who was drinking? 1. Yes 2. No
10. Did you ever feel like hiding or emptying your father's bottle of liquor? 1. Yes 2. No
11. Do many of your thoughts revolve around a problem drinking father or difficulties that arise because of his drinking? 1. Yes 2. No
12. Did you ever wish that he would stop drinking? 1. Yes 2. No
13. Did you ever feel responsible for or guilty about your father's drinking? 1. Yes 2. No
14. Did you ever fear that your parents would get divorced due to your father's alcohol misuse? 1. Yes 2. No
15. Have you ever withdrawn from and avoided outside activities and friends because of embarrassment and shame over your father's drinking problem? 1. Yes 2. No

16. Did you ever feel caught in the middle of an argument or fight between a problem drinking parent (father) and your other parent? 1. Yes 2. No

17. Did you ever feel that you made your father drink alcohol? 1. Yes 2. No

18. Have you ever that a problem drinking parent (father) did not really love you? 1. Yes 2. No

19. Did you ever resent your father's drinking? 1. Yes 2. No

20. Have you ever worried about your father's health because of his or her alcohol use?
    1. Yes 2. No

21. Have you ever been blamed for his drinking? 1. Yes 2. No

22. Did you ever think your father was an alcoholic? 1. Yes 2. No

23. Did you ever wish you home could be more like the homes of your friends who did not have a father with a drinking problem? 1. Yes 2. No

24. Did your father ever make promises to you that he or she did not keep because of drinking? 1. Yes 2. No

25. Did you ever wish that you could talk to someone who could understand and help the alcohol-related problems of your father? 1. Yes 2. No

26. Did you ever fight with your brothers and sisters about your father's drinking? 1. Yes 2. No

27. Did you ever stay away from home to avoid your drinking father or your mother's reaction to the drinking? 1. Yes 2. No

28. Have you ever felt sick, cried, or had a "knot" in your stomach after worrying about your father's drinking? 1. Yes 2. No

29. Did you ever take over any chores and duties at home that were usually done by your father before he developed a drinking problem? 1. Yes 2. No

Appendix F

Demographic Information and Alcohol Use

1. Please identify your gender: 1. Female 2. Male

2. What is your age: _____

3. What is your height (in feet and inches)? _____ Feet _____ Inches

4. Please type in your weight (in lb.'s)? _____ Pounds

5. Please identify your race:
   a. Caucasian
   b. African American
   c. Hispanic/Latino
   d. Asian American
   e. Native American
   f. Other

6. If you also identify with a second race please select that as well?
   a. Caucasian
   b. African American
   c. Hispanic/Latino
   d. Asian American
   e. Native American
   f. Other
   g. Does not apply to me

7. Please type in your major (including undecided or no preference): _____
   _____

8. Please identify your grade level:
   a. Freshman
   b. Sophomore
   c. Junior
   d. Fourth Year Senior
   e. Fifth Year Senior
   f. Graduate Student

9. What is your current GPA? _____

10. Are you a member of a non-academic fraternity/sorority? 1. Yes 2. No

11. Please identify your parents' marital status:
    a. Married
    b. Separated
    c. Divorced
    d. Never Married
    e. Widow/Widower

12. Please identify when your parents divorced:
    a. They're still married
    b. This year
    c. 1 year ago
    d. 2 years ago
    e. 3 or more years ago

13. Are you currently in a significant relationship? 1. Yes 2. No

14. Please identify your marital status:
    a. Married
    b. Separated
    c. Divorced
    d. Never Married
    e. Widow/Widower

15. What is your current religious/spiritual affiliation (include none)?
    _____

16. How many times do you go to mass or religious service in an average month?
    _____

17. What is your primary residence during the academic year?
    a. Dorm on campus
    b. Fraternity/Sorority house
    c. An apartment/house with roommates
    d. An apartment/house with yourself
    e. An apartment/house with your parents
    f. An apartment/house with your significant other
    g. Other

18. Please write in how many occasions you consumed alcohol over the past month (30 days)?

    _____

19. Please write in how many average drinks you consumed per drinking occasion over the past month? (1 drink is equal to a 12-oz beer, a 4-oz glass of wine, a 12-oz wine cooler, or a 1.25-oz shot of liquor, either straight or in a mixed drink)

    _____

20. If you are a male, please write in the number of occasions within the past 2 weeks you consumed 5 or more drinks (including 0 for never)? (If you are a female please write in an "X"). _____

21. If you are a female, please type in the number of occasions within the past 2 weeks you consumed 4 or more drinks (including 0 for never)? (If you are a male please write in an "X"). _____

22. Please type in the number of occasions within the past 2 weeks you got drunk (including 0 for never)? _____

23. Do you feel you have a drinking problem? 1. Yes 2. No

24. Do you feel your best friend at Michigan State has a drinking problem? 1. Yes 2. No

25. Please type in how many occasions you believe the average Michigan State student consumed alcohol over the past month (30 days)? _____

26. Please type in how many average drinks you believe the average Michigan State student consumed per drinking occasion over the past month? (1 drink is equal to a 12-oz beer, a 4-oz glass of wine, a 12-oz wine cooler, or a 1.25-oz shot of liquor, either straight or in a mixed drink) _____

27. On how many occasions within the past 2 weeks do you think the average male Michigan State student consumed 5 or more drinks (including 0 for never)?

_____

28. On how many occasions within the past 2 weeks do you think the average female Michigan State student consumed 4 or more drinks (including 0 for never)?

_____

29. Please type in how many occasions you believe your best friend at Michigan State consumed alcohol over the past month (30 days)? _____

30. Please type in how many average drinks you believe your best friend at Michigan State consumed per drinking occasion over the past month? (1 drink is equal to a 12-oz beer, a 4-oz glass of wine, a 12-oz wine cooler, or a 1.25-oz shot of liquor, either straight or in a mixed drink) _____

31. If your best friend at Michigan State is a male, how many times within the past 2 weeks they consumed 5 or more drinks (including 0 for never)? (If your best friend is a female please write in an "X"). _____

32. If your best friend at Michigan State is a female, how many times within the past 2 weeks they consumed 4 or more drinks (including 0 for never)? (If your best friend is a male please write in an "X"). _____

Appendix G

Expectancies of Alcohol Use

Please read each statement carefully and respond with how generally true it is of you on a 0 (not at all) to 4 (a lot) scale.

1. Drinking helps me to relax.

0	1	2	3	4
Not at all				A lot

2. Drinking helps me forget problems at work or school.

0	1	2	3	4
Not at all				A lot

3. Drinking helps me feel better about myself.

0	1	2	3	4
Not at all				A lot

4. Drinking helps me forget my worries.

0	1	2	3	4
Not at all				A lot

5. Drinking helps me feel better when I'm down.

0	1	2	3	4
Not at all				A lot

6. Drinking helps me to relax when I'm tense.

0	1	2	3	4
Not at all				A lot

7. Drinking helps me to calm down when I'm angry.

0	1	2	3	4
Not at all				A lot

8. Drinking helps me deal with boredom.

0	1	2	3	4
Not at all				A lot

9. Drinking helps me express my opinions and ideas better.

0	1	2	3	4
Not at all				A lot

10. Drinking helps me feel more relaxed about sex.

0	1	2	3	4
Not at all				A lot

11. Drinking makes me feel more sexy.

0	1	2	3	4
Not at all				A lot

12. Drinking makes me do some things better.

0	1	2	3	4
Not at all				A lot

13. Drinking makes me feel less shy.

0	1	2	3	4
Not at all				A lot

14. Drinking makes it easier to find the right words when talking to people.

0	1	2	3	4
Not at all				A lot

15. Drinking makes me feel more romantic.

0	1	2	3	4
Not at all				A lot

16. Drinking helps me to fit in better with people around me.

0	1	2	3	4
Not at all				A lot

17. Drinking makes me feel cool.

0	1	2	3	4
Not at all				A lot

18. Alcohol tastes good.

0	1	2	3	4
Not at all				A lot

19. Drinking makes any celebration more enjoyable.

0	1	2	3	4
Not at all				A lot

20. Drinking adds enjoyment to a good meal.

0	1	2	3	4
Not at all				A lot

21. Drinking makes many activities more enjoyable.

0	1	2	3	4
Not at all				A lot

22. Drinking helps me to fall asleep at night.

0	1	2	3	4
Not at all				A lot

23. Drinking can be exciting.

0	1	2	3	4
Not at all				A lot

24. Drinking makes sports (like football, basketball, car races) more enjoyable.

0	1	2	3	4
Not at all				A lot

25. Drinking makes listening to music more enjoyable.

0	1	2	3	4
Not at all				A lot

26. Drinking is a good way to kill time.

0	1	2	3	4
Not at all				A lot

27. Drinking makes it easier for me to play sports.

0	1	2	3	4
Not at all				A lot

28. Drinking makes me feel more alert.

0	1	2	3	4
Not at all				A lot

29. Drinking helps me think better.

0	1	2	3	4
Not at all				A lot

30. Drinking helps me understand complicated things better.

0	1	2	3	4
Not at all				A lot

31. Drinking makes me fell more coordinated.

0	1	2	3	4
Not at all				A lot

32. Drinking helps me have better ideas.

0	1	2	3	4
Not at all				A lot

33. Drinking improves my concentration.

0	1	2	3	4
Not at all				A lot

34. Drinking makes me more creative.

0	1	2	3	4
Not at all				A lot

35. Drinking helps me perform certain tasks better.

0	1	2	3	4
Not at all				A lot

Appendix H

Consent Form

We are interested in gaining a better understanding into what contributes to alcohol consumption in undergraduate college students. Specifically, we are studying the effects of familial and interpersonal relationships with alcohol consumption.

We would like you to complete a battery of 4 surveys regarding your alcohol use, parental alcohol use, interpersonal relationships, feelings of anxiety, and demographic variables (e.g., your birth order, gender, major). All of your responses will be anonymous and your privacy will be protected to the maximum extent allowable by law.

Participation in this study is completely voluntary. It is estimated that it will take no longer than 45 minutes to complete the battery. You may stop at any point without any penalty to you.

If you have any questions about this study, please contact the investigator (Chris Latty, 432-2271 #3, 329 Olin Health Center). If you have questions or concerns regarding your rights as a study participant, or are dissatisfied at any time with any aspect of this study, you may contact – anonymously, if you wish – Peter Vasilenko, Ph.D., Chair of the University Committee on Research Involving Human Subjects (UCRIHS) by phone: (517) 355-2180, fax: (517) 432-4503, e-mail: ucrihs@msu.edu, or regular mail: 202 Olds Hall, East Lansing, MI 48824.

After completing the battery you may have concerns regarding your consumption of alcohol or may wish to process rekindled feelings toward your family of origin. Two resources are available on campus for you to discuss and explore these concerns: The MSU Family and Child Clinic (432-2272; http://www.fce.msu.edu/mft/MFTClinic.htm) and the MSU Counseling Center (355-8270; http://www.couns.msu.edu/).

You indicate your voluntary agreement to participate by completing and submitting the questionnaires.

Appendix I

Debriefing Form

At most colleges and universities, there is a normative component in the student culture involving alcohol consumption for reasons to socialize, relax, celebrate, and for pleasure (Demers et al., 2002; Dreer et al., 2004; Schulenberg & Maggs, 2002; Wechsler, Davenport, Dowdall, Moeykens, & Castillo, 1994; Wechsler, Isaac, Grodstein, & Sellers, 1994; Zucker et al., 1997). Many students will normatively drink alcohol and will never experience consequences of drinking beyond a hangover. Unfortunately, some students' alcohol consumption may evolve into dangerous levels of consumption, result in various negative consequences, or begin a pattern for a life-long battle with dependence. Additionally, some estimates indicate that around 31% of college students have a diagnosis of alcohol abuse and 6% have a diagnosis of alcohol dependence. This high prevalence of abuse puts students at greater risk for academic problems, sexual abuse, risky sexual behaviors, physical injury, assault, violence, and death.

I am interested in understanding what disparate influences lead some college students to drink at problematic levels. Although a number of studies to date have looked at the influence of parental alcoholism and the role of peer group usage, the study you have just participated in also adds a component from the field of marriage and family therapy as a central variable in the role of college student alcohol consumption.

Differentiation exists on inter- and intrapersonal levels. Intrapersonally, differentiation refers to a person's ability to remain clear-minded and objective in the face of anxiety rather than becoming emotionally reactive. It is also an interpersonal dynamic reflecting an individual's ability to maintain a sense-of-self while remaining emotionally connected in relationships. An individual with a low level of differentiation has struggled in forming their own identity and convictions and will adopt the beliefs and values of those they are in close relationships with. Moreover, they are dependent on others for validation. Therefore, when there is some form of relational anxiety (e.g., a criticism) the individual with lower levels of differentiation are not able to tolerate this stress and become emotionally reactive as they do not have an internal foundation of who they are. When emotional disequilibrium occurs in a dyad, poorly differentiated individuals are likely to triangle in other people or things to diffuse this anxiety. For example, a couple on the cusp of fighting about themselves may channel this energy into a conflict about their children. Moreover, individuals may triangle things (e.g., work or alcohol) as a means to diffuse the relational tension building in the relationship, resulting in a couple having conflict over the object rather than with their relationship. Therefore, an individual's level of differentiation influences how they tolerate anxiety and triangling is a dysfunctional means to alleviate the anxiety. According to this theory, the more differentiated an individual is, the more likely they are to tolerate anxiety, resulting in a greater potential to objectively respond to anxiety, and therefore be less likely to exhibit a need to triangle someone or something to regulate anxiety. The central hypothesis of this study is that there is a relationship between differentiation and alcohol consumption in college students.

This study asked you to reflect on your relationship with your family of origin, your parents' drinking, and your typical drinking behaviors. You may have concerns regarding your consumption of alcohol or may wish to process rekindled feelings toward your family of origin. Two resources are available on campus for you to discuss and explore these concerns:

- The MSU Family and Child Clinic (432-2272; http://www.fce.msu.edu/mft/MFTClinic.htm)
- MSU Counseling Center (355-8270; http://www.couns.msu.edu/).

You may also find the following resources helpful in obtaining more information about Bowen theory, as well as other marriage and family therapy theories, and alcohol:

Bowen & MFT

Bowen, M. (1966). The use of family theory in clinical practice. *Comprehensive Psychiatry, 7*, 345-374.

Nichols, M. P. & Schwartz, R. C. (2004). Family therapy: Concepts and methods (6th ed.). Boston: Allyn & Bacon.

Titelman, P. (1998). Overview of the Bowen-theoretical-therapeutic system. In P. Titleman (Ed.), *Clinical applications of Bowen family systems theory* (pp. 7-49). New York: The Haworth Press.

Alcohol

Goodwin, D.W. (2000). Alcoholism: The facts (3rd ed.). New York: Oxford University Press.

http://www.collegedrinkingprevention.gov/

http://www.alcoholics-anonymous.org/

http://www.al-anon.org/

Thank you once for participation in this study. Please feel free to contact me if you have specific questions or would like to get a copy of the final results.

Chris Latty
lattychr@msu.edu
(517) 432-2271 #3

Appendix J

Transformation of Continuous Alcohol Measures Into Categorical Data

The outcome variables for this study were subjects' general alcohol use (GAU, as measured by Quantity X Frequency over the past 30 days) and frequency of binge drinking (over the past two weeks). The distributions were positively skewed distributions for both GAU (see Figure 15, p. 148, for males and Figure 16, p. 149, for females) and binge drinking (see Figure 17, p. 150, for males and Figure 18, p. 151, for females). As these distributions would have violated the normality assumption of regression analysis, the data were converted into categories.

Binge Drinking Conversion

The binge drinking behavior categories for this study replicated those from recent studies (Bladt, 2002; Knight et al., 2002; Wechsler et al., 1994; Wechsler et al., 1998; Wechsler et al., 2000; Wechsler, Lee, Kuo, et al., 2002; Wechsler, Lee, Nelson, et al., 2002). Accordingly, four categories of binge drinking were created: Abstainers (those that did not drink), Nonbinging Drinkers (subjects that consumed alcohol, but not at binge levels), Occasional Binge Drinkers (1 or 2 times in the past 2 weeks), and Frequent Binge Drinkers (3 or more times in the past 2 weeks) (see Table 17, p. 152).

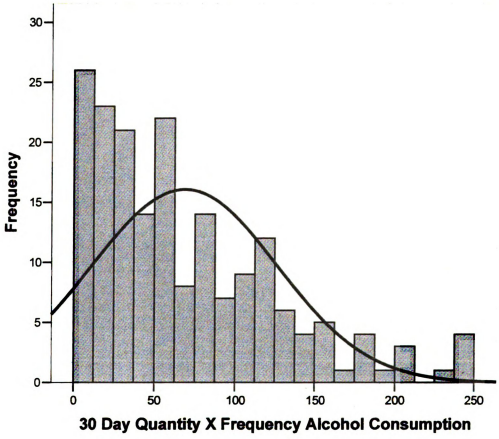

Figure 15. General alcohol use (Quantity X Frequency) of male drinkers for the Past 30 days.

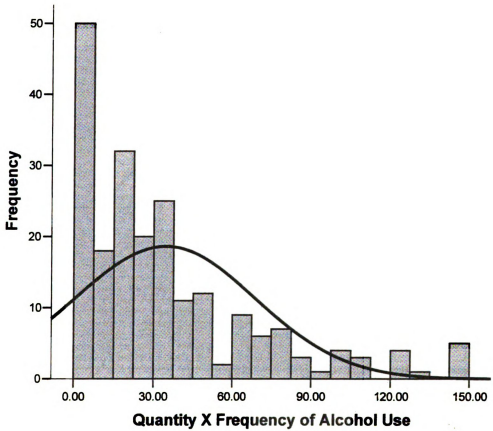

Figure 16. General alcohol use (Quantity X Frequency) of female drinkers for the Past 30 Days

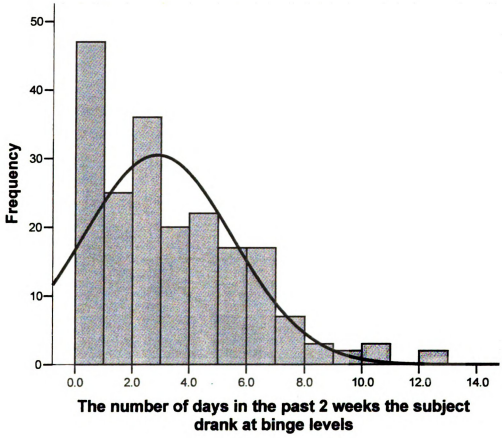

Figure 17. Frequency of male binge drinking over the past 2 weeks.

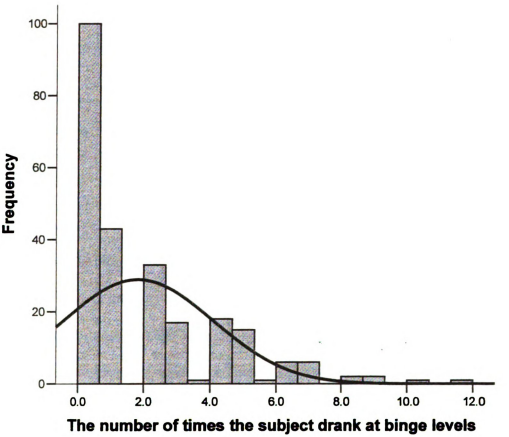

Figure 18. Frequency of female binge drinking over the past 2 weeks.

Table 17

Frequency of Binge Drinking Categories by Gender

	Total Sample		Males		Females	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Abstainers	49	11.0	16	8.0	33	13.4
Nonbinging Drinkers	98	21.9	31	15.4	67	27.2
Occasional Binge Drinkers	135	30.2	60	29.9	75	30.5
Frequent Binge Drinkers	165	36.9	94	46.8	71	28.9

GAU Conversion

Whereas binge drinking categories were established in multiple studies, no clear norms for creating quantity frequency categories were present in the literature. It was decided that abstainers would naturally be one category and it needed to be determined if there would be enough of variation between the categories to create three additional variables (low-, moderate-, and high drinking categories by splitting the frequency distribution of those that consumed alcohol into thirds) or only two categories (low and high categories by a median split). As it was established from the test of association with binge drinking that males and females were to be analyzed separately (see Appendix K), frequency distribution points were utilized to create categories for males and females separately. A one-way ANOVA testing the 4 category model indicated that the moderate group did show differences from the low and high groups on comparisons to the DSI-R full- and subscale measures. Therefore, the positively skewed Quantity X Frequency variable was converted into a general alcohol use variable comprised of four categories (see Table 18, p. 153).

Table 18

Frequency of GAU Categories by Gender

	Total Sample		Males				Females			
	Frequency	Percent	Frequency	Percent	Mean	SD	Frequency	Percent	Mean	SD
Abstainers	49	11	16	8	--	--	33	13.4	--	--
Low Drinkers	139	31	63	31.3	16.09	8.78	76	30.9	6.66	4.53
Moderate Drinkers	125	28	62	30.8	55.88	14.41	63	25.6	24.94	6.06
High Drinkers	134	30	60	29.9	137.78	44.84	74	30.1	71.64	32.64

Appendix K

Individual Variable Descriptions

Gender

With the transformation of the skewed continuous data to categorical data, logistic regression was implemented to test the relationship between differentiation and the moderating variables with the outcomes of alcohol consumption. Prior to examining the main and interaction effects with logistic regression, males and females were tested for differences in alcohol consumption to avoid the interpretation of three-way interaction effects in the analyses. In order to test the hypothesis that gender and binge drinking behaviors were independent of each other (no relationship), a chi-square test of association was implemented with a .05 α level. The results indicated that gender and binge drinking were related $\chi^2(3) = 19.66, p < .001$ and the Cramer's phi ($\phi_c = .21$) indicated that the association was relatively small. Since there was a significant association between gender and binge drinking, males and females were analyzed separately for all further analyses.

Race

Of the 447 subjects analyzed in this study, 373 identified themselves as Caucasian (83.4%), 45 as African American (10.1%), 5 as Hispanic/Latino (1.1%), 20 as Asian American (4.5%), 1 as Native American (.2%), and 3 as Other (.7%) (for gender comparisons see Table 19, p. 155). A chi-square test of association indicated that there was not a relationship between gender and race for this sample $\chi^2(5) = 7.214, p = .205$. As this sample had such a limited numbers of non-Caucasians, this variable was excluded from all future regression analyses.

Table 19

Frequency of Race by Gender

	Total Sample		Males		Females	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Caucasian	373	83.4	169	84.1	204	82.9
African American	45	10.1	17	8.5	28	11.4
Hispanic/ Latino	5	1.1	2	1.0	3	1.2
Asian American	20	4.5	10	5.0	10	4.1
Native American	1	.2	0	0	1	.4
Other	3	.7	3	1.5	0	0

Age

The age of participants for this study was restricted to subjects who were between 18 and 22, reflecting the typical age range of traditional students. Although males were significantly older (19.72, SD 1.24) than females (19.45, SD, 1.19) ($t(445) = -2.39$, $p = .017$, $d = 0.22$, $r^2_{pb} = 0.01$), the small effect size indicates this difference was relatively trivial.

BMI

Values of BMI are typically used to categorize weight by adjusting for height. The traditional weight ranges for adults are: Underweight (BMI < 18.5), Normal (18.5 – 24.9), Overweight (25.0 – 29.9), and Obese (30.0 ≥ BMI). The categories were not implemented in this study, as the BMI values were maintained as a continuous measure to serve as a proxy for alcohol tolerance based on weight. Males had a significantly

greater BMI value (24.62, SD = 3.78, range 17.72 to 41.38) than females (22.80, SD = 4.09, range 17.16 to 47.50) ($t(445) = -4.85$, $p < .001$, $d = 0.46$, $r^2_{pb} = 0.05$).

COA

COA status was determined by subjects' responses to created gender-specific versions of the Children of Alcoholics Screening Test (CAST). Scores of six or more "yes" responses on the 29-item scales of either the F-CAST (for fathers) or M-CAST (for mothers) indicate the presence of an alcoholic parent. High internal consistency reliabilities based on Cronbach's alpha values were found for both the M-CAST (males $\alpha = .96$, females $\alpha = .96$) and F-CAST (males $\alpha = .95$, females $\alpha = .96$). Almost 80% of males and females had parents who were not identified as being alcoholic (see Table 20). A chi-square test of association indicated that there was not a significant relationship between gender and the number of parental alcoholics (based on categories of 0, 1, 2) for this sample ($\chi^2(2) = 5.24$, $p = .073$).

Table 20

Frequency of Parental Alcoholism by Gender

	Males		Females	
	Frequency	Percent	Frequency	Percent
No Alcoholic Parents	169	84.1	195	79.3
One Alcoholic Parent	22	10.9	44	17.9
Two Alcoholic Parents	10	5.0	7	2.8

Due to the low frequency of one and two alcoholic parent families, tests of association were conducted to validate combining these two categories into one variable, creating a dichotomy of being a COA or not. There was no significant relationship between the 3 categories of parental alcoholism with frequency of binge drinking for

males ($\chi^2(6) = 10.31, p = .112$) or females ($\chi^2(6) = 6.17, p = .405$, see Table 21 for gender distribution). Similarly, there was no a significant relationship between the 3 categories of parental alcoholism with general alcohol use for males ($\chi^2(6) = 7.71, p = .260$) or females ($\chi^2(6) = 1.78, p = .939$, see Table 22 for gender distribution).

Table 21

Frequency of Parental Alcoholism and Binge Drinking by Gender

		Abstainer	Nonbinging Drinker	Occasional Binge Drinker	Frequent Binge Drinker
Males	No alcoholic parents	16	27	51	75
	1 Alcoholic Parent	0	4	6	12
	2 Alcoholic Parents	0	0	3	7
Females	No alcoholic parents	24	56	56	59
	1 Alcoholic Parent	8	8	18	10
	2 Alcoholic Parents	1	3	1	2

Table 22

Frequency of Parental Alcoholism and GAU by Gender

		Abstainer	Low Drinker	Moderate Drinker	High Drinker
Males	No alcoholic parents	16	54	52	47
	1 Alcoholic Parent	0	7	7	8
	2 Alcoholic Parents	0	2	3	5
Females	No alcoholic parents	24	60	51	60
	1 Alcoholic Parent	8	13	11	12
	2 Alcoholic Parents	1	3	1	2

Individuals who had either one or two alcoholic parents were combined into one COA category. As was the case with the three categories of parental alcoholism, there was no significant relationship between gender and COA status ($\chi^2(1) = 1.69, p = .193$).

There was no significant relationship between the two categories of parental alcoholism with frequency of binge drinking for males ($\chi^2(3) = 7.02, p = .071$) or females ($\chi^2(3) = 3.22, p = .359$, see Table 23 for gender distribution). Although, neither test was significant, the p values for the dichotomous COA variable were closer to significance than were the original three category variable. There also was no significant relationship between the two categories of parental alcoholism with general alcohol use for males ($\chi^2(3) = 7.04, p = .071$) or females ($\chi^2(3) = 1.12, p = .772$, see Table 24 for gender distribution). Since the COA variable slightly improved the frequency distribution and did not alter the relationship with alcohol use, the dichotomous variable was utilized for all future analyses.

Table 23

Frequency of COA Status and Binge Drinking by Gender

		Abstainer	Nonbinging Drinker	Occasional Binge Drinker (1-2 times/week)	Frequent Binge Drinker (3 or more/week)
Males	Not a COA	16	27	51	75
	COA	0	4	9	19
Females	Not a COA	24	56	56	59
	COA	9	11	19	12

Table 24

Frequency of COA Status and GAU by Gender

		Abstainer	Low Drinker	Moderate Drinker	High Drinker
Males	Not a COA	16	54	52	47
	COA	0	9	10	13
Females	Not a COA	24	60	51	60
	COA	9	16	12	14

Expectation of Alcohol as a Tension Reducer

Nine questions from Kushner et al.'s (1994) measure of alcohol outcome expectancies comprise the Tension Reduction subscale. The subjects' responses on a 5-point scale were summed with higher scores reflecting greater tension reduction expectations. The Tension Reduction subscale had a high internal consistency reliability based on Cronbach's alpha value for both males ($\alpha = .91$) and females ($\alpha = .92$). Males had higher expectations of alcohol as a tension reducer (15.07, SD = 8.73) than females (13.15, SD = 8.81) ($t(445) = -2.39$, $p = .022$, $d = 0.22$, $r^2_{pb} = 0.01$) although the point-biserial correlation indicated that gender only accounts for about 1% of the variance in expectations of alcohol as a tension reducer.

