Coping Style and Attributional Style as Mediators of Alcohol Use and Depression Among Young Adults

by

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A thesis submitted in conformity with the requirements for the degree of Doctor of Philosophy
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Abstract

The phenomenon of gender differences in alcohol consumption and depressive symptomatology has been well documented. Depression and alcohol consumption pose significant problems for society in the form of psychological, emotional, and financial costs. Nonetheless, such pathology is common in North American society. The present study approaches the etiology of depressive symptoms and alcohol consumption from a cognitive-behavioral perspective. Attributional style and negative life events were hypothesized predictors of depression and alcohol consumption. Coping styles were hypothesized to predict the specific outcome; rumination was hypothesized to be associated with depression, and distraction was hypothesized to be associated with alcohol consumption. A total of 108 (51 males, 57 females) undergraduate university students, ages 18-21, completed the Beck Depression Inventory, the Khavari Alcohol Test, the Attributional Style Questionnaire, the Response Style Questionnaire, and the Adolescent Perceived Events Scale. Descriptive analyses of the data indicated that the sample, as a
whole, was characterized by mild levels of depressive symptoms, similar to comparable samples. In contrast, there were relatively low levels of alcohol consumption. Correlation analyses showed that higher levels of depressive symptoms were associated with negative events and rumination among both males and females. Among females, pessimism and wine consumption were also correlated with depression. Importantly, the gender difference in depression was not significant. With respect to alcohol, males consumed significantly more than females. Distraction was found to be negatively associated with alcohol consumption among women. Possible clinical implications are discussed, including the potential use of the study measures as screens for risk-profiling. Future directions are also discussed, and include replication of the present findings in a large, multi-cultural sample.
Dedication

To my family, who provide me with purpose.
Acknowledgements

From conceptualization through completion, this work has benefited from the contributions of a number of individuals with whom I have had the good fortune of interacting. First, there are a number of individuals who have influenced my thinking, ambition, and perspective. Dr. Gregory Buchanan opened the door to psychological research when I was an undergraduate at the University of Pennsylvania. Dr. Martin Seligman has been a mentor and role model, and it was in his research laboratory that I caught the proverbial research bug. His work, along with that of his protégé, Susan Nolen-Hoeksema, provides much of the rationale on which this study is based.

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Introduction

Depression and alcoholism are two conditions that have a pervasive and deleterious effect on society. The emotional, psychological, and financial costs are great, both for society at large and for the affected individual and his/her relations.

Young adults are a critical population for the study of both depressive symptoms and alcohol consumption for a number of reasons. The young adult years bring unfamiliar issues and are often associated with disrupted dynamics with family members, peers, and significant others (Stark, Spirito, & Williams, 1989). Young adulthood is a critical time during which the individual’s coping style and attributional style matures, and it is during this time that gender differences in these cognitive styles, as well as in depression, become manifest (Nolen-Hoeksema, 1987, 1990; Butler & Nolen-Hoeksema, 1994).

When an individual deals with stress, he/she can cope in a variety of ways including active problem solving, distraction, and rumination (Just & Alloy, 1997). The question arises as to how it is that certain coping styles become utilized preferentially over others. A further question arises as to the relative sequelae of one coping style as compared to another. For example, epidemiological statistics from a Statistics Canada longitudinal study of a nationally representative sample indicate that the prevalence of depression among women is significantly higher than among men; this holds true for young adults as well as for all other age groups (Patten, 2000). Conversely, men partake in substances such as alcohol significantly more than women (Carney, Armeli, Tennen, Affleck, & O’Neil, 2000). Clearly there are a variety of mechanisms by which the above-cited differences can emerge. Perhaps women become depressed because they often have the added responsibility of home-making in addition to holding a job. Perhaps men drink because they are socially expected to do so. On the other hand, the possibility exists that boys learn to cope with stress in ways that lead to alcohol abuse in later years, namely distraction, and girls learn to cope in ways that predispose them to depression, namely rumination. To date,
only the association between rumination, depression, and female gender has been elaborated (e.g. Nolen-Hoeksema, 1987, 1990). Distraction, as characterized in Nolen-Hoeksema's response styles theory (Nolen-Hoeksema, 1991) has not yet been empirically associated with alcohol consumption or male gender.

Just as coping styles play a role in how individuals respond to their environment, so does attributional style reflect individual differences in the perception of negative events. Given an identical event, individuals with different attributional styles will give different explanations for the causes of such events. Differences in attributional styles have been used to explain why some people experience depressed mood while others do not. In addition, although less prevalent in the literature, attributional style has been studied as a predictor of alcohol consumption (e.g. Dowd, Lawson, & Petosa, 1986; Goldstein, Abela, Buchanan, & Seligman, 2000). In addition to the direct relationship between attributional style and depression or alcohol consumption, it has been suggested that attributional style may mediate between a negative life event and the utilization of a coping behavior (Nolen-Hoeksema, 1991).

When an individual possesses a depressogenic attributional style, also known as pessimism, he/she is predisposed to symptoms of learned helplessness (Abramson, Seligman, & Teasdale, 1978). The passivity experienced by such individuals, as well as the belief that their responses to setbacks do not effect change, result in higher levels of depression and alcohol consumption when compared to their more optimistic peers (Goldstein et al., 2000). The reformulated learned helplessness theory is represented in this study by the inclusion of attributional style as a moderator. Individuals who experience cognitions consistent with learned helplessness (e.g. "I can’t do anything to improve my grades") are more likely to also display less effort directed at changing the situation (i.e., not studying). The inclusion of this cognitive-behavioral model of motivation in the present study is highly relevant to a discussion of coping styles. A thought such as "I’ll never be able to solve this problem--no matter what I do!" suggests that a maladaptive coping style is
likely. Hence, attributional style is included among the measures in the present study since it is a well-documented predictor of depression, alcohol consumption, and coping style (Nolen-Hoeksema, 1991; Bruder-Mattson & Hovanitz, 1990).

This study seeks to address the following questions: Do male young adults actually report different coping mechanisms than females? Further, does the information gathered in the present study provide support for gender differences in alcohol consumption and depression in young adults? How is attributional style related to coping style? Finally, are specific coping strategies associated with specific maladaptive outcomes?

While genetic and biological factors are prominent in both the depression and alcohol consumption literature, the discussion of these perspectives is beyond the scope of the present study.

**Literature Review**

The following sections will review the literature that relates to both the predictor variables and outcome variables utilized in the present study. In some cases, by necessity of having to discuss certain variables before others, terminology will be utilized, such as “coping style” in sections preceding those in which it is discussed in depth. The order in which the sections are presented below is determined by the theoretical relationship among these variables. Depression is presented first because it is one of the two primary outcomes of interest in the present study, and because it has been the subject of numerous studies that include attributional styles, response styles, and negative events as predictor variables. Next, alcohol consumption is discussed as it is the second outcome of interest in the present study. The remainder of the variables are presented in the order in which they are hypothesized to influence the above outcomes. Stressful events are considered, in this study, to be most distally associated with the outcome variables. In other words, stressful events are thought to precede the utilization of attributional style. The individual
experiences the event and then makes an attribution as to its cause. Finally, coping styles are discussed as these are considered to be proximally associated with the outcome variables. Coping is considered here to be the final step in the chain of events leading to the either depressive symptoms or alcohol use. Further elaboration of these hypothesized associations among the variables can be found below under the heading “Path Model.”

**Depression**

Overall, between 21-32% of adolescents report mild to severe symptoms of depression (Shochet & Dadds, 1997). However, there seems to be a developmental skewness in North American populations between childhood and adolescence. Although the rate of depression amongst boys and girls is comparable, as girls enter adolescence and adulthood they exhibit increasing rates of depression as compared to their male counterparts. The most recent data on a Canadian sample indicates that the prevalence of depression is 5.2% among male young adults, and 9.6% among female young adults (Patten, 2000). This is entirely consistent with the generally accepted 2:1 gender difference in depression. Surprisingly, the only studies finding a sex difference in childhood depression have found a greater prevalence among boys (e.g., Pearce, 1977; Rutter, 1986). Marked sex differences in levels of depression appear by early adolescence (Kandel & Davies, 1982). According to Nolen-Hoeksema (1987), the gender difference in depression that emerges in adolescence is not explained by response bias, greater openness to acknowledge psychological difficulties, or other attributes apart from actual depression. Nolen-Hoeksema (1987) reviewed the literature on depression and found that undergraduate university students comprised one group in which the gender difference in depression is not pronounced. She contended that depression may have an earlier onset in males, but the rate of depression for males declines after the early twenties while the rate for women increases at the same time.
There are a number of theories that seek to explain the gender difference in depression during adolescence. First, Hill and Lynch (1983) describe the theory of gender intensification. According to this theory, pubertal change stimulates increased focus by both genders on the significance of their gender, which is hypothesized to lead them to adopt stereotypical traits. It has been suggested that there is a significant relationship between masculine identity and depression. Specifically, depression is associated with self-reported lack of masculine characteristics rather than the presence of feminine characteristics (Nezu & Nezu, 1987; Craighead & Green, 1989; Kennedy, 1989).

Potentially linked to this finding is the fact that early-developing girls have more problems with body image and self-esteem relative to on-time or later developing girls (Tobin-Richards et al., 1983). Such girls may simply have more time to develop stereotypical traits—including ruminative coping. In addition, so-called "early bloomers" may experience greater scrutiny (both self- and other-derived) as a result of the salience of their physical changes. Distortion of body image has been found to characterize depressed females more than depressed males among both adolescents (Hammen & Padesky, 1977; Baron & Joly, 1988) and adults (Vredenberg et al., 1986).

A second theory relating to the gender difference in depression among adolescents relates to stressful life events. On the whole, young adolescent girls (ages 12-14) report more negative daily events than boys (Compas, 1987; Garmezy & Rutter, 1983). Compas (1987) writes: "Although the pattern of gender differences does not appear to be strong among children and adolescents, it has been girls who have shown the most negative reactions to life events in almost all the studies that have found significant gender differences in such reactions" (p. 252). In a longitudinal study, Petersen, Sarigiani, and Kennedy (1991) found that girls showed significantly more depressed affect and poorer emotional tone than boys by 17 years; this difference emerges around 13 years and then increases. They also report that the long-term negative effects of early pubertal timing are shown only for girls.
The third theory that has been put forth to explain the gender differences in depression among young adults is that of coping resources. Coping resources can exist either in the form of external or internal resources. External resources are primarily in the form of social support (Thoits, 1986) and internal resources are manifested as coping styles, discussed in detail below (Lazarus & Folkman, 1984; Nolen-Hoeksema, 1987). Nolen-Hoeksema (1987) has stated that gender differences in depression are the result of gender differences in coping styles. She argues that young women ruminate more than young men, and are therefore more depressed. The present study focuses on internal coping resources or coping styles rather than external coping resources because coping styles are inherently more amenable to change at the hands of a competent clinician. The present study is concerned with the potential for prevention of depression through psychological means rather than through social or environmental manipulation.

**Alcohol Use**

Studies using general population samples show steady increase in alcohol and other substance abuse from 12-18 (Johnston, O'Malley, & Bachman, 1989). The initial experience generally occurs during 7th or 8th grade (Johnston, O'Malley, & Bachman, 1989), and the frequency of use increases over adolescence (Kandel & Yamaguchi, 1985). While many teenagers experiment, only a small number develop problems with alcohol (Glantz & Pickens, 1992).

In terms of gender differences, the current literature shows nonsignificant gender differences in alcohol consumption among young adolescents (Wills et al., 1996). However, amongst older adolescents and young adults (i.e., university-aged), males tend to drink more than females (Fromme & Rivet, 1994).

There are a number of models of alcohol use that strive to explain why individuals drink. These models focus on expectancies, motivation, life stresses, cognitions, genetic
factors, and biological diatheses. According to motivational models of alcohol use, drinking behavior is not a unitary phenomenon, but rather represents a number of psychologically distinct behaviors defined by the different underlying functions they serve (Cooper, Frone, Russell, & Mudar, 1995). For instance, the same individual can drink socially on one occasion and drink as an avoidant coping strategy on another occasion.

Of primary relevance to the present study is the relationship of alcohol consumption as a specific coping behavior to coping styles in general. According to social learning models of alcohol use, drinking to cope is a maladaptive response used when other, more adaptive means of coping are unavailable. As a result, motivated use of alcohol to cope is hypothesized to be inversely related to coping ability, skill, or options (Abrams & Niaura, 1987). Consumption of alcohol as a coping behavior is strongly related to maladaptive forms of coping such as avoidance and denial but not deficits in more active forms of problem focused coping (Cooper et al., 1988).

Similarly, the reliance on avoidant forms of coping consistently distinguishes problem and nonproblem drinkers whereas active problem-focused coping does so only inconsistently (Moos, Brennan, Fondacaro, & Moos, 1990). While Cole (1991) contends that adaptive coping decreases the likelihood of escalated alcohol use because it resolves problems and builds normative competencies, the above findings suggest that adaptive coping is mainly significant in that it represents a lack of maladaptive coping (rather than having beneficial effects in its own right).

Alcohol use is highly related to life stress. The hypothesized link between these two variables is that life stress increases young adult substance use by increasing emotional distress or undermining perception of control (Newcomb & Harlow, 1986; Wills, 1986, 1990). Further discussion of this perception of control will be deferred to the discussion of attributional style.

The literature distinguishes between "enhancement" and "coping" drinkers. It is noteworthy that while most adults who drink for one reason also drink for the other, there
are more pronounced differences between the two groups among adolescents (Cooper et al., 1995).

The discussion of alcohol consumption that is motivated by a desire to cope with life stressors does not prevent researchers from focusing on alcohol as an outcome measure. For instance, Fromme and Rivet (1994) focused on coping style as a predictor of alcohol use. In their study, the amount of alcohol consumed was considered an outcome measure despite the fact that they recognized alcohol consumption to be an example of a coping behavior. In their words, it is "...important to know whether young adults' coping strategies are in fact predictive of their drinking patterns" (Fromme & Rivet, 1994, p. 86). Further, Carney et al. (2000) focus on the amount of alcohol consumed as an outcome measure while focusing on drinking to cope as a predictor thereof. Similarly, the present study utilizes alcohol as an outcome measure while it is simultaneously recognized that alcohol consumption is an example of distractive coping. As mentioned above, alcohol is not always consumed with the purpose of coping. When one drinks to cope, the results may be worse when compared to other reasons for drinking, such as celebration and religious tradition. Moos et al (1990) report that drinking in the context of distraction in general is particularly deleterious. Further, the present study focuses on broad coping styles, namely rumination and distraction, which include multiple types of thoughts and behaviors.

The hypotheses of this study are in part based on the theoretical assumption that male children and adolescents learn to cope by distraction, and from this comes the predisposition to drink rather than to deal with problems internally once these boys grow to be men. They are not socialized to talk about their depressed moods as girls are (Nolen-Hoeksema, 1987). Without the balancing effect of emotion-focused coping discussed above, individuals who use distractive coping behaviors—among them alcohol consumption—become prone to pathological alcohol consumption (Fromme & Rivet, 1994; Cooper et al., 1988). Whether or not the amount of alcohol consumed is consistent with normative or problematic alcohol consumption, any consumption of alcohol with the intent
of dealing with depressed mood is by definition a coping behavior. If such a coping behavior occurs to the exclusion of others, the individual may become increasingly unable to utilize alternative balancing coping behaviors (Cooper et al., 1988).

The definition of alcohol consumption as a coping style versus outcome has been the subject of significant discourse. What is of concern in the present study is the association between distractive coping mechanisms and the degree of alcohol consumption. It is true that alcohol is often consumed as a specific coping behavior. However, this behavior must be evaluated in the context of the general style of coping utilized by the individual. There may be individuals who cope primarily by ruminating but consume significant amounts of alcohol, or individuals who utilize distraction but do not consume alcohol. The association of distraction as a whole with alcohol consumption is of significant interest in the present study, and so despite the fact that alcohol consumption is a specific example of distraction, alcohol consumption is considered an outcome in the present study.

**Alcohol Use vs. Abuse**

A recent psychiatry textbook defines substance abuse as "using a psychoactive substance to such an extent that it interferes with health, occupational, or social function" (Clark et al., 1995, p. 190). This is based on the explicit criteria for substance abuse of the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (American Psychiatric Association, 1994). Given this definition, there is significant latitude afforded the clinician in making the diagnosis of alcohol abuse. In contrast, the diagnosis of alcohol dependence implies more significant symptomatology, including increasing amount of consumption, and physical symptoms of withdrawal (Clark et al., 1995). The aim of this
study is to identify factors associated with alcohol consumption in general, but not necessarily at the dependence level. As described below, there has been a recent impetus towards studies that focus on alcohol consumption among non-dependent or non-alcoholic individuals.

The question that arises, therefore, is what constitutes compromised health, occupational, and social function? Further, at what level of alcohol consumption can such consequences be measured? Finally, what problems are associated with alcohol at the community or population level?

The current trend in the prevention of alcohol-related morbidity is to combat alcohol consumption in the so-called normal population. A recent epidemiological study of Ontarians conducted between 1977 and 1997 indicates that the single strongest predictor of negative outcomes related to alcohol is per capita alcohol consumption. Per capita alcohol consumption was a significant predictor of liver cirrhosis, mortality, driving while impaired, hospital admissions, while the percentage of drinkers and percentage of heavy drinkers were not (Smart, Suurvali, & Mann, 2000). In a recent chapter on epidemiology, Fleming and Manwell (2000) write, "the alcohol field is moving toward a public health harm reduction paradigm and away from an exclusive focus on the identification and treatment of alcoholism and abstinence-based endpoints. based on observations indicating that most problems related to alcohol use occur in non-alcoholics" (p. 271).

The negative outcomes found in Smart, Suurvali, and Mann's (2000) study to be predicted by per capita alcohol consumption are obviously devastating, but at what level of consumption is the individual affected? A recent large-scale meta analysis of 200 studies indicates that a surprisingly low level of consumption can yield negative effects. Corrao et
al. (1999) report that there is an increased risk of liver cirrhosis, some cancers, strokes, and injuries—among other effects—with as little consumption as two alcoholic beverages per day.

Finally, the question arises as to the real risks of “experimentation” with alcohol in the undergraduate environment. Quigley and Marlatt (1997) identify a disproportionately higher rate of alcohol abuse among those aged 18-29 as compared to other age groups. Young adults also tend to participate in binge drinking, and although most grow out of this pattern of alcohol consumption some do not (Quigley & Marlatt, 1997). Therefore, two groups of young adults are affected: those who sustain adverse alcohol-related effects during their undergraduate years, and those who do not mature out of their alcohol abuse.

It is clear that there is significant morbidity associated with alcohol consumption—even at quite moderate levels. Given the above empirical evidence of negative effects of even so-called “moderate” alcohol consumption, the current emphasis on alcohol consumption among individuals who do not meet diagnostic criteria for alcohol dependence, as well as the emphasis on sequelae of alcohol consumption at the community level, it is important to assess which factors are associated with alcohol consumption in general.

**Stressful Life Events**

Stressful life events have been linked to both depression (e.g. Metalsky, Halberstadt, & Abramson, 1987; Kuiper, Olinger, & Air, 1989) and alcohol consumption (e.g. Josephs & Steele, 1990; Fromme & Rivet, 1994). In addition, researchers have documented gender differences in life stress. Amongst young adolescents aged 12-14, girls report more
negative daily life events than boys (Compas et al., 1985). This brings into question whether it is the girls' style of coping that leads to higher levels of depression than their male peers, or whether this difference is simply based on the fact that adolescent girls are exposed to a greater degree of life stresses than adolescent boys. For instance, the stress brought on by family responsibilities during parental illness has been shown to account for the interaction of gender of the ill parent and gender of the adolescent in predicting depressive symptomatology (Grant & Compas, 1995). Girls assume more familial responsibility, thus leaving them more prone to symptoms of depression.

The escalation of substance abuse from early to middle adolescence is significantly associated with life stress (McNamara, Vaccaro, & Hirky, 1996). Adolescents who experiment with alcohol tend to have higher stress than their abstaining peers (McNamara et al., 1996). With respect to the direction of causality, prospective analyses have shown that negative life events precede changes in alcohol abuse (e.g., Newcomb & Bentler, 1988a; Wills, Vaccaro, McNamara, & Hirky, 1993). This has implications with respect to interventions. If alcohol abuse had been shown to precede negative life events, then an alcohol-related intervention would be more appropriate. Given the fact that negative life events were shown to precede changes in alcohol abuse, it stands to reason that interventions related to minimizing exacerbating factors of such negative events should come first (e.g., rumination, depressogenic attributional style, etc.).

The above findings are paradoxical in that stress is reportedly associated with alcohol consumption, girls experience more stress, yet girls consume less alcohol but are more likely to be depressed. In order to avoid the limitations of a direct model associating stress exclusively with alcohol consumption, the present study incorporates gender-determined coping styles as a mediator not only between life stress and alcohol consumption, but between life stress and depressive symptoms as well.

In addition to the literature supporting a direct influence of stressful life events on the outcome of depression, studies have shown that the effect of life stressors on depression
may be mediated by coping style. In a longitudinal study focusing on ruminative coping following loss of a loved one, Nolen-Hoeksema, Parker, and Larson (1994) concluded that coping style mediated the effect of such loss on depressed mood. They further suggest that more stressful life events constitute more issues over which an individual can ruminate. Individuals who endure multiple stressors may be too cognitively overwhelmed to use distraction as a coping mechanism. As a result, even individuals who might otherwise choose to cope by distraction may be forced into a situation where they ruminate (Nolen-Hoeksema, Parker, & Larson, 1994).

In summary, negative or stressful life events are viewed in the context of this study as one of the predictors of both alcohol consumption and depression. Negative life events comprise the "stress" component of the diathesis-stress model tested in the present study. While the effect of negative life events may be influenced by coping style, attributional style, or gender, high levels of negative life events are generally predicted to be more deleterious than low levels of negative life events.

**Coping Styles**

In general, 'coping' is a term that has been widely used to describe the type of strategy that an individual employs in dealing with life stresses. The literature that deals with coping is replete with terms such as coping style, coping behavior, and coping strategy. 'Coping style' refers to a pattern of either thoughts or behaviors, or both, that an individual utilizes to deal with depressed mood (Nolen-Hoeksema, Morrow, & Fredrickson, 1993). A 'coping behavior' is a specific example of how an individual may act in order to alleviate depressed mood. Finally, Nolen-Hoeksema and her colleagues use the term 'response' in place of 'coping,' although the terms are synonymous (Nolen-Hoeksema, Morrow, & Fredrickson, 1993; Nolen-Hoeksema, 1991). Although Nolen-Hoeksema's (1991) response styles theory is used exclusively in the present study to characterize
coping, other authors have described types of coping that are highly similar in theory and
different mainly in name. Folkman and Lazarus (1980) describe coping strategies as being
cognitive or behavioral responses that individuals may use in dealing with stressful life
events. They describe emotion-focused coping as a strategy that is targeted at the
regulation of emotions that result from stressful events. Ruminative coping, as
characterized by Nolen-Hoeksema (1991) is an example of emotion focused coping (Nolen-
Hoeksema, Parker, & Larson, 1994).

In addition to Nolen-Hoeksema's formulation of ruminative and distractive coping
styles utilized in the present study, the Carver et al. (1989) describe three categories of
coping: Emotion focused coping, mentioned above, includes seeking social support for
emotional reasons, positive reinterpretation, acceptance, turning to religion, and venting
emotions. Problem focused coping includes seeking social support for instrumental
reasons, active coping, planning, suppression of competing activities, and restraint coping.
Finally, so-called less useful coping includes denial, behavioral, mental, and drug or alcohol
disengagement, and is also referred to as avoidant coping. By the formulation of these
authors, both emotion focused and problem focused coping strategies may be used
effectively to decrease stress-related problems.