Expectation of Alcohol as a Social Lubrication

Eight questions from Kushner et al.'s (1994) measure of alcohol outcome expectancies comprise the Social Lubrication subscale. The subjects' responses on a 5-point scale were summed with higher scores reflecting greater social lubrication expectations. The Social Lubrication subscale had a high internal consistency reliability based on Cronbach's alpha value for both males ($\alpha = .89$) and females ($\alpha = .90$). Although males had higher expectations of alcohol as a social lubricant (13.93, SD = 7.89) than females (10.97, SD = 7.74) ($t(445) = -3.99$, $p < .001$, $d = 0.38$, $r^2_{pb} = 0.03$), only 3% of the variance of expectations of alcohol as a social lubricant can be accounted for by gender.

Perceptions of Average MSU Student's Alcohol Use

A total drinks-per-month variable was calculated by multiplying the number of days by the average number of drinks subjects believed the average Michigan State

student consumed in the past 30 days. Females (57.57 drinks-per-month, SD = 38.75) and males (50.89 drinks-per-month, SD = 37.22) did not significantly differ from one another in their perceptions of MSU student alcohol consumption (t (445) = 1.85, p = .065).

Perceptions of Subjects' Best Friend at MSU's Alcohol Use

A total drinks-per-month variable was calculated by multiplying the number of days by the average number of drinks subjects believed their best friend at Michigan State consumed in the past 30 days. Females had significantly lower perceptions of their best friends alcohol usage (36.88, SD = 41.48) than males (68.16, SD = 72.43) (t (303.78) = -5.44, $p < .001$, d = 0.54, $r^2_{pb} = 0.09$), although only 9% of the variation in perceptions could be attributed to the subjects' gender.

Tests of Multicollinearity

A summary description of means and standard deviations is provided in Table 25 (p. 160) After transforming the respective independent variables, correlation analyses were done separately for males (see Table 26, p. 162) and females (see Table 27, p. 163).

Table 25

Frequency of Independent Variables by Gender

	Males			Females		
	Mean	SD	Range	Mean	SD	Range
Age	19.45*	1.19	18 – 22	19.72*	1.24	18 – 22
BMI	24.62**	3.78	17.72 - 41.38	22.80**	4.09	17.16 - 47.5
Tension reduction	15.08*	8.73	0 – 33	13.15*	8.81	0 – 36
Social Lubrication	13.93**	7.89	0 – 30	10.97**	7.74	0 – 30
MSU Student Use	50.89	37.22	6 – 176	57.58	38.75	4 – 180
Best Friend Use	68.16**	72.43	0 – 387	36.88**	41.48	0 – 180

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Ignoring the correlations between the DSI-R full scale with the 4 subscale measures (as the full- and subscales will not be analyzed in the same equations) the correlations ranged from .00 to .79 for males and .00 to .71 for females. As logistic regression does not have a measure directly equivalent to the R^2 value of OLS regression, tests of multicollinearity could not be directly computed using the variance inflation factor formula (VIF) (von Eye & Schuster, 1998). In order for an exploratory analysis of multicollinearity to be conducted, liner regressions with the positively skewed continuous GAU and Binge Drinking variables were analyzed using the VIF. The VIF values were identical for GAU and Binge Drinking outcomes.

None of the respective regression equations (differentiation only, five equations of differentiation with interaction terms, and the comprehensive equation including all variables) had VIF values reaching a value of 10.0 – a rule of thumb for multicollinearity (von Eye & Schuster, 1998) (see Table 28, p. 164, for VIF values for the Comprehensive Model which contained all of the variables). Therefore it was concluded that multicollinearity was not a concern for the remaining analyses.

Table 26

Correlations for Independent Variables – Male Subjects

		DSI-R	ER	IP	EC	FO	BMI	Age	COA	MSU	BF	TR
ER subscale (ER)	*R*	.86**										
	p	.000										
IP subscale (IP)	*R*	.68**	.47**									
	p	.000	.000									
EC subscale (EC)	*R*	.73**	.43**	.38**								
	p	.000	.000	.000								
FO subscale (FO)	*R*	.73**	.66**	.20**	.35**							
	p	.000	.000	.004	.000							
BMI	*R*	.00	-.02	.03	.02	-.02						
	p	.973	.756	.680	.827	.838						
Age	*R*	.07	.07	.00	.06	.08	.15*					
	p	.312	.321	.953	.410	.262	.037					
COA	*R*	-.07	-.08	-.14*	-.01	.03	-.07	.02				
	p	.325	.278	.043	.863	.717	.296	.795				
MSU students	*R*	-.06	-.02	-.12	-.07	.03	.15*	.07	.04			
	p	.403	.754	.105	.332	.703	.035	.345	.542			
Best friend	*R*	-.12	-.07	-.13	-.14*	-.03	.09	.17*	-.03	.34**		
	p	.082	.309	.076	.045	.701	.215	.018	.709	.000		
Tension reduction	*R*	-.35**	-.28**	-.27**	-.28**	-.21**	-.05	-.02	.02	.10	.35**	
	p	.000	.000	.000	.000	.003	.529	.760	.833	.141	.000	
Social Lubricant	*R*	-.38**	-.32**	-.20**	-.30**	-.31	-.07	-.04	.03	.03	.28**	.79
	p	.000	.000	.004	.000	.000	.343	.559	.640	.650	.000	.000

Note: DSI-R = full scale, BMI = body mass index, COA = child of an alcoholic status, MSU = perceptions of the average MSU students use, BF = perceptions of best friend's use, TR = expectations of tension reduction, SL = expectations of social lubrication.

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 27

Correlations for Independent Variables – Female Subjects

		DSI-R	ER	IP	EC	FO	BMI	Age	COA	MSU	BF	TR
ER subscale	*R*	.84**										
	p	.000										
IP subscale	*R*	.77**	.58**									
	p	.000	.000									
EC subscale	*R*	.66**	.34**	.36**								
	p	.000	.000	.000								
FO subscale	*R*	.79**	.61**	.49**	.34**							
	p	.000	.000	.000	.000							
BMI	*R*	-.12	-.12	-.17**	-.09	-.01						
	p	.053	.063	.010	.186	.895						
Age	*R*	.02	.00	.01	.05	.02	.00					
	p	.721	.996	.936	.479	.711	.995					
COA	*R*	-.09	-.13*	-.05	-.07	.01	.03	-.02				
	p	.179	.045	.427	.282	.939	.635	.791				
MSU students	*R*	-.02	-.01	.00	-.06	.00	-.04	-.07	.06			
	p	.744	.920	.981	.341	.960	.498	.259	.358			
Best friend	*R*	-.12	-.15*	-.11	.04	-.14*	-.07	.04	-.02	.28**		
	p	.069	.021	.100	.568	.029	.276	.487	.757	.000		
Tension reduction	*R*	-.25**	-.19**	-.17**	-.20**	-.22**	-.11	-.01	-.13*	-.01	.32**	
	p	.000	.002	.007	.002	.001	.084	.840	.044	.939	.000	
Social Lubricant	*R*	-.34**	-.25**	-.20**	-.24**	-.36**	-.10	-.05	-.12	.02	.27**	.71**
	p	.000	.000	.002	.000	.000	.112	.429	.063	.721	.000	.000

Note: DSI-R = full scale, BMI = body mass index, COA = child of an alcoholic status, MSU = perceptions of the average MSU students use, BF = perceptions of best friend's use, TR = expectations of tension reduction, SL = expectations of social lubrication.

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 28

VIF for Independent Variables

	Males	Females
DSI-R	1.54	1.67
Age	1.11	1.05
Body Mass Index	1.09	1.09
Perceptions of MSU student use	1.21	1.12
Perceptions of best friend at MSU's use	1.45	1.35
Expectations of alcohol as a tension reducer	2.97	2.17
Expectations of alcohol as a social lubricant	2.93	2.22
COA status	1.07	1.08
DSI-R X Perceptions of MSU student use	1.11	1.11
DSI-R X Perceptions of best friend at MSU's use	1.52	1.44
DSI-R X Expectations of alcohol as a tension reducer	3.47	2.79
DSI-R X Expectations of alcohol as a social lubricant	3.21	2.70
DSI-R X COA status	1.35	1.33

Note: All variables have been centered around the mean, with the exception of the dummy variable of COA status

Appendix L

Analyses of General Alcohol Use

As previously described, the continuous General Alcohol Use (GAU) measure (30 day Quantity X Frequency) was converted into a categorical variable consisting of 4 levels: Abstainers, Low Drinkers, Moderate Drinkers, and High Drinkers (see Appendix J). As the four categories reflect increasing degrees of alcohol consumption, the nature of this study's originally stated hypotheses for a continuous dependent variable (e.g., students with lower levels of differentiation will be more likely to have greater amounts of general alcohol consumption) was maintained with the categorical analyses (e.g., students with lower levels of differentiation will be more likely to have a greater relationship with High Drinkers than Low Drinkers when controlling for BMI and age).

As logistic regression is based on a dichotomous dependent variable, the four GAU categories were contrasted in ways such that four unique outcome dichotomies were created:

1. Drinkers (Low, Moderate, High) versus Abstainers
2. Moderate Drinkers versus Low Drinkers
3. High Drinkers versus Low Drinkers
4. High Drinkers versus Moderate Drinkers

In each instance, the variable with the greater amount of alcohol consumption was coded as a "1" in SPSS 13.0 and the lesser category was coded as a "0." For example, in the Drinkers versus Abstainers analyses, all persons in the Low, Moderate, and High Drinking categories were coded as a "1" and Abstainers were coded as a "0."

Drinkers versus Abstainers

Differentiation and GAU

Males. The Basic Model was significant according to the model chi-square ($\chi^2(3) = 18.00, p < .001$, $R^2_{\text{Cox \& Snell}} = .09$, $R^2_{\text{Nagelkerke}} = .20$). The model illustrated a 92% success rate in predicting the correct drinking classifications, however, this is the same value if someone were to predict an individual was a drinker with every case (a model with no predictors), indicating the Basic Model adds nearly nothing to the ability to predict individuals that drink from those that abstain. When an individual is at an average BMI level and age, differentiation had a significant negative coefficient indicating that the odds of drinking are multiplied by .190 (95% CI = .068, .530) with a one unit difference in differentiation, which is a 81% (1 - .19) decrease (see Table 29, p. 167). Additionally, when differentiation and age are at average levels, an individual is 2.24 times more likely to drink as they gain one year of age (e.g., 19- to 18-year olds, 20- to 19-year olds).

Females. The Basic Model was not significant according to the model chi-square ($\chi^2(3) = 6.91, p = .075$), indicating that there was no effect of the independent variables, taken together, on the dependent variable (see Table 29, p. 167).

Four factors of the DSI-R (Emotional Reactivity, "I" Position, Emotional Cutoff, and Fusion with Others) with GAU

Males. As was the case in the Basic Model, the overall four factor model was significant ($\chi^2(6) = 18.21, p = .006$, $R^2_{\text{Cox \& Snell}} = .09$, $R^2_{\text{Nagelkerke}} = .20$). This model had the same successful prediction rate of 92% that the Basic Model and having no model

Table 29

Logistic Regression Predicting Students that Drink – Differentiation

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
DSI-R	-1.66	0.53	10.04**	0.190	0.068	0.530	-0.67	0.33	4.21*	0.510	0.268	0.970
BMI	-0.01	0.07	0.02	0.989	0.861	1.137	-0.08	0.04	3.75	0.926	0.856	1.001
Age	0.81	0.31	6.99**	2.239	1.232	4.071	0.09	0.16	0.28	1.088	0.795	1.489

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 30

Logistic Regression Predicting Students that Drink – Four Factors

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Emotional Reactivity	-0.56	0.48	1.34	0.572	0.222	1.472	0.10	0.28	0.14	1.108	0.645	1.903
"I" Position	-0.46	0.47	0.97	0.632	0.253	1.576	-0.16	0.34	0.21	0.853	0.434	1.675
Emotional Cutoff	-0.20	0.47	0.18	0.822	0.329	2.054	0.01	0.29	0.00	1.008	0.573	1.774
Fusion with Others	-0.36	0.63	0.33	0.696	0.203	2.387	-0.75	0.39	3.65	0.474	0.221	1.020
BMI	-0.01	0.07	0.02	0.989	0.860	1.137	-0.07	0.04	2.75	0.934	0.862	1.013
Age	0.80	0.31	6.82**	2.222	1.220	4.044	0.09	0.16	0.29	1.091	0.796	1.495

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

had. None of the four factors significantly changed the odds of group membership (see Table 30, p. 167).

Females. As was the case in the Basic Model, the overall four-factor model was not significant ($\chi^2(6) = 9.21, p = .162$, see Table 30, p. 167).

Differentiation & Perception of Average MSU Student's Alcohol Use

Males. The Additive Model with perceptions of the average MSU student's alcohol consumption was significant overall ($\chi^2(4) = 18.20, p = .003$, $R^2_{\text{Cox \& Snell}} = .09$, $R^2_{\text{Nagelkerke}} = .20$) and had a successful prediction rate of 92%. The model did not show a block improvement over the Basic Model ($\chi^2(1) = .03, p = .862$). The change in odds of drinking remained virtually the same as the Basic Model for the significant individual predictor of differentiation (OR = .190, 95% CI = .068, .530, see Table 31, p. 169).

The Interaction Model also was significant overall ($\chi^2(5) = 18.20, p = .003$, $R^2_{\text{Cox \& Snell}} = .09$, $R^2_{\text{Nagelkerke}} = .20$) and had a successful prediction rate of 92%. However, it did not show a block improvement over the Basic Model ($\chi^2(2) = .20, p = .900$). Although the individual predictors of differentiation (OR = .181, 95% CI = .063, .525) and age (OR = 2.242, 95% CI = 1.227, 4.096) remained significant, the interaction term failed to reach a level of significance (see Table 31, p. 169).

Females. The Additive Model with perceptions of the average MSU student's alcohol consumption was not significant as an overall model ($\chi^2(4) = 7.004, p = .136$, see Table 31, p. 169). The Interaction Model also was not significant as an overall model ($\chi^2(5) = 7.480, p = .187$, see Table 31, p. 169).

Table 31

Logistic Regression Predicting Students that Drink – Perceptions of MSU Student Use

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-1.66	0.53	10.04**	0.190	0.068	0.530	-0.67	0.33	4.21*	0.510	0.268	0.970
BMI	-0.01	0.07	0.02	0.989	0.861	1.137	-0.08	0.04	3.75	0.926	0.856	1.001
Age	0.81	0.31	6.99**	2.239	1.232	4.071	0.09	0.16	0.28	1.088	0.795	1.489
Additive Model												
DSI-R	-1.66	0.53	10.02**	0.190	0.068	0.531	-0.68	0.33	4.24*	0.509	0.268	0.968
BMI	-0.01	0.07	0.03	0.988	0.859	1.136	-0.08	0.04	3.80	0.925	0.855	1.000
Age	0.81	0.31	6.95**	2.251	1.231	4.116	0.08	0.16	0.27	1.086	0.794	1.486
MSU Use	0.00	0.01	0.03	1.001	0.985	1.018	0.00	0.01	0.09	0.999	0.989	1.008
Interaction Model												
DSI-R	-1.71	0.54	9.91**	0.181	0.063	0.525	-0.69	0.33	4.33*	0.501	0.261	0.961
BMI	-0.02	0.07	0.05	0.985	0.854	1.135	-0.07	0.04	3.41	0.928	0.858	1.005
Age	0.81	0.31	6.88**	2.242	1.227	4.096	0.10	0.16	0.37	1.103	0.804	1.514
MSU Use	0.00	0.01	0.12	1.004	0.983	1.024	0.00	0.01	0.01	0.999	0.989	1.009
DSI-R X MSU Use	-0.01	0.02	0.16	.994	0.963	1.025	-0.01	0.01	0.47	0.994	0.977	1.011

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Differentiation & Perception of Best Friend at MSU's Alcohol Use

Males. The Additive Model with perceptions of their best friend at MSU's alcohol consumption was significant overall ($\chi^2(4) = 24.12, p < .001, R^2_{\text{Cox \& Snell}} = .11, R^2_{\text{Nagelkerke}} = .27$) with a significant block improvement over the Basic Model ($\chi^2(1) = 6.12, p = .013$), and had a successful prediction rate of 92.5%, an increase .5% over the Basic model. The change in odds for being a drinker remained a significant individual predictor of differentiation (OR = .225, 95% CI = .081, .624), when the student has an average level of age, BMI, and perception of their best friend at MSU's alcohol use (see Table 32, p. 172). Similarly, when subjects had average levels of the other predictors, they were 1.02 times more likely to be a drinker with every increase of 1 unit in perceived monthly Quantity X Frequency drink they believed their friends drank. As the range for perceptions is quite large, a 1 unit change is relatively miniscule. To better illustrate this effect, if a subject's perception were to increase by the equivalent of one standard deviation for males (72.43), they would be 4.26 times more likely to be a drinker. Additionally, when differentiation and perceptions are at average levels, an individual is 2.27 times more likely to drink as they gain one year of age.

The Interaction Model also was significant overall ($\chi^2(5) = 24.64, p < .001, R^2_{\text{Cox \& Snell}} = .12, R^2_{\text{Nagelkerke}} = .27$) and had a successful prediction rate of 92.5% (see Table 32, p. 172); however, it did not show a block improvement over the Additive Model ($\chi^2(1) = .52, p = .470$). Although the interaction term itself was not significant, by adding it to the equation differentiation no longer significantly changed the odds of being a drinker. When the subject had average levels of the other predictors, they were 1.02 times more likely to be a drinker with every 1 unit increase of best friend perception and 1.75 times

for one standard deviation change. Additionally, when differentiation and age are at average levels, an individual is 2.28 times more likely to drink as they gain one year of age.

Females. The Additive Model with perceptions of their best friend at MSU's alcohol consumption was significant ($\chi^2(4) = 28.53, p < .001, R^2_{\text{Cox \& Snell}} = .11, R^2_{\text{Nagelkerke}} = .20$) with a significant block improvement over the Basic Model ($\chi^2(1) = 21.62, p < .001$), and had miniscule improvement in successful prediction rate to 87%, an increase .4% over the Basic Model. Perceptions of best friend use changed the odds of being a drinker by 1.044 (95% CI = 1.018, 1.070) for every one unit change in perceptions (see Table 32, p. 172). Individuals who had higher best friend perception equivalent to one standard deviation for (41.48) were 5.95 times likely to be a Drinker versus Abstainer. Additionally, the presence of best friend perceptions eliminates the significance of differentiation found in the Basic Model.

The Interaction Model also was significant ($\chi^2(5) = 29.48, p < .001, R^2_{\text{Cox \& Snell}} = .11, R^2_{\text{Nagelkerke}} = .21$), but did not show a block improvement over the Additive Model ($\chi^2(1) = .95, p = .329$) and actually had a worse successful prediction rate (85.8%) than all of the other models--including not having a model at all. The interaction term was not significant, and the effect of perceptions of best friend use remained equivalent to the Additive Model (OR = 1.044, 95% CI = 1.018, 1.070, see Table 32, p. 172).

Table 32

Logistic Regression Predicting Students that Drink – Perceptions of Best Friend's Use

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-1.66	0.53	10.04**	0.190	0.068	0.530	-0.67	0.33	4.21*	0.510	0.268	0.970
BMI	-0.01	0.07	0.02	0.989	0.861	1.137	-0.08	0.04	3.75	0.926	0.856	1.001
Age	0.81	0.31	6.99**	2.239	1.232	4.071	0.09	0.16	0.28	1.088	0.795	1.489
Additive Model												
DSI-R	-1.49	0.52	8.21**	0.225	0.081	0.624	-0.57	0.34	2.80	0.566	0.290	1.103
BMI	-0.01	0.07	0.01	0.992	0.865	1.137	-0.04	0.04	1.16	0.957	0.884	1.037
Age	0.82	0.32	6.53*	2.272	1.211	4.262	0.05	0.17	0.10	1.053	0.758	1.463
Best Friend's Use	0.02	0.01	4.39*	1.018	1.001	1.035	0.04	0.01	11.34**	1.044	1.018	1.070
Interaction Model												
DSI-R	-1.07	0.76	2.01	0.343	0.078	1.508	-0.05	0.62	0.01	0.947	0.279	3.213
BMI	-0.01	0.07	0.01	0.992	0.865	1.139	-0.05	0.04	1.24	0.955	0.881	1.036
Age	0.82	0.32	6.52*	2.280	1.211	4.290	0.05	0.17	0.10	1.054	0.756	1.468
Best Friend's Use	0.02	0.01	3.46*	1.015	0.999	1.032	0.04	0.01	11.31**	1.043	1.018	1.069
DSI-R X Best Friend's Use	0.01	0.01	0.57	1.011	0.983	1.040	0.02	0.02	1.00	1.020	.981	1.061

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Differentiation & COA Status

Males. The Additive Model with COA status was significant overall ($\chi^2(4) = 24.09, p < .001, R^2_{\text{Cox \& Snell}} = .11, R^2_{\text{Nagelkerke}} = .27$) with a significant block improvement over the Basic Model ($\chi^2(1) = 6.07, p = .014$).The model had a successful prediction rate of 92%, the same as the Basic Model. The individual predictor of differentiation remained significant (OR = .162, 95% CI = .052, .507, see Table 33, p. 174) when the student has an average level of age, BMI, and was a COA. Being a COA by itself did not increase the odds of being classified as a drinker; however this may have more to do with the sample. The results of these analyses should be interpreted as controlling for COA status, as none of the Abstainers had an alcoholic parent.

The Interaction Model was also significant as an overall model ($\chi^2(5) = 24.07, p < .001, R^2_{\text{Cox \& Snell}} = .11, R^2_{\text{Nagelkerke}} = .27$) and had a successful prediction rate of 92%; however, it did not show a block improvement over the Additive Model ($\chi^2(1) = .000, p = 1.000$). The interaction term was neither significant nor did it change the significant odds for differentiation (OR = .162, 95% CI = .052, .507, see Table 33, p. 174).

Females. The Additive Model with COA status was not significant as an overall model ($\chi^2(4) = 8.064, p = .089$, see Table 33, p. 174).

The Interaction Model also failed to achieve a significance as an overall model ($\chi^2(5) = 8.200, p = .146$, see Table 33, p. 174).

Differentiation & Expectations of Alcohol Serving as a Tension Reducer

Males. The Additive Model with expectations of alcohol as a tension reducer was significant overall ($\chi^2(4) = 55.06, p < .001, R^2_{\text{Cox \& Snell}} = .24, R^2_{\text{Nagelkerke}} = .56$) with a

Table 33

Logistic Regression Predicting Students that Drink – COA Status

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-1.66	0.53	10.04**	0.190	.068	0.530	-0.67	0.33	4.21*	0.510	0.268	0.970
BMI	-0.01	0.07	0.02	0.989	.861	1.137	-0.08	0.04	3.75	0.926	0.856	1.001
Age	0.81	0.31	6.99**	2.239	1.232	4.071	0.09	0.16	0.28	1.088	0.795	1.489
Additive Model												
DSI-R	-1.82	0.58	9.77**	0.162	.052	0.507	-0.70	0.33	4.52*	0.496	0.260	0.947
BMI	0.00	0.07	0.00	0.996	.867	1.144	-0.08	0.04	3.64	0.926	0.857	1.002
Age	0.81	0.30	7.094**	2.245	1.238	4.070	0.08	0.16	0.22	1.078	0.788	1.475
COA	-18.95	6346.02	0.00	0.000	0.000	.	0.48	0.44	1.21	1.619	0.686	3.818
Interaction Model												
DSI-R	-1.82	0.58	9.77**	0.162	0.052	0.507	-0.77	0.38	4.18*	0.465	0.223	0.969
BMI	0.00	0.07	0.00	0.996	0.867	1.144	-0.08	0.04	3.64	0.926	0.856	1.002
Age	0.81	0.30	7.09**	2.245	1.238	4.070	0.08	0.16	0.24	1.081	0.790	1.478
COA	-18.57	6857.78	0.00	0.000	0.000	.	0.50	0.44	1.28	1.644	0.694	3.894
DSI-R X COA	1.57	9997.76	0.00	4.816	0.000	.	0.28	0.77	0.14	1.329	0.294	6.010

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

significant block improvement over the Basic Model ($\chi^2(1) = 37.06, p < .001$), and had successful prediction rate of 95.5%, an increase 3.5% over the Basic model. The tension reduction variable was significant as subjects were 1.388 (95% CI = 1.175, 1.639) times more likely to be a Drinker with a 1 unit increase in tension reduction expectations (see Table 34, p. 176). Subjects whose expectations were by one standard deviation greater (8.73) are 17.53 times more likely to be drinkers.

The Interaction Model also was significant overall ($\chi^2(5) = 55.73, p < .001$, $R^2_{\text{Cox \& Snell}} = .24$, $R^2_{\text{Nagelkerke}} = .57$) and had a successful prediction rate of 95.5%; however, it did not show a block improvement over the Additive Model ($\chi^2(1) = .67, p = .412$). The interaction term did not significantly change the odds of being a drinker and the tension reduction variable maintained the same level of influence (OR = 1.375, 95% CI = 1.169, 1.618, see Table 34, p. 176).

Females. The Additive Model with tension reduction expectations was significant as an overall model ($\chi^2(4) = 81.39, p < .001$, $R^2_{\text{Cox \& Snell}} = .28$, $R^2_{\text{Nagelkerke}} = .52$) and had a significant block improvement over the Basic Model ($\chi^2(1) = 74.47, p < .001$). The model had a successful prediction rate of 91.5%, an increase of nearly 5% over the Basic model. Expectations of alcohol serving as a tension reducer changed the odds of being a drinker by 1.374 (95% CI = 1.225, 1.542) for a one unit difference in expectations (see Table 34, p. 176). By changing the difference in expectations to a unit equivalent to one standard deviation for expectations (8.81) the likelihood of being a Drinker versus abstainer is 16.47 times greater. Additionally, the presence of tension reduction expectations eliminated the significance of differentiation found in the Basic Model.

Table 34

Logistic Regression Predicting Students that Drink – Expectations of Tension Reduction

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-1.66	0.53	10.04**	0.190	0.068	0.530	-0.67	0.33	4.21*	0.510	0.268	0.970
BMI	-0.01	0.07	0.02	0.989	0.861	1.137	-0.08	0.04	3.75	0.926	0.856	1.001
Age	0.81	0.31	6.99**	2.239	1.232	4.071	0.09	0.16	0.28	1.088	0.795	1.489
Additive Model												
DSI-R	-0.53	0.59	0.81	0.587	0.184	1.876	-0.13	0.38	0.11	0.882	0.421	1.846
BMI	0.01	0.07	0.02	1.010	0.873	1.169	-0.03	0.04	0.37	0.973	0.892	1.062
Age	0.87	0.38	5.321*	2.374	1.139	4.949	0.13	0.20	0.40	1.135	0.768	1.676
Tension Reduction	0.33	0.09	14.95**	1.388	1.175	1.639	0.32	0.06	29.19**	1.374	1.225	1.542
Interaction Model												
DSI-R	0.72	1.55	0.21	2.043	0.098	42.496	0.53	1.06	0.25	1.692	0.214	13.380
BMI	0.01	0.08	0.01	1.008	0.870	1.167	-0.03	0.04	0.45	0.971	0.890	1.059
Age	0.85	0.38	5.050*	2.343	1.115	4.922	0.13	0.20	0.43	1.139	0.771	1.683
Tension Reduction	0.32	0.08	14.77**	1.375	1.169	1.618	0.32	0.06	29.61**	1.370	1.223	1.534
DSI-R X Tension Reduction	0.11	0.13	0.74	1.119	0.867	1.444	0.06	0.09	0.44	1.064	0.886	1.278

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

The Interaction Model also was significant overall ($\chi^2(5) = 81.82, p < .001$, $R^2_{\text{Cox \& Snell}} = .28$, $R^2_{\text{Nagelkerke}} = .52$) and had a successful prediction rate of 91.1%; however, it did not show a block improvement over the Additive Model ($\chi^2(1) = .43, p = .511$). The interaction term was not significant and the significant odds ratio for tension reduction remained equivalent to the Additive Model (OR = 1.370, 95% CI = 1.223, 1.534, see Table 34, p. 176).