The coping styles that are of primary interest in the present study are those
delineated in Nolen-Hoeksema's (1991) response styles theory of depression, namely
rumination and distraction. Ruminative responses to depressed mood include "behaviors
and thoughts that focus one's attention on one's depressive symptoms and on the
implications of these symptoms" (Nolen-Hoeksema, 1991, p. 569). Examples of
rumination including talking about one's negative feelings, thinking about the reasons for
these negative feelings, and thinking or talking about the consequences of one's feelings or
the events that elicited them (Just & Alloy, 1997). Examples of distraction are more active
and less cognitive or emotional; these include playing sports, socializing, and focusing on
one's work. Such responses comprise an active attempt to ignore depressive symptoms and focus on pleasant or neutral activities (Just & Alloy, 1997).

The distinction between rumination and distraction is more than a theoretical exercise. It has been shown that the utilization of a ruminative response style results in amplification of the severity and prolongation of the duration of depressed mood (Nolen-Hoeksema, Morrow, & Fredrickson, 1993). The benefit of distraction has generally been described as indirect; distraction alleviates depressive mood by promoting participation in activities that are enjoyable and result in positive reinforcement (Nolen-Hoeksema, Morrow, & Fredrickson, 1993). Further, distraction prevents the individual from participating in self-contemplation until the depressed mood has subsided. This increases the likelihood that good judgement will be used to solve the problem that precedes the depressed mood (Nolen-Hoeksema & Lyubomirsky, 1992).

People engaged in ruminative coping worry excessively but passively about the causes of their depressed mood. They think about their symptoms, worry about the implications of depression, and worry about the consequences of distress (Nolen-Hoeksema, Parker, & Larson, 1994). Individuals who ruminate will often discuss their problems with a number of friends or family, rarely reaching a conclusion or making any progress from such rehashing. They dwell on any of a number of issues pertaining to negative events that they experience, and in doing so make themselves prone to longer episodes of depression than their non-ruminating counterparts.

Nolen-Hoeksema (1987) suggests that rumination tends to increase negative behaviors and cognitions in a number of ways. First, rumination interferes with attention to, and concentration on, instrumental behaviors. Therefore the individual becomes blinded to the ways in which he/she can improve the situation. In addition, by nature of the multiple cognitive iterations inherent in rumination, there is an increased probability that the depressed person will recall negative information and thereby make negative judgements about events. Finally, and of particular relevance to the present study,
rumination increases the possibility that the depressed person may use a maladaptive explanatory (i.e., attributional) style.

In contrast to rumination, distracting activities may lessen depressive feelings in several ways (Nolen-Hoeksema, 1990). First, by distracting one from negative cognitions the individual achieves the direct benefit of spending less time in an aversive cognitive state. Further, the activities in which one partakes as means of distraction increase one's chances of controlling the environment and of obtaining positive reinforcement. For example, an individual who feels slighted by rejection at the hands of a romantic interest may improve his/her mood by engaging in activities over which he/she has more control, such as exercise or his/her studies. Finally, distractive coping increases the amount of pleasant activity in which an individual partakes, and this is associated with a decrease in depressive symptoms (Morrow & Nolen-Hoeksema, 1990).

Although the focus on response styles is obviously based on a theoretical construct, rumination has been empirically associated with significant real-life psychological morbidity. People who ruminate, instead of using distraction, experience more depressive episodes and greater severity of depressive symptoms (Nolen-Hoeksema, 1990). Collectively, recent studies suggest that use of a ruminating style is associated with higher levels of measured depression than the use of a distracting style (e.g., Just & Alloy, 1997; Nolen-Hoeksema, Parker, & Larson, 1994; Nolen-Hoeksema, Morrow, & Fredrickson, 1993; Lehmicke & Hicks, 1995). Individuals who focus passively and ruminatively on the emotions aroused by stressful events are at marked risk for severe and prolonged periods of distress (Carver & Scheier, 1990; Fenigstein, Scheier, & Buss, 1975; Nolen-Hoeksema, 1991; Pyszczynski & Greenberg, 1987).

Since it seems clear from the above evidence that rumination is a deleterious coping strategy, the question arises as to why individuals ruminate. Carver and Scheier (1990) contend that the motivation for ruminative self-focus is solving the problems that lead to
depression. However, ruminators do not make use of structured problem solving, and so the issues are not resolved (Nolen-Hoeksema & Morrow, 1991). Therefore, despite the fact that individuals who ruminate rarely manage to effect change through this ironically deleterious coping style (although trying to cognitively solve the problem, ruminators actually make it significantly worse), they continue to utilize this response style as a means of dealing with negative events in their lives.

Laboratory studies indicate that forcing depressed participants to focus on distracting external stimuli leads to relief from depressed mood, while forcing them to ruminate maintains depressed mood (Lyubomirsky & Nolen-Hoeksema, 1993). However, these findings should be interpreted with caution due to potentially harmful behaviors that would nonetheless be consistent with distraction. While distracting stimuli in the laboratory are unlikely to be maladaptive, real life situations offer the possibility of utilizing alcohol to distract from depressive symptoms. It is not difficult to imagine how this strategy has the potential to lend itself to the development of alcohol dependence (an outcome that is more common among males).

The primary relevance of rumination to this discussion is that a ruminating response style has been hypothesized to account for women's greater propensity to depression (Nolen-Hoeksema, 1987). When gender differences in the tendency to ruminate are statistically controlled, the gender differences in depression become nonsignificant. The implication here is that rumination mediates the gender difference in depression (Butler & Nolen-Hoeksema, 1995; Nolen-Hoeksema et al., 1993).

It is perhaps due to the above evidence that distraction is viewed as the coping style of choice. However, such an emphasis is not without risks. Cooper et al. (1988) found that
disproportionate avoidant coping without the balancing effect of strong emotion focused coping is associated with problematic alcohol consumption. It is precisely this necessary balance that is all but ignored in Nolen-Hoeksema’s formulation. In prizing distraction and summarily dismissing any possible benefits of ruminative coping, the response styles theory neglects the possibility that the promotion of distraction (which is highly similar to avoidant coping) may yield the unwanted result of also promoting disengagement through alcohol consumption.

While the above findings are based on studies of adult populations, most trends hold true for young adults as well. Young adult ruminators tend to be more depressed in response to academic failure or personal tragedy, and decrease in rumination is associated with decreased depression (Compas & Grant, 1993, Compas, Malcarne, & Fondacaro, 1988). In terms of gender differences, Fromme and Rivet (1994) found that young adult males use avoidant coping (i.e. distraction) more than females, females use emotion-focused coping (i.e. rumination) more than males, and that no gender differences were evident for so-called “problem focused coping.”

Given the fact that rumination has been hypothesized to be a possible source of gender differences in depression (Nolen-Hoeksema, 1987), the question arises as to whether there are gender differences in coping styles themselves. Some studies have suggested that there is no significant association between coping style and gender. For example, Kuehner and Weber (1999) report that while depression is associated with rumination, rumination is not associated with gender. They also report that results pertaining to distraction are more ambiguous. Porter and Stone (1995) found no gender differences (in an adult sample) in emotion-focused versus problem-focused coping. Strauss et al. (1997) report that while
women ruminate more than men, they are also equally likely to report distraction. Eshun, Chang, and Owusu (1998) found a significant gender effect for rumination, with young women reporting higher levels of rumination. In another study of college students, rumination was found to mediate the effects of gender on dysphoria (Roberts, Gilboa, & Gotlib, 1998).

**Distraction and Alcohol Use**

This is not the only study that considers alcohol consumption as an outcome measure while also assessing coping styles that include items related to alcohol consumption as predictor variables. Carver et al. (1989) identified avoidant coping that is characterized by denial, mental, behavioral, and drug/alcohol disengagement. Using this definition of avoidant coping, Cooper et al. (1988) found that disproportionate avoidant coping in general, in the presence of low emotion-focused (ruminative) coping, is associated with problematic alcohol use. This finding was reproduced by Fromme and Rivet (1994) who reported that individuals with deficits in emotion-focused coping consumed greater amounts of alcohol than individuals with more emotion-focused coping.

Other researchers have focused on the relationship between drinking to cope and the actual amount of alcohol consumed under such situations (Carney et al., 2000). In fact, in reviewing the relevant literature, these authors concluded that “few studies, however, have used research designs adequate for assessing how alcohol consumption relates to daily negative events” (Carney et al., 2000, p. 788). This is certainly the case in the present study. As it is not possible in the present study to distinguish between “social” alcohol consumption and “drinking to cope,” total alcohol consumption is considered the outcome of interest. The reason for not emphasizing “drinking to cope” in the present study is two-fold: First, as previously mentioned, it would appear intuitive—and the empirical support is not unclear about this—that drinking under such circumstances is undesirable. Also
previously mentioned was the fact that "drinking to cope" represents only one motivational pathway among a number of sound theoretical models of alcohol use. Individuals also drink in order to maintain or enhance positive experiences (Cooper et al., 1995; Cox & Klinger, 1988, 1990) or to enhance their social expressiveness (Critchlow, 1986). In summary, the assessment of alcohol consumption in the present study was to shed light on the possibility that distraction can be a harmful coping strategy, and not to assess whether people drink for the same reasons they claim to.

In summary, the two coping styles that are of interest in this study are rumination and distraction. Since coping styles consist of ways in which individuals deal with negative events in their lives, they are considered more proximal predictors of depression and/or alcohol consumption. As discussed below, the retrospective design of this study precludes a conclusion regarding the longitudinal order of events. Although not described above, the possibility exists that deleterious coping styles may lead to negative life events. Similarly, depression or alcohol abuse may influence the type of coping style utilized. Nonetheless, rumination is the coping style that is hypothesized to be most strongly associated with depression. Distraction is the coping style that is hypothesized to be most strongly associated with alcohol consumption. The gender difference in depression, as described above, is thought to reflect a gender difference in rumination (Nolen-Hoeksema, 1987), and this study tested the hypothesis that the gender difference in alcohol consumption similarly reflects a gender difference in distraction.

**Attributional Style**

When events occur in our lives, we attribute those events to a variety of causes. The concept of attributional style emerged from the reformulated learned helplessness theory (Abramson, Seligman, & Teasdale, 1978). It was hypothesized in the reformulation that individuals with certain patterns of causal attributions are at greater risk of depression than
other individuals. Specifically, attributional style incorporates three axes: internal vs. external, global vs. specific, and stable vs. transient.

Take, for example, two hypothetical university students who fail the same examination. One explains her failure by saying “I’m just a poor student,” while the other says “that was a totally unfair exam.” The first student’s causal attribution is internal (I am a poor student), relatively stable (this status as poor student is likely considered chronic), and relatively global (she is not a bad test-taker or a bad math student, she considers herself a bad student in general). The second student’s causal attribution, on the other hand, is external (the test and its writers, but not the student, were at fault), transient (she did not suggest future tests are likely to also be unfair), and specific (this test was unfair, rather than tests being unfair in general). Individuals whose causal attributions for negative events are characterized as internal (due to the individual), global (influences all situations in the individual’s life), and stable (will always be present), are said to have a pessimistic or depressogenic attributional style.

The basic relationship between learned helplessness and attributional style is that individuals with pessimistic attributional styles often believe the causes of negative events to be global, stable, and internal in nature. Therefore, they are unlikely to try to change negative situations or their responses to them, given their belief that the causes of such negative situations cannot be affected (Abramson, Seligman, & Teasdale, 1978).

Pessimistic attributional style is a known precursor of depression (Peterson & Seligman, 1986). In the depression literature, attributional style is cited as a significant predictor of depressed mood following negative life events (Abramson, Seligman, & Teasdale, 1978). Studies focusing on concurrent diathesis-stress models have shown that depressive symptoms are related to the interaction between attributional style and frequency of recent negative life events (Robins & Block, 1989, Rothwell & Williams, 1983). When an individual makes a depressogenic attribution (one that is internal, stable, and global) for a negative life event, the result is depressed mood. Longitudinal studies have consistently
shown that depressogenic attributional style predicts later depression over and above earlier depression (Zullow & Seligman, 1985).

In a meta-analytic review of the association between attributional style and depression among children and adolescents, Joiner and Wagner (1995) found that attributional style is clearly associated with both self-reported and clinical depression amongst both males and females. They also, however, reported mixed findings regarding the association between attributional style and negative life events in predicting depression. Johnson (1992) found that the interaction of attributional style, hassles, and gender predicted change in hopelessness levels, and this interaction demonstrated a non-significant trend toward predicting change in depressive symptom levels. In summary, the value of attributional style in predicting depression through interaction with negative life events has been difficult to show empirically. Although some studies provide support for a model of depression wherein attributional style interacts with negative life events to predict depression, support for such a finding is certainly not universal.