Differentiation & Expectations of Alcohol Serving as a Social Lubricant

Males. The Additive Model with expectations of alcohol as a social lubricant was significant overall ($\chi^2(4) = 53.38, p < .001$, $R^2_{\text{Cox \& Snell}} = .23$, $R^2_{\text{Nagelkerke}} = .55$) with a significant block improvement over the Basic Model ($\chi^2(1) = 35.28, p < .001$). The model had a successful prediction rate of 95.5%, an increase 3.5% over the Basic model. The social lubrication variable was significant for subjects as individuals with 1 unit higher social lubrication expectations were 1.366 (95% CI = 1.177, 1.586) times greater odds of being a Drinker (see Table 35, p. 179). Subjects whose expectations were one standard deviation (7.89) higher were 11.73 times more likely to be a drinker.

The Interaction Model also was significant overall ($\chi^2(5) = 53.96, p < .001$, $R^2_{\text{Cox \& Snell}} = .24$, $R^2_{\text{Nagelkerke}} = .55$) and had a successful prediction rate of 95.5%; however, it did not show a block improvement over the Additive Model ($\chi^2(1) = .68, p = .410$). The interaction term did not significantly change the odds of being a Drinker versus Abstainer and the social lubricant variable maintained the same level of influence (OR = 1.361, 95% CI = 1.174, 1.577, see Table 35, p. 179)

Females. The Additive Model with social lubrication expectations was significant as an overall model ($\chi^2(4) = 66.75, p < .001$, $R^2_{\text{Cox \& Snell}} = .24$, $R^2_{\text{Nagelkerke}} = .44$) and had a

significant block improvement over the Basic Model ($\chi^2(1) = 59.84, p < .001$). The model had a successful prediction rate of 89.4%, an increase of nearly 3% over the Basic Model. Expectations of alcohol serving as a social lubricant changed the odds of being a drinker by 1.387 (95% CI = 1.227, 1.567) for every one unit change in perceptions (see Table 35, p. 179). By altering the unit of change to be equivalent to one standard deviation for expectations (7.74) students were 12.58 times more likely to be a Drinker versus an Abstainer .Additionally, the presence of social lubrication expectations eliminates the significance of differentiation found in the Basic Model.

The Interaction Model also was significant overall ($\chi^2(5) = 68.81, p < .001, R^2_{\text{Cox \& Snell}} = .24, R^2_{\text{Nagelkerke}} = .45$) and had a successful prediction rate of 90.7%; however, it did not show a block improvement over the Additive Model ($\chi^2(1) = .43, p = .511$). The interaction term was not significant and the significant odds ratio for social lubrication became 1.418 (95% CI = 1.239, 1.623) for a one unit change in expectations (see Table 35, p. 179).

The Comprehensive Model

Males. The Comprehensive Model was significant according to the model chi-square ($\chi^2(13) = 66.18, p < .001, R^2_{\text{Cox \& Snell}} = .28, R^2_{\text{Nagelkerke}} = .66$) and showed a significant improvement over the Basic Model ($\chi^2(10) = 48.18, p < .001$). The model illustrated a 96% success rate in predicting the correct drinking classifications, an improvement of 4% over the Basic Model. Interestingly, taken as a whole the model was significant; however, no individual predictors in this model significantly changed the odds of being a drinker (see Table 36, p. 181).

Table 35

Logistic Regression Predicting Students that Drink – Expectations of Social Lubrication

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-1.66	0.53	10.04**	0.190	0.068	0.530	-0.67	0.33	4.21*	0.510	0.268	0.970
BMI	-0.01	0.07	0.02	0.989	0.861	1.137	-0.08	0.04	3.75	0.926	0.856	1.001
Age	0.81	0.31	6.99**	2.239	1.232	4.071	0.09	0.16	0.28	1.088	0.795	1.489
Additive Model												
DSI-R	-0.47	0.58	0.66	0.627	0.203	1.935	0.37	0.37	1.02	1.451	0.705	2.984
BMI	0.03	0.08	0.18	1.033	0.890	1.199	-0.02	0.04	0.23	0.980	0.904	1.063
Age	0.89	0.38	5.56*	2.432	1.162	5.089	0.22	0.18	1.41	1.244	0.868	1.782
Social Lubrication	0.31	0.08	16.84**	1.366	1.177	1.586	0.33	0.06	27.49**	1.387	1.227	1.567
Interaction Model												
DSI-R	0.61	1.38	0.20	1.839	0.124	27.233	1.59	0.94	2.88	4.890	0.781	30.612
BMI	0.03	0.08	0.15	1.029	0.888	1.193	-0.01	0.04	0.10	0.987	0.911	1.070
Age	0.91	0.38	5.734*	2.491	1.180	5.257	0.19	0.18	1.00	1.203	0.838	1.726
Social Lubrication	0.31	0.08	16.69**	1.361	1.174	1.577	0.35	0.07	25.71**	1.418	1.239	1.623
DSI-R X Social Lubrication	0.11	0.12	0.73	1.112	0.872	1.418	0.14	0.10	2.10	1.154	0.951	1.401

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Females. The Comprehensive Model was significant according to the model chi-square ($\chi^2(13) = 90.70, p < .001$, $R^2_{\text{Cox \& Snell}} = .31$, $R^2_{\text{Nagelkerke}} = .57$) and showed a significant improvement over the Basic Model ($\chi^2(10) = 83.79, p < .001$). The model illustrated a 91.5% success rate in predicting the correct drinking classifications, an improvement of almost 5% over the Basic Model. Only the tension reduction variable showed an individual level of significance in changing the odds of being a Drinker (OR = 1.237, 95% CI = 1.078, 1.419, see Table GAU 36, p. 181).

Moderate Drinkers versus Low Drinkers

Differentiation and GAU

Males. The Basic Model did not reach a level of significance ($\chi^2(3) = 2.92, p = .405$, see Table 37, p. 182).

Females. The Basic Model failed to reach a level of significance ($\chi^2(3) = 2.62, p = .453$, see Table 37, p. 182).

Four factors of the DSI-R with GAU

Males. As was the case with the Basic Model, the overall four-factor model failed to reach a level of significance ($\chi^2(6) = 4.94, p = 551$, see Table 38, p. 184).

Females. As was the case in the Basic Model, the four factor model failed to reach a level of significance as an overall model ($\chi^2(6) = 2.97, p = .813$, see Table 38, p. 184).

Differentiation & perceptions of the average MSU student's alcohol use.

Males. The Additive Model with perceptions of the average MSU student's alcohol consumption was not significant ($\chi^2(4) = 8.655, p = .070$, see Table 39, p. 184). The Interaction Model also failed to reach a level of significance ($\chi^2(5) = 9.94, p = .077$).

Table 36

Logistic Regression Predicting Students that Drink – Comprehensive Model

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
DSI-R	-0.81	0.59	1.90	0.446	0.142	1.406	1.15	1.11	1.07	3.166	0.357	28.089
BMI	0.16	0.09	2.97	1.173	0.978	1.406	-0.01	0.05	0.04	0.991	0.906	1.085
Age	0.08	0.20	0.17	1.087	0.728	1.622	0.12	0.21	0.32	1.126	0.747	1.697
MSU Perceptions	0.00	0.01	0.04	0.999	0.986	1.012	0.00	0.01	0.07	0.998	0.985	1.011
DSI-R X MSU Perceptions	-0.02	0.01	3.03	0.976	0.950	1.003	0.00	0.01	0.07	1.003	0.983	1.022
Best Friend	0.03	0.01	18.64**	1.026	1.014	1.038	0.02	0.01	2.69	1.018	0.997	1.040
DSI-R X Best Friend	-0.01	0.01	0.45	0.992	0.968	1.016	0.01	0.02	0.19	1.007	0.977	1.038
COA	-1.16	0.63	3.40	0.313	0.091	1.076	0.33	0.59	0.32	1.393	0.440	4.406
DSI-R X COA	1.32	1.15	1.33	3.747	0.397	35.400	0.16	0.94	0.03	1.171	0.185	7.423
Tension Reduction	0.04	0.05	0.49	1.037	0.936	1.149	0.21	0.07	9.17**	1.237	1.078	1.419
DSI-R X Tension Reduction	0.11	0.11	0.90	1.115	0.891	1.394	0.01	0.10	0.01	1.007	0.830	1.222
Social Lubrication	-0.05	0.06	0.96	0.948	0.852	1.055	0.13	0.08	3.06	1.142	0.984	1.326
DSI-R X Social Lubrication	-0.06	0.13	0.23	0.941	0.736	1.203	0.10	0.12	0.76	1.108	0.880	1.394

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 37

Logistic Regression Predicting Students that are Moderate versus Low Drinkers – Differentiation

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
DSI-R	-0.16	0.34	0.23	0.852	0.442	1.643	-0.23	0.32	0.52	0.792	0.420	1.493
BMI	-0.08	0.06	2.03	0.925	0.830	1.030	-0.02	0.04	0.26	0.978	0.900	1.064
Age	-0.04	0.16	0.07	0.958	0.703	1.305	0.22	0.15	2.17	1.241	0.931	1.653

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 38

Logistic Regression Predicting Students that are Moderate versus Low Drinkers – Four Factors

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Emotional Reactivity	-0.13	0.31	0.18	0.877	.479	1.609	-0.03	0.26	0.01	0.975	0.588	1.617
"I" Position	0.28	0.31	0.79	1.319	0.717	2.425	0.09	0.32	0.08	1.098	0.582	2.070
Emotional Cutoff	-0.35	0.26	1.70	0.709	0.422	1.190	-0.10	0.24	0.17	0.906	0.567	1.447
Fusion with Others	0.18	0.42	0.17	1.191	0.523	2.712	-0.22	0.35	.377	0.805	0.402	1.609
BMI	-.081	0.06	2.10	0.922	0.826	1.029	-0.02	0.04	.139	0.984	0.903	1.072
Age	-.038	1.60	0.06	0.962	0.704	1.316	0.22	0.15	2.198	1.243	0.932	1.658

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Females. The Additive Model with perceptions of MSU students' alcohol consumption failed to reach a level of significance ($\chi^2(4) = 3.77, p = .438$, see Table 39, p. 184). The Interaction Model also failed to reach a level of significance ($\chi^2(5) = 4.63, p = .463$, see Table 39, p. 184).

Differentiation & Perception of Best Friend at MSU's Alcohol Use

Males. The Additive Model with perceptions of their best friend at MSU's alcohol consumption was significant ($\chi^2(4) = 19.894\ p = .001$, $R^2_{\text{Cox \& Snell}} = .15$, $R^2_{\text{Nagelkerke}} = .20$) with a significant block improvement over the Basic Model ($\chi^2(1) = 16.98, p < .001$). The model had successful prediction rate of 68.8%, an increase of greater than 18% over the Basic Model. Perception of best friend alcohol use was a significant individual predictor in that the odds of being a Moderate Drinker were 1.024 (95% CI = 1.011, 1.037) times greater (see Table 40, p. 186) for every one unit change in perception and 5.69 times greater for a change of 1 standard deviation (72.43).

The Interaction Model also was significant overall ($\chi^2(5) = 21.21, p < .001$, $R^2_{\text{Cox \& Snell}} = .16$, $R^2_{\text{Nagelkerke}} = .21$) and had a successful prediction rate of 68.0%, however, it did not show a block improvement over the Additive Model ($\chi^2(1) = 1.32, p = .251$). Perception of best friend alcohol use was a significant individual predictor in that the odds of being a Moderate Drinker were 1.025 (95% CI = 1.011, 1.039, see Table 40, p. 186).

Table 39

Logistic Regression Predicting Students that are Moderate versus Low Drinkers – Perceptions of MSU Student Use

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.16	0.34	0.23	0.852	0.442	1.643	-0.23	0.32	0.52	0.792	0.420	1.493
BMI	-0.08	0.06	2.03	0.925	0.830	1.030	-0.02	0.04	0.26	0.978	0.900	1.064
Age	-0.04	0.16	0.07	0.958	0.703	1.305	0.22	0.15	2.17	1.241	0.931	1.653
Additive Model												
DSI-R	-0.25	0.35	0.50	0.782	0.396	1.543	-0.25	0.33	0.60	0.776	0.409	1.472
BMI	-0.08	0.06	1.85	0.926	0.830	1.034	-0.02	0.04	0.16	0.983	0.904	1.070
Age	-0.02	0.16	0.02	0.979	0.713	1.344	0.21	0.15	1.95	1.228	0.920	1.639
MSU Use	0.02	0.01	4.82*	1.015	1.002	1.029	0.01	0.01	1.13	1.006	0.995	1.016
Interaction Model												
DSI-R	-0.16	0.36	0.19	0.855	0.424	1.724	-0.29	0.33	0.77	0.750	0.394	1.428
BMI	-0.07	0.06	1.65	0.930	0.832	1.039	-0.02	0.04	0.14	0.984	0.903	1.072
Age	-0.01	0.16	0.00	0.993	0.721	1.368	0.22	0.15	2.20	1.248	0.932	1.671
MSU Use	0.01	0.01	4.63*	1.014	1.001	1.028	0.01	0.01	1.25	1.006	0.996	1.016
DSI-R X MSU Use	0.01	0.01	1.28	1.014	0.990	1.039	-0.01	0.01	0.85	0.992	0.976	1.009

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Females. The Additive Model with perceptions of their best friend at MSU's alcohol consumption was significant ($\chi^2(4) = 19.29, p = .001, R^2_{\text{Cox \& Snell}} = .13, R^2_{\text{Nagelkerke}} = .17$) with a significant block improvement over the Basic Model ($\chi^2(1) = 16.67, p < .001$) and a successful prediction rate of 68.3%, an increase of 6.3% over the Basic model. The change in odds for being a Moderate Drinker versus a Low Drinker was 1.025 (95% CI = 1.010, 1.040) for every 1 unit change in perception of best friend drinking, and 2.71 times for an increase equivalent to one standard deviation (41.48) (see Table 40, p. 186).

The Interaction Model was also significant overall ($\chi^2(5) = 19.55, p = .002, R^2_{\text{Cox \& Snell}} = .13, R^2_{\text{Nagelkerke}} = .18$) and had a successful prediction rate of 68.3%; however, it did not show a block improvement over the Additive Model ($\chi^2(1) = .26, p = .611$). The only significant individual predictor was perception of best friend use, which remained identical to the value of the Additive Model (see Table 40, p. 186).

Differentiation & COA Status

Males. The Additive Model with COA status did not reach a level of significance ($\chi^2(4) = 2.92, p = .571$, see Table 41, p. 187). The Interaction Model also failed to reach a level of significance ($\chi^2(5) = 2.94, p = .709$).

Females. The Additive Model with COA status failed to reach a level of significance ($\chi^2(4) = 2.88, p = .578$, see Table 41, p. 187). The Interaction Model also failed to reach a level of significance ($\chi^2(5) = 3.218, p = .666$).

Table 40

Logistic Regression Predicting Students that are Moderate versus Low Drinkers – Perceptions of Best Friend's Use

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.16	0.34	0.23	0.852	0.442	1.643	-0.23	0.32	0.52	0.792	0.420	1.493
BMI	-0.08	0.06	2.03	0.925	0.830	1.030	-0.02	0.04	0.26	0.978	0.900	1.064
Age	-0.04	0.16	0.07	0.958	0.703	1.305	0.22	0.15	2.17	1.241	0.931	1.653
Additive Model												
DSI-R	-0.13	0.36	0.13	0.878	0.435	1.775	-0.25	0.35	0.51	0.782	0.397	1.539
BMI	-0.09	0.06	2.07	0.912	0.804	1.034	-0.03	0.05	0.38	0.970	0.881	1.068
Age	-0.12	0.17	0.50	0.884	0.629	1.243	0.19	0.16	1.44	1.206	0.889	1.636
Best Friend's Use	0.02	0.01	12.78**	1.024	1.011	1.037	0.02	0.01	10.73**	1.025	1.010	1.040
Interaction Model												
DSI-R	0.37	0.57	0.41	1.444	0.468	4.451	-0.35	0.40	0.74	0.707	0.320	1.559
BMI	-0.08	0.06	1.70	0.920	0.812	1.043	-0.03	0.05	0.41	0.968	0.878	1.069
Age	-0.12	0.18	0.45	0.889	0.631	1.253	0.18	0.16	1.34	1.198	0.882	1.627
Best Friend's Use	0.03	0.01	12.93**	1.025	1.011	1.039	0.02	0.01	9.88**	1.025	1.009	1.040
DSI-R X Best Friend's Use	0.01	0.01	1.27	1.014	0.990	1.038	-0.01	0.01	0.25	0.993	0.967	1.020

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 41

Logistic Regression Predicting Students that are Moderate versus Low Drinkers – COA Status

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.16	0.34	0.23	0.852	0.442	1.643	-0.23	0.32	0.52	0.792	.420	1.493
BMI	-0.08	0.06	2.03	0.925	0.830	1.030	-0.02	0.04	0.26	0.978	.900	1.064
Age	-0.04	0.16	0.07	0.958	0.703	1.305	0.22	0.15	2.17	1.241	.931	1.653
Additive Model												
DSI-R	-0.16	0.34	0.23	0.853	0.442	1.645	-0.27	0.33	0.65	0.765	0.400	1.465
BMI	-0.08	0.06	1.99	0.925	0.830	1.031	-0.02	0.04	0.32	0.976	0.898	1.062
Age	-0.04	0.16	0.07	0.958	0.703	1.306	0.22	0.15	2.24	1.246	0.934	1.661
COA	-0.04	0.51	0.01	0.965	0.357	2.606	0.22	0.44	0.26	1.251	0.526	2.979
Interaction Model												
DSI-R	-0.14	0.38	0.13	0.872	0.418	1.820	-0.37	0.37	0.95	.694	0.334	1.444
BMI	-0.08	0.06	1.96	0.925	0.830	1.031	-0.03	0.04	0.40	.973	0.894	1.059
Age	-0.04	0.16	0.08	0.958	0.703	1.305	0.22	0.15	2.31	1.251	0.937	1.670
COA	-0.03	0.51	0.00	0.970	0.357	2.633	0.14	0.46	0.09	1.151	0.465	2.852
DSI-R X COA	-0.11	0.81	0.02	0.899	0.182	4.433	0.47	0.82	0.33	1.604	0.323	7.965

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Differentiation & Expectations of Alcohol Serving as a Tension Reducer

Males. The Additive Model with expectations of alcohol as a tension reducer was significant ($\chi^2(4) = 16.17, p = .003, R^2_{\text{Cox \& Snell}} = .12, R^2_{\text{Nagelkerke}} = .16$) with a significant block improvement over the Basic Model ($\chi^2(1) = 13.26, p < .001$), and had successful prediction rate of 69.6%, an increase 19.2% over the Basic Model. The tension reduction variable was significant indicating subjects were 1.101 (95% CI = 1.042, 1.163) times more likely of being a moderate drinker versus a low drinker with a 1 unit increase in tension reduction expectations (see Table 42, p. 189). Subjects whose expectations changed by one standard deviation (8.73) were 2.31 times more likely to be drinkers.

The Interaction Model was also significant overall ($\chi^2(5) = 16.24, p = .006, R^2_{\text{Cox \& Snell}} = .12, R^2_{\text{Nagelkerke}} = .16$) and had a successful prediction rate of 70.4%; however, it did not show a block improvement over the Additive Model ($\chi^2(1) = .07, p = .798$). The significant tension reduction odds ration was identical to the Additive Model (see Table 42, p. 189).

Females. The Additive Model with expectations of alcohol as a tension reducer was significant ($\chi^2(4) = 24.47, p < .001, R^2_{\text{Cox \& Snell}} = .16, R^2_{\text{Nagelkerke}} = .22$) with a significant block improvement over the Basic Model ($\chi^2(1) = 21.84, p < .001$), and a successful prediction rate of 66.9%, an increase of 5% over the Basic model. Age (OR= 1.386, 95% CI = 1.007, 1.90) and Tension reduction (OR = 1.123, 95% CI = 1.064, 1.184 for a 1 unit change, and OR = 2.78 for a change of one standard deviation of 8.81 units, see Table 42, p. 189).

Table 42

Logistic Regression Predicting Students that are Moderate versus Low Drinkers – Expectations of Tension Reduction

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.16	0.34	0.23	0.852	0.442	1.643	-0.23	0.32	0.52	0.792	0.420	1.493
BMI	-0.08	0.06	2.03	0.925	0.830	1.030	-0.02	0.04	0.26	0.978	0.900	1.064
Age	-0.04	0.16	0.07	0.958	0.703	1.305	0.22	0.15	2.17	1.241	0.931	1.653
Additive Model												
DSI-R	0.24	0.37	0.40	1.266	0.610	2.629	0.17	0.37	0.22	1.187	0.576	2.444
BMI	-0.05	0.06	0.65	0.954	0.849	1.071	-0.01	0.05	0.09	0.986	0.895	1.085
Age	-0.05	0.17	0.08	0.953	0.685	1.324	0.33	0.16	4.02*	1.386	1.007	1.906
Tension Reduction	0.10	0.03	11.72**	1.101	1.042	1.163	0.12	0.03	18.06**	1.123	1.064	1.184
Interaction Model												
DSI-R	0.21	0.38	0.31	1.239	0.586	2.621	0.13	0.38	0.11	1.135	0.538	2.395
BMI	-0.05	0.06	0.65	0.954	0.850	1.070	-0.01	0.05	0.07	0.987	0.896	1.088
Age	-0.04	0.17	0.06	0.959	0.687	1.340	0.32	0.16	3.98*	1.383	1.006	1.903
Tension Reduction	0.10	0.03	11.71**	1.101	1.042	1.163	0.11	0.03	16.90**	1.121	1.061	1.183
DSI-R X Tension Reduction	-0.01	0.05	0.07	0.988	0.899	1.085	-0.02	0.05	0.24	0.977	0.891	1.071

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

The Interaction Model also was significant overall ($\chi^2(5) = 24.71, p < .001$, $R^2_{\text{Cox \& Snell}} = .16$, $R^2_{\text{Nagelkerke}} = .22$) but failed to yield a significant block improvement over the Additive Model ($\chi^2(1) = .24, p = .622$), maintaining the identical prediction rate of the Additive Model 66.9%. Age (OR= 1.383, 95% CI = 1.006, 1.903) and tension reduction (OR = 1.121, 95% CI = 1.061, 1.183 for a 1 unit change) remained nearly identical in their respective values of categorical prediction between Moderate versus Low Drinkers (see Table 42, p. 189).

Differentiation & Expectations of Alcohol Serving as a Social Lubricant

Males. The Additive Model with expectations of alcohol as a social lubricant approached, but did not obtain, significance ($\chi^2(4) = 9.37, p = .052$, see Table 43, p. 193). Additionally, the Interaction Model also was not significant ($\chi^2(5) = 9.386, p = .095$).

Females. The Additive Model with expectations of alcohol as a social lubricant was significant overall ($\chi^2(4) = 14.01, p = .007$, $R^2_{\text{Cox \& Snell}} = .10$, $R^2_{\text{Nagelkerke}} = .13$) with a significant block improvement over the Basic Model ($\chi^2(1) = 11.38, p = .001$), and a successful prediction rate of 61.2%, which was .7% less than the Basic Model. The social lubrication variable was a significant individual predictor, indicating subjects had a 1.094 (95% CI = 1.036, 1.155) times greater chance of being classified as a Moderate Drinker versus Low Drinker with a 1 unit increase in social lubrication (see Table 43, p. 193). Subjects whose expectations change by one standard deviation (7.74) were 2.01 times more likely to be Moderate Drinkers.

The Interaction Model was also significant ($\chi^2(5) = 14.18, p = .015, R^2_{\text{Cox \& Snell}} = .10, R^2_{\text{Nagelkerke}} = .13$) and had a successful prediction rate of 61.2%. The model did not have significant block improvement over the Additive Model ($\chi^2(1) = .171, p = .679$). Social lubrication remained the only significant predictor and the values remained equivalent to the Additive Model (OR = 1.095, 95% CI = 1.037, 1.157, see Table 43, p. 193).

The Comprehensive Model

Males. The Comprehensive Model was significant according to the model chi-square ($\chi^2(13) = 34.99, p = .001, R^2_{\text{Cox \& Snell}} = .24, R^2_{\text{Nagelkerke}} = .33$) and showed a significant improvement over the Basic Model ($\chi^2(10) = 32.07, p < .001$). The model illustrated a 73.6% success rate in predicting the correct drinking classifications, an improvement of 13.2% over the Basic Model. Perceptions of best friend use (OR = 1.020) and expectations of tension reduction (OR = 1.109) were the only individual variables to significantly improve the odds of being classified as a Moderate versus a Low Drinker (see Table 44, p. 194).

Females. The Comprehensive Model was significant according to the model chi-square ($\chi^2(13) = 45.72, p < .001, R^2_{\text{Cox \& Snell}} = .28, R^2_{\text{Nagelkerke}} = .38$) and showed a significant improvement over the Basic Model ($\chi^2(10) = 43.1, p < .001$). The model illustrated a 75.5% success rate in predicting the correct drinking classifications, an improvement of 13.6% over the Basic Model. Age (OR = 1.461, 95% CI = 1.014, 2.107), perceptions of best friend use (OR = 1.028, 95% CI = 1.009, 1.047), and expectations of tension reduction (OR = 1.118, 95% CI = 1.041, 1.201) were all significant individual

predictors in the likelihood of being classified as a Moderate versus Low Drinker (see Table 44, p. 194).

High Drinkers versus Low Drinkers

Differentiation and GAU

Males. The Basic Model did not reach a level of significance according to the model chi-square ($\chi^2(3) = 2.208, p = .530$, see Table 45, p. 195).

Females. The Basic Model failed to reach a level of significance ($\chi^2(3) = 2.057, p = .561$, see Table 45, p. 195).

Four factors of the DSI-R with GAU

Males. As was the case in the basic model, the overall four-factor model failed to reach a level of significance ($\chi^2(6) = 10.841, p = .093$, see Table 46, p. 195).

Females. The four factor model failed to reach a level of significance as an overall model ($\chi^2(6) = 3.405, p = .757$, see Table 46, p. 195).

Differentiation & perceptions of the average MSU student's alcohol use

Males. The Additive Model with perceptions of the average MSU student's alcohol consumption was significant as an overall model for predicting High versus Low Drinkers ($\chi^2(4) = 24.11, p < .001, R^2_{\text{Cox \& Snell}} = .18, R^2_{\text{Nagelkerke}} = .24$). The Additive Model had a successful prediction rate of 65%, a 9.7% improvement over the Basic Model. Only perceptions of MSU student use was a significant individual predictor in the Additive Model indicating that for every 1 unit increase in perceptions they were 1.032 (95% CI = 1.016, 1.049) times more likely to be classified as a High Drinker (see Table 47, p. 197). With a one standard deviation change (37.22), the likelihood for being a Moderate Drinker was 3.29 times greater.