In contrast to the burgeoning literature focusing on attributional style and depression, studies on the relationship of attributional style and alcohol consumption are few. In a longitudinal study of undergraduate psychology students, Goldstein et al. (2000) found that the interaction between negative life events and pessimistic attributional style predicts increased hard-alcohol consumption. Dowd, Lawson, and Petosa (1986) found that alcoholics differ from non-alcoholics with respect to their attributional style, making more global and stable attributions for events with good outcomes. No differences were found for attributions for negative events, which are the focus of the present study.

In summary, attributional style comprises the diathesis in the diathesis-stress model tested here. Diathesis implies predisposition, and, indeed, individuals with pessimistic attributional styles are hypothesized to be predisposed to both alcohol consumption and depression. As discussed above, coping style is hypothesized to be more strongly associated with the type of outcome. In contrast, attributional style is thought to amplify, or
moderate, the effect of negative life events on alcohol consumption and depression. Given the same number of negative life events experienced by two individuals who are otherwise similar, the individual with the more pessimistic attributional style is predicted to exhibit higher levels of depression and/or alcohol consumption.

**Rationale for the Present Study**

As mentioned above, depressive symptoms and alcohol consumption are both extensively documented in contemporary literature. Similarly, the gender differences in the rate of depression—that is, a female predominance—is commonly cited (e.g., Butler & Nolen-Hoeksema, 1994; Nolen-Hoeksema, 1987; Peterson, Sarigiani, & Kennedy, 1991). Finally, it has been reported that among older adolescents males consume greater quantities of alcohol, and drink more frequently, than females (Fromme & Rivet, 1994). Midanik and Room (1992) found that men are more likely than women to consume alcohol in general, this difference more than triples when only consumers of at least 60 drinks per month are considered. In terms of actual alcoholism, data from the Epidemiological Catchment Area study (Bucholz, 1992), indicate that approximately 23.8% of males and 4.6% of females receive such a diagnosis in their lifetime. Nonetheless, most studies assess a single outcome—usually depression—and therefore risk classification bias by excluding other potential stress-related co-morbid outcomes such as substance abuse (Hoffmann & Su, 1998). This study addressed both alcohol consumption and depressive symptomatology as possible outcome variables, and further proposes a path model, described below, in order to test a theoretical explanation of gender differences in these outcomes.

The present study focused on young adults' self-reported depressive symptoms, alcohol consumption, coping style and attributional style. The goal of the study was to elucidate the relationship between the outcomes of depressive symptomatology and alcohol consumption, and the predictors thereof, including coping style, attributional style, and
gender. As previously mentioned, Nolen-Hoeksema (1987, 1991) proposes that females' tendency to ruminate accounts for the gender difference in depression. Fromme and Rivet (1994) report that the use of avoidant coping strategies (i.e. distraction) is associated with higher levels of alcohol consumption than other forms of coping. However, as of yet, studies have not provided a framework with which to understand the etiology of depression and alcohol consumption. While it is understood that the determination of causality is empirically elusive, the literature lacks a theoretical model that proposes a path between stressful life events and the outcomes discussed.

This study comprised an attempt to test a theoretical path model of alcohol consumption and depression amongst young adults. The goal was to incorporate a number of findings that remain isolated in the literature, yet are proposed in the present study to play related roles in the manifestations of gender differences in depression and alcohol consumption.

Part of the purpose of the present study was to provide information that can be used by clinicians in developing interventions. It would be hard to argue against the benefits of intervening with young adults and discouraging them from consuming alcohol for the explicit purpose of dealing with their negative life events. Not only is alcohol unhealthy in all but the smallest doses, the consumption of alcohol in the context of coping is reinforcing and it hinders the development of more adaptive coping behaviors (Abrams & Niaura, 1987). Since response styles theory is more prevalent in the contemporary depression literature than in the alcohol consumption literature, there are a number of studies in which distraction is described as the coping style of choice (e.g. Nolen-Hoeksema, 1987, 1991; Just & Alloy, 1997; Butler & Nolen-Hoeksema, 1994; Nolen-Hoeksema, Morrow, & Fredrikson, 1993). As a result, the negative outcomes that may result from distraction have been underrepresented. It was not the aim of this study to prove that “drinking to cope” is harmful; this seems obvious. Rather the aim was to argue that preferential utilization of distraction in general, although it is associated with lower levels of depressive symptoms, is
not without drawbacks. In order to fairly assess the utility of a given coping style, multiple types of outcome variables—including both alcohol consumption and depression—should be assessed.

**Path Model**

The above review of literature indicates that different researchers have focused on different predictors of depression and alcohol consumption, among them life stress, attributional style, coping style, and gender. In univariate studies of depression or alcohol consumption, one cannot comment on the associations between predictor variables or hypothesize as to the effect of such associations on the outcome variable of interest. In the present study, hypothesized predictors of depression and alcohol consumption were analyzed with respect to their predictive values as well as with respect to their associations with the other variables. Despite the correlational nature of this study, a theoretical path model was tested in an attempt to provide some empirical support for the theoretical associations between the predictor and outcome variables. The following is a discussion of the proposed path model, based largely on the literature reviewed above.

While other contributions of attributional style will be discussed (e.g., its role in coping style selection), the main contribution of attributional style in the proposed model is that it moderates the effects of life stress. A pessimistic individual theoretically requires less stressful life events to become depressed than an optimistic individual. The interaction between negative/stressful life events with attributional style predicts depressed mood (e.g., Metalsky, Halberstadt, & Abramson, 1987).

Depressed mood follows a different course in different individuals. This course is largely determined by the method of coping utilized by the individual. Individuals who cope by ruminating participate in behaviors or thoughts that focus their attention on their depressed mood, and the possible causes and consequences of that mood (Nolen-
Hoeksema, 1991). Among these individuals, depressed mood is longer-lasting and more severe in nature than among those who do not ruminate. Therefore, individuals who cope with depressed mood by distracting themselves tend to be less depressed, and more transiently depressed, than their ruminating counterparts.

While Nolen-Hoeksema (1987, 1991, 1993) contends that non-ruminative coping styles are better than ruminative ones, the present study suggests that the benefit is only temporary: while “distractors” may be less likely to maintain their depression, they are also more likely to turn to alcohol as another means of distraction. It is suggested that coping by means of distraction has become a default gold standard because of the fact that most research on rumination focuses on depression as the outcome. Researchers focusing on alcohol consumption as an outcome measure suggest that low levels of emotion-focused coping (i.e., rumination) are a "deficit" because of an association with higher levels of alcohol consumption (Fromme & Rivet, 1994). The consideration of higher levels of alcohol consumption as another undesirable outcome in the rumination literature might change the perception of what in fact is the desired coping style. Just as high levels of rumination are associated with increased depression, so are low levels of rumination associated with increased alcohol consumption.

The relevance of gender in this path model is associated with Nolen-Hoeksema’s (1987) contention that women experience more depression than men as a result of their tendency to ruminate more than men. She argues that the gender difference in depression is not significant once the tendency to ruminate is statistically controlled. This implies that the gender difference in depression is mediated by a gender difference in coping style; women are more depressed because they tend to ruminate more than men. Gender is hypothesized to be associated with the type of coping style employed by an individual. The relatively low levels of rumination amongst males are hypothesized to correlate with higher levels of alcohol consumption (as are high levels of distraction). The reasons for such
gender differences in coping styles are certainly significant, but they are beyond the scope of the present study.

The proposed path model does not accommodate all of the interactions between mediating and moderating variables. For example, it can be argued that a number of variables participate in feedback loops in which a given outcome (e.g., depression) impacts upon one or more of its predictors (e.g., coping style). Such feedback interactions are consciously omitted from the present study because of the unfeasibility of multiple sequential measurements over time in the present study. Similarly, added paths would raise the statistically-required sample size to a level which is unrealistic due to limited availability of participants. Nonetheless, a major impetus for this study is the fact that "drinking-to-cope" amongst young adults can in turn hinder the development of adaptive coping strategies (Abrams & Niaura, 1987), which leaves them at increased risk of later drinking problems.

In summary, the present study, and the path model of which it is comprised, was designed in an attempt to consolidate a number of different theoretical "camps," assuming that researchers must not focus exclusively on a given outcome. The simple association of distraction with lower levels of depression does not make it an ideal coping strategy. When focusing on variables such as life stress, attributional style, gender, and coping styles, both levels of alcohol consumption and depressive symptomatology must be considered important outcomes.

Figure 1 depicts the proposed theoretical path model of this study. The hypothesized path involves the following rationale: 1. Pessimistic individuals are more likely to experience depressed mood following negative life events. 2. Depressed mood necessitates the selection of a coping style. 3. Gender mediates between depressed mood and the selection of a coping style (females are more likely to ruminate; males are more apt to use distraction). 4. The nature of the coping style determines the nature of the outcome; distraction is associated with alcohol use, and rumination is associated with depression.
The bold lines emanating from the female icon are meant to indicate that rumination is hypothesized to be the primary coping style among women. Similarly, the bold lines emanating from the male icon are meant to indicate that distraction is hypothesized to be the primary coping style among men. Finally, the bold lines from rumination to depression, and from distraction to alcohol, are meant to indicate the hypothesized associations among these variables.

**Hypotheses**

The findings of the literature reviewed above are the basis for this model, which translates into several specific, measure-based hypotheses:

1. Coping strategies, negative life events, and attributional style for negative life events will each uniquely contribute to the prediction of depression in adolescents. Coping strategies will be most strongly associated with depression, followed by attributional style and negative life events which will be more modestly correlated with depression when alone than when combined in a diathesis-stress term (see Hypothesis 4. e.g., Bruder-Matson & Hovanitz, 1990).

2. Women will have significantly higher depression scores, as indicated by the Beck Depression Inventory, than men (e.g., Butler & Nolen-Hoeksema, 1994).

3. Men will report significantly higher hard alcohol/spirits consumption, as indicated by the Khavari Alcohol Test, than women (e.g., Fromme & Rivet, 1994).

4. Attributional style will interact with negative life events to predict either alcohol consumption, depression, or both (e.g., Metalsky et al., 1987; Goldstein et al., 2000). The nature of the outcome (alcohol vs. depression) will be associated with the individual's coping strategy: ruminators will be depressed and distractors will be drinkers (e.g., Fromme & Rivet, 1994).
5. There will be gender differences with respect to coping strategies, but not with respect to attributional style. Specifically, it is hypothesized that females will ruminate more than males, and that males will utilize distraction more than females although the effect is hypothesized to be more pronounced for rumination (e.g., Butler & Nolen-Hoeksema, 1994; Nolen-Hoeksema, Morrow, & Fredrickson, 1993).

Method

Sample

The original sample consisted of 110 participants, of whom one male and one female were removed from the study due to extremely outlying data. The final sample consisted of 51 male and 57 female participants, ages 18-21. Participants were undergraduate students at the University of Calgary who were enrolled in introductory psychology courses. They received credit towards the course in return for participation in the study. Participants volunteered by signing-up for the study, which was among a number of studies advertised on the "Research Board" of the Department of Psychology (Appendix B). Written informed consent was obtained from the participants, who were told that the study was confidential and anonymous (Appendix A). The consent form included a protocol by which students were informed of ways they could contact a qualified professional should participation in the study have left them distressed. Five questionnaires designed to measure the variables of interest, as well as a background information questionnaire, were administered to participants by the investigator. The investigator explained the procedure for filling out the questionnaires, and was available to answer questions.
Measures

Demographic Information

Participants were asked to record their age and gender.

Beck Depression Inventory (BDI)

The BDI was developed by Beck, Ward, Mendelson, Mock, and Erbaugh (1961). This measure is appropriate for university-aged participants. The BDI assesses levels of depressive symptomatology in the past week. Participants are asked to complete 21 questions about depressive symptoms. The answer corresponding to absence of the symptom has a value of zero, while increasingly severe depressive symptoms are scored as 1, 2, or 3, respectively. Scores on the BDI range from zero to 63.