Table 43

Logistic Regression Predicting Students that are Moderate versus Low Drinkers – Expectations of Social Lubrication

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.16	0.34	0.23	0.852	0.442	1.643	-0.23	0.32	0.52	0.792	0.420	1.493
BMI	-0.08	0.06	2.03	0.925	0.830	1.030	-0.02	0.04	0.26	0.978	0.900	1.064
Age	-0.04	0.16	0.07	0.958	0.703	1.305	0.22	0.15	2.17	1.241	0.931	1.653
Additive Model												
DSI-R	0.11	0.36	0.09	1.112	0.549	2.253	0.14	0.36	0.15	1.149	0.570	2.317
BMI	-0.06	0.06	1.07	0.942	0.842	1.054	0.00	0.05	0.01	0.996	0.911	1.090
Age	-0.04	0.16	0.05	0.965	0.701	1.329	0.27	0.15	3.07	1.310	0.968	1.772
Social Lubrication	0.07	0.03	6.09*	1.069	1.014	1.127	0.09	0.03	10.40**	1.094	1.036	1.155
Interaction Model												
DSI-R	0.12	0.37	0.10	1.124	0.545	2.320	0.19	0.38	0.25	1.206	0.577	2.523
BMI	-0.06	0.06	1.07	0.942	0.842	1.055	-0.01	0.05	0.01	0.995	0.909	1.088
Age	-0.04	0.16	0.05	0.963	0.698	1.329	0.27	0.15	3.05	1.310	0.968	1.772
Social Lubrication	0.07	0.03	6.107*	1.069	1.014	1.128	0.09	0.03	10.57**	1.095	1.037	1.157
DSI-R X Social Lubrication	0.01	0.05	0.02	1.006	0.920	1.100	0.02	0.05	0.17	1.021	0.926	1.124

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 44

Logistic Regression Predicting Students that are Moderate versus Low Drinkers – Comprehensive Model

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
DSI-R	0.30	0.65	0.21	1.349	0.376	4.839	-0.07	0.58	0.02	0.929	0.301	2.869
BMI	-0.05	0.07	0.57	0.950	0.832	1.086	-0.05	0.07	0.59	0.950	0.834	1.083
Age	-0.05	0.19	0.06	0.953	0.652	1.393	0.38	0.19	4.13*	1.461	1.014	2.107
MSU Perceptions	0.01	0.01	2.21	1.012	0.996	1.029	0.01	0.01	0.83	1.006	0.993	1.018
DSI-R X MSU Perceptions	0.01	0.01	0.26	1.007	0.979	1.036	-0.01	0.01	1.14	0.988	0.968	1.010
Best Friend	0.02	0.01	7.48**	1.020	1.006	1.035	0.03	0.01	8.80**	1.028	1.009	1.047
DSI-R X Best Friend	0.01	0.01	0.20	1.006	0.981	1.031	-0.01	0.02	0.42	0.990	0.960	1.021
COA	-0.12	0.65	0.03	0.887	0.249	3.158	-0.03	0.53	0.00	0.966	0.344	2.715
DSI-R X COA	0.39	1.13	0.12	1.478	0.162	13.521	0.64	0.99	0.42	1.892	0.274	13.064
Tension Reduction	0.10	0.04	5.45*	1.109	1.017	1.209	0.11	0.04	9.28**	1.118	1.041	1.201
DSI-R X Tension Reduction	-0.05	0.08	0.31	0.956	0.813	1.122	-0.13	0.07	3.10	0.877	0.758	1.015
Social Lubrication	-0.01	0.05	0.04	0.991	0.904	1.086	0.03	0.04	0.69	1.031	0.960	1.107
DSI-R X Social Lubrication	0.03	0.09	0.13	1.031	0.873	1.218	0.11	0.08	1.93	1.116	0.956	1.303

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 45

Logistic Regression Predicting Students that are High versus Low Drinkers – Differentiation

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
DSI-R	-0.43	0.32	1.88	0.648	0.348	1.205	-0.23	0.32	0.04	0.946	0.420	1.493
BMI	0.00	0.05	0.01	1.004	0.920	1.096	-0.02	0.04	1.83	0.939	0.900	1.064
Age	0.09	0.14	0.38	1.093	0.824	1.449	0.22	0.15	0.01	0.989	0.931	1.653

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 46

Logistic Regression Predicting Students that High versus Low Drinkers – Four Factors

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Emotional Reactivity	0.62	0.33	3.65	1.860	0.984	3.517	0.21	0.25	0.75	1.238	0.763	2.008
"I" Position	-0.86	0.33	6.93**	0.422	0.222	0.802	0.04	0.29	0.02	1.039	0.588	1.834
Emotional Cutoff	-0.26	0.28	0.85	0.770	0.443	1.340	-0.02	0.26	0.01	0.979	0.591	1.620
Fusion with Others	-0.41	0.43	0.92	0.665	0.289	1.533	-0.39	0.35	1.23	0.677	0.340	1.350
BMI	0.02	0.05	0.13	1.016	0.929	1.112	-0.06	0.05	1.65	0.941	0.857	1.033
Age	0.08	0.15	0.25	1.078	0.801	1.451	-0.01	0.14	0.00	0.994	0.758	1.303

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

The Interaction Model also was significant as an overall model for predicting high versus low drinkers ($\chi^2(4) = 24.48, p < .001, R^2_{\text{Cox \& Snell}} = .18, R^2_{\text{Nagelkerke}} = .24$) and had a 65.9% successful prediction rate. However, the Interaction Model did not show a block improvement over the Additive Model ($\chi^2(2) = .37, p = .545$). The only significant individual predictor was the perception of MSU students use, which remained almost identical to the OR from the Additive Model (1.032, 95% CI = 1.015, 1.049, see Table 47, p. 197).

Females. The Additive Model with perceptions of their best friend at MSU's alcohol consumption was significant ($\chi^2(4) = 13.42, p = .009, R^2_{\text{Cox \& Snell}} = .09, R^2_{\text{Nagelkerke}} = .11$) and a significant block improvement over the Basic Model ($\chi^2(1) = 11.36, p = .001$), and had successful prediction rate of 60.7%, an increase of greater than 8% over the Basic Model. Perception of MSU student use was a significant individual predictor in that the likelihood was 1.015 (95% CI = 1.006, 1.025) times greater of being a High versus Low Drinker for every one unit change in perception (see Table 47, p. 197) and 1.79 times greater for every one standard deviation (38.75).

The Interaction Model also was significant overall ($\chi^2(5) = 18.01, p = .003, R^2_{\text{Cox \& Snell}} = .11, R^2_{\text{Nagelkerke}} = .15$), had a successful prediction rate of 62.7%, and had a significant block improvement over the Additive Model ($\chi^2(1) = 4.59, p = .032$). Perception of MSU student use remained a significant predictor of High versus Low Drinkers (OR = 1.015, 95% CI = 1.006, 1.025, see Table 47, p. 197). Additionally, the interaction of differentiation with perception of MSU student use was significant with the

Table 47

Logistic Regression Predicting Students that High versus Low Drinkers – Perceptions of MSU Student Use

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.43	0.32	1.88	0.648	0.348	1.205	-0.23	0.32	0.04	0.946	0.420	1.493
BMI	0.00	0.05	0.01	1.004	0.920	1.096	-0.02	0.04	1.83	0.939	0.900	1.064
Age	0.09	0.14	0.38	1.093	0.824	1.449	0.22	0.15	0.01	0.989	0.931	1.653
Additive Model												
DSI-R	-0.21	0.35	0.35	0.815	0.411	1.614	0.01	0.29	0.00	1.012	0.571	1.794
BMI	-0.03	0.05	0.40	0.967	0.871	1.073	-0.05	0.05	1.13	0.947	0.858	1.046
Age	0.06	0.16	0.12	1.057	0.770	1.452	0.02	0.14	0.02	1.021	0.772	1.351
MSU Use	0.03	0.01	14.67**	1.032	1.016	1.049	0.02	0.01	10.06*	1.015	1.006	1.025
Interaction Model												
DSI-R	-0.26	0.36	0.51	0.772	0.380	1.568	-0.03	0.30	0.01	0.968	0.539	1.741
BMI	-0.04	0.05	0.43	0.965	0.869	1.072	-0.05	0.05	0.89	0.951	0.858	1.055
Age	0.06	0.16	0.13	1.061	0.772	1.460	0.05	0.14	0.14	1.056	0.797	1.398
MSU Use	0.03	0.01	13.85**	1.032	1.015	1.049	0.02	0.01	9.85**	1.015	1.006	1.025
DSI-R X MSU Use	-0.01	0.01	0.36	0.992	0.965	1.019	-0.02	0.01	4.34*	0.983	0.967	0.999

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

odds ratio of .983 (95% CI = .967, .999) for every unit increase in the interaction term (see Figure 4, p. 62, for illustration of the interaction effect).

Differentiation & Perception of Best Friend at MSU's Alcohol Use

Males. The Additive Model with perceptions of their best friend at MSU's alcohol consumption was significant overall ($\chi^2(4) = 70.40, p < .001$, $R^2_{\text{Cox \& Snell}} = .44$, $R^2_{\text{Nagelkerke}} = .58$) with a significant block improvement over the Basic Model ($\chi^2(1) = 68.19, p < .001$), and had successful prediction rate of 84.6%, an increase 29.3% over the Basic model. The only significant individual predictor in the model was perception of best friend use, which illustrated a difference of 1 unit of perception made it 1.04 times more likely the subject was a High versus a Low Drinker (see Table 48, p. 199). A difference in perceptions by a value of one standard deviation (72.43) improved the odds of being classified as a high drinker by 13.56 times.

The Interaction Model also was significant overall ($\chi^2(5) = 72.77, p < .001$, $R^2_{\text{Cox \& Snell}} = .45$, $R^2_{\text{Nagelkerke}} = .60$) and had a successful prediction rate of 84.65%; however, it did not show a block improvement over the Additive Model ($\chi^2(1) = 2.37, p = .124$). Again, the only significant individual variable was perceptions of best friend use which remained similar to the Additive Model (OR = 1.041, 95% CI = 1.026, 1.056, see Table 48, p. 199).

Table 48

Logistic Regression Predicting Students that High versus Low Drinkers – Perceptions of Best Friend's Use

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.43	0.32	1.88	0.648	0.348	1.205	-0.23	0.32	0.04	0.946	0.420	1.493
BMI	0.00	0.05	0.01	1.004	0.920	1.096	-0.02	0.04	1.83	0.939	0.900	1.064
Age	0.09	0.14	0.38	1.093	0.824	1.449	0.22	0.15	0.01	0.989	0.931	1.653
Additive Model												
DSI-R	-0.13	0.42	0.09	0.880	0.384	2.015	0.13	0.35	0.13	1.134	0.571	2.255
BMI	-0.06	0.07	0.56	0.947	0.820	1.093	-0.03	0.06	0.29	0.969	0.863	1.087
Age	0.00	0.21	0.00	0.999	0.665	1.501	-0.04	0.16	0.07	0.959	0.695	1.323
Best Friend's Use	0.04	0.01	32.44**	1.037	1.024	1.050	0.05	0.01	29.18**	1.046	1.029	1.063
Interaction Model												
DSI-R	0.22	0.47	0.21	1.245	0.491	3.154	-0.11	0.37	0.09	0.895	0.430	1.860
BMI	-0.04	0.07	0.34	0.958	0.829	1.107	-0.03	0.06	0.24	0.970	0.860	1.095
Age	0.04	0.21	0.03	1.038	0.689	1.562	-0.04	0.16	0.06	0.961	0.697	1.325
Best Friend's Use	0.04	0.01	30.61**	1.041	1.026	1.056	0.05	0.01	28.05**	1.049	1.031	1.068
DSI-R X Best Friend's Use	0.02	0.01	2.35	1.017	0.995	1.040	-0.02	0.01	3.04	0.977	0.952	1.003

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Females. The Additive Model with perceptions of their best friend at MSU's alcohol consumption was significant overall ($\chi^2(4) = 55.99, p < .001$, $R^2_{\text{Cox \& Snell}} = .31$, $R^2_{\text{Nagelkerke}} = .42$) with a significant block improvement over the Basic Model ($\chi^2(1) = 53.93, p < .001$), and had successful prediction rate of 80.7%, an increase 28% over the Basic model. Perceptions of best friend's alcohol use significantly changed the odds of being a High versus Low Drinker by 1.046 (95% CI = 1.029, 1.063) times for a one unit change in perception (see Table 48, p. 199) and 6.47 times greater for a change equivalent to one standard deviation change (41.48).

The Interaction Model also was significant overall ($\chi^2(5) = 59.09, p < .001$, $R^2_{\text{Cox \& Snell}} = .33$, $R^2_{\text{Nagelkerke}} = .43$) and had a successful prediction rate of 79.3%, but did not show a block improvement over the Additive Model ($\chi^2(1) = 3.11, p = .078$). The perception of best friend use remained the only significant individual predictor with the values remaining nearly identical (OR = 1.049, 95% CI = 1.031, 1.068, see Table 48, p. 199).

Differentiation & COA Status

Males. The Additive Model with COA status failed to reach a level of significance ($\chi^2(4) = 3.20, p = .525$, see Table 49, p. 201). The Interaction Model also failed to reach significance ($\chi^2(5) = 3.29, p = .655$).

Females. The Additive Model with COA status failed to reach a level of significance ($\chi^2(4) = 2.09, p = .719$, see Table 49, p. 201). The Interaction Model also was significant overall ($\chi^2(5) = 4.959, p = .421$).

Table 49

Logistic Regression Predicting Students that are High versus Low Drinkers – COA Status

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.43	0.32	1.88	0.648	0.348	1.205	-0.23	0.32	0.04	0.946	0.420	1.493
BMI	0.00	0.05	0.01	1.004	0.920	1.096	-0.02	0.04	1.83	0.939	0.900	1.064
Age	0.09	0.14	0.38	1.093	0.824	1.449	0.22	0.15	0.01	0.989	0.931	1.653
Additive Model												
DSI-R	-0.43	0.32	1.81	0.653	0.351	1.214	-0.06	0.28	0.04	0.944	0.544	1.638
BMI	0.01	0.05	0.02	1.006	0.922	1.099	-0.06	0.05	1.77	0.940	0.857	1.030
Age	0.08	0.15	0.27	1.079	0.811	1.434	-0.01	0.14	0.01	0.988	0.755	1.292
COA	-0.48	0.49	0.98	0.619	0.239	1.600	0.08	0.42	0.04	1.083	0.480	2.446
Interaction Model												
DSI-R	-0.48	0.36	1.76	0.620	0.306	1.256	-0.30	0.32	0.88	0.742	0.398	1.382
BMI	0.01	0.05	0.02	1.006	0.922	1.099	-0.06	0.05	1.86	0.938	0.856	1.028
Age	0.08	0.15	0.30	1.083	0.813	1.442	-0.01	0.14	0.01	0.989	0.753	1.297
COA	-0.49	0.48	1.02	0.613	0.238	1.581	0.00	0.43	0.00	1.003	0.431	2.333
DSI-R X COA	0.23	0.76	0.09	1.260	0.283	5.607	1.18	0.72	2.69	3.248	0.795	13.266

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Differentiation & Expectations of Alcohol Serving as a Tension Reducer

Males. The Additive Model with expectations of alcohol as a tension reducer was significant overall ($\chi^2(4) = 27.64, p < .001$, $R^2_{\text{Cox \& Snell}} = .20$, $R^2_{\text{Nagelkerke}} = .27$) with a significant block improvement over the Basic Model ($\chi^2(1) = 25.43, p < .001$), and had successful prediction rate of 67.5%, an increase 12.2% over the Basic model. The tension reduction variable was significant for subject's in that they were 1.137 (95% CI = 1.075, 1.203) times more likely to be a High versus a Low Drinker with a 1 unit difference in tension reduction expectations (see Table 50, p. 203). Subjects with one standard deviation (8.73) higher expectations are 3.08 times more likely to be High Drinkers.

The Interaction Model also was significant overall ($\chi^2(5) = 27.64, p < .001$, $R^2_{\text{Cox \& Snell}} = .20$, $R^2_{\text{Nagelkerke}} = .27$), had a successful prediction rate of 67.5%, but did not significantly show a block improvement over the Additive Model ($\chi^2(1) = .00, p = .993$). The only significant individual variable in the model, expectations of tension reduction, maintained the same values as the Additive Model (OR = 1.137, 95% CI = 1.075, 1.203, see Table 50, p. 203).

Females. The Additive Model with expectations of alcohol as a tension reducer was significant overall ($\chi^2(4) = 35.99, p < .001$, $R^2_{\text{Cox \& Snell}} = .21$, $R^2_{\text{Nagelkerke}} = .28$) with a significant block improvement over the Basic Model ($\chi^2(1) = 33.93, p < .001$). The model had a successful prediction rate of 69.3%, an increase 16.6% over the Basic model. The tension reduction variable was a significant individual predictor for the increased odds of being classified as a High versus Low Drinker (OR = 1.146, 95% CI = 1.087, 1.209) for a one unit change in tension reduction (see Table 50, p. 203) and (OR = 3.31) for a change equivalent to one standard deviation (8.81).

Table 50

Logistic Regression Predicting Students that High versus Low Drinkers – Expectations of Tension Reduction

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.43	0.32	1.88	0.648	0.348	1.205	-0.23	0.32	0.04	0.946	0.420	1.493
BMI	0.00	0.05	0.01	1.004	0.920	1.096	-0.02	0.04	1.83	0.939	0.900	1.064
Age	0.09	0.14	0.38	1.093	0.824	1.449	0.22	0.15	0.01	0.989	0.931	1.653
Additive Model												
DSI-R	-0.02	0.37	0.00	0.985	0.479	2.025	0.36	0.33	1.16	1.429	0.746	2.737
BMI	0.02	0.05	0.21	1.024	0.925	1.133	-0.04	0.06	0.50	0.960	0.856	1.076
Age	0.16	0.16	0.92	1.169	0.849	1.611	0.02	0.16	0.02	1.021	0.750	1.388
Tension Reduction	0.13	0.03	20.03**	1.137	1.075	1.203	0.14	0.03	25.43**	1.146	1.087	1.209
Interaction Model												
DSI-R	-0.02	0.37	0.00	0.984	0.475	2.038	0.36	0.33	1.15	1.427	0.744	2.737
BMI	0.02	0.05	0.21	1.024	0.925	1.133	-0.04	0.06	0.47	0.960	0.856	1.078
Age	0.16	0.16	0.92	1.169	0.849	1.611	0.02	0.16	0.02	1.022	0.749	1.394
Tension Reduction	0.13	0.03	19.97**	1.137	1.075	1.203	0.14	0.03	25.33**	1.146	1.087	1.209
DSI-R X Tension Reduction	0.00	0.05	0.00	1.000	0.911	1.097	0.00	0.04	0.01	0.997	0.916	1.084

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

The Interaction Model also was significant overall ($\chi^2(5) = 36.00, p < .001$, $R^2_{\text{Cox \& Snell}} = .21$, $R^2_{\text{Nagelkerke}} = .28$) and had a successful prediction rate of 70%, but did not show a significant block improvement over the Additive Model ($\chi^2(1) = .01, p = .938$). The tension reduction variable remained the only a significant individual predictor for the increased odds of being classified as a High versus Low Drinker (OR = 1.146, 95% CI = 1.087, 1.209, see Table 50, p. 203).

Differentiation & Expectations of Alcohol Serving as a Social Lubricant

Males. The Additive Model with expectations of alcohol as a social lubricant was significant ($\chi^2(4) = 15.83, p = .003$, $R^2_{\text{Cox \& Snell}} = .12$, $R^2_{\text{Nagelkerke}} = .16$) with a significant block improvement over the Basic Model ($\chi^2(1) = 13.63, p < .001$) and had a successful prediction rate of 67.5%, an increase 12.2% over the Basic model. The social lubrication variable was the only significant individual variable that changed the odds of drinking classification. Having a social lubrication value change by 1 unit increased the likelihood of being a High Drinker by 1.114 (95% CI = 1.047, 1.184) times (see Table 51, p. 205). Additionally, a difference in social lubrication scores equivalent to one standard deviation (7.89) improved the odds of being a high drinker by 2.35.

The Interaction Model also was significant overall ($\chi^2(5) = 15.84, p = .007$, $R^2_{\text{Cox \& Snell}} = .12$, $R^2_{\text{Nagelkerke}} = .16$) and had a successful prediction rate of 66.7%; however, it did not show a block improvement over the Additive Model ($\chi^2(1) = .01, p = .923$). The social lubricant variable maintained the same level of influence 1.114 (95% CI = 1.047, 1.185) as the Additive Model (see Table 51, p. 205).

Table 51

Logistic Regression Predicting Students that High versus Low Drinkers – Expectations of Social Lubrication

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.43	0.32	1.88	0.648	0.348	1.205	-0.23	0.32	0.04	0.946	0.420	1.493
BMI	0.00	0.05	0.01	1.004	0.920	1.096	-0.02	0.04	1.83	0.939	0.900	1.064
Age	0.09	0.14	0.38	1.093	0.824	1.449	0.22	0.15	0.01	0.989	0.931	1.653
Additive Model												
DSI-R	-0.07	0.35	0.03	0.937	0.469	1.871	0.41	0.32	1.62	1.508	0.801	2.841
BMI	0.02	0.05	0.15	1.019	0.927	1.119	-0.07	0.06	1.54	0.931	0.832	1.042
Age	0.18	0.16	1.32	1.197	0.881	1.625	0.04	0.15	0.09	1.045	0.778	1.404
Social Lubrication	0.11	0.03	11.68**	1.114	1.047	1.184	0.11	0.03	17.13**	1.120	1.061	1.181
Interaction Model												
DSI-R	-0.06	0.36	0.03	0.942	0.468	1.899	0.41	0.33	1.53	1.503	0.789	2.862
BMI	0.02	0.05	0.15	1.019	0.927	1.119	-0.07	0.06	1.50	0.931	0.831	1.044
Age	0.18	0.16	1.33	1.198	0.881	1.629	0.05	0.15	0.09	1.046	0.778	1.406
Social Lubrication	0.11	0.03	11.62**	1.114	1.047	1.185	0.11	0.03	17.04**	1.119	1.061	1.181
DSI-R X Social Lubrication	0.01	0.05	0.01	1.005	0.910	1.109	0.00	0.04	0.00	0.997	0.916	1.086

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Females. The Additive Model with expectations of alcohol as a social lubricant was significant overall ($\chi^2(4) = 22.34, p < .001, R^2_{\text{Cox \& Snell}} = .14, R^2_{\text{Nagelkerke}} = .19$) with a significant block improvement over the Basic Model ($\chi^2(1) = 20.29, p < .001$). The model had a successful prediction rate of 67.3%, an increase 14.6% over the Basic model. Only social lubrication was a significant individual predictor for High versus Low Drinker, with individuals having a 1 unit change being 1.120 (95% CI = 1.061, 1.181) times more likely to be a High Drinker (see Table 51, p. 205), and 2.40 times more likely for a difference equivalent to one standard deviation (7.74).

The Interaction Model also was significant overall ($\chi^2(5) = 22.35, p < .001, R^2_{\text{Cox \& Snell}} = .14, R^2_{\text{Nagelkerke}} = .19$) and had a successful prediction rate of 67.3%; however, it did not show a block improvement over the Additive Model ($\chi^2(1) = .00, p = .950$). Social lubrication remained the only significant individual predictor for high versus low drinkers, with individuals having a 1 unit change being 1.119 (95% CI = 1.061, 1.181) times more likely to classified as a high drinker (see Table 51, p. 205).

The Comprehensive Model

Males. The Comprehensive Model was significant according to the model chi-square ($\chi^2(13) = 86.95, p < .001, R^2_{\text{Cox \& Snell}} = .51, R^2_{\text{Nagelkerke}} = .68$) and showed a significant improvement over the Basic Model ($\chi^2(10) = 45.97, p < .001$). The model illustrated an 87% success rate in predicting the correct drinking classifications, an improvement of 31.7% over the Basic Model. Perception of best friend usage improved the likelihood of being classified as a high drinker (OR = 1.037, 95% CI = 1.021, 1.053) while being a COA actually decreased the likelihood of being a high drinker versus low drinker (OR = .188, 95% CI = .037, .947, see Table 52, p. 207).

Table 52

Logistic Regression Predicting Students that High versus Low Drinkers – Comprehensive Model

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
DSI-R	-0.03	0.58	0.00	0.970	0.312	3.009	0.21	0.52	0.16	1.232	0.442	3.437
BMI	-0.02	0.08	0.05	0.982	0.839	1.150	-0.03	0.09	0.14	0.967	0.809	1.156
Age	0.08	0.25	0.09	1.080	0.661	1.764	0.07	0.20	0.12	1.072	0.721	1.593
MSU Perceptions	0.02	0.01	2.41	1.022	0.994	1.051	0.02	0.01	5.30*	1.016	1.002	1.029
DSI-R X MSU Perceptions	-0.01	0.02	0.05	0.995	0.953	1.039	-0.02	0.01	2.55	0.982	0.960	1.004
Best Friend	0.04	0.01	20.30**	1.037	1.021	1.053	0.05	0.01	20.83**	1.048	1.027	1.069
DSI-R X Best Friend	0.02	0.01	1.58	1.018	0.990	1.046	-0.03	0.02	4.268*	0.970	0.942	0.998
COA	-1.67	0.83	4.10*	0.188	0.037	0.947	-0.19	0.59	0.10	0.827	0.260	2.629
DSI-R X COA	1.45	1.48	0.95	4.251	0.233	77.708	0.62	0.95	0.42	1.849	0.290	11.805
Tension Reduction	0.10	0.06	2.92	1.104	0.986	1.236	0.13	0.04	10.55**	1.135	1.052	1.225
DSI-R X Tension Reduction	-0.01	0.10	0.02	0.986	0.810	1.200	-0.02	0.08	0.06	0.982	0.847	1.138
Social Lubrication	-0.02	0.06	0.07	0.985	0.873	1.110	0.02	0.05	0.29	1.024	0.938	1.118
DSI-R X Social Lubrication	0.03	0.12	0.05	1.026	0.815	1.291	0.04	0.08	0.19	1.036	0.884	1.214

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Females. The Comprehensive Model was significant ($\chi^2(13) = 88.84, p < .001$, $R^2_{\text{Cox \& Snell}} = .45$, $R^2_{\text{Nagelkerke}} = .60$) and showed a significant improvement over the Basic Model ($\chi^2(10) = 86.81, p < .001$). The model illustrated an 84.7% success rate in predicting the correct drinking classifications, an improvement of 32% over the Basic Model. Perceptions of MSU student use (OR = 1.016, 95% CI = 1.002, 1.029). perceptions of best friend use (OR = 1.048, 95% CI = 1.027, 1.069), the interaction between differentiation and the perception of best friend use (OR = .970, 95% CI = .942, .998), and tension reduction (OR = 1.135, 95% CI = 1.052, 1.225) (see Table 52, p. 207).

High Drinkers versus Moderate Drinkers

Differentiation and GAU

Males. The Basic Model failed to reach a level of significance as an overall model ($\chi^2(3) = 5.851$ $p = .119$, see Table 53, p. 209).

Females. The Basic Model failed to reach a level of significance as an overall model ($\chi^2(3) = 4.095, p = .251$, see Table 53, p. 209).

Four factors of the DSI-R with GAU

Males. The four-factor model was significant as an overall model ($\chi^2(6) = 16.35$, $p = .012$, $R^2_{\text{Cox \& Snell}} = .13$, $R^2_{\text{Nagelkerke}} = .17$) and had a 61.5% success rate in predicting the correct drinking classifications, an improvement of 5.8% over the Basic Model. Interestingly, a 1 unit increase in Emotional Reactivity (being less emotionally reactive) increased the likelihood of being a High Drinker (OR = 1.928, 95% CI = .999, 3.720), whereas increasing the "I" Position value by 1 unit decreased the likelihood of being a High versus a Moderate Drinker (OR = .374, 95% CI = .198, .706, see Table 54, p. 209).