In a 25-year evaluation of the BDI, Beck, Steer, and Garbin (1986) reviewed studies that utilized the BDI. They found that the BDI has high internal consistency in both psychiatric and non-psychiatric samples. The mean internal consistency estimate (coefficient alpha), was .81 for non-psychiatric participants. The BDI's correlations with respect to test-retest reliability are greater than .60. The concurrent validity of the BDI has been established by comparing it to both clinical assessments of depression (r > .60) and four other well-researched measures of depression. For example, the BDI exhibits a correlation of .73 with the Hamilton Rating Scale for Depression (HRSD; Beck et al., 1986). Finally, the BDI has been shown to differentiate depression from anxiety.
**Khavari Alcohol Test (KAT)**

This measure was developed by Khavari and Farber (1978). The KAT consists of 12 questions concerning drinking behavior (Appendix C). For each type of alcoholic beverage (beer, wine, and hard alcohol/spirits), subjects report their frequency of usual drinking, the usual amount consumed on such occasions (Vu), the maximum amount consumed on any one occasion, and the frequency of this maximum amount. In addition to scaled scores for the responses to these twelve questions, two summary statistics are calculated. The total frequency of alcohol consumption, and the absolute alcohol intake, are calculated. The higher the scores in each category, the greater the relative alcohol intake.

The validity of the KAT is evidenced by its ability to significantly differentiate between alcoholics and non-alcoholics (Khavari & Farber, 1978). The KAT has been used extensively with undergraduate university students (Farber, Khavari, & Douglass, 1980). The beer and spirits scales are generally more sensitive than the wine scale. The KAT has been shown to accurately differentiate groups of alcoholics based on the preferred type of alcohol. Test-retest reliability across the 12 variables of the KAT yields a mean correlation of $r = .92$ (Khavari & Farber, 1978). Reliability measures which tap internal consistency (e.g., split-half, Kuder-Richardson) are not applicable to this measure's subscales as there is no expectation of high homogeneity among the 12 KAT items.

**Adolescent Perceived Events Scale (APES)**

Developed by Compas, Davis, Forsythe, and Wagner (1987), this measure is appropriate for university-aged participants (versions for junior high school- and high
school-aged participants are distinct from this version). The APES assesses the number and types of hassles or recurrent stressful events, as well as the number of positive events reported by female and male young adults. The short form of the APES comprises 100 stressful events that are likely to affect adolescents. The events vary in nature from major, as in the case of one's parents divorcing, to daily hassles, such as chores or household responsibilities. The participant endorses a given life event by checking it off, and applies a "good-bad rating" score to it. Ratings are on a likert-type scale and range from "extremely bad" (-4) to "extremely good" (+4).

Both validity and reliability are well established for the APES (Compas et al., 1987). The test-retest reliability for older adolescent subjects (>18 years of age) was indicated by Pearson correlations ranging from 74 to 84. Validity of the APES was assessed by comparing subjects' self-reports of recent life events with the reports of subjects' life events obtained from the subjects' roommates. Percentages of agreement between roommate and subject were 89% for occurrence of the event, and 91% for the event's frequency (Compas et al., 1987). Finally, the magnitude of the association between weighted negative events assessed with the APES and measures of psychological distress ranged from .49 to .60 (Compas et al., 1987).

**Response Styles Questionnaire (RSQ)**

The RSQ was developed by Nolen-Hoeksema (cf. Nolen-Hoeksema & Morrow, 1991). This questionnaire is used to assess the way in which individuals tend to respond to their own symptoms of negative emotion. Participants are asked to indicate on a 4-point scale how often—almost never, sometimes, often, or almost always—they think or do what is described when they feel down, sad, or depressed. The Ruminative Responses Scale includes 22 items describing responses to depressed mood that are self-focused (e.g., "think, 'why do I react this way?"), symptom-focused (e.g., "think about how hard it is to
concentrate"), and focused on the possible consequences and causes of their mood (e.g., "think I won't be able to do my job if I don't snap out of this"). The Distracting Responses Scale includes 11 items such as "do something you enjoy," "do something active to get your mind off of your feelings (i.e., job/aerobics/exercise)," and "do something with a friend."

Acceptable predictive validity for the Ruminative Responses Scale has been reported (Nolen-Hoeksema & Morrow, 1991). Participants' responses to this scale correlated significantly ($r = .62$) with their use of ruminative responses to depressed mood in a 30-day diary study (Nolen-Hoeksema, Parker, & Lawson, 1994). A laboratory study showed that participants who scored above the median on this scale were more likely than those who scored below the median to choose to engage in an emotion-focused task (Nolen-Hoeksema, Parker, & Lawson, 1994). Although far less prominent in the literature, similar support has been found for the distraction scale, which has been shown to have a reliability coefficient (Cronbach's alpha) of .80 (Butler & Nolen-Hoeksema, 1994).

**Attributional Style Questionnaire (ASQ)**

The ASQ was developed by Peterson, von Baeyer, Abramson, Metalsky, and Seligman (1982). This measure is appropriate for individuals who are 15 years of age or older. The ASQ is made up of six hypothetical negative life events (Appendix D). Three of the life events are of an achievement nature (e.g., you are unsuccessful in employment search). The other three life events are of an interpersonal nature (e.g., a friend compliments you on your appearance). With each life event, participants are asked to vividly imagine themselves in each situation. They are then asked to write the one major cause of each event. Finally, subjects are asked to rate the cause on a 1-7 scale for each of the following dimensions: internality, globality, and stability. The higher the scores on these dimensions, the more internal, global, and stable the attributions. Scores are averaged
across the 6 life events, yielding one score ranging from 1 to 7. Higher scores correspond to more negative attributional styles.

In a meta-analytic review of attributional style and depression, Sweeney et al. (1986) report that the average from eight studies indicates a reliability of .73 for the composite measure of negative outcomes, and a reliability of .69 for the composite measure of positive outcomes. Test-retest reliability has been reported as .67 for both positive and negative events. Both construct validity and criterion validity have been well established for the ASQ (Reivich, 1995). Independent-rater ratings of explanations given by undergraduates who completed the ASQ correlated significantly (.71, ps < .001) with the participants' ratings of their own explanations (Schulman, Castellon, & Seligman, 1989). Finally, the predictive and concurrent validity of the ASQ are reported (Peterson & Seligman, 1984). Robins' (1988) meta-analytic review of over 100 attributional style studies found strong evidence for the predicted relationship between attributional style and depression.

**Analysis of Data**

At various points in the analysis in the present study, both mediator and moderator models were used. A moderator model was used to assess the capacity of the interaction between negative life events and attributional style to account for variance in the outcome measures. A mediator model was used to test the sequence of the proposed theoretical pathway.

**Multiple Linear Regression**

The best way to establish the presence of a moderating effect is to test a given Predictor x Moderator interaction in a hierarchical regression equation (e.g., Baron &
Kenny, 1986; Cohen & Cohen, 1983). To test whether attributional style will moderate the relation between negative life events and depression or alcohol consumption, a number of hierarchical multiple regression analyses were conducted. In the first step of each equation, the main effects of the diathesis, attributional style, were entered. The second step involved entering the stress term, represented by stressful life events scores. Finally, the last variable entered into the regression was the attributional style x life events interaction term. It was hypothesized that the interaction between negative life events and depressive attributional style would be significantly correlated with depression and/or alcohol consumption. In comparison, it was hypothesized that negative life events and attributional style alone would be more moderately associated with these outcomes than when combined in an interaction term. Using this method, and focusing on the final increment in R-squared, it is possible to determine whether the interaction term will contribute significantly to the prediction of each dependent variable above and beyond the separate main effects.

Similarly, hierarchical multiple regression analyses were conducted to test the incremental contribution of the predictor variables (negative events, attributional style, rumination, distraction) in accounting for the variance in the outcome variables (depressive symptoms, overall alcohol consumption. These regressions were conducted separately by gender.

**Path Analysis**

Path analytic techniques were used to test some of the study’s central hypotheses. Path coefficients were derived from a series of standardized regression coefficients. "Scale free" path coefficients allow for the comparative assessment of the relative impact of each explanatory variable on the relevant outcomes (Glasgow et al., 1997). Both the hypothesized and alternative path models were analyzed.
The Statistical Procedure for the Social Science Computer Package (SPSS) was used in this study. Descriptive statistics and hierarchical regression analyses were performed.

Procedure

Participants scheduled themselves for administration of the study by signing their initials on a participant recruitment board. The number of students in each administration varied from one to nine, depending on the demand for a given time slot. Participants completed five questionnaires in a single session of 30-50 minutes. They were given an envelope with, in order, a consent form, the Adolescent Perceived Events Scale, the Khavari Alcohol Test, the Response Styles Questionnaire, the Attributional Style Questionnaire, and the Beck Depression Inventory. The consent form indicated to the participants that “it is possible that thinking about these topics may trigger strong feelings...” and that participants were free to end the experiment at any time without penalty. With respect to the objectives of the study, the consent form stated the following: “This research study is concerned with factors that affect alcohol use and depression (or symptoms of depression) in young adults (aged 16-21). In particular, we are studying the roles that coping and attributional style play.” The signed consent form was returned along with the completed questionnaires in the original envelope when the participant was finished.
Results

Preliminary Analyses

The sample initially included 110 participants. Nine incomplete cases were among these. The final sample size of complete cases was 101, of which 49 were males and 52 were females. Descriptive statistics for age and gender are presented in Table 1.

Descriptive statistics for the Adolescent Perceived Events Scale, the Attributional Style Questionnaire, the Beck Depression Inventory, the Khavari Alcohol Test, and the Response Styles Questionnaire are presented in Table 2. Upon exploration of the variables, it was discovered that the Beck Depression Inventory (BDI) was not normally distributed. Due to its positive skew, a log transformation of depression was taken in order to transform the data to a normal distribution. While the mean and standard deviation of the untransformed variable is reported, subsequent statistical analyses involving the Beck Depression Inventory were done with the transformed variable.

Table 1
Age and Gender Distribution

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>19</td>
<td>17.6</td>
</tr>
<tr>
<td>19</td>
<td>22</td>
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<td>20</td>
<td>32</td>
<td>29.6</td>
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<td>21</td>
<td>35</td>
<td>32.4</td>
</tr>
<tr>
<td>Total</td>
<td>108</td>
<td>100.0</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>57</td>
<td>52.8</td>
</tr>
<tr>
<td>Male</td>
<td>51</td>
<td>47.2</td>
</tr>
<tr>
<td>Total</td>
<td>108</td>
<td>100.0</td>
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</table>
A reliability analysis was performed on the Attributional Style Questionnaire and the Response Styles Questionnaire. Internal consistency was measured using Cronbach’s Alpha (Cronbach, 1951). The Attributional Style Questionnaire had a Cronbach Alpha of 0.75. After one item was removed (13), the distraction subscale of the Response Styles Questionnaire had a Cronbach Alpha of 0.78. Subsequent analyses were performed on the shortened scale. The rumination subscale of the Response Styles Questionnaire had an acceptable Cronbach Alpha of 0.84.

Levene’s tests for equality of variance were performed to compare males to females. Variances in distraction ($F(2,107)=4.918, p<0.01$), beer consumption ($F(2,107)=4.876, p<0.05$), and total alcohol consumption ($F(2,106)=4.934, p<0.05$), were all higher amongst males. That is, there was more variability among males than females with respect to distraction, beer, and total alcohol consumption.

T-tests for equality of means were performed. Gender differences in beer consumption ($t(108)=3.01, p=0.003$) and total alcohol consumption ($t(107)=2.50, p<0.05$) were significant, with males consuming greater quantities (Table 2).