Table 53

Logistic Regression Predicting Students that High versus Moderate Drinkers – Differentiation

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
DSI-R	-0.29	0.37	0.62	0.746	0.359	1.550	0.10	0.33	0.08	1.100	0.577	2.096
BMI	0.13	0.07	3.49	1.134	0.994	1.293	-0.07	0.06	1.72	0.930	0.835	1.036
Age	0.14	0.15	0.85	1.147	0.856	1.536	-0.23	0.15	2.35	0.796	0.595	1.066

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 54

Logistic Regression Predicting Students that High versus Moderate Drinkers – Four Factors

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Emotional Reactivity	0.66	0.34	3.83*	1.928	0.999	3.720	0.12	0.25	0.23	1.124	0.693	1.825
"I" Position	-0.98	0.32	9.19**	0.374	0.198	0.706	-0.06	0.34	0.03	0.940	0.484	1.823
Emotional Cutoff	0.20	0.31	0.42	1.219	0.670	2.218	0.11	0.25	0.21	1.119	.689	1.818
Fusion with Others	-0.58	0.45	1.65	0.560	0.231	1.357	-0.14	0.37	0.14	0.873	0.425	1.795
BMI	0.13	0.07	3.11	1.133	0.986	1.302	-0.07	0.06	1.61	0.932	0.835	1.039
Age	0.09	0.16	0.34	1.097	0.805	1.493	-0.23	0.15	2.31	0.797	0.595	1.068

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Females. As was the case in the Basic Model, the four-factor model failed to reach a level of significance as an overall model ($\chi^2(6) = 4.49, p = .61$, see Table 54, p. 209).

Differentiation & perceptions of the average MSU student's alcohol use

Males. The Additive Model with perceptions of their best friend at MSU's alcohol consumption failed to reach a level of significance ($\chi^2(4) = 8.455, p = .076$, see Table 55, p. 212). However, the Interaction Model was significant overall ($\chi^2(5) = 13.21, p = .022$, $R^2_{\text{Cox \& Snell}} = .10$, $R^2_{\text{Nagelkerke}} = .14$) and had a successful prediction rate of 60.7%, and showed a significant a block improvement over the Basic Model ($\chi^2(2) = 7.36, p = .03$). The interaction of differentiation and perception of MSU student use was a significant individual predictor with individuals being .978 (95% CI = .957, .999) times as likely to be a High versus a Moderate Drinker (see Table 55, p. 212, and see Figure 3, p. 60, for illustration of the interaction effect).

Females. The Additive Model with perceptions of MSU student alcohol consumption failed to reach significance as an overall model ($\chi^2(4) = 9.05, p = .060$, see Table 55, p. 212). However, the Interaction Model was significant overall ($\chi^2(5) = 11.52$, $p = .042$, $R^2_{\text{Cox \& Snell}} = .08$, $R^2_{\text{Nagelkerke}} = .11$) and had a successful prediction rate of 65.0%, however, it did not show a block improvement over the Basic Model ($\chi^2(2) = 7.43, p = .024$). Although it was not significant, the interaction between differentiation and perception of MSU student use removed the significance of MSU student use as an individual variable (see Table 55, p. 212).

Differentiation & Perception of Best Friend at MSU's Alcohol Use

Males. The Additive Model with perceptions of their best friend at MSU's alcohol consumption was significant overall ($\chi^2(4) = 55.99$, p =< .000, $R^2_{\text{Cox \& Snell}} = .31$, $R^2_{\text{Nagelkerke}} = .42$) with a significant block improvement over the Basic Model ($\chi^2(1) = 35.81, p = .000$), and had successful prediction rate of 76.2%, an increase 20.5% over the Basic model. The perception of best friend use increased the likelihood of being a High versus a Moderate Drinker by 1.024 (95% CI = 1.013, 1.034, see Table 56, p. 214) times for a one unit change in perception and 5.29 times for a difference equivalent of one standard deviation (72.43).

The Interaction Model also was significant overall ($\chi^2(5) = 59.09, p < .001$, $R^2_{\text{Cox \& Snell}} = .33$, $R^2_{\text{Nagelkerke}} = .43$) and had a successful prediction rate of 76.2%, but did not show a block improvement over the Additive Model ($\chi^2(1) = .45, p = .504$). Perception of best friend use remained the only significant independent variable in the categorization of High versus Moderate Drinkers and remained equivalent to the values in the Additive Model (OR = 1.023, 95% CI = 1.013, 1.033, see Table 56, p. 214).

Females. The Additive Model with perceptions of their best friend at MSU's alcohol consumption was significant ($\chi^2(4) = 12.05, p = .017$, $R^2_{\text{Cox \& Snell}} = .08$, $R^2_{\text{Nagelkerke}} = .11$) with a significant block improvement over the Basic Model ($\chi^2(1) = 7.96, p = .005$). The model had a successful prediction rate of 61.3%, an increase 2.2% over the Basic model. Perception of best friend use was a significant individual variable with individuals that had a one unit higher value on best friend perception were 1.012 (95% CI = 1.003, 1.021) times more likely to be a Higher versus a Moderate Drinker (see Table 56, p. 214). The change in odds for being a high drinker increased to 1.65 times

Table 55

Logistic Regression Predicting Students that High versus Moderate Drinkers – Perceptions of MSU Student Use

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.29	0.37	0.62	0.746	0.359	1.550	0.10	0.33	0.08	1.100	0.577	2.096
BMI	0.13	0.07	3.49	1.134	0.994	1.293	-0.07	0.06	1.72	0.930	0.835	1.036
Age	0.14	0.15	0.85	1.147	0.856	1.536	-0.23	0.15	2.35	0.796	0.595	1.066
Additive Model												
DSI-R	-0.28	0.38	0.57	0.753	0.359	1.576	0.19	0.34	0.33	1.212	0.628	2.340
BMI	0.11	0.07	2.43	1.114	0.972	1.277	-0.07	0.06	1.62	0.930	0.832	1.040
Age	0.12	0.15	0.65	1.130	0.839	1.521	-0.19	0.15	1.48	0.830	0.615	1.121
MSU Use	0.01	0.01	2.48	1.008	0.998	1.017	0.01	0.01	4.61*	1.010	1.001	1.020
Interaction Model												
DSI-R	-0.23	0.39	0.34	0.798	0.375	1.699	0.22	0.34	0.41	1.245	0.636	2.439
BMI	0.11	0.07	2.28	1.116	0.968	1.288	-0.06	0.06	1.11	0.940	0.838	1.054
Age	0.12	0.16	0.56	1.124	0.827	1.528	-0.16	0.15	1.14	0.849	0.628	1.147
MSU Use	0.01	0.01	1.43	1.006	0.996	1.017	0.01	0.01	3.80	1.010	1.000	1.019
DSI-R X MSU Use	-0.02	0.01	4.23*	0.978	0.957	0.999	-0.02	0.01	2.39	0.983	0.962	1.005

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

more likely when the difference between perception scores was equal to one standard deviation (41.48).

The Interaction Model also was significant overall ($\chi^2(5) = 12.45, p = .029$, $R^2_{\text{Cox \& Snell}} = .09$, $R^2_{\text{Nagelkerke}} = .12$) and had a successful prediction rate of 61.3%, but did not show a block improvement over the Additive Model ($\chi^2(1) = .40, p = .527$). Perception of best friend use remained the only significant individual variable in changing the likelihood of being a High versus Moderate Drinker (OR =1.013, 95% CI = 1.003, 1.021, see Table 56, p. 214).

Differentiation & COA Status

Males. The Additive Model with COA status failed to reach a level of significance ($\chi^2(4) = 6.98, p = .137$, see Table 57, p. 215). The Interaction Model also failed to reach a level significance ($\chi^2(5) = 7.55, p = .183$).

Females. The Additive Model with COA status failed to reach a level of significance as an overall model ($\chi^2(4) = 4.10, p = .393$, see Table 57, p. 215). The Interaction Model also failed to reach a level of significance ($\chi^2(5) = 6.63, p = .249$).

Differentiation & Expectations of Alcohol Serving as a Tension Reducer

Males. The Additive Model with expectations of alcohol as a tension reducer failed to reach a level of significance ($\chi^2(4) = 8.77, p = .067$, see Table 58, p. 216).

Females. The Additive Model with expectations of alcohol as a tension reducer failed to reach significance ($\chi^2(4) = 7.34, p = .119$, see Table 58, p. 216). The Interaction Model also failed to achieve a level of significance ($\chi^2(5) = 8.202, p = .145$).

Table 56

Logistic Regression Predicting Students that are High versus Moderate Drinkers – Perceptions of Best Friend's Use

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.29	0.37	0.62	0.746	0.359	1.550	0.10	0.33	0.08	1.100	0.577	2.096
BMI	0.13	0.07	3.49	1.134	0.994	1.293	-0.07	0.06	1.72	0.930	0.835	1.036
Age	0.14	0.15	0.85	1.147	0.856	1.536	-0.23	0.15	2.35	0.796	0.595	1.066
Additive Model												
DSI-R	-0.31	0.44	0.50	0.732	0.308	1.740	0.25	0.34	0.51	1.278	0.653	2.503
BMI	0.14	0.09	2.58	1.147	0.970	1.357	-0.08	0.06	1.71	0.927	0.827	1.039
Age	0.09	0.18	0.24	1.093	0.765	1.564	-0.24	0.15	2.39	0.790	0.585	1.065
Best Friend's Use	0.02	0.01	21.06**	1.024	1.013	1.034	0.01	0.00	7.13**	1.012	1.003	1.021
Interaction Model												
DSI-R	-0.26	0.45	0.32	0.775	0.320	1.876	0.16	0.37	0.20	1.176	0.572	2.415
BMI	0.13	0.09	2.30	1.140	0.963	1.349	-0.07	0.06	1.66	0.928	0.829	1.040
Age	0.09	0.18	0.23	1.092	0.762	1.563	-0.25	0.16	2.56	0.781	0.576	1.058
Best Friend's Use	0.02	0.01	20.39**	1.023	1.013	1.033	0.01	0.01	7.09**	1.013	1.003	1.023
DSI-R X Best Friend's Use	-0.01	0.01	0.44	0.993	0.973	1.014	0.01	0.01	0.39	1.005	0.990	1.020

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 57

Logistic Regression Predicting Students that are High versus Moderate Drinkers – COA Status

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.29	0.37	0.62	0.746	0.359	1.550	0.10	0.33	0.08	1.100	0.577	2.096
BMI	0.13	0.07	3.49	1.134	0.994	1.293	-0.07	0.06	1.72	0.930	0.835	1.036
Age	0.14	0.15	0.85	1.147	0.856	1.536	-0.23	0.15	2.35	0.796	0.595	1.066
Additive Model												
DSI-R	-0.27	0.37	0.54	0.761	0.367	1.579	0.10	0.33	0.08	1.100	0.577	2.095
BMI	0.13	0.07	3.87*	1.143	1.001	1.306	-0.07	0.06	1.72	0.930	0.834	1.037
Age	0.15	0.15	0.98	1.161	0.864	1.561	-0.23	0.15	2.33	0.797	0.595	1.067
COA	-0.51	0.49	1.12	0.598	0.230	1.552	-0.03	0.45	0.01	0.966	0.400	2.335
Interaction Model												
DSI-R	-0.44	0.43	1.02	0.646	0.277	1.508	-0.14	0.36	0.14	0.874	0.432	1.765
BMI	0.14	0.07	4.08*	1.149	1.004	1.315	-0.08	0.06	1.99	0.923	0.825	1.032
Age	0.15	0.15	0.92	1.156	0.859	1.554	-0.24	0.15	2.49	0.789	0.587	1.059
COA	-0.58	0.49	1.39	0.559	0.212	1.471	-0.14	0.48	0.09	0.870	0.342	2.215
DSI-R X COA	0.65	0.86	0.57	1.911	0.354	10.301	1.49	0.99	2.25	4.421	0.635	30.807

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 58

Logistic Regression Predicting Students that are High versus Moderate Drinkers – Expectations of Tension Reduction

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.29	0.37	0.62	.746	0.359	1.550	0.10	0.33	0.08	1.100	0.577	2.096
BMI	0.13	0.07	3.49	1.134	0.994	1.293	-0.07	0.06	1.72	0.930	0.835	1.036
Age	0.14	0.15	0.85	1.147	0.856	1.536	-0.23	0.15	2.35	0.796	0.595	1.066
Additive Model												
DSI-R	-0.09	0.40	0.05	0.919	0.419	2.012	0.33	0.36	0.86	1.396	0.691	2.823
BMI	0.13	0.07	3.65	1.141	0.997	1.307	-0.06	0.06	1.30	0.938	0.839	1.047
Age	0.18	0.15	1.42	1.202	0.888	1.626	-0.25	0.15	2.74	0.778	0.579	1.047
Tension Reduction	0.05	0.03	2.81	1.047	0.992	1.105	0.05	0.03	3.11	1.051	0.994	1.111
Interaction Model												
DSI-R	-0.10	0.41	0.06	0.902	0.401	2.026	0.21	0.38	0.31	1.235	0.586	2.603
BMI	0.13	0.07	3.61	1.141	0.996	1.306	-0.08	0.06	1.73	0.926	0.826	1.038
Age	0.18	0.16	1.37	1.199	0.885	1.624	-0.28	0.16	3.25	0.756	0.558	1.025
Tension Reduction	0.05	0.03	2.84	1.048	0.992	1.106	0.05	0.03	3.45	1.054	0.997	1.115
DSI-R X Tension Reduction	0.01	0.05	0.03	1.008	0.922	1.102	0.05	0.05	0.86	1.047	0.950	1.153

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Differentiation & Expectations of Alcohol Serving as a Social Lubricant

Males. The Additive Model with expectations of alcohol as a tension reducer failed to reach a level of significance ($\chi^2(4) = 6.933, p = .139$, see Table 59, p. 218). The Interaction Model also failed to reach a level of significance ($\chi^2(5) = 6.939, p = .225$).

Females. The Additive Model with expectations of alcohol as a social lubricant failed to reach significance ($\chi^2(4) = 5.45, p = .244$, see Table 59, p. 218). The Interaction Model also failed to achieve a level of significance ($\chi^2(5) = 5.58, p = .350$).

The Comprehensive Model

Males. The Comprehensive Model was significant according to the model chi-square ($\chi^2(13) = 51.44, p < .001$, $R^2_{\text{Cox \& Snell}} = .34$, $R^2_{\text{Nagelkerke}} = .46$) and showed a significant improvement over the Basic Model ($\chi^2(10) = 45.59, p < .001$). The model illustrated a 74.6% success rate in predicting the correct drinking classifications, an improvement of 18.9% over the Basic Model. Perception of best friend use was the only significant individual variable in the Comprehensive Model (OR = 1.026, 95% CI 1.014, 1.038, see Table 60, p. 219).

Females. The Comprehensive Model was significant according to the model chi-square ($\chi^2(13) = 23.41, p = .037$, $R^2_{\text{Cox \& Snell}} = .16$, $R^2_{\text{Nagelkerke}} = .21$) and showed a significant improvement over the Basic Model ($\chi^2(10) = 19.32, p = .04$). The model illustrated a 65% success rate in predicting the correct drinking classifications, an improvement of 5.9% over the Basic Model. Interestingly, taken as a whole the model was significant, however, no individual predictors in this model significantly changed the odds of being a High Drinker versus a Moderate Drinker (see Table 60, p. 219).

Table 59

Logistic Regression Predicting Students that are High versus Moderate Drinkers – Expectations of Social Lubrication

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.29	0.37	0.62	0.746	0.359	1.550	0.10	0.33	0.08	1.100	0.577	2.096
BMI	0.13	0.07	3.49	1.134	0.994	1.293	-0.07	0.06	1.72	0.930	0.835	1.036
Age	0.14	0.15	0.85	1.147	0.856	1.536	-0.23	0.15	2.35	0.796	0.595	1.066
Additive Model												
DSI-R	-0.15	0.40	0.14	0.860	0.394	1.879	0.26	0.36	0.53	1.299	0.642	2.626
BMI	0.14	0.07	3.946*	1.144	1.002	1.307	-0.06	0.06	1.26	0.938	0.840	1.049
Age	0.16	0.15	1.14	1.176	0.873	1.585	-0.22	0.15	2.14	0.804	0.599	1.077
Social Lubrication	0.03	0.03	1.07	1.031	0.973	1.093	0.03	0.03	1.33	1.035	0.976	1.096
Interaction Model												
DSI-R	-0.16	0.40	0.15	0.856	0.388	1.889	0.28	0.36	0.58	1.317	0.647	2.682
BMI	0.14	0.07	3.944*	1.144	1.002	1.307	-0.06	0.06	0.99	0.943	0.841	1.058
Age	0.16	0.15	1.14	1.176	0.873	1.585	-0.21	0.15	1.97	0.809	0.602	1.088
Social Lubrication	0.03	0.03	1.07	1.032	0.972	1.094	0.03	0.03	1.31	1.034	0.976	1.096
DSI-R X Social Lubrication	0.00	0.05	0.01	1.004	0.908	1.110	-0.02	0.05	0.13	0.983	0.895	1.080

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 60

Logistic Regression Predicting Students that are High versus Moderate Drinkers – Comprehensive Model

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
DSI-R	-0.81	0.59	1.90	0.446	0.142	1.406	0.18	0.48	0.14	1.197	0.464	3.085
BMI	0.16	0.09	2.97	1.173	0.978	1.406	-0.06	0.07	0.81	0.940	0.821	1.076
Age	0.08	0.20	0.17	1.087	0.728	1.622	-0.23	0.17	1.96	0.792	0.572	1.098
MSU Perceptions	0.00	0.01	0.04	0.999	0.986	1.012	0.01	0.01	1.98	1.008	0.997	1.018
DSI-R X MSU Perceptions	-0.02	0.01	3.03	0.976	0.950	1.003	-0.02	0.01	1.73	0.984	0.960	1.008
Best Friend	0.03	0.01	18.64**	1.026	1.014	1.038	0.01	0.01	2.93	1.009	0.999	1.020
DSI-R X Best Friend	-0.01	0.01	0.45	0.992	0.968	1.016	0.01	0.01	0.27	1.005	0.987	1.023
COA	-1.16	0.63	3.40	0.313	0.091	1.076	-0.31	0.52	0.35	0.735	0.264	2.044
DSI-R X COA	1.32	1.15	1.33	3.747	0.397	35.400	1.28	1.09	1.38	3.596	0.426	30.386
Tension Reduction	0.04	0.05	0.49	1.037	0.936	1.149	0.05	0.04	2.32	1.055	0.985	1.131
DSI-R X Tension Reduction	0.11	0.11	0.90	1.115	0.891	1.394	0.08	0.08	1.07	1.081	0.933	1.254
Social Lubrication	-0.05	0.06	0.96	0.948	0.852	1.055	0.02	0.04	0.31	1.021	0.949	1.097
DSI-R X Social Lubrication	-0.06	0.13	0.23	0.941	0.736	1.203	-0.06	0.07	0.63	0.946	0.824	1.085

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Appendix M

Analyses of Binge Drinking Use

As was done with the General Alcohol Use measure, the continuous Binge Drinking variable (number of days in the past 14 days the subject drank at binge levels - - 5 drinks per occasion for males, 4 drinks per occasion for females) was converted into a categorical variable consisting of 4 levels of binge drinking: Abstainers (those that did not drink), Nonbinging Drinkers (subjects that consumed alcohol, but not at binge levels), Occasional Binge Drinkers (1 or 2 times in the past 2 weeks), and Frequent Binge Drinkers (3 or more times in the past 2 weeks) (see Appendix J). As the four categories reflect increasing degrees of alcohol consumption, the nature of this study's hypotheses which was stated for a continuous dependent variable (e.g., students lower levels of differentiation will be more likely to have greater amounts of binge drinking) was maintained with the categorical analyses (e.g., students lower levels of differentiation will be more likely to have a greater relationship with Frequent Binge Drinkers than Occasional Binge Drinkers when controlling for BMI and age).

The four binge drinking categories were contrasted in ways such that four unique outcome dichotomies were created:

1. Binge Drinkers (Occasional & Frequent Bingers) versus Nonbinging Drinkers
2. Occasional Binge Drinkers versus Nonbinging Drinkers
3. Frequent Binge Drinkers versus Nonbinging Binge Drinkers
4. Frequent Binge Drinkers versus Occasional Binge Drinkers

The same coding procedure from the General Alcohol Use variables was implemented with the Binge Drinking variables with the greater prevalence of binging was coded as a

"1" in SPSS and the lesser category was coded as a "0." For example, in the Bingers to Nonbinging Drinkers analyses, all persons in the Occasional and Frequent Binging categories were coded as a "1" and Nonbinging Drinkers were coded as a "0."

Bingers (Occasional & Frequent Bingers) versus Nonbingers

Differentiation and binge drinking

Males. The Basic Model was not significant according to the model chi-square ($\chi^2(3) = .75, p = .861$, see Table 61, p. 222).

Females. The Basic Model failed to reach a level of significance according to the model chi-square ($\chi^2(3) = 3.38, p = .337$, see Table 61, p. 222).

Four-factors of the DSI-R (Emotional Reactivity, "I" Position, Emotional Cutoff, and Fusion with Others) with binge drinking

Males. As was the case in the Basic Model, the overall four-factor model failed to reach a level of significance ($\chi^2(6) = 1.327, p = .970$, see Table 62, p. 222).

Females. As was the case in the Basic Model, the overall four-factor model failed to reach a level of significance ($\chi^2(6) = 4.987, p = .546$, see Table 62, p. 222).

Differentiation & perception of average MSU student's alcohol use

Males. The Additive Model with perceptions of the average MSU student's alcohol consumption was not significant as an overall model ($\chi^2(4) = 5.616, p = .230$, see Table 63, p. 223). The Interaction Model also was not significant as an overall model ($\chi^2(5) = 5.923, p = .314$).

Table 61

Logistic Regression Predicting Students that are Occasional Bingers versus Nonbingers – Differentiation

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
DSI-R	-0.08	0.36	0.05	0.925	0.455	1.880	-0.22	0.27	0.68	0.802	0.475	1.356
BMI	-0.02	0.05	0.21	0.977	0.882	1.082	-0.07	0.04	2.93	0.937	0.869	1.009
Age	0.13	0.16	0.60	1.134	0.825	1.560	0.05	0.13	0.18	1.055	0.825	1.349

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 62

Logistic Regression Predicting Students that are Bingers versus Nonbingers – Four Factors

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Emotional Reactivity	0.14	0.32	0.17	1.144	0.606	2.161	0.08	0.22	0.14	1.084	0.710	1.655
"I" Position	0.05	0.32	0.03	1.055	0.569	1.957	-0.26	0.27	0.91	0.770	0.450	1.317
Emotional Cutoff	-0.11	0.30	0.14	0.895	0.497	1.609	0.14	0.22	0.41	1.149	0.752	1.753
Fusion with Others	-0.26	0.44	0.35	0.770	0.325	1.825	-0.25	0.31	0.66	0.779	0.426	1.425
BMI	-0.03	0.05	0.22	0.976	0.881	1.081	-0.07	0.04	3.02	0.935	0.867	1.009
Age	0.13	0.16	0.64	1.139	0.828	1.568	0.06	0.13	0.22	1.060	0.829	1.356

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 63

Logistic Regression Predicting Students that are Bingers versus Nonbingers – Perceptions of MSU Student Use

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.08	0.36	0.05	0.925	0.455	1.880	-0.22	0.27	0.68	0.802	0.475	1.356
BMI	-0.02	0.05	0.21	0.977	0.882	1.082	-0.07	0.04	2.93	0.937	0.869	1.009
Age	0.13	0.16	0.60	1.134	0.825	1.560	0.05	0.13	0.18	1.055	0.825	1.349
Additive Model												
DSI-R	-0.03	0.37	0.01	0.969	0.470	1.997	-0.20	0.27	0.54	0.821	0.484	1.393
BMI	-0.04	0.05	0.50	0.963	0.867	1.069	-0.06	0.04	2.38	0.942	0.873	1.016
Age	0.13	0.17	0.56	1.134	0.815	1.578	0.06	0.13	0.26	1.066	0.832	1.367
MSU Use	0.02	0.01	3.84	1.015	1.000	1.030	0.01	0.00	2.47	1.007	0.998	1.015
Interaction Model												
DSI-R	0.05	0.40	0.02	1.050	0.481	2.292	-0.26	0.28	0.88	0.771	0.448	1.327
BMI	-0.04	0.05	0.46	0.964	0.869	1.071	-0.05	0.04	1.87	0.947	0.877	1.024
Age	0.13	0.17	0.58	1.137	0.817	1.582	0.09	0.13	0.45	1.090	0.848	1.401
MSU Use	0.02	0.01	4.07*	1.016	1.000	1.031	0.01	0.00	2.52	1.007	0.998	1.016
DSI-R X MSU Use	0.01	0.01	0.31	1.007	0.982	1.034	-0.01	0.01	3.18	0.986	0.971	1.001

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Females. The Additive Model with perceptions of the average MSU student's alcohol consumption was not significant as an overall model ($\chi^2(4) = 6.00, p = .200$, see Table 63, p. 223). The Interaction Model also was not significant as an overall model ($\chi^2(5) = 9.293, p = .098$).

Differentiation & Perception of Best Friend at MSU's Alcohol Use

Males. The Additive Model with perceptions of their best friend at MSU's alcohol consumption was significant ($\chi^2(4) = 25.61, p < .001, R^2_{\text{Cox \& Snell}} = .13, R^2_{\text{Nagelkerke}} = .22$) and had a successful prediction rate of 82.7%, which was .5% less than having no model. Students that had one unit higher in perceptions of best friend use were 1.028 (95% CI = 1.013, 1.043) times more likely to be a Binge Drinker versus a Nonbinging Drinker (see Table 64, p. 225). Students that had a higher level of perception of best friend use equivalent to one standard deviation (72.43) were 7.067 times more likely to be a Binge Drinker.

The Interaction Model also was significant ($\chi^2(5) = 25.68, p < .001, R^2_{\text{Cox \& Snell}} = .13, R^2_{\text{Nagelkerke}} = .22$) and had a successful prediction rate of 82.7%, but did not show a block improvement over the Additive Model ($\chi^2(1) = .16, p = .693$). The only significant individual predictor in the model was perception of best friend use (OR = 1.028, 95% CI = 1.013, 1.043, see Table 64, p. 225).

Table 64

Logistic Regression Predicting Students that are Bingers versus Nonbingers – Perceptions of Best Friend's Use

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.08	0.36	0.05	0.925	0.455	1.880	-0.22	0.27	0.68	0.802	0.475	1.356
BMI	-0.02	0.05	0.21	0.977	0.882	1.082	-0.07	0.04	2.93	0.937	0.869	1.009
Age	0.13	0.16	0.60	1.134	0.825	1.560	0.05	0.13	0.18	1.055	0.825	1.349
Additive Model												
DSI-R	0.04	0.37	0.01	1.037	0.500	2.150	-0.17	0.30	0.31	0.847	0.470	1.524
BMI	-0.04	0.06	0.48	0.963	0.865	1.071	-0.05	0.04	1.29	0.951	0.872	1.037
Age	0.09	0.18	0.25	1.095	0.764	1.571	0.04	0.14	0.09	1.043	0.798	1.363
Best Friend's Use	0.03	0.01	13.94**	1.028	1.013	1.043	0.04	0.01	22.92**	1.039	1.023	1.055
Interaction Model												
DSI-R	0.25	0.67	0.15	1.288	0.350	4.747	-0.36	0.37	0.91	0.700	0.337	1.456
BMI	-0.04	0.06	0.42	0.965	0.866	1.075	-0.05	0.05	1.20	0.952	0.872	1.040
Age	0.09	0.18	0.26	1.098	0.766	1.574	0.04	0.14	0.08	1.040	0.796	1.359
Best Friend's Use	0.03	0.01	13.78**	1.028	1.013	1.043	0.04	0.01	22.40**	1.040	1.023	1.057
DSI-R X Best Friend's Use	0.01	0.01	0.16	1.005	0.980	1.031	-0.01	0.01	0.74	0.989	0.964	1.014

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Females. The Additive Model with perceptions of their best friend at MSU's alcohol consumption was significant ($\chi^2(4) = 45.28, p < .001$, $R^2_{\text{Cox \& Snell}} = .19$, $R^2_{\text{Nagelkerke}} = .27$) and had a successful prediction rate of 75.6%, an increase 5.6% over the Basic Model. Students that had one unit higher in perceptions of best friend use were 1.039 (95% CI = 1.023, 1.055) times more likely to be a Binge Drinker versus a Nonbinging Drinker (see Table 64, p. 225). Students that had a higher level of perception of best friend use equivalent to one standard deviation (41.48) were 4.84 times more likely to be a Binge Drinker versus a Nonbinging Drinker.

The Interaction Model also was significant ($\chi^2(5) = 46.02, p < .001$, $R^2_{\text{Cox \& Snell}} = .19$, $R^2_{\text{Nagelkerke}} = .27$) and had a successful prediction rate of 76.1%, but did not show a block improvement over the Additive Model ($\chi^2(1) = .74, p = .39$). The only significant individual predictor in the model was perception of best friend use, which was nearly identical in value as the Additive Model (OR = 1.040, 95% CI = 1.023, 1.057, see Table 64, p. 225).

Differentiation & COA Status

Males. The Additive Model with COA status failed to reach a level of significance ($\chi^2(4) = 1.23, p = .873$, see Table 65, p. 227). The Interaction Model also failed to achieve a significance as an overall model ($\chi^2(5) = 1.359, p = .929$).

Females. The Additive Model with COA status failed to reach a level of significance ($\chi^2(4) = 4.200, p = .380$, see Table 65, p. 227). The Interaction Model also failed to achieve a significance as an overall model ($\chi^2(5) = 5.033, p = .412$).

Table 65

Logistic Regression Predicting Students that are Bingers versus Nonbingers – COA Status

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.08	0.36	0.05	0.925	0.455	1.880	-0.22	0.27	0.68	0.802	0.475	1.356
BMI	-0.02	0.05	0.21	0.977	0.882	1.082	-0.07	0.04	2.93	0.937	0.869	1.009
Age	0.13	0.16	0.60	1.134	0.825	1.560	0.05	0.13	0.18	1.055	0.825	1.349
Additive Model												
DSI-R	-0.07	0.37	0.04	0.934	0.456	1.910	-0.21	0.27	0.59	0.813	0.480	1.379
BMI	-0.02	0.05	0.16	0.980	0.884	1.085	-0.07	0.04	3.07	0.934	0.866	1.008
Age	0.13	0.16	0.59	1.134	0.823	1.561	0.06	0.13	0.21	1.060	0.828	1.357
COA	-0.39	0.58	0.45	0.679	0.219	2.109	-0.35	0.39	0.79	0.704	0.326	1.523
Interaction Model												
DSI-R	-0.13	0.41	0.10	0.878	0.397	1.942	-0.32	0.30	1.15	0.728	0.408	1.299
BMI	-0.02	0.05	0.15	0.980	0.884	1.086	-0.07	0.04	3.29	0.932	0.864	1.006
Age	0.13	0.16	0.60	1.135	0.825	1.561	0.06	0.13	0.23	1.062	0.829	1.361
COA	-0.42	0.59	0.50	0.657	0.205	2.105	-0.43	0.41	1.07	0.654	0.292	1.464
DSI-R X COA	0.34	0.96	0.13	1.405	0.214	9.231	0.65	0.72	0.82	1.924	0.465	7.956

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Differentiation & Expectations of Alcohol Serving as a Tension Reducer

Males. The Additive Model with tension reduction expectations was significant as an overall model ($\chi^2(4) = 20.74, p < .001, R^2_{\text{Cox \& Snell}} = .11, R^2_{\text{Nagelkerke}} = .18$). The model had a successful prediction rate of 83.2%, which was identical to having no model. Expectation of alcohol serving as a tension reducer was the only significant individual variable. Students that had a one unit higher level of expectation were 1.133 (95% CI = 1.068, 1.202) times more likely to be a Binge Drinker versus a Nonbinging Drinker (see Table 66, p. 229). Students that had a greater perception equal to one standard deviation (8.73) were 2.98 times more likely to be Binge Drinkers.

The Interaction Model also was significant overall ($\chi^2(5) = 22.13, p < .001, R^2_{\text{Cox \& Snell}} = .11, R^2_{\text{Nagelkerke}} = .19$) and had a successful prediction rate of 83.2%; however, it did not show a block improvement over the Additive Model ($\chi^2(1) = 1.39, p = .24$). Expectations of tension reduction remained the only significant individual predictor (OR = 1.142, 95% CI = 1.073, 1.216) of Binge Drinking (see Table 66, p. 229).

Females. The Additive Model with tension reduction expectations was significant as an overall model ($\chi^2(4) = 43.71, p < .001, R^2_{\text{Cox \& Snell}} = .19, R^2_{\text{Nagelkerke}} = .26$). The model had a successful prediction rate of 74.2%, an increase of 5.7% over not having a model. Expectations of alcohol serving as a tension reducer changed the odds of being a Binge Drinker versus a Nonbinging Drinker by 1.147 (95% CI = 1.094, 1.202) for a one unit difference in expectations (see Table 66, p. 229). By changing the difference in expectations to a unit equivalent to one standard deviation for expectations (8.81) the likelihood of being a Binge Drinker is 3.34 times greater.

Table 66

Logistic Regression Predicting Students that are Bingers versus Nonbingers – Expectations of Tension Reduction

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.08	0.36	0.05	0.925	0.455	1.880	-0.22	0.27	0.68	0.802	0.475	1.356
BMI	-0.02	0.05	0.21	0.977	0.882	1.082	-0.07	0.04	2.93	0.937	0.869	1.009
Age	0.13	0.16	0.60	1.134	0.825	1.560	0.05	0.13	0.18	1.055	0.825	1.349
Additive Model												
DSI-R	0.43	0.38	1.27	1.529	0.731	3.198	0.22	0.30	0.53	1.245	0.691	2.240
BMI	0.01	0.06	0.02	1.007	0.903	1.123	-0.05	0.05	1.12	0.953	0.872	1.042
Age	0.21	0.18	1.41	1.236	0.871	1.753	0.10	0.14	0.51	1.105	0.839	1.456
Tension Reduction	0.13	0.03	16.91**	1.133	1.068	1.202	0.14	0.02	32.29**	1.147	1.094	1.202
Interaction Model												
DSI-R	0.71	0.45	2.48	2.028	0.841	4.886	0.08	0.32	0.06	1.077	0.579	2.003
BMI	0.01	0.06	0.03	1.009	0.906	1.124	-0.04	0.05	0.86	0.958	0.874	1.049
Age	0.20	0.18	1.26	1.222	0.861	1.735	0.11	0.14	0.66	1.120	0.851	1.476
Tension Reduction	0.13	0.03	17.38**	1.142	1.073	1.216	0.14	0.03	30.58**	1.146	1.092	1.202
DSI-R X Tension Reduction	0.06	0.05	1.43	1.060	0.964	1.166	-0.06	0.04	2.17	0.940	0.867	1.020

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

The Interaction Model also was significant overall ($\chi^2(5) = 45.96, p < .001$, $R^2_{\text{Cox \& Snell}} = .19$, $R^2_{\text{Nagelkerke}} = .27$) and had a successful prediction rate of 71.8%; however, it did not show a block improvement over the Additive Model ($\chi^2(1) = 2.25, p = .134$). Expectations of tension reduction remained the only significant individual predictor (OR = 1.146, 95% CI = 1.092, 1.202, see Table 66, p. 229).

Differentiation & Expectations of Alcohol Serving as a Social Lubricant

Males. The Additive Model with social lubrication expectations was significant as an overall model ($\chi^2(4) = 19.43, p = .001$, $R^2_{\text{Cox \& Snell}} = .10$, $R^2_{\text{Nagelkerke}} = .17$). The model had a successful prediction rate of 83.8%, an increase of .6% over the not having a model. The only significant individual predictor was expectations of alcohol serving as a social lubricant. Students that had a one unit higher level of expectation were 1.145 (95% CI = 1.071, 1.224) times more likely to be a Binge Drinker versus a Nonbinging Drinker (see Table 67, p. 233). Students that had a greater perception equal to one standard deviation (7.89) were 2.93 times more likely to be Binge Drinkers.

The Interaction Model also was significant overall ($\chi^2(5) = 19.58, p = .001$, $R^2_{\text{Cox \& Snell}} = .10$, $R^2_{\text{Nagelkerke}} = .17$) and had a successful prediction rate of 82.7%; however, it did not show a block improvement over the Additive Model ($\chi^2(1) = .15, p = .697$). Expectations for social lubrication remained the only significant individual predictor (OR = 1.147, 95% CI = 1.072, 1.227) in predicting Bingers versus Nonbinging Drinkers.

Females. The Additive Model with social lubrication expectations was significant as an overall model ($\chi^2(4) = 17.33, p = .002$, $R^2_{\text{Cox \& Snell}} = .08$, $R^2_{\text{Nagelkerke}} = .11$). The model had a successful prediction rate of 70%, an increase of 1.5% over the not having a model. Expectations of alcohol serving as a social lubricant changed the odds of being a

drinker by 1.090 (95% CI = 1.040, 1.142) for every one unit change in perceptions (see Table 67, p. 233). Students with a difference in expectations equal to one standard deviation (7.74) were 1.95 times more likely to be a Binge Drinker versus a Nonbinging Drinker.

The Interaction Model also was significant overall ($\chi^2(5) = 18.07, p = .003, R^2_{\text{Cox \& Snell}} = .08, R^2_{\text{Nagelkerke}} = .11$) and had a successful prediction rate of 71.8%; however, it did not show a block improvement over the Additive Model ($\chi^2(1) = .74, p = .389$). Expectations for social lubrication remained the only significant individual predictor (OR = 1.089, 95% CI = 1.039, 1.141) in predicting Binge Drinkers versus Nonbinging Drinkers (see Table 67, p. 233).

The Comprehensive Model

Males. The Comprehensive Model was significant according to the model chi-square ($\chi^2(13) = 41.11, p < .001, R^2_{\text{Cox \& Snell}} = .20, R^2_{\text{Nagelkerke}} = .34$). The model illustrated an 85.4% success rate in predicting the correct drinking classifications, a 2.2% increase over having no model. Perceptions of best friend use (OR = 1.019) was the only individual variables to significantly improve the odds of being classified as a Binge Drinker versus a Nonbinging Drinker (see Table 68, p. 234).

Females. The Comprehensive Model was significant according to the model chi-square ($\chi^2(13) = 85.81, p < .001, R^2_{\text{Cox \& Snell}} = .33, R^2_{\text{Nagelkerke}} = .47$). The model illustrated a 70% success rate in predicting the correct drinking classifications, the identical value to the Basic Model. Perceptions of best friend use (OR = 1.037), expectations of tension reduction (OR = 1.166), and the differentiation X expectations of

tension reduction (OR = .862) were the only individual variables to significantly improve the odds of being classified as a Binge Drinker versus a Nonbinging Drinker.

Occasional Binge Drinkers versus Nonbinging Drinkers

Differentiation and binge drinking

Males. The Basic Model was not significant according to the model chi-square ($\chi^2(3) = .50$ $p = .919$, see Table 69, p. 236).

Females. The Basic Model did not reach a level of significance ($\chi^2(3) = 1.40, p = .705$, see Table 69, p. 236).

Four-factors of the DSI-R with binge drinking

Males. As was the case in the Basic Model, the overall four-factor model failed to reach a level of significance ($\chi^2(6) = 2.77, p = .838$, see Table 70, p. 236).

Females. The overall four-factor model failed to reach a level of significance ($\chi^2(6) = 4.58, p = .599$, see Table 70, p. 236).

Differentiation & perception of average MSU student's alcohol use

Males. The Additive Model failed to reach a level of significance ($\chi^2(4) = 1.547$, $p = .818$, see Table 71, p. 237). Similarly, the Interaction Model also was not significant as an overall model ($\chi^2(5) = 2.980, p = .703$).

Females. The Additive Model with perceptions of the average MSU student's alcohol consumption was not significant as an overall model ($\chi^2(4) = 3.36, p = .500$, see Table 71, p. 237). The Interaction Model also was not significant as an overall model ($\chi^2(5) = 4.273, p = .511$, see Table 71, p. 237).

Table 67

Logistic Regression Predicting Students that are Bingers versus Nonbingers – Expectations of Social Lubrication

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.08	0.36	0.05	0.925	0.455	1.880	-0.22	0.27	0.68	0.802	0.475	1.356
BMI	-0.02	0.05	0.21	0.977	0.882	1.082	-0.07	0.04	2.93	0.937	0.869	1.009
Age	0.13	0.16	0.60	1.134	0.825	1.560	0.05	0.13	0.18	1.055	0.825	1.349
Additive Model												
DSI-R	0.43	0.38	1.28	1.534	0.731	3.217	0.13	0.29	0.21	1.141	0.651	1.999
BMI	0.02	0.06	0.08	1.015	0.912	1.130	-0.05	0.04	1.51	0.951	0.877	1.031
Age	0.23	0.18	1.55	1.253	0.879	1.787	0.10	0.13	0.55	1.101	0.853	1.420
Social Lubrication	0.14	0.03	15.86**	1.145	1.071	1.224	0.09	0.02	12.81**	1.090	1.040	1.142
Interaction Model												
DSI-R	0.52	0.45	1.35	1.684	0.699	4.058	0.04	0.30	0.02	1.044	0.576	1.894
BMI	0.02	0.05	0.08	1.015	0.912	1.129	-0.05	0.04	1.21	0.955	0.881	1.036
Age	0.23	0.18	1.56	1.253	0.879	1.785	0.10	0.13	0.64	1.110	0.860	1.432
Social Lubrication	0.14	0.03	15.94**	1.147	1.072	1.227	0.09	0.02	12.46**	1.089	1.039	1.141
DSI-R X Social Lubrication	0.02	0.05	0.15	1.021	0.921	1.132	-0.04	0.04	0.73	0.965	0.890	1.047

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 68

Logistic Regression Predicting Students that are Bingers versus Nonbingers – Comprehensive Model

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
DSI-R	0.77	0.68	1.28	2.154	0.569	8.158	-0.13	0.46	0.07	0.883	0.355	2.193
BMI	0.01	0.06	0.01	1.007	0.891	1.138	-0.07	0.06	1.29	0.933	0.827	1.052
Age	0.18	0.21	0.76	1.201	0.796	1.813	0.19	0.17	1.31	1.208	0.874	1.669
MSU Perceptions	0.01	0.01	1.29	1.011	0.992	1.030	0.00	0.01	0.33	1.003	0.992	1.014
DSI-R X MSU Perceptions	0.01	0.02	0.32	1.008	0.980	1.038	-0.02	0.01	2.30	0.985	0.967	1.004
Best Friend	0.02	0.01	5.74*	1.019	1.003	1.034	0.04	0.01	17.45**	1.037	1.020	1.055
DSI-R X Best Friend	0.00	0.01	0.05	1.003	0.979	1.027	-0.02	0.01	1.16	0.985	0.959	1.012
COA	-1.07	0.71	2.30	0.342	0.085	1.368	-0.85	0.50	2.88	0.428	0.160	1.141
DSI-R X COA	0.66	1.20	0.30	1.938	0.183	20.495	-0.02	0.86	0.00	0.982	0.181	5.336
Tension Reduction	0.06	0.05	1.92	1.066	0.974	1.167	0.15	0.04	18.67**	1.166	1.088	1.251
DSI-R X Tension Reduction	0.07	0.08	0.70	1.069	0.914	1.249	-0.15	0.07	4.73*	0.862	0.754	0.985
Social Lubrication	0.07	0.05	1.90	1.074	0.970	1.190	-0.01	0.04	0.15	0.986	0.919	1.058
DSI-R X Social Lubrication	-0.01	0.09	0.01	0.990	0.838	1.169	0.07	0.07	0.97	1.068	0.937	1.217

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Differentiation & Perception of Best Friend at MSU's Alcohol Use

Males. The Additive Model failed to reach a level of significance ($\chi^2(4) = 6.130$, $p = .190$, see Table 72, p. 238). The Interaction Model also failed to reach a level of significance ($\chi^2(5) = 6.219$, $p = .286$, see Table 72, p. 238).

Females. The Additive Model with perceptions of their best friend at MSU's alcohol consumption was significant ($\chi^2(4) = 15.09$, $p < .001$, $R^2_{\text{Cox \& Snell}} = .11$, $R^2_{\text{Nagelkerke}} = .15$) and had a successful prediction rate of 66.9%, an increase 16.2% over the Basic Model. Students that had one unit higher in perceptions of best friend use were 1.026 (95% CI = 1.009, 1.042) times more likely to be an Occasional Binge Drinker versus a Nonbinging Drinker (see Table 72, p. 238). Students that had a higher level of perception of best friend use equivalent to one standard deviation (41.48) were 2.82 times more likely to be an Occasional Binge Drinker versus a Nonbinging Drinker.

The Interaction Model also was significant ($\chi^2(5) = 16.62$, $p = .005$, $R^2_{\text{Cox \& Snell}} = .11$, $R^2_{\text{Nagelkerke}} = .15$) and had a successful prediction rate of 66.9%, but did not show a block improvement over the Additive Model ($\chi^2(1) = .12$, $p = .724$). The only significant individual predictor in the model remained perception of best friend use, which was nearly identical in value as the Additive Model (OR = 1.025, 95% CI = 1.009, 1.042, see Table 72, p. 238).

Differentiation & COA Status

Males. The Additive Model failed to reach a level of significance ($\chi^2(4) = .59$, $p = .96$, see Table 73, p. 239). The Interaction Model also failed to reach a level of significance ($\chi^2(5) = .66$, $p = .985$, see Table 73, p. 239).

Table 69

Logistic Regression Predicting Students that are Occasional Bingers versus Nonbingers – Differentiation

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
DSI-R	0.28	0.40	0.49	1.324	0.601	2.912	-0.28	0.31	0.83	0.756	0.414	1.380
BMI	0.00	0.05	0.00	0.998	0.897	1.111	-0.03	0.04	0.58	0.970	0.898	1.049
Age	-0.05	0.20	0.08	0.947	0.643	1.396	0.08	0.14	0.34	1.085	0.825	1.426

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 70

Logistic Regression Predicting Students that are Occasional Bingers versus Nonbingers – Four Factors

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Emotional Reactivity	-0.14	0.41	0.11	0.874	0.393	1.943	0.02	0.26	0.01	1.023	0.617	1.695
"I" Position	0.46	0.39	1.42	1.587	0.743	3.388	-0.55	0.32	2.99	0.577	0.309	1.076
Emotional Cutoff	0.22	0.36	0.37	1.248	0.614	2.535	0.24	0.25	0.88	1.266	0.773	2.074
Fusion with Others	-0.16	0.54	0.09	0.849	0.297	2.427	-0.06	0.37	0.02	0.947	0.457	1.963
BMI	-0.02	0.06	0.07	0.985	0.884	1.098	-0.04	0.04	1.07	0.958	0.884	1.039
Age	-0.04	0.20	0.05	0.958	0.644	1.425	0.10	0.14	0.48	1.103	0.835	1.456

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 71

Logistic Regression Predicting Students that are Occasional Bingers versus Nonbingers – Perceptions of MSU Student Use

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	0.28	0.40	0.49	1.324	0.601	2.912	-0.28	0.31	0.83	0.756	0.414	1.380
BMI	0.00	0.05	0.00	0.998	0.897	1.111	-0.03	0.04	0.58	0.970	0.898	1.049
Age	-0.05	0.20	0.08	0.947	0.643	1.396	0.08	0.14	0.34	1.085	0.825	1.426
Additive Model												
DSI-R	0.27	0.41	0.44	1.308	0.591	2.895	-0.30	0.31	0.91	0.744	0.404	1.367
BMI	0.00	0.05	0.01	0.996	0.895	1.108	-0.03	0.04	0.41	0.975	0.901	1.054
Age	-0.08	0.20	0.15	0.924	0.622	1.372	0.08	0.14	0.29	1.079	0.818	1.423
MSU Use	0.01	0.01	0.97	1.008	0.992	1.025	0.01	0.01	1.89	1.006	0.997	1.015
Interaction Model												
DSI-R	0.46	0.45	1.02	1.577	0.650	3.825	-0.31	0.31	0.99	0.734	0.398	1.352
BMI	0.00	0.05	0.01	0.996	0.896	1.107	-0.02	0.04	0.33	0.977	0.903	1.058
Age	-0.07	0.20	0.12	0.932	0.626	1.389	0.09	0.14	0.37	1.091	0.826	1.441
MSU Use	0.01	0.01	0.44	1.006	0.989	1.024	0.01	0.01	1.91	1.006	0.997	1.015
DSI-R X MSU Use	0.02	0.02	1.35	1.019	0.987	1.051	-0.01	0.01	0.90	0.993	0.977	1.008

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 72

Logistic Regression Predicting Students that are Occasional Bingers versus Nonbingers – Perceptions of Best Friend's Use

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	0.28	0.40	0.49	1.324	0.601	2.912	-0.28	0.31	0.83	0.756	0.414	1.380
BMI	0.00	0.05	0.00	0.998	0.897	1.111	-0.03	0.04	0.58	0.970	0.898	1.049
Age	-0.05	0.20	0.08	0.947	0.643	1.396	0.08	0.14	0.34	1.085	0.825	1.426
Additive Model												
DSI-R	0.40	0.41	0.92	1.487	0.662	3.341	-0.31	0.33	0.90	0.734	0.388	1.392
BMI	-0.01	0.06	0.07	0.986	0.885	1.098	-0.04	0.04	0.84	0.960	0.880	1.048
Age	-0.14	0.21	0.44	0.870	0.576	1.313	0.09	0.15	0.36	1.092	0.818	1.457
Best Friend's Use	0.02	0.01	4.36*	1.015	1.001	1.030	0.03	0.01	9.71**	1.026	1.009	1.042
Interaction Model												
DSI-R	0.59	0.76	0.60	1.798	0.405	7.979	-0.38	0.39	0.95	0.681	0.315	1.472
BMI	-0.01	0.06	0.04	0.988	0.886	1.103	-0.04	0.05	0.84	0.960	0.879	1.048
Age	-0.14	0.21	0.45	0.869	0.576	1.311	0.08	0.15	0.33	1.088	0.815	1.452
Best Friend's Use	0.02	0.01	4.26*	1.016	1.001	1.031	0.03	0.01	9.13**	1.025	1.009	1.042
DSI-R X Best Friend's Use	0.00	0.01	0.09	1.004	0.977	1.032	-0.01	0.01	0.12	0.995	0.969	1.022

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 73

Logistic Regression Predicting Students that are Occasional Bingers versus Nonbingers – COA Status

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	0.28	0.40	0.49	1.324	0.601	2.912	-0.28	0.31	0.83	0.756	0.414	1.380
BMI	0.00	0.05	0.00	0.998	0.897	1.111	-0.03	0.04	0.58	0.970	0.898	1.049
Age	-0.05	0.20	0.08	0.947	0.643	1.396	0.08	0.14	0.34	1.085	0.825	1.426
Additive Model												
DSI-R	0.29	0.40	0.50	1.330	0.603	2.932	-0.22	0.31	0.48	0.805	0.435	1.489
BMI	0.00	0.06	0.00	1.000	0.898	1.112	-0.03	0.04	0.62	0.969	0.896	1.048
Age	-0.05	0.20	0.08	0.947	0.643	1.396	0.07	0.14	0.25	1.073	0.814	1.414
COA	-0.19	0.65	0.09	0.826	0.230	2.963	-0.51	0.43	1.36	0.603	0.258	1.410
Interaction Model												
DSI-R	0.24	0.44	0.29	1.268	0.534	3.010	-0.21	0.35	0.36	0.812	0.413	1.599
BMI	0.00	0.06	0.00	0.999	0.897	1.111	-0.03	0.04	0.60	0.969	0.896	1.049
Age	-0.05	0.20	0.07	0.950	0.645	1.401	0.07	0.14	0.25	1.072	0.814	1.414
COA	-0.21	0.66	0.10	0.811	0.222	2.969	-0.50	0.46	1.17	0.609	0.247	1.499
DSI-R X COA	0.28	1.06	0.07	1.325	0.167	10.481	-0.05	0.83	0.00	0.953	0.189	4.801

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Females. The Additive Model with COA status failed to reach a level of significance ($\chi^2(4) = 2.792, p = .593$, see Table 73, p. 239). The Interaction Model also failed to achieve a significance as an overall model ($\chi^2(5) = 2.795, p = .732$).

Differentiation & Expectations of Alcohol Serving as a Tension Reducer

Males. The Additive Model failed to reach a level of significance ($\chi^2(4) = 8.94, p = .063$, see Table 74, p. 242). The Interaction Model was significant as an overall model ($\chi^2(5) = 11.19, p = .048, R^2_{\text{Cox \& Snell}} = .12, R^2_{\text{Nagelkerke}} = .16$) and had a successful prediction rate of 75.8%. Although differentiation approached significance ($p = .052$), expectations of tension reduction remained the only significant individual predictor (OR = 1.108, 95% CI = 1.030, 1.191) of Occasional Binge Drinkers versus Nonbinging Drinkers (see Table 74, p. 242).

Females. The Additive Model with tension reduction expectations was significant as an overall model ($\chi^2(4) = 21.62, p < .001, R^2_{\text{Cox \& Snell}} = .14, R^2_{\text{Nagelkerke}} = .19$). The model had a successful prediction rate of 66.2%, an increase of 14.8% over not having a model. Expectations of alcohol serving as a tension reducer changed the odds of being an Occasional Binge Drinker versus a Nonbinging Drinker by 1.117 (95% CI = 1.060, 1.177) for a one unit difference in expectations (see Table 74, p. 242). By changing the difference in expectations to a unit equivalent to one standard deviation for expectations (8.81) there is a 4.13 times greater likelihood of being an Occasional Binge Drinker.

The Interaction Model also was significant overall ($\chi^2(5) = 24.15, p < .001, R^2_{\text{Cox \& Snell}} = .19, R^2_{\text{Nagelkerke}} = .27$) and had a successful prediction rate of 64.1%; however, it did not show a block improvement over the Additive Model ($\chi^2(1) = 2.52, p = .112$).

Expectations of tension reduction remained the only significant individual predictor (OR = 1.114, 95% CI = 1.056, 1.176, see Table 74, p. 242).

Differentiation & Expectations of Alcohol Serving as a Social Lubricant

Males. The Additive Model with social lubrication expectations was significant as an overall model ($\chi^2(4) = 10.12, p = .039, R^2_{\text{Cox \& Snell}} = .11, R^2_{\text{Nagelkerke}} = .15$). The model had a successful prediction rate of 70.3%, an increase of 4.4% over the not having a model. The only significant individual predictor was expectations of alcohol serving as a social lubricant. Students that had a one unit higher level of expectation were 1.118 (95% CI = 1.036, 1.206) times more likely to be an Occasional Binge Drinker versus a Nonbinging Drinker (see Table 75, p. 243). Students that had a greater perception equal to one standard deviation (7.89) were 2.40 times more likely to be Occasional Binge Drinkers.

The Interaction Model failed to reach a level of significance ($\chi^2(5) = 10.21, p = .070$) and had a successful prediction rate of 71.4%. Expectations for social lubrication remained the only significant individual predictor for the sample (OR = 1.118, 95% CI = 1.036, 1.206) in predicting Occasional Binge Drinkers versus Nonbinging Drinkers (see Table 75, p. 243).