**Gender Differences in Correlations**

Correlations were analyzed for the variables in this study. The correlation matrix for the variables included in this study is presented in Table 3 Negative events were significantly correlated with rumination for males ($r(50)=.45, p<.001$) as well as females ($r(53)=.28, p<.05$). Similarly, negative events were significantly correlated with depression among both males ($r(50)=.43, p<.01$) and females ($r(54)=.46, p<.001$). Rumination was
strongly associated with depression among males ($r(51)=58$, $p<0.000$) and females ($r(56)=31$, $p<0.05$). Pessimism was significantly correlated with depression among women ($r(57)=38$, $p<0.01$) but not among men ($r(51)=0.9$, $p<0.54$). Pessimism was significantly negatively correlated with distraction for females only ($r(57)=-0.39$, $p<0.01$). Negative events were correlated with wine consumption among women alone ($r(54)=0.38$, $p<0.01$) but not among men ($r(51)=0.09$, $p<0.54$). Pessimism was correlated with ruminating among men alone ($r(51)=0.28$, $p<0.05$). In contrast, pessimism was correlated with negative events among females alone ($r(54)=0.27$, $p<0.05$). Overall alcohol consumption was negatively correlated with distraction among females ($r(56)=-0.27$, $p<0.05$). Wine consumption among females was correlated with depression ($r(57)=42$, $p<0.001$).

The significance of difference between genders was analyzed for each of the significant correlation coefficients. Only the gender difference in magnitude of the correlation of wine consumption with negative events was significant (test statistic=1.967, $p<0.05$). The correlation between negative events and wine consumption is significantly higher among women than among men.
### Table 2

**Descriptive Statistics by Gender for Measures of Predictor and Outcome Variables**

<table>
<thead>
<tr>
<th>Measure</th>
<th>N</th>
<th>Mean</th>
<th>Range</th>
<th>Std. Deviation</th>
<th>t</th>
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<tr>
<td>Male</td>
<td>50</td>
<td>33.9</td>
<td>0.0-74.0</td>
<td>18.2</td>
<td>-.26</td>
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<td>Female</td>
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<td>34.8</td>
<td>6.0-72.0</td>
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<tr>
<td>Attributional Style Questionnaire</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>51</td>
<td>13.3</td>
<td>9.7-17.5</td>
<td>2.0</td>
<td>77</td>
</tr>
<tr>
<td>Female</td>
<td>57</td>
<td>13.1</td>
<td>10.3-17.3</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>Beck Depression Inventory</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>51</td>
<td>10.3</td>
<td>0.0-32.0</td>
<td>7.0</td>
<td>1.33</td>
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<tr>
<td>Female</td>
<td>56</td>
<td>8.5</td>
<td>0.0-38.0</td>
<td>7.0</td>
<td></td>
</tr>
<tr>
<td>Khavari Alcohol Test</td>
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<td></td>
<td></td>
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<tr>
<td>Hard Alcohol</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>51</td>
<td>238.5</td>
<td>0.0-1782.0</td>
<td>373.9</td>
<td>1.78</td>
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<tr>
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<td>56</td>
<td>137.1</td>
<td>0.0-717.8</td>
<td>168.9</td>
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<tr>
<td>Wine</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Male</td>
<td>51</td>
<td>82.9</td>
<td>0.0-752.0</td>
<td>157.9</td>
<td>-1.09</td>
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<tr>
<td>Female</td>
<td>57</td>
<td>213.2</td>
<td>0.0-1200.0</td>
<td>223.1</td>
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</tr>
<tr>
<td>Beer</td>
<td></td>
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<td></td>
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</tr>
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<td>51</td>
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<td>2076.3</td>
<td>3.01**</td>
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<td>1524.2</td>
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<td>Overal Alcohol</td>
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</tr>
<tr>
<td>Male</td>
<td>51</td>
<td>196.6</td>
<td>0.0-929.25</td>
<td>221.9</td>
<td>2.50*</td>
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<tr>
<td>Female</td>
<td>56</td>
<td>128.4</td>
<td>0.0-469.91</td>
<td>113.6</td>
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<tr>
<td>Response Styles Questionnaire</td>
<td></td>
<td></td>
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<tr>
<td>Ruminatin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>51</td>
<td>1.17</td>
<td>0.27-2.36</td>
<td>0.54</td>
<td>-817</td>
</tr>
<tr>
<td>Female</td>
<td>56</td>
<td>1.25</td>
<td>0.27-2.95</td>
<td>0.53</td>
<td></td>
</tr>
<tr>
<td>Distaction</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Male</td>
<td>51</td>
<td>1.47</td>
<td>0.30-2.60</td>
<td>0.44</td>
<td>-0.37</td>
</tr>
<tr>
<td>Female</td>
<td>57</td>
<td>1.51</td>
<td>0.50-3.00</td>
<td>0.52</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05. **p < .01
Table 3

Correlational Analyses for Males and Females

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<tr>
<th>Males Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Stress</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2. Rumination(^2)</td>
<td>.446**</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>3. Distraction(^3)</td>
<td>.024</td>
<td>.094</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>4. Spirits(^4)</td>
<td>-175</td>
<td>-205</td>
<td>204</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Beer(^5)</td>
<td>-001</td>
<td>-031</td>
<td>088</td>
<td>386**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Wine(^6)</td>
<td>039</td>
<td>174</td>
<td>-186</td>
<td>154</td>
<td>166</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Alcohol(^7)</td>
<td>-129</td>
<td>-150</td>
<td>172</td>
<td>094***</td>
<td>732***</td>
<td>060</td>
<td></td>
<td></td>
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<tr>
<td>8. Pessimism(^8)</td>
<td>256</td>
<td>.281*</td>
<td>048</td>
<td>-169</td>
<td>154</td>
<td>183</td>
<td>-173</td>
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<td></td>
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<tr>
<td>9. Depression(^9)</td>
<td>.431**</td>
<td>.574***</td>
<td>-161</td>
<td>-240</td>
<td>102</td>
<td>263</td>
<td>-111</td>
<td>088</td>
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<table>
<thead>
<tr>
<th>Females Variables</th>
<th>1</th>
<th>2</th>
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<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
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<tbody>
<tr>
<td>1. Stress</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Rumination</td>
<td>281*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>3. Distraction</td>
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<td>-023</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4. Spirits</td>
<td>154</td>
<td>000</td>
<td>-084</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>5. Beer</td>
<td>-146</td>
<td>029</td>
<td>-266*</td>
<td>038</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>6. Wine</td>
<td>375**</td>
<td>046</td>
<td>-170</td>
<td>168</td>
<td>-004</td>
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<td>7. Alcohol</td>
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<td>031</td>
<td>-272*</td>
<td>742***</td>
<td>631***</td>
<td>404**</td>
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<tr>
<td>8. Pessimism</td>
<td>.272*</td>
<td>119</td>
<td>-390**</td>
<td>032</td>
<td>075</td>
<td>193</td>
<td>139</td>
<td></td>
<td></td>
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<tr>
<td>9. Depression</td>
<td>.458**</td>
<td>312*</td>
<td>-078</td>
<td>144</td>
<td>-031</td>
<td>422**</td>
<td>199</td>
<td>378**</td>
<td></td>
</tr>
</tbody>
</table>

Note.

1 Adolescent Perceived Events Scale
2 Rumination scale of Response Styles Questionnaire
3 Distraction scale of Response Style Questionnaire
4 Spirits scale of Khavari Alcohol Test
5 Beer scale of Khavari Alcohol Test
6 Wine scale of Khavari Alcohol Test
7 Overall scale of Khavari Alcohol Test
8 Attributional Style Questionnaire
9 Beck Depression Inventory

\*p<.05, **p<.01, ***p<.001
Hierarchical Regression Analysis

Hierarchical regression analyses were conducted with depression and overall alcohol consumption as dependent variables. The predictor variables were entered into the equation in the following sequence: stressful life events, pessimism, distraction, and rumination. The results for this regression are analyzed by gender (Table 4).

Overall Alcohol Consumption

Although the hypotheses of this study relate to hard alcohol/spirits consumption, the results indicate that overall alcohol consumption is more strongly associated with the predictor variables ( Attributional Style Questionnaire, Response Styles Questionnaire, Adolescent Perceived Events Scale) and therefore overall consumption is addressed here. The results of the regression analysis (Table 4) indicate that the predictor variables account for 8.4% of the variance in overall alcohol consumption amongst males ($F(4,49)=1.04, p>.39$), and 9.6% of the variance in overall alcohol consumption amongst females ($F(4,51)=1.25, p>.30$). None of the hypothesized mediators or predictors accounted for a significant amount of the variance in the overall alcohol consumption of males. Amongst females, distraction was negatively associated with alcohol consumption, accounting for 7.7% of the variance. In other words, the higher women’s scores on the distraction measure, the less alcohol they were likely to consume.
Depression

In contrast to alcohol consumption, each of the predictor variables accounted for a significant proportion of the variance on the depression measure. Among males, the predictor variables accounted for approximately 41% of the variance in depression scores ($F(4.49)=7.69, p<.000$). Rumination was the predictor variable most strongly associated with depression amongst males accounting for an additional 18.8% of the variance, and negative events, when entered first, accounted for a similar 18.6% of the variance on the depression measure.

The same regression analysis accounted for approximately 32% of the variance in depression scores among females ($F(4.52)=5.53, p<.001$). Negative events accounted for the largest proportion of the variance (20.6%), when entered first, and rumination accounted for a much lower 3.1% of the variance (as compared to males) when entered last.

Although not addressed in the hypotheses of this study, it is important to note that the correlation between total alcohol intake and depressive symptoms was not significant. Among women, however, wine consumption shared a correlation of 422 ($p<.01$) with depression.

Test of Diathesis-Stress Moderator

The hierarchical regression equation that is most central to the path model presented in this study involves a diathesis-stress term. Briefly, the main effects of the diathesis, attributional style, were entered first. This was followed by the stress term. The final step entered involves the interaction of these first two terms. This regression was performed to
test the moderating effect of attributional style on the association between negative life events and alcohol consumption or depression. The results of this regression are presented in Table 5.

Table 4

Results of Multiple Hierarchical Regression Analyses by Gender: Correlates of Overall Alcohol Intake and Depressive Symptoms

<table>
<thead>
<tr>
<th>Overall Alcohol Consumption</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R2 change</td>
<td>df</td>
</tr>
<tr>
<td>1. Negative events</td>
<td>0.017</td>
<td>1.48</td>
</tr>
<tr>
<td>2. Attributional style</td>
<td>0.034</td>
<td>2.47</td>
</tr>
<tr>
<td>3. Distraction</td>
<td>0.029</td>
<td>3.46</td>
</tr>
<tr>
<td>4. Rumination</td>
<td>0.004</td>
<td>4.45</td>
</tr>
<tr>
<td>Cumulative R2 = 0.084</td>
<td></td>
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</tr>
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</table>

<table>
<thead>
<tr>
<th>Depressive symptoms</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R2 change</td>
<td>df</td>
</tr>
<tr>
<td>1. Negative events</td>
<td>0.186</td>
<td>1.48</td>
</tr>
<tr>
<td>2. Attributional style</td>
<td>0.010</td>
<td>2.47</td>
</tr>
<tr>
<td>3. Distraction</td>
<td>0.022</td>
<td>3.46</td>
</tr>
<tr>
<td>4. Rumination</td>
<td>0.188</td>
<td>4.45</td>
</tr>
<tr>
<td>Cumulative R2 = 0.406</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Females</th>
<th>R2 change</th>
<th>df</th>
<th>F change</th>
<th>Beta</th>
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<th>df</th>
<th>F change</th>
<th>Beta</th>
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</thead>
<tbody>
<tr>
<td>1. Negative events</td>
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<td>1.51</td>
<td>13.206***</td>
<td>0.322*</td>
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<tr>
<td>2. Attributional style</td>
<td>0.066</td>
<td>2.50</td>
<td>9.333***</td>
<td>0.305*</td>
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</tr>
<tr>
<td>3. Distraction</td>
<td>0.012</td>
<td>3.49</td>
<td>6.467***</td>
<td>0.109</td>
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<tr>
<td>4. Rumination</td>
<td>0.031</td>
<td>4.48</td>
<td>5.526***</td>
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<tr>
<td>Cumulative R2 = 0.315</td>
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<td></td>
</tr>
</tbody>
</table>

*p<0.05. **p<0.01. ***p<0.001
Table 5

Results of Multiple Hierarchical Regression Analyses Testing the Moderating Effect of Attributional Style on Depression and Overall Alcohol Consumption

Overall alcohol intake

<table>
<thead>
<tr>
<th></th>
<th>Males</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R2 change</td>
<td>F change</td>
<td>df</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1. Attributional style</td>
<td>0.45</td>
<td>2.288</td>
<td>1.48</td>
<td>-0.047</td>
<td></td>
</tr>
<tr>
<td>2. Negative events</td>
<td>0.06</td>
<td>0.295</td>
<td>1.47</td>
<td>0.492</td>
<td></td>
</tr>
<tr>
<td>3. Attributional style</td>
<td>0.05</td>
<td>0.252</td>
<td>1.46</td>
<td>-0.630</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Females</th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>R2 change</td>
<td>F change</td>
<td>df</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1. Attributional style</td>
<td>0.09</td>
<td>0.461</td>
<td>1.51</td>
<td>0.343</td>
<td></td>
</tr>
<tr>
<td>2. Negative events</td>
<td>0.12</td>
<td>0.633</td>
<td>1.50</td>
<td>0.958</td>
<td></td>
</tr>
<tr>
<td>3. Attributional style</td>
<td>0.15</td>
<td>0.741</td>
<td>1.49</td>
<td>-0.962</td>
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</tr>
</tbody>
</table>

Depressive symptoms

Males

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<tbody>
<tr>
<td></td>
<td>R2 change</td>
<td>F change</td>
<td>df</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1. Attributional style</td>
<td>0.42</td>
<td>2.130</td>
<td>1.48</td>
<td>0.117</td>
<td></td>
</tr>
<tr>
<td>2. Negative events</td>
<td>0.15</td>
<td>0.846**</td>
<td>1.47</td>
<td>0.460</td>
<td></td>
</tr>
<tr>
<td>3. Attributional style</td>
<td>0.00</td>
<td>0.003</td>
<td>1.46</td>
<td>-0.061</td>
<td></td>
</tr>
</tbody>
</table>

Females

<p>| | | | | | |</p>
<table>
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<tbody>
<tr>
<td></td>
<td>R2 change</td>
<td>F change</td>
<td>df</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1. Attributional style</td>
<td>0.37</td>
<td>8.233**</td>
<td>1.52</td>
<td>-0.204</td>
<td></td>
</tr>
<tr>
<td>2. Negative events</td>
<td>0.38</td>
<td>9.676**</td>
<td>1.51</td>
<td>-1.010</td>
<td></td>
</tr>
<tr>
<td>3. Attributional style</td>
<td>0.40</td>
<td>2.898</td>
<td>1.50</td>
<td>1.601</td>
<td></td>
</tr>
</tbody>
</table>

Among males, the above regression model accounted for a combined 5.6% of the variance in overall alcohol consumption ($F(1.49) = 9.20, p > 0.61$). None of the terms entered into the regression accounted for a significant proportion of the variance.

Among females, the same regression model accounted for 3.6% of the variance in overall alcohol consumption ($F(1.52) = 6.1, p > 0.61$). Again, there were no significant associations.

The results for the diathesis-stress model were significant with respect to accounting for variance in depressive symptomatology. Among males, the regression model accounted
for a significant 19.5% of the variance ($F(3.49)=3.73$, $p<.05$). However, the only significant predictor was stressful life events ($F(1.47)=8.95$, $p<.01$).

Among women, the overall model accounted for 31.5% of the variance in depressive symptomatology ($F(3.53)=7.63$, $p<.000$). Both attributional style ($F(1.52)=8.233$, $p<.01$) and stressful life events ($F(1.51)=9.68$, $p<.01$) accounted for a significant amount of the variance. The diathesis-stress term (interaction of attributional style x stressful life events), accounted for 4% of the variance over and above the contribution of the individual terms. This was not significant.

The above findings imply that attributional style is not a significant moderator of the relationship between negative life events and either alcohol consumption or depression. In other words, the interaction of attributional style with negative life events did not account for a significant amount of the variance in alcohol consumption once the individual terms were accounted for. With respect to depression, negative events were a significant predictor of depression for both males and females. In addition, attributional style was also a significant predictor amongst females, yet the interaction terms did not account for a significant proportion over and above the contribution of the independent predictors.

**Test of Overall Path Model**

The proposed path model was tested and found to be not significant as a whole (Figures 2 and 3). The relationships between pessimism, negative life events, rumination, distraction, alcohol consumption, and depression are indicated by the values above the lines connecting these variables. These values represent t-tests, with scores higher than 2 being statistically significant. The results of the path analysis are presented by gender.

Among females, there was a significant relationship between the following pairs of variables: pessimism and depression, negative life events and depression, negative life events and wine consumption, and pessimism and distraction.
Among males, there were significant relationships only between negative life events and rumination, and between rumination and depression. That is, expected relationships were not found for distraction and alcohol consumption.

Discussion

The first part of this section comprises a discussion of the support for the hypotheses of the study. The second part of this section presents the limitations of the present study, as well as the implications of this study and some directions for future research.

The purpose of the present study was to determine, within a normal undergraduate university sample, the interrelationships of depression, alcohol consumption, coping style, attributional style, negative life events, and gender. This study took into consideration the cognitive diathesis-model of depression, using attributional style as the diathesis and negative life events as the stress. It was hypothesized that the interaction of these two variables would be associated with levels of rumination and distraction. Similarly, distraction was hypothesized to be associated with alcohol consumption, and rumination was hypothesized to be associated with depression. The overarching goal of this study was to add a multivariate study to the literature on depression and alcohol consumption among young adults. To this end, the following sections will address the relationships among the above variables and, in doing so, the hypotheses of this study.
Levels of Alcohol Consumption and Depression

The undergraduate participants in this study must be compared to those of similar studies despite the fact that the hypotheses do not address absolute levels of alcohol consumption or depression. The Beck Depression Inventory is a measure that is ubiquitous in cognitively-oriented studies of depression. Recent research indicates that this sample is comparable with respect to depression. In a study of 565 undergraduates conducted at York University, Endler, Rutherford, and Denisoff (2000) report mean BDI scores of 7.9 and 9.9 for males and females respectively (compared to 10.3 and 8.5 in the present study). With respect to absolute levels of depression in the present study, as measured by the Beck Depression Inventory, the mean depression score amongst males was above the cutoff of 9 for mild depression (M=10.3). The mean female score was in the non-depressed range (M=8.5).

With respect to alcohol consumption, previous studies utilizing the Khavari Alcohol Test indicate higher levels of alcohol consumption than indicated in the present study. Khavari and Farber (1978) report absolute overall alcohol consumption of 312 ounces/year in a study of 396 undergraduates. Similarly, in a study of 93 undergraduates, Goldstein et al. (2000) report 332 ounces/year of absolute overall alcohol. In the present study, males averaged 197 ounces/year and the mean female consumption was 128 ounces/year.

Given the above information, the present sample yields levels of male depression that are substantially higher than other samples, and overall alcohol consumption that is lower than in similar studies. Since no demographic data were gathered, it is impossible to determine the nature of these differences. The depression data cited above emerged from a
similar, commuter-based Canadian university. The alcohol data cited above were, however, gathered at academic institutions in the United States. Since the present study is concerned with the variables associated with alcohol consumption and depression, and not with the absolute levels of depression or alcohol consumption, these differences are considered here to be of secondary importance.

**Predictors of Depression**

The first hypothesis addressed the association of coping, negative life events, and attributional style, with depression. Each variable was predicted to uniquely contribute to the variance in depression scores. It was predicted that among these variables, rumination is most strongly associated with depression.

As predicted, each of rumination, negative life events, and pessimism accounted for a significant proportion of the variance in depression scores amongst both males and females. The results of this study show that rumination was the variable most significantly associated with depression amongst males, amongst females, however, the measure of negative life events was the strongest predictor of depression. In fact rumination among males accounted for six-fold the variance in depression scores when compared to females (approximately 18% vs 3% respectively). This finding is compelling in that rumination has been cited in past studies as an explanation of women's greater propensity to depression (Nolen-Hoeksema, 1987). Other studies have shown that when gender differences in the tendency to ruminate are statistically controlled, the gender difference in depression becomes non-significant (Butler & Nolen-Hoeksema, 1995; Nolen-Hoeksema et al., 1993).
Overall, depression was significantly correlated with negative life events among both males and females. As previously mentioned, stressful life events have been strongly linked to depression (e.g. Metalsky, Halberstadt, & Abramson, 1987; Kuiper, Olinger, & Air, 1989), and, therefore, this finding is consistent with the present study’s predictions.

Also consistent with the study’s predictions, rumination was significantly correlated with negative life events across genders. One possible pathway for this relationship is that when individuals ruminate rather than utilizing distraction, they are less able to control the environment and are therefore more likely to experience events of a negative or stressful nature. (Alternatively, individuals who experience many negative events become unable to utilize distraction; the correlational design of the present study does not support a discussion of the direction of this relationship). In addition, individuals who ruminate rather than utilize distraction experience less pleasant activities, thus making negative events all the more salient (Nolen-Hoeksema, 1990). Finally, since ruminators tend not to make use of structured problem solving, the issues they face are often not resolved (Nolen-Hoeksema & Morrow, 1991).

Most compelling among the above findings is the strength of the association between rumination and depression amongst males, especially considering that the present sample is otherwise comparable to other samples with respect to the associations between the variables and the gender differences therein. Given that there were no gender differences on measures of rumination or life stressors, the question arises as to what factors may be responsible for the difference from females in this respect.

Unfortunately, no data regarding ethnicity were systematically gathered. Nonetheless, it became apparent during the data collection that there was a high number of
participants of Asian descent. Therefore, one possibility, discussed below, is that there are cultural differences in the ways in which depression is manifest. Perhaps males of Asian heritage have a more powerful exacerbation of depressed mood following rumination. Alternatively, there is a possibility that the compromised ability to control the environment, that is a theoretical outcome of rumination, has a particularly strong effect on this group. Unfortunately, there are no studies that deal explicitly with cultural differences in the relationship between rumination and depression; a thorough literature search on the PSYCINFO database did not yield any relevant publications. Another possibility is that the significant association between pessimism and rumination among males accounts for the stronger association between rumination and depression: this possibility is explored in the discussion of attributional style below.

Despite the fact that rumination and negative life events were associated, as predicted, with depression amongst women, the hypothesis that the association between rumination and depression would be stronger than the association between negative life events and depression was not supported. One possible explanation for this finding is that, among women, rumination is a socially learned coping style that does not in-and-of itself imply pathology. In addition, pessimism was not associated with rumination among women, while this association was significant among men. The comparable association between negative events and depression between the genders, when compared to the clear difference with respect to the association between rumination and depression, suggests that the role of rumination among women was less than expected. Pessimistic women did not necessarily ruminate, and ruminative women were not necessarily depressed. This is in contrast with males, among whom pessimism was associated with rumination, that was in
turn strongly associated with depression. It would appear possible that pessimism plays a role in the unexpected gender difference in the association between rumination and depression, and that this may explain why, among women, negative life events are relatively more strongly associated with depression than is rumination.

**Gender and Depression**

The second hypothesis stated that females would have higher levels of depression than males. The findings of this study did not support this hypothesis, with females and males showing similar depression scores on the Beck Depression Inventory.

There is a substantial literature indicating that females exhibit higher levels of depressive symptomatology than males (Nolen-Hoeksema, 1987). Granted, Nolen-Hoeksema (1987) identified undergraduate university students as one population within which gender differences are not pronounced. However, recent studies of Canadian young adults (e.g., Patten, 2000) indicate that such evidence may be dated. In light of the fact that this study described a small sample and that the sample is likely confounded by a large number of students from one particular ethnic group, no attempt is made at this time to rationalize the present findings (indeed, the possibility that there are additional unidentified confounds is acknowledged). Instead, it is conceded that the lack of evidence for gender differences in depression in the present study is a function of its limitations rather than evidence supporting the lack of a gender difference in depression among young adults. The literature regarding ethnic differences in depression, particularly as it relates to individuals of Asian descent, is discussed below.
**Diathesis-Stress Model**

Another component of the first hypothesis included the diathesis-stress moderator, which related to whether the interaction of attributional style with negative life events is more strongly associated with depression than the main effect of either of these variables alone (Bruder-Matson & Hovanitz, 1990). The cognitive diathesis-stress model of depression, as it relates to attributional style, asserts that a pessimistic attributional style increases the risk of depression when a person experiences stressful life events (Abramson et al., 1978, 1989). In the present study, a moderator model was tested which consisted of the interaction of attributional style with negative life events.