Females. The Additive Model failed to reach a level of significance as an overall model ($\chi^2(4) = 6.094, p = .192$, see Table 75, p. 243). The Interaction Model also failed to reach a level of significance ($\chi^2(5) = 7.056, p = .216$).

The Comprehensive Model

Males. The Comprehensive Model failed to reach a level of significance ($\chi^2(13) = 19.269, p = .115$, see Table 76, p. 245).

Table 74

Logistic Regression Predicting Students that are Occasional Bingers versus Nonbingers – Expectations of Tension Reduction

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	0.28	0.40	0.49	1.324	0.601	2.912	-0.28	0.31	0.83	0.756	0.414	1.380
BMI	0.00	0.05	0.00	0.998	0.897	1.111	-0.03	0.04	0.58	0.970	0.898	1.049
Age	-0.05	0.20	0.08	0.947	0.643	1.396	0.08	0.14	0.34	1.085	0.825	1.426
Additive Model												
DSI-R	0.62	0.43	2.04	1.850	0.795	4.305	-0.03	0.33	0.01	0.967	0.503	1.859
BMI	0.03	0.06	0.33	1.034	0.922	1.160	-0.02	0.04	0.16	0.983	0.901	1.072
Age	-0.07	0.21	0.13	0.928	0.616	1.400	0.18	0.15	1.39	1.197	0.887	1.614
Tension Reduction	0.10	0.04	7.23**	1.102	1.027	1.183	0.11	0.03	17.31**	1.117	1.060	1.177
Interaction Model												
DSI-R	1.00	0.52	3.77	2.722	0.991	7.476	-0.24	0.36	0.43	0.789	0.387	1.609
BMI	0.04	0.06	0.43	1.039	0.927	1.166	-0.01	0.05	0.07	0.988	0.902	1.082
Age	-0.12	0.21	0.34	0.884	0.583	1.341	0.18	0.15	1.46	1.203	0.891	1.622
Tension Reduction	0.10	0.04	7.63**	1.108	1.030	1.191	0.11	0.03	15.64**	1.114	1.056	1.176
DSI-R X Tension Reduction	0.09	0.06	2.24	1.091	0.974	1.222	-0.07	0.05	2.46	0.930	0.848	1.018

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 75

Logistic Regression Predicting Students that are Occasional Bingers versus Nonbingers – Expectations of Social Lubrication

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	0.28	0.40	0.49	1.324	0.601	2.912	-0.28	0.31	0.83	0.756	0.414	1.380
BMI	0.00	0.05	0.00	0.998	0.897	1.111	-0.03	0.04	0.58	0.970	0.898	1.049
Age	-0.05	0.20	0.08	0.947	0.643	1.396	0.08	0.14	0.34	1.085	0.825	1.426
Additive Model												
DSI-R	0.69	0.45	2.41	1.999	0.834	4.793	-0.09	0.32	0.07	0.919	0.488	1.731
BMI	0.03	0.06	0.34	1.034	0.923	1.160	-0.02	0.04	0.29	0.978	0.903	1.060
Age	-0.01	0.21	0.00	0.987	0.655	1.487	0.13	0.14	0.81	1.139	0.859	1.509
Social Lubrication	0.11	0.04	8.25**	1.118	1.036	1.206	0.06	0.03	4.53*	1.056	1.004	1.111
Interaction Model												
DSI-R	0.77	0.51	2.27	2.151	0.794	5.823	-0.23	0.36	0.41	0.797	0.396	1.602
BMI	0.03	0.06	0.35	1.035	0.923	1.160	-0.02	0.04	0.17	0.983	0.907	1.066
Age	-0.02	0.21	0.01	0.981	0.651	1.480	0.14	0.14	0.89	1.146	0.864	1.519
Social Lubrication	0.11	0.04	8.32**	1.118	1.036	1.207	0.05	0.03	4.22*	1.055	1.002	1.110
DSI-R X Social Lubrication	0.02	0.06	0.09	1.019	0.904	1.148	-0.05	0.05	0.95	0.954	0.869	1.048

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Females. The Comprehensive Model was significant according to the model chi-square ($\chi^2(13) = 45.05, p < .001, R^2_{\text{Cox \& Snell}} = .27, R^2_{\text{Nagelkerke}} = .36$) and showed a significant improvement over the Basic Model ($\chi^2(10) = 43.65, p < .001$). The model illustrated a 74.6% success rate in predicting the correct drinking classifications, an improvement of 23.9% over the Basic Model. Perceptions of best friend use (OR = 1.030), expectations of tension reduction (OR = 1.147), and the differentiation X expectations of tension reduction (OR = .861) were the only individual variables to significantly improve the odds of being classified as an Occasional Binge Drinker versus a Nonbinging Drinker (see Table 76, p. 245).

Frequent Binge Drinkers versus Nonbinging Drinkers

Differentiation and binge drinking

Males. The Basic Model was not significant according to the model chi-square ($\chi^2(3) = 2.48, p = .479$, see Table 77, p. 246).

Females. The Basic Model was not significant according to the model chi-square ($\chi^2(3) = 5.81, p = .121$, see Table 77, p. 246).

Four-factors of the DSI-R with binge drinking

Males. As was the case in the Basic Model, the overall four-factor model failed to reach a level of significance ($\chi^2(6) = 3.78, p = .706$, see Table 78, p. 246).

Females. The overall four-factor model failed to reach a level of significance ($\chi^2(6) = 7.39, p = .286$).

Table 76

Logistic Regression Predicting Students that are Occasional Bingers versus Nonbingers – Comprehensive Model

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
DSI-R	-0.81	0.59	1.90	0.446	0.142	1.406	-0.38	0.52	0.52	0.686	0.246	1.913
BMI	0.16	0.09	2.97	1.173	0.978	1.406	-0.05	0.06	0.73	0.949	0.841	1.071
Age	0.08	0.20	0.17	1.087	0.728	1.622	0.21	0.17	1.45	1.232	0.878	1.730
MSU Perceptions	0.00	0.01	0.04	0.999	0.986	1.012	0.01	0.01	0.73	1.005	0.994	1.016
DSI-R X MSU Perceptions	-0.02	0.01	3.03	0.976	0.950	1.003	-0.01	0.01	0.92	0.991	0.972	1.010
Best Friend	0.03	0.01	18.64**	1.026	1.014	1.038	0.03	0.01	9.24**	1.030	1.010	1.049
DSI-R X Best Friend	-0.01	0.01	0.45	0.992	0.968	1.016	-0.01	0.02	0.57	0.988	0.958	1.019
COA	-1.16	0.63	3.40	0.313	0.091	1.076	-0.69	0.53	1.69	0.501	0.176	1.422
DSI-R X COA	1.32	1.15	1.33	3.747	0.397	35.400	-0.38	0.97	0.16	0.681	0.103	4.527
Tension Reduction	0.04	0.05	0.49	1.037	0.936	1.149	0.14	0.04	13.83*	1.147	1.067	1.233
DSI-R X Tension Reduction	0.11	0.11	0.90	1.115	0.891	1.394	-0.15	0.07	4.11*	0.861	0.745	0.995
Social Lubrication	-0.05	0.06	0.96	0.948	0.852	1.055	-0.02	0.04	0.44	0.976	0.909	1.048
DSI-R X Social Lubrication	-0.06	0.13	0.23	0.941	0.736	1.203	0.06	0.08	0.53	1.056	0.911	1.225

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 77

Logistic Regression Predicting Students that are Frequent Bingers versus Nonbingers – Differentiation

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
DSI-R	-0.33	0.38	0.73	0.721	0.341	1.524	-0.12	0.32	0.14	0.887	0.474	1.658
BMI	-0.04	0.06	0.52	0.958	0.853	1.076	-0.13	0.06	4.21*	0.879	0.778	0.994
Age	0.22	0.17	1.64	1.240	0.892	1.722	0.02	0.15	0.01	1.015	0.758	1.359

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 78

Logistic Regression Predicting Students that are Frequent Bingers versus Nonbingers – Four Factors

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Emotional Reactivity	0.23	0.32	0.52	1.255	0.675	2.336	0.13	0.25	0.28	1.144	0.698	1.874
"I" Position	-0.20	0.33	0.35	0.821	0.428	1.576	0.01	0.33	0.00	1.011	0.534	1.912
Emotional Cutoff	-0.31	0.32	0.97	0.734	0.396	1.359	0.06	0.26	0.05	1.062	0.636	1.775
Fusion with Others	-0.22	0.46	0.24	0.802	0.329	1.955	-0.44	0.34	1.67	0.641	0.327	1.258
BMI	-0.04	0.06	0.42	0.962	0.857	1.081	-0.13	0.06	4.15*	0.878	0.774	0.995
Age	0.21	0.17	1.60	1.238	0.889	1.722	0.02	0.15	0.02	1.020	0.759	1.371

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Differentiation & perception of average MSU student's alcohol use

Males. The Additive Model was significant as an overall model ($\chi^2(4) = 10.96, p = .027$, $R^2_{\text{Cox \& Snell}} = .08$, $R^2_{\text{Nagelkerke}} = .13$). The model had a successful prediction rate of 76%, an improvement of .8% over having no model. Perceptions of MSU student use was the only significant individual predictor. Students that had a one unit higher level of perception were 1.022 (95% CI = 1.004, 1.040) times more likely to be Frequent Binge Drinkers than Nonbinging Drinkers (see Table 79, p. 248). Students that had a greater perception equal to one standard deviation (37.22) were 2.27 times more likely to be Frequent Binge Drinkers.

The Interaction Model was significant as an overall model ($\chi^2(5) = 11.20, p = .048$, $R^2_{\text{Cox \& Snell}} = .09$, $R^2_{\text{Nagelkerke}} = .13$), had a successful prediction rate of 74.4%; however, it did not show a block improvement over the Additive Model ($\chi^2(1) = .24, p = .624$). Perceptions of MSU student alcohol use remained the only significant individual variable in predicting Frequent Binge Drinkers versus Nonbinging Drinkers (OR = 1.023, 95% CI = 1.005, 1.043, see Table 79, p. 248).

Females. The Additive Model with perceptions of the average MSU student's alcohol consumption was not significant as an overall model ($\chi^2(4) = 7.850, p = .097$, see Table 79, p. 248).

The Interaction Model was significant as an overall model ($\chi^2(5) = 14.01, p = .016$, $R^2_{\text{Cox \& Snell}} = .10$, $R^2_{\text{Nagelkerke}} = .13$) and had a significant block improvement over the Additive Model ($\chi^2(1) = 6.16, p = .013$). The model had a successful prediction rate of 63%, which was a 4.3% improvement over the Basic Model and 11.6% over having no model. The differentiation X perception of MSU student use was the only significant

Table 79

Logistic Regression Predicting Students that are Frequent Bingers versus Nonbingers – Perceptions of MSU Student Use

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.33	0.38	0.73	0.721	0.341	1.524	-0.12	0.32	0.14	0.887	0.474	1.658
BMI	-0.04	0.06	0.52	0.958	0.853	1.076	-0.13	0.06	4.21*	0.879	0.778	0.994
Age	0.22	0.17	1.64	1.240	0.892	1.722	0.02	0.15	0.01	1.015	0.758	1.359
Additive Model												
DSI-R	-0.23	0.40	0.32	0.799	0.366	1.743	-0.09	0.32	0.07	0.918	0.488	1.728
BMI	-0.09	0.07	1.89	0.914	0.804	1.039	-0.12	0.06	3.67	0.884	0.779	1.003
Age	0.26	0.18	2.13	1.296	0.915	1.836	0.03	0.15	0.04	1.031	0.768	1.385
MSU Use	0.02	0.01	6.00*	1.022	1.004	1.040	0.01	0.01	1.99	1.007	0.997	1.017
Interaction Model												
DSI-R	-0.15	0.43	0.11	0.864	0.371	2.014	-0.24	0.34	0.48	0.790	0.403	1.546
BMI	-0.09	0.07	1.86	0.915	0.806	1.040	-0.12	0.07	3.38	0.884	0.776	1.008
Age	0.26	0.18	2.14	1.297	0.916	1.837	0.09	0.15	0.35	1.096	0.810	1.482
MSU Use	0.02	0.01	5.96*	1.023	1.005	1.043	0.01	0.01	2.03	1.008	0.997	1.019
DSI-R X MSU Use	0.01	0.02	0.24	1.008	0.977	1.039	-0.03	0.01	5.48*	0.975	0.955	0.996

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

individual predictor (see Table 79, p. 248, and Figure 6, p. 73, for interaction effect). Students with a one unit higher interaction value was .975 (95% CI = .955, .996) times more likely to be a Frequent Binge Drinker than a Nonbinging Drinker. Students that had a difference in the interaction term equivalent to one standard deviation (21.57) were .58 times more likely to be a Frequent Binge Drinker than a Nonbinging Drinker.

Differentiation & Perception of Best Friend at MSU's Alcohol Use

Males. The Additive Model with perceptions of their best friend at MSU's alcohol consumption was significant ($\chi^2(4) = 25.61, p < .001, R^2_{\text{Cox \& Snell}} = .13, R^2_{\text{Nagelkerke}} = .22$) and had a successful prediction rate of 88.8%, which was 13.6% greater than having no model. Students that had one unit higher in perceptions of best friend use were 1.043 (95% CI = 1.024, 1.062) times more likely to be a Frequent Binge Drinker versus a Nonbinging Drinker (see Table 80, p. 251). Students that had a higher level of perception of best friend use equivalent to one standard deviation (72.43) were 20.94 times more likely to be a Frequent Binge Drinker.

The Interaction Model also was significant ($\chi^2(5) = 47.43, p < .001, R^2_{\text{Cox \& Snell}} = .32, R^2_{\text{Nagelkerke}} = .47$) and had a successful prediction rate of 88.8%, but did not show a block improvement over the Additive Model ($\chi^2(1) = 2.10, p = .148$). The only significant individual predictor in the model was perception of best friend use (OR = 1.046, 95% CI = 1.026, 1.067, see Table 80, p. 251).

Females. The Additive Model with perceptions of their best friend at MSU's alcohol consumption was significant ($\chi^2(4) = 61.52, p < .001, R^2_{\text{Cox \& Snell}} = .36, R^2_{\text{Nagelkerke}} = .48$) and had a successful prediction rate of 82.6%, an increase of 23.9% over the Basic Model. Students that had one unit higher in perceptions of best friend use were 1.052

(95% CI = 1.032, 1.071) times more likely to be a Frequent Binge Drinker versus a Nonbinging Drinker (see Table 80, p. 251). Students that had a higher level of perception of best friend use equivalent to one standard deviation (41.48) were 7.96 times more likely to be a Frequent Binge Drinker versus a Nonbinging Drinker.

The Interaction Model also was significant ($\chi^2(5) = 65.35, p < .001, R^2_{\text{Cox \& Snell}} = .38, R^2_{\text{Nagelkerke}} = .50$) and had a successful prediction rate of 81.2%, but was only on the fringe of showing a block improvement over the Additive Model ($\chi^2(1) = 3.84, p = .050$). The only significant individual predictor in the model remained perception of best friend use, which was nearly identical in value as the Additive Model (OR = 1.057, 95% CI = 1.036, 1.079, see Table 80, p. 251). Additionally, the interaction term nearly reached a level of significance ($p = .054$).

Differentiation & COA Status

Males. The Additive Model failed to reach a level of significance ($\chi^2(4) = 3.26, p = .516$, see Table 81, p. 252). The Interaction Model also failed to achieve a significance as an overall model ($\chi^2(5) = 3.477, p = .627$).

Females. The Additive Model with COA status failed to reach a level of significance ($\chi^2(4) = 5.809, p = .214$, see Table 81, p. 252). The Interaction Model also failed to achieve a significance as an overall model ($\chi^2(5) = 9.296, p = .098$).

Differentiation & Expectations of Alcohol Serving as a Tension Reducer

Males. The Additive Model with tension reduction expectations was significant as an overall model ($\chi^2(4) = 28.32, p < .001, R^2_{\text{Cox \& Snell}} = .20, R^2_{\text{Nagelkerke}} = .30$). The model had a successful prediction rate of 80.8%, which was a 5.6% improvement over having no model. Expectation of alcohol serving as a tension reducer was the only

Table 80

Logistic Regression Predicting Students that are Frequent Bingers versus Nonbingers – Perceptions of Best Friend's Use

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.33	0.38	0.73	0.721	0.341	1.524	-0.12	0.32	0.14	0.887	0.474	1.658
BMI	-0.04	0.06	0.52	0.958	0.853	1.076	-0.13	0.06	4.21*	0.879	0.778	0.994
Age	0.22	0.17	1.64	1.240	0.892	1.722	0.02	0.15	0.01	1.015	0.758	1.359
Additive Model												
DSI-R	-0.56	0.45	1.55	0.574	0.239	1.377	0.16	0.41	0.15	1.173	0.522	2.639
BMI	-0.09	0.08	1.28	0.918	0.793	1.064	-0.06	0.08	0.58	0.943	0.811	1.096
Age	0.37	0.22	2.75	1.449	0.935	2.246	-0.15	0.19	0.64	0.861	0.596	1.243
Best Friend's Use	0.04	0.01	20.37**	1.043	1.024	1.062	0.05	0.01	28.64**	1.052	1.032	1.071
Interaction Model												
DSI-R	0.18	0.68	0.07	1.197	0.316	4.531	-0.14	0.43	0.10	0.872	0.375	2.027
BMI	-0.08	0.08	1.13	0.922	0.794	1.071	-0.05	0.08	0.37	0.952	0.811	1.116
Age	0.44	0.23	3.51	1.549	0.980	2.449	-0.14	0.19	0.56	0.870	0.603	1.254
Best Friend's Use	0.05	0.01	20.63**	1.046	1.026	1.067	0.06	0.01	27.62**	1.057	1.036	1.079
DSI-R X Best Friend's Use	0.02	0.02	2.05	1.022	0.992	1.054	-0.03	0.02	3.71	0.971	0.942	1.001

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 81

Logistic Regression Predicting Students that are Frequent Bingers versus Nonbingers – COA Status

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.33	0.38	0.73	0.721	0.341	1.524	-0.12	0.32	0.14	0.887	0.474	1.658
BMI	-0.04	0.06	0.52	0.958	0.853	1.076	-0.13	0.06	4.21*	0.879	0.778	0.994
Age	0.22	0.17	1.64	1.240	0.892	1.722	0.02	0.15	0.01	1.015	0.758	1.359
Additive Model												
DSI-R	-0.32	0.39	0.68	0.727	0.340	1.555	-0.12	0.32	0.14	0.887	0.474	1.658
BMI	-0.04	0.06	0.41	0.963	0.856	1.082	-0.13	0.06	4.21*	0.879	0.778	0.994
Age	0.22	0.17	1.66	1.244	0.893	1.732	0.02	0.15	0.01	1.015	0.757	1.361
COA	-0.51	0.60	0.73	0.599	0.184	1.947	-0.02	0.47	0.00	0.978	0.390	2.452
Interaction Model												
DSI-R	-0.42	0.45	0.88	0.654	0.270	1.587	-0.41	0.36	1.28	0.667	0.331	1.346
BMI	-0.04	0.06	0.40	0.963	0.857	1.083	-0.13	0.06	4.37*	0.876	0.773	0.992
Age	0.22	0.17	1.68	1.245	0.894	1.733	0.01	0.15	0.01	1.014	0.753	1.366
COA	-0.55	0.61	0.80	0.577	0.173	1.920	-0.04	0.49	0.01	0.964	0.368	2.524
DSI-R X COA	0.42	0.90	0.21	1.514	0.261	8.800	1.57	0.89	3.12	4.791	0.843	27.222

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

significant individual variable. Students that had a one unit higher level of expectation were 1.163 (95% CI = 1.088, 1.244) times more likely to be a Frequent Binge Drinker versus a Nonbinging Drinker (see Table 82, p. 255). Students that had a greater perception equal to one standard deviation (8.73) were 3.74 times more likely to be Binge Drinkers. Additionally, age was a significant factor, as students that were 1 year older were 1.594 (95% CI = 1.069, 2.376) times more likely to be Frequent Binge Drinkers. Students that were two years older were 2.54 times more likely to be Frequent Binge Drinkers.

The Interaction Model also was significant overall ($\chi^2(5) = 29.83, p < .001$, $R^2_{\text{Cox \& Snell}} = .21$, $R^2_{\text{Nagelkerke}} = .32$) and had a successful prediction rate of 78.4%; however, it did not show a block improvement over the Additive Model ($\chi^2(1) = 1.51, p = .219$). Age (OR = 1.603, 95% CI = 1.074, 2.392) and expectations of tension reduction (OR = 1.176, 95% CI = 1.095, 1.262) remained the only significant individual predictors (see Table 82, p. 255).

Females. The Additive Model with tension reduction expectations was significant as an overall model ($\chi^2(4) = 55.84, p < .001$, $R^2_{\text{Cox \& Snell}} = .33$, $R^2_{\text{Nagelkerke}} = .44$). The model had a successful prediction rate of 73.9%, an increase of 22.5% over not having a model. Expectations of alcohol serving as a tension reducer changed the odds of being a Frequent Binge Drinker versus a Nonbinging Drinker by 1.229 (95% CI = 1.139, 1.325) for a one unit difference in expectations (see Table 82, p. 255). By changing the difference in expectations to a unit equivalent to one standard deviation for expectations (8.81) there is a 6.14 times greater likelihood of being a Frequent Binge Drinker.

Additionally, BMI was a significant contributor changing the likelihood of being a Frequent Binge Drinker (OR = .765, 95% CI = .624, .937).

The Interaction Model also was significant overall ($\chi^2(5) = 57.91, p < .001$, $R^2_{\text{Cox \& Snell}} = .34$, $R^2_{\text{Nagelkerke}} = .46$) and had a successful prediction rate of 75.4%; however, it did not show a block improvement over the Additive Model ($\chi^2(1) = 2.08, p = .150$). Expectations of tension reduction (OR = 1.239, 95% CI = 1.143, 1.343) and BMI (OR = .776, 95% CI = .633, .953) were the only significant individual predictors (see Table 82, p. 255).

Differentiation & Expectations of Alcohol Serving as a Social Lubricant

Males. The Additive Model with social lubrication expectations was significant as an overall model ($\chi^2(4) = 25.63, p < .001$, $R^2_{\text{Cox \& Snell}} = .19$, $R^2_{\text{Nagelkerke}} = .28$). The model had a successful prediction rate of 80%, an increase of 4.8% over not having a model. Expectations of alcohol serving as a social lubricant (OR = 1.182, 95% CI = 1.093, 1.279) and age (OR = 1.601, 95% CI = 1.063, 2.411) were significant individual predictors of Binge Drinking category (see Table 83, p. 258). Students that had a greater expectation of social lubrication equal to one standard deviation (7.89) were 3.74 times more likely to be Frequent Binge Drinkers. Additionally, students that were two years older were 2.57 times more likely to be Frequent Binge Drinkers.

The Interaction Model also was significant overall ($\chi^2(5) = 26.52, p < .001$, $R^2_{\text{Cox \& Snell}} = .19$, $R^2_{\text{Nagelkerke}} = .28$) and had a successful prediction rate of 79.2%; however, it did not show a block improvement over the Additive Model ($\chi^2(1) = .89, p = .345$).

Table 82

Logistic Regression Predicting Students that are Frequent Bingers versus Nonbingers – Expectations of Tension Reduction

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.33	0.38	0.73	0.721	0.341	1.524	-0.12	0.32	0.14	0.887	0.474	1.658
BMI	-0.04	0.06	0.52	0.958	0.853	1.076	-0.13	0.06	4.21*	0.879	0.778	0.994
Age	0.22	0.17	1.64	1.240	0.892	1.722	0.02	0.15	0.01	1.015	0.758	1.359
Additive Model												
DSI-R	0.28	0.42	0.45	1.326	0.584	3.010	0.71	0.42	2.84	2.042	0.890	4.684
BMI	-0.03	0.06	0.21	0.971	0.856	1.101	-0.27	0.10	6.716*	0.765	0.624	0.937
Age	0.47	0.20	5.23*	1.594	1.069	2.376	-0.19	0.20	0.91	0.831	0.567	1.217
Tension Reduction	0.15	0.03	19.60**	1.163	1.088	1.244	0.21	0.04	28.41**	1.229	1.139	1.325
Interaction Model												
DSI-R	0.52	0.47	1.24	1.685	0.674	4.214	0.72	0.43	2.76	2.050	0.879	4.782
BMI	-0.04	0.06	0.30	0.966	0.852	1.094	-0.25	0.10	5.88*	0.776	0.633	0.953
Age	0.47	0.20	5.34*	1.603	1.074	2.392	-0.16	0.20	0.67	0.852	0.582	1.249
Tension Reduction	0.16	0.04	20.00**	1.176	1.095	1.262	0.21	0.04	27.07**	1.239	1.143	1.343
DSI-R X Tension Reduction	0.07	0.05	1.52	1.068	0.962	1.185	-0.08	0.06	1.99	0.925	0.830	1.031

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Expectations for social lubrication (OR = 1.192, 95% CI = 1.099, 1.292) and age (OR = 1.634, 95% CI = 1.080, 2.472) remained the only significant individual variables in predicting Binge Drinkers versus Nonbinging Drinkers (see Table 83, p. 258).

Females. The Additive Model with social lubrication expectations was significant as an overall model ($\chi^2(4) = 27.49, p < .001$, $R^2_{\text{Cox \& Snell}} = .18$, $R^2_{\text{Nagelkerke}} = .24$). The model had a successful prediction rate of 68.1%, an increase of 16.7% over the not having a model. Expectations of alcohol serving as a social lubricant changed the odds of being a Frequent Binge Drinker versus a Nonbinging Drinker by 1.144 (95% CI = 1.074, 1.218) for every one unit change in perceptions (see Table 83, p. 258). Students with a difference in expectations equal to one standard deviation (7.74) were 2.82 times more likely to be a Frequent Binge Drinker. Additionally, BMI was a significant contributor in predicting Frequent Binge Drinkers versus a Nonbinging Drinkers (OR = .855, 95% CI = .731, .999).

The Interaction Model also was significant overall ($\chi^2(5) = 28.19, p < .001$, $R^2_{\text{Cox \& Snell}} = .19$, $R^2_{\text{Nagelkerke}} = .25$) and had a successful prediction rate of 68.8%; however, it did not show a block improvement over the Additive Model ($\chi^2(1) = .70, p = .404$). BMI was no longer a significant individual variable with the addition of the interaction term (see Table 83, p. 258). Expectations for social lubrication was the only significant individual predictor (OR = 1.145, 95% CI = 1.074, 1.221) in predicting Frequent Binge Drinkers versus a Nonbinging Drinkers.

The Comprehensive Model

Males. The Comprehensive Model was significant according to the model chi-square ($\chi^2(13) = 64.24, p < .001$, $R^2_{\text{Cox \& Snell}} = .40$, $R^2_{\text{Nagelkerke}} = .60$). The model had an

88.8% success rate in predicting the correct binge drinking classifications, which was a 13.6% improvement over having no model. Age (OR = 2.431) and perceptions of best friend use (OR = 1.040) were the only individual variables to significantly improve the odds of being classified as a Frequent Binge Drinker versus a Nonbinging Drinker (see Table 84, p. 259).

Females. The Comprehensive Model was significant according to the model chi-square ($\chi^2(13) = 100.54, p < .001, R^2_{\text{Cox \& Snell}} = .52, R^2_{\text{Nagelkerke}} = .69$) and showed a significant improvement over the Basic Model ($\chi^2(10) = 94.73, p < .001$). The model illustrated an 85.5% success rate in predicting the correct drinking classifications, an improvement of 26.8% over the Basic Model. Perceptions of best friend use (OR = 1.050) and expectations of tension reduction (OR = 1.251) were the only individual variables to significantly improve the odds of being classified as a Frequent Binge Drinker versus a Nonbinging Drinker (see Table 84, p. 259).