Among male and female young adults alike, the moderator model did not account for significant variance in overall alcohol consumption. Further, the diathesis-stress term did not better account for alcohol consumption when compared to either attributional style or life events alone.

The value of the moderator in predicting depressive symptoms varied by gender. Among males, negative life events were significantly associated with depressive symptoms. Once the variance in depressive symptoms accounted for by negative life events was considered, the diathesis-stress term was not found to uniquely account for any of the variance in depressive symptoms. The role of the moderator was more strongly supported among women. In this population both attributional style and negative life events were independently significantly associated with depression. Contrary to what was
hypothesized, the interaction of these two variables was not significantly associated with depression over and above the individual associations.

In sum, the roles of the independent terms were stronger than predicted, and the synergistic effect predicted for the diathesis-stress model was not statistically supported. As utilized here, diathesis-stress theory is a means of accounting for why certain individuals become depressed following a given level of negative life events while other individuals do not. It was hypothesized that individuals with pessimistic attributional styles who also experienced significant negative life events would be more prone to depression than would be expected from the simple additive effects of these variables.

The reason for this discrepancy may relate to the fact that this study was not longitudinal (discussed below). For instance, pessimism and negative life events may be so strongly associated with depression when both are measured at the same time that there is little variance remaining to be accounted for by the interaction. However, pessimism or negative life events alone may play a lesser role in the prediction of depression when compared to the interaction of pessimism with negative life events, as might be the case if the predictor variable were measured a month before the outcome variables. A longitudinal study would allow for analysis of changes in depression, and since the interaction between negative life events and pessimism is dynamic, this interaction may be more strongly associated with changes in depression across time than with concurrent depression levels.
Alcohol Consumption

The third hypothesis stated that young adult males would consume more hard alcohol/spirits than females. While males did not consume significantly more hard alcohol than females, they did consume significantly more beer and the overall consumption of alcohol was higher among males. Since overall alcohol consumption was also far more strongly associated with the predictor variables it was therefore was used as the primary alcohol outcome variable.

While hard alcohol/spirits and wine consumption were significantly correlated with negative life events among females, this association was not found among males. In addition, wine consumption among women was correlated with depression while this was not found for men. In fact, among males, none of the measures of alcohol consumption correlated with rumination, distraction, or depression.

These findings are consistent with those of Hoffmann and Su (1998) who reported that young adults' reactions to stressful life events are often inconsistent with older adult reactions to similar life situations and transitions. They found that life events affected depressive symptoms and substance use among females but not males. One possible explanation of this is that alcohol consumption among university-aged males takes place in the context of socializing or celebration so often that an association with negative events is not evident. It may be only after university that adult males begin to drink in response to negative events, while at the same time having fewer occasions, reasons, or excuses to consume alcohol socially.
The correlational design of this study prevents one from drawing conclusions regarding the direction of these associations. Do women drink after they become depressed? Before? Does the consumption of alcohol lead women to experience more negative life events only to become depressed as a result of this? Why is male alcohol consumption so difficult to characterize? These and other questions necessitate further multivariate longitudinal studies, primarily to elucidate the temporal sequence in the associations of these variables.

**Coping Styles and Attributional Style**

Previous studies have shown that alcohol consumption and depression are associated with different coping styles, as predicted in the fourth hypothesis. For example, rumination is associated with depression and distraction is associated with alcohol consumption (e.g., Fromme & Rivet, 1994).

While, as predicted, rumination was a significant predictor of depression, distraction did not account for a significant amount of the variance in alcohol consumption. Further, the correlation between distraction and alcohol consumption was non-significant. Nolen-Hoeksema (1987, 1991, 1993) has posited that non-ruminative response styles are preferable to ruminative ones because they do not increase the likelihood, severity, or duration of depressive episodes. Part of this study was based on the hypothesis that distraction can be an equally maladaptive response at times, and that its use may promote alcohol consumption (Cooper et al., 1988). The importance of this hypothesis is that, to this point, the research findings have been largely disparate: many researchers focus on
depression as an outcome, and while others focus on alcohol consumption as an outcome, only few address both alcohol and depression when considering risk factors and proposed etiological mechanisms.

The fifth hypothesis stated that while there would be a significant gender difference in coping strategies, no such differences would emerge with respect to attributional style. Specifically, it was hypothesized that females ruminate more than males, and that males utilize distraction to a greater degree than females. Finally, included in this hypothesis was the prediction that the gender differences would be more substantial for rumination than for distraction (e.g., Butler & Nolen-Hoeksema, 1994).

A central feature of response styles theory (Nolen-Hoeksema, 1987) is that the gender difference in depression is not significant once the tendency to ruminate is statistically controlled. In the present study, contrary to what was hypothesized, there were no statistically significant gender differences with respect to depressive symptomatology or rumination. The unexpected finding regarding lack of a gender difference in depression is discussed below in the context of a potential cultural confound. There is no evidence in the current literature that addresses cultural differences in coping styles as discussed in the present study. Nonetheless, the possibility remains that the cultural factors that have been suggested here as a possible explanation of the relatively high level of depression among males manifest themselves through the medium of rumination.

The results of this study indicate that there are no statistically significant gender differences with respect to rumination or distraction. Similarly, the association between gender and attributional style was non-significant. However, pessimism was significantly correlated with use of distraction among women. Past studies have been inconsistent
with respect to the association between coping style and gender. Some have found gender differences (e.g., Kuehner & Weber, 1999), while others have not (e.g., Eshun et al., 1998). In this respect, the present findings were consistent with the lack of past definitive findings in this domain.

With respect to attributional style, pessimism was associated with rumination among males. Among females, pessimism was associated with depression, negative events and, negatively, with distraction. The association between pessimism and rumination among males has particular significance as the strength of the association between rumination and depression among males is a relatively unexplained finding in this study. Pessimism implies making internal, global, and stable causal attributions for negative events. Such attributions have been shown to be depressogenic because they leave the individual feeling symptoms of helplessness in the face of the negative life event for which the attributions were made. Rumination often involves thinking about the causes of negative events, discussing them with friends, and otherwise focusing on one's depressed mood following a negative event. Pessimists who ruminate about the negative events in their lives are at particular risk of depression because not only do they think excessively about the causes of their depressed mood, but their thoughts themselves further have depressogenic content.

By example, consider the failure of a test to be a negative event. Take two hypothetical individuals who failed a test, both ruminate, but only one is pessimistic. The non-pessimistic ruminator will exacerbate his depressed mood solely by coping in a ruminative fashion. That is, coping with a negative life event by thinking and talking about it is harmful even when the content of such thought and discussion is not pessimistic.
However, a pessimistic individual who ruminates subjects himself to repeated thoughts that are inherently depressogenic. Therefore, a possible explanation of the strength of the association between rumination and depression among males in this study is the significant association between rumination and pessimism.

**Limitations**

A number of methodological and theoretical issues limit the interpretation of the findings of the present study. While this study addresses alcohol consumption and depressive symptomatology, a distinction is not made between clinical and sub-clinical levels. The sample population is considered normative in that participants were not selected based on in-patient status or Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) diagnostic criteria. Therefore, the level of pathology evidenced by the participants is relatively low. Intervention and prevention initiatives based on the above profiles may not apply to individuals who meet formal diagnostic criteria for depression or alcoholism. Although the use of university- or community-based samples is common, the nature of the relationship between mild and severe forms of depression is inconclusive (Endler et al., 2000).

A further limitation is that this study is based on a non-random sample. All participants are undergraduate university students which implies at the very least that they have graduated from high-school and were successful in their applications to an institute of higher learning. Furthermore, the sample is based on a self-selection bias. Only those students who signed themselves up on the research participant board were included.
University students who are motivated and concerned enough to participate in bonus-credit research are unlikely to represent young-adults in general. Further, since a description of the study accompanied the sign-up list (as per departmental protocol), this may have biased the selection of participants in favor of those who had in interest in the subject matter.

The participants in this study were students enrolled in psychology courses at an urban university; they were also self-selected with respect to the motivation and grade-consciousness that are suggested by the fact that they independently and voluntarily chose to participate in the study. A more representative sample would allow the results to be examined with more confidence that they reflect a fair test of the hypotheses.

Given these sample-based limitations, it should be noted that the majority of the literature cited in this study utilizes nearly identical samples with similar biases. Therefore, while the findings should be interpreted and extrapolated cautiously, they can be confidently compared to those of other studies using similar populations.

One possible reason for the limited findings regarding attributional style is that cognitive styles can be latent, and not adequately assessed unless activated. This study did not use cognitive priming procedures, and thus may not have adequately assessed attributional styles. Cognitive vulnerability factors for depression have been shown to be present in vulnerable individuals who are not currently depressed, however these factors are not accessible until activated by negative mood (Miranda & Gross, 1997).

In addition, this study did not examine specific vulnerability. There may be some individuals who make pessimistic attributions for events of an interpersonal nature, while other individuals make pessimistic attributions for achievement-oriented events. The degree to which alcohol consumption or depressive symptoms occur following pessimistic
attributions would be better assessed in relation to specific vulnerabilities. In this way, individuals "at risk" for one of these outcomes could be identified on the basis of a high level of negative life events in the domain that corresponds to their specific type of pessimism. It would be interesting to assess the contributions of achievement- vs. interpersonal-type pessimism as they relate to the degree of negative events of an achievement or interpersonal nature respectively.

The measures in this study were completed on a single occasion. Therefore, it is difficult to comment about any dynamic associations between the predictor and outcome variables. A multiple sequential protocol, where the variables are repeatedly measured on separate occasions at monthly intervals for example, would certainly add to the understanding of how these variables change with respect to one another. So many factors must be considered when addressing depression and alcohol consumption, and focusing on changes in depression in alcohol consumption over time would allow for a clearer understanding of the variables that are proximally and actively associated with these outcomes.

Finally, the fact that culture or ethnicity was not included among the variables of the present study limits the interpretation of the findings. The following section addresses issues related to culture that are pertinent to the present study as well as to future studies of depression.
Culture

Although culture was not one of the measure variables of this study, it became apparent during the collection of data that the number of males of Asian heritage was high (estimated to be one-third) relative to the overall representation at the University of Calgary; this was a function of the population of individuals that chose to sign-up for extra-credit research participation. Because cultural issues related to depression were not addressed in the hypotheses of this study, it is important to include them here in a brief discussion.

Studies pertaining to depression among ethnic populations in North America have been inconsistent with respect to their findings. Some studies reported no evidence of ethnic differences in depression amongst young adults (Doerfler et al., 1988, Garrison et al., 1990; Kandel & Davies, 1982; Manson et al., 1990). Other studies found that non-caucasian youth did, in fact, exhibit higher levels of depression (Emslie et al., 1990; Schoenback, 1982).

Studies focusing on Asian-Americans and Asian-Canadians are abundant relative to most other minorities. Part of the reason for this may be that Asian cultures are different from Western cultures in a number of significant ways. For instance, family systems are different from those in Western society, as is affective expression, levels of stigmatization, and parent-child relationships (e.g. Zang, 1995; Tseng & Wu, 1985). A common caveat, however, is that Asian individuals are often pooled together in studies despite the fact that there is significant cultural variation within the various Asian societies.
Some differences in depressive symptomatology have been documented. For instance, somatic complaints are far more common and more culturally acceptable than affective expressions among Chinese clients (Zang, 1995). This manifestation of depression is influenced by traditional Chinese medicine, social and political norms, and language use relating to emotional expression. Traditional Chinese medical theory divides depression into three subtypes: Niyu refers to depression resulting from excessive anger. Siyu is depression resulting from excessive thinking. Yiyu, finally, is depression that results from excessive worry.

The direct verbal expression of emotion is regarded as insensitive and uncouth among many Chinese. While the psychological aspects of depression may be experienced and shared with a few trusted friends, Chinese clients tend not to initiate help-seeking for psychological symptoms (Tseng & Wu, 1985). Chinese-Canadians are worried about "losing face," and therefore have difficulty opening-up to outsiders (Jenkins, 1988). This is supported by a lack of any equivalent to the term "depression" in spoken language (although there are written Chinese characters designating states of depression). The closest term is "xin qing bu