Frequent Binge Drinkers versus Occasional Binge Drinkers

Differentiation and binge drinking

Males. The Basic Model was not significant according to the model chi-square ($\chi^2(3) = 6.83, p = .08$, see Table 85, p. 261).

Females. The Basic Model was not significant according to the model chi-square ($\chi^2(3) = 4.588, p = .205$). The model had a 52.7% success rate in predicting the correct drinking classifications which was 1.3% worse than having no model. Additionally, there were no significant individual predictors for the sample, although BMI approached significance ($p = .054$) (see Table 85, p. 261).

Table 83

Logistic Regression Predicting Students that are Frequent Bingers versus Nonbingers – Expectations of Social Lubrication

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.33	0.38	0.73	0.721	0.341	1.524	-0.12	0.32	0.14	0.887	0.474	1.658
BMI	-0.04	0.06	0.52	0.958	0.853	1.076	-0.13	0.06	4.21*	0.879	0.778	0.994
Age	0.22	0.17	1.64	1.240	0.892	1.722	0.02	0.15	0.01	1.015	0.758	1.359
Additive Model												
DSI-R	0.16	0.41	0.14	1.167	0.520	2.617	0.51	0.38	1.82	1.663	0.794	3.484
BMI	-0.02	0.06	0.14	0.977	0.865	1.104	-0.16	0.08	3.897*	0.855	0.731	0.999
Age	0.47	0.21	5.07*	1.601	1.063	2.411	-0.01	0.16	0.01	0.988	0.716	1.361
Social Lubrication	0.17	0.04	17.55**	1.182	1.093	1.279	0.13	0.03	17.41**	1.144	1.074	1.218
Interaction Model												
DSI-R	0.36	0.47	0.58	1.431	0.571	3.588	0.47	0.38	1.48	1.592	0.753	3.366
BMI	-0.03	0.06	0.20	0.972	0.860	1.099	-0.15	0.08	3.61	0.859	0.735	1.005
Age	0.49	0.21	5.41*	1.634	1.080	2.472	-0.01	0.16	0.00	0.992	0.719	1.368
Social Lubrication	0.18	0.04	18.16**	1.192	1.099	1.292	0.14	0.03	17.09**	1.145	1.074	1.221
DSI-R X Social Lubrication	0.06	0.06	0.90	1.056	0.948	1.183	-0.04	0.05	0.68	0.959	0.869	1.059

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 84

Logistic Regression Predicting Students that are Frequent Bingers versus Nonbingers – Comprehensive Model

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
DSI-R	0.68	0.83	0.68	1.977	0.391	9.990	-0.15	0.66	0.05	0.860	0.237	3.124
BMI	-0.10	0.10	0.94	0.909	0.749	1.103	-0.21	0.14	2.27	0.810	0.615	1.066
Age	0.89	0.33	7.32**	2.431	1.277	4.627	-0.17	0.26	0.43	0.843	0.507	1.403
MSU Perceptions	0.01	0.01	0.47	1.008	0.985	1.032	-0.01	0.01	0.35	0.994	0.975	1.014
DSI-R X MSU Perceptions	0.00	0.02	0.02	1.003	0.962	1.045	-0.03	0.02	2.87	0.969	0.934	1.005
Best Friend	0.04	0.01	11.20**	1.040	1.016	1.063	0.05	0.01	15.92**	1.050	1.025	1.076
DSI-R X Best Friend	0.02	0.02	1.74	1.024	0.989	1.060	-0.02	0.02	0.82	0.980	0.939	1.024
COA	-1.40	0.91	2.34	0.248	0.042	1.480	-0.39	0.84	0.22	0.674	0.130	3.499
DSI-R X COA	1.52	1.35	1.27	4.559	0.325	63.993	2.03	1.83	1.23	7.595	0.212	272.667
Tension Reduction	0.09	0.06	2.46	1.092	0.978	1.220	0.22	0.06	13.68**	1.251	1.111	1.408
DSI-R X Tension Reduction	-0.02	0.11	0.03	0.979	0.784	1.224	-0.12	0.11	1.14	0.888	0.715	1.104
Social Lubrication	0.11	0.08	2.07	1.114	0.962	1.292	-0.04	0.06	0.35	0.964	0.855	1.088
DSI-R X Social Lubrication	0.10	0.13	0.61	1.102	0.862	1.409	0.10	0.12	0.64	1.104	0.866	1.407

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Four- factors of the DSI-R with binge drinking

Males. The overall four-factor model was significant ($\chi^2(6) = 15.82, p = .015$, $R^2_{\text{Cox \& Snell}} = .10$, $R^2_{\text{Nagelkerke}} = .13$). The model had the same successful prediction rate of 63%, a 2% improvement over having no model. The "I" Position subscale was a significant predictor of binge drinking categories. Students that had a one unit higher "I" Position score were .488 (95% CI = .268, .889) times more likely to be Frequent Binge Drinkers versus Occasional Binge Drinkers (see Table 86, p. 261). Additionally, Emotional Cut-off subscale approached significance ($p = .056$).

Females. As was the case in the Basic Model, the overall four-factor model failed to reach a level of significance ($\chi^2(6) = 9.05, p = .171$, see Table 86, p. 261).

Differentiation & perception of average MSU student's alcohol use

Males. The Additive Model was significant as an overall model ($\chi^2(4) = 11.031, p = .026$, $R^2_{\text{Cox \& Snell}} = .069$, $R^2_{\text{Nagelkerke}} = .094$). The model had a successful prediction rate of 62.3%, an improvement of 1.3% over having no model. Perceptions of MSU student use was the only significant individual predictor. Although perception of MSU student use approached significance ($p = .053$), none of the individual predictors significantly predicted being more likely to be Frequent Binge Drinkers than Nonbinging Drinkers (see Table 87, p. 263).

Table 85

Logistic Regression Predicting Students that are Frequent Bingers versus Occasional Bingers – Differentiation

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
DSI-R	-0.60	0.33	3.38	0.547	0.287	1.040	0.09	0.30	0.10	1.098	0.609	1.981
BMI	-0.04	0.05	0.67	0.961	0.873	1.058	-0.11	0.06	3.71	0.892	0.794	1.002
Age	0.24	0.14	2.95	1.273	0.966	1.676	-0.06	0.14	0.16	0.945	0.716	1.247

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 86

Logistic Regression Predicting Students that are Frequent Bingers versus Occasional Bingers – Four Factors

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Emotional Reactivity	0.42	0.31	1.91	1.524	0.839	2.769	-0.03	0.25	0.02	0.967	0.595	1.571
"I" Position	-0.72	0.31	5.496*	0.488	0.268	0.889	0.63	0.33	3.73	1.876	0.991	3.551
Emotional Cutoff	-0.50	0.26	3.67	0.606	0.363	1.012	-0.13	0.24	0.28	0.880	0.547	1.415
Fusion with Others	-0.14	0.41	0.12	0.868	0.389	1.937	-0.39	0.36	1.17	0.675	0.332	1.375
BMI	-0.05	0.05	0.96	0.952	0.862	1.051	-0.11	0.06	3.46	0.892	0.791	1.006
Age	0.20	0.15	1.91	1.222	0.920	1.623	-0.08	0.14	0.30	0.924	0.697	1.226

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

The Interaction Model was significant as an overall model ($\chi^2(5) = 14.96, p = .011$, $R^2_{\text{Cox \& Snell}} = .09$, $R^2_{\text{Nagelkerke}} = .13$), had a successful prediction rate of 64.9%, and showed a significant block improvement over the Additive Model ($\chi^2(1) = 3.93, p = .047$). None of the individual predictors significantly predicted binge drinking category, although the DSI-R ($p = .051$), perceptions of MSU use ($p = .054$), and the interaction variable (p=.061) each approached significance (see Table 87, p. 263).

Females. The Additive Model with perceptions of the average MSU student's alcohol consumption was not significant as an overall model ($\chi^2(4) = 4.61, p = .330$, see Table 87, p. 263). The Interaction Model also was not significant as an overall model ($\chi^2(5) = 6.280, p = .280$).

Differentiation & Perception of Best Friend at MSU's Alcohol Use

Males. The Additive Model with perceptions of their best friend at MSU's alcohol consumption was significant ($\chi^2(4) = 33.27, p < .001$, $R^2_{\text{Cox \& Snell}} = .19$, $R^2_{\text{Nagelkerke}} = .26$) and had a successful prediction rate of 71.4%, which was 10.4% greater than having no model. Students that had one unit higher in perceptions of best friend use were 1.018 (95% CI = 1.010, 1.027) times more likely to be a Frequent Binge Drinker versus an Occasional Binge Drinker (see Table 88, p. 265). Students that had a higher level of perception of best friend use equivalent to one standard deviation (72.43) were 3.68 times more likely to be a Frequent Binge Drinker.

Table 87

Logistic Regression Predicting Students that are Frequent Bingers versus Occasional Bingers – Perceptions of MSU Student Use

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.60	0.33	3.38	0.547	0.287	1.040	0.09	0.30	0.10	1.098	0.609	1.981
BMI	-0.04	0.05	0.67	0.961	0.873	1.058	-0.11	0.06	3.71	0.892	0.794	1.002
Age	0.24	0.14	2.95	1.273	0.966	1.676	-0.06	0.14	0.16	0.945	0.716	1.247
Additive Model												
DSI-R	-0.59	0.33	3.13	0.555	0.289	1.066	0.10	0.30	0.11	1.104	0.609	2.001
BMI	-0.05	0.05	1.10	0.948	0.857	1.048	-0.12	0.06	3.71	0.892	0.794	1.002
Age	0.24	0.14	2.89	1.277	0.963	1.692	-0.05	0.14	0.14	0.947	0.716	1.253
MSU Use	0.01	0.01	3.76	1.010	1.000	1.020	0.00	0.00	0.02	1.001	0.992	1.009
Interaction Model												
DSI-R	-0.68	0.35	3.81	0.509	0.258	1.002	0.14	0.31	0.20	1.149	0.628	2.103
BMI	-0.07	0.05	1.70	0.933	0.840	1.036	-0.11	0.06	3.36	0.895	0.796	1.008
Age	0.26	0.15	3.03	1.290	0.968	1.719	-0.03	0.14	0.05	0.969	0.731	1.287
MSU Use	0.01	0.01	3.71	1.011	1.000	1.022	0.00	0.00	0.00	1.000	0.991	1.009
DSI-R X MSU Use	-0.02	0.01	3.52	0.980	0.959	1.001	-0.01	0.01	1.61	0.989	0.972	1.006

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

The Interaction Model also was significant ($\chi^2(5) = 33.87, p < .001$, $R^2_{\text{Cox \& Snell}} = .20$, $R^2_{\text{Nagelkerke}} = .27$) and had a successful prediction rate of 70.1%, but did not show a block improvement over the Additive Model ($\chi^2(1) = .60, p = .438$). The only significant individual predictor in the model was perception of best friend use (OR = 1.019, 95% CI = 1.010, 1.028, see Table 88, p. 265).

Females. The Additive Model with perceptions of their best friend at MSU's alcohol consumption was significant ($\chi^2(4) = 22.36, p < .001$, $R^2_{\text{Cox \& Snell}} = .14$, $R^2_{\text{Nagelkerke}} = .19$) and had a successful prediction rate of 64.4%, an increase of 11.7% over the Basic Model. Students that had one unit higher in perceptions of best friend use were 1.018 (95% CI = 1.009, 1.027) times more likely to be Frequent versus Occasional Binge Drinkers (see Table 88, p. 265). Students that had a higher level of perception of best friend use equivalent to one standard deviation (41.48) were 2.11 times more likely to be a Frequent versus Occasional Binge Drinkers. Additionally, BMI was a significant contributor in predicting drinking categories, as subjects BMI values increased they were less likely to be Frequent Drinkers (OR = .866, 95% CI = .762, .978).

The Interaction Model also was significant ($\chi^2(5) = 22.69, p < .001$, $R^2_{\text{Cox \& Snell}} = .14$, $R^2_{\text{Nagelkerke}} = .19$) and had a successful prediction rate of 63.7%, but did not show a block improvement over the Additive Model ($\chi^2(1) = .33, p = .565$). The only significant individual predictors in the model remained perception of best friend use (OR = 1.019, 95% CI = 1.009, 1.029) and BMI (.866, 95% CI = .762, .983, see Table 88, p. 265).

Table 88

Logistic Regression Predicting Students that Are Frequent Bingers versus Occasional Bingers – Perceptions of Best Friend's Use

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.60	0.33	3.38	0.547	0.287	1.040	0.09	0.30	0.10	1.098	0.609	1.981
BMI	-0.04	0.05	0.67	0.961	0.873	1.058	-0.11	0.06	3.71	0.892	0.794	1.002
Age	0.24	0.14	2.95	1.273	0.966	1.676	-0.06	0.14	0.16	0.945	0.716	1.247
Additive Model												
DSI-R	-0.52	0.35	2.16	0.595	0.297	1.190	0.26	0.33	0.62	1.292	0.683	2.445
BMI	-0.09	0.06	2.00	0.915	0.810	1.035	-0.15	0.07	5.26*	0.861	0.758	0.978
Age	0.28	0.16	2.98	1.322	0.963	1.814	-0.07	0.15	0.23	0.930	0.693	1.249
Best Friend's Use	0.02	0.00	17.05**	1.018	1.010	1.027	0.02	0.01	14.36**	1.018	1.009	1.027
Interaction Model												
DSI-R	-0.44	0.37	1.46	0.642	0.312	1.318	0.21	0.34	0.40	1.235	0.640	2.385
BMI	-0.08	0.06	1.66	0.922	0.815	1.043	-0.14	0.07	4.91*	0.866	0.762	0.983
Age	0.28	0.16	2.94	1.319	0.961	1.810	-0.08	0.15	0.26	0.926	0.689	1.246
Best Friend's Use	0.02	0.01	17.41**	1.019	1.010	1.028	0.02	0.01	13.46**	1.019	1.009	1.029
DSI-R X Best Friend's Use	0.01	0.01	0.60	1.007	0.990	1.023	0.00	0.01	0.32	1.004	0.989	1.020

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Differentiation & COA Status

Males. The Additive Model with COA status failed to reach a level of significance ($\chi^2(4) = 7.30, p = .121$, see Table 89, p. 268). The Interaction Model also failed to achieve a significance as an overall model ($\chi^2(5) = 7.309, p = .199$).

Females. The Additive Model with COA status failed to reach a level of significance ($\chi^2(4) = 5.65, p = .227$, see Table 89, p. 268). The Interaction Model was significant as an overall model ($\chi^2(5) = 11.19, p = .05, R^2_{\text{Cox \& Snell}} = .07, R^2_{\text{Nagelkerke}} = .10$). The model had a successful prediction rate of 52.7%, which was an improvement of 1.3% over having no model. Students with a one unit higher interaction value were 6.773 (95% CI = 1.209, 37.949) times more likely to be a Frequent Binge Drinker than an Occasional Binge Drinker (see Table 89, p. 268, see Figure 7, p. 74 for interaction effect).

Differentiation & Expectations of Alcohol Serving as a Tension Reducer

Males. The Additive Model with tension reduction expectations was significant as an overall model ($\chi^2(4) = 15.09, p = .005, R^2_{\text{Cox \& Snell}} = .09, R^2_{\text{Nagelkerke}} = .13$). The model had a successful prediction rate of 62.3%, which was a 1.3% improvement over having no model. Expectation of alcohol serving as a tension reducer was the only significant individual variable. Students that had a one unit higher level of expectation were 1.073 (95% CI = 1.021, 1.127) times more likely to be a Frequent versus an Occasional Binge Drinkers (see Table 90, p. 269). Students that had a greater perception equal to one standard deviation (8.73) were 1.84 times more likely to be Frequent Binge Drinkers. Additionally, age was a significant factor, as students that were 1 year older were 1.338

(95% CI = 1.001, 1.787) times more likely to be Frequent Binge Drinkers. Students that were two years older were 1.79 times more likely to be Frequent Binge Drinkers.

The Interaction Model also was significant overall ($\chi^2(5) = 16.62, p = .005$, $R^2_{\text{Cox \& Snell}} = .10$, $R^2_{\text{Nagelkerke}} = .14$) and had a successful prediction rate of 61.7%; however, it did not show a block improvement over the Additive Model ($\chi^2(1) = 1.54, p = .215$). Age (OR = 1.377, 95% CI = 1.024, 1.852) and expectations of tension reduction (OR = 1.074, 95% CI = 1.022, 1.128) remained the only significant individual predictors (see Table 90, p. 269).

Females. The Additive Model with tension reduction expectations was significant as an overall model ($\chi^2(4) = 15.89, p = .003$, $R^2_{\text{Cox \& Snell}} = .10$, $R^2_{\text{Nagelkerke}} = .14$). The model had a successful prediction rate of 57.5%, an increase of 6.1% over not having a model. Expectations of alcohol serving as a tension reducer changed the odds of being a Frequent Binge Drinker versus an Occasional Binge Drinker by 1.096 (95% CI = 1.035, 1.160) for a one unit difference in expectations (see Table 90, p. 269). By changing the difference in expectations to a unit equivalent to one standard deviation for expectations (8.81) there is a 2.23 times greater likelihood of being a Frequent Binge Drinker.

The Interaction Model also was significant overall ($\chi^2(5) = 15.97, p = .007$, $R^2_{\text{Cox \& Snell}} = .19$, $R^2_{\text{Nagelkerke}} = .27$) and had a successful prediction rate of 59.6%; however, it did not show a block improvement over the Additive Model ($\chi^2(1) = .08, p = .778$). Expectations of tension reduction remained the only significant individual predictor (OR = 1.095, 95% CI = 1.035, 1.160, see Table 90, p. 269).

Table 89

Logistic Regression Predicting Students that Are Frequent Bingers versus Occasional Bingers – COA Status

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.60	0.33	3.38	0.547	0.287	1.040	0.09	0.30	0.10	1.098	0.609	1.981
BMI	-0.04	0.05	0.67	0.961	0.873	1.058	-0.11	0.06	3.71	0.892	0.794	1.002
Age	0.24	0.14	2.95	1.273	0.966	1.676	-0.06	0.14	0.16	0.945	0.716	1.247
Additive Model												
DSI-R	-0.60	0.33	3.32	0.551	0.290	1.047	0.08	0.30	0.08	1.087	0.601	1.966
BMI	-0.04	0.05	0.56	0.964	0.875	1.062	-0.11	0.06	3.26	0.897	0.798	1.009
Age	0.24	0.14	2.91	1.272	0.965	1.678	-0.07	0.14	0.24	0.933	0.705	1.234
COA	-0.31	0.46	0.46	0.733	0.300	1.792	0.43	0.42	1.05	1.543	0.673	3.542
Interaction Model												
DSI-R	-0.61	0.37	2.79	0.544	0.266	1.112	-0.27	0.34	0.61	0.767	0.395	1.489
BMI	-0.04	0.05	0.56	0.964	0.875	1.062	-0.12	0.06	3.75	0.887	0.786	1.001
Age	0.24	0.14	2.92	1.273	0.965	1.678	-0.08	0.15	0.28	0.926	0.697	1.231
COA	-0.31	0.46	0.47	0.732	0.300	1.788	0.35	0.46	0.58	1.413	0.579	3.447
DSI-R X COA	0.07	0.83	0.01	1.068	0.210	5.432	1.91	0.88	4.73*	6.773	1.209	37.949

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 90

Logistic Regression Predicting Students that Are Frequent Bingers versus Occasional Bingers – Expectations of Tension Reduction

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.60	0.33	3.38	0.547	0.287	1.040	0.09	0.30	0.10	1.098	0.609	1.981
BMI	-0.04	0.05	0.67	0.961	0.873	1.058	-0.11	0.06	3.71	0.892	0.794	1.002
Age	0.24	0.14	2.95	1.273	0.966	1.676	-0.06	0.14	0.16	0.945	0.716	1.247
Additive Model												
DSI-R	-0.32	0.35	0.85	0.725	0.366	1.436	0.56	0.35	2.57	1.757	0.882	3.500
BMI	-0.04	0.05	0.44	0.966	0.873	1.069	-0.11	0.06	2.87	0.900	0.797	1.017
Age	0.29	0.15	3.87*	1.338	1.001	1.787	-0.05	0.15	0.10	0.955	0.715	1.275
Tension Reduction	0.07	0.03	7.77**	1.073	1.021	1.127	0.09	0.03	9.85**	1.096	1.035	1.160
Interaction Model												
DSI-R	-0.35	0.35	0.97	0.706	.354	1.410	0.60	0.38	2.54	1.821	0.872	3.803
BMI	-0.04	0.05	0.63	0.960	0.868	1.062	-0.10	0.06	2.64	0.903	0.798	1.021
Age	0.32	0.15	4.48*	1.377	1.024	1.852	-0.04	0.15	0.07	0.962	0.717	1.291
Tension Reduction	0.07	0.03	7.89**	1.074	1.022	1.128	0.09	0.03	9.76**	1.095	1.035	1.160
DSI-R X Tension Reduction	-0.06	0.05	1.47	0.946	0.866	1.034	-0.01	0.05	0.08	0.987	0.901	1.082

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Differentiation & Expectations of Alcohol Serving as a Social Lubricant

Males. The Additive Model with social lubrication expectations was significant as an overall model ($\chi^2(4) = 9.53, p = .049, R^2_{\text{Cox \& Snell}} = .06, R^2_{\text{Nagelkerke}} = .08$). The model had a successful prediction rate of 60.4%, an increase of .6% over not having a model. Although the model was significant, none of the individual variables were significant in the prediction of binge drinking category (see Table 91, p. 271). The Interaction Model failed to reach a level of significance ($\chi^2(5) = 9.54, p = .089$, see Table 91, p. 271).

Females. The Additive Model with social lubrication expectations was significant as an overall model ($\chi^2(4) = 12.18, p = .016, R^2_{\text{Cox \& Snell}} = .08, R^2_{\text{Nagelkerke}} = .11$). The model had a successful prediction rate of 59.6%, an increase of 8.2% over not having a model. Expectations of alcohol serving as a social lubricant changed the odds of being a Frequent Binge Drinker versus an Occasional Binge Drinker by 1.078 (95% CI = 1.020, 1.140) for every one unit change in perceptions (see Table 91, p. 271). Students with a difference in expectations equal to one standard deviation (7.74) were 1.79 times more likely to be a Frequent Binge Drinker.

The Interaction Model also was significant overall ($\chi^2(5) = 12.18, p = .032, R^2_{\text{Cox \& Snell}} = .08, R^2_{\text{Nagelkerke}} = .11$) and had a successful prediction rate of 71.8%; however, it did not show a block improvement over the Additive Model ($\chi^2(1) = .00, p = .982$). Expectations for social lubrication remained the only significant individual predictor (OR = 1.078, 95% CI = 1.020, 1.140) in predicting Frequent versus Occasional Binge Drinkers (see Table 91, p. 271).

Table 91

Logistic Regression Predicting Students that Are Frequent Bingers versus Occasional Bingers – Expectations of Social Lubrication

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
Basic Model												
DSI-R	-0.60	0.33	3.38	0.547	0.287	1.040	0.09	0.30	0.10	1.098	0.609	1.981
BMI	-0.04	0.05	0.67	0.961	0.873	1.058	-0.11	0.06	3.71	0.892	0.794	1.002
Age	0.24	0.14	2.95	1.273	0.966	1.676	-0.06	0.14	0.16	0.945	0.716	1.247
Additive Model												
DSI-R	-0.40	0.35	1.34	0.668	0.337	1.324	0.48	0.34	1.92	1.610	0.821	3.160
BMI	-0.03	0.05	0.32	0.972	0.880	1.073	-0.12	0.06	3.45	0.891	0.789	1.006
Age	0.27	0.14	3.45	1.307	0.985	1.735	-0.03	0.15	0.04	0.972	0.730	1.295
Social Lubrication	0.04	0.03	2.64	1.045	0.991	1.101	0.08	0.03	7.02**	1.078	1.020	1.140
Interaction Model												
DSI-R	-0.41	0.35	1.34	0.667	0.336	1.324	0.48	0.34	1.91	1.610	0.819	3.162
BMI	-0.03	0.05	0.32	0.972	0.880	1.073	-0.12	0.06	3.37	0.891	0.787	1.008
Age	0.27	0.15	3.41	1.306	0.984	1.734	-0.03	0.15	0.04	0.972	0.727	1.298
Social Lubrication	0.04	0.03	2.63	1.045	0.991	1.102	0.08	0.03	7.021*	1.078	1.020	1.140
DSI-R X Social Lubrication	0.00	0.05	0.01	1.004	0.917	1.100	0.00	0.04	0.00	1.001	0.918	1.091

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

The Comprehensive Model

Males. The Comprehensive Model was significant according to the model chi-square ($\chi^2(13) = 46.11, p < .001, R^2_{\text{Cox \& Snell}} = .26, R^2_{\text{Nagelkerke}} = .35$). The model illustrated a 73.4% success rate in predicting the correct drinking classifications, a 12.4% improvement over having no model. Age (OR = 1.472), perceptions of best friend use (OR = 1.018), and the differentiation X expectations of tension reduction interaction (OR = .826, see Figure 8, p. 77, for interaction) were the only individual variables to significantly improve the odds of being classified as a Frequent Binge Drinker versus an Occasional Binge Drinker (see Table 92, p. 273).

Females. The Comprehensive Model was significant according to the model chi-square ($\chi^2(13) = 39.46, p < .001, R^2_{\text{Cox \& Snell}} = .24, R^2_{\text{Nagelkerke}} = .32$) and showed a significant improvement over the Basic Model ($\chi^2(10) = 34.88, p < .001$). The model had a 69.2% success rate in predicting the correct drinking classifications, an improvement of 16.5% over the Basic Model. Perceptions of best friend use (OR = 1.019) and expectations of tension reduction (OR = 1.081) were the only individual variables to significantly improve the odds of being classified as a Frequent versus an Occasional Binge Drinker (see Table 92, p. 273).

Table 92

Logistic Regression Predicting Students that are Frequent Bingers versus Occasional Bingers – Comprehensive Model

	Males						Females					
	b	SE	Wald	OR	95% CI		*b*	SE	Wald	OR	95% CI	
DSI-R	-0.56	0.47	1.40	0.572	0.226	1.443	0.58	0.51	1.27	1.778	0.654	4.837
BMI	-0.07	0.07	1.25	0.930	0.818	1.057	-0.14	0.07	3.34	0.874	0.756	1.010
Age	0.39	0.18	4.78*	1.472	1.041	2.083	-0.02	0.17	0.01	0.985	0.704	1.379
MSU Perceptions	0.00	0.01	0.31	1.003	0.991	1.016	0.00	0.01	0.42	0.996	0.986	1.007
DSI-R X MSU Perceptions	-0.02	0.01	2.99	0.978	0.953	1.003	-0.01	0.01	0.53	0.992	0.969	1.014
Best Friend	0.02	0.01	12.59**	1.018	1.008	1.028	0.02	0.01	10.65**	1.019	1.008	1.031
DSI-R X Best Friend	0.02	0.01	3.12	1.018	0.998	1.039	0.00	0.01	0.11	1.003	0.984	1.022
COA	-0.45	0.52	0.75	0.637	0.229	1.770	-0.12	0.51	0.05	0.891	0.326	2.436
DSI-R X COA	0.29	1.08	0.07	1.338	0.160	11.173	1.66	1.02	2.63	5.235	0.707	38.756
Tension Reduction	0.07	0.04	2.65	1.070	0.986	1.161	0.08	0.04	4.42*	1.081	1.005	1.163
DSI-R X Tension Reduction	-0.19	0.09	4.59*	0.826	0.693	0.984	-0.05	0.08	0.35	0.956	0.822	1.112
Social Lubrication	-0.02	0.04	0.27	0.978	0.900	1.063	0.04	0.04	1.13	1.039	0.968	1.116
DSI-R X Social Lubrication	0.15	0.09	2.85	1.159	0.977	1.375	0.03	0.07	0.15	1.029	0.891	1.188

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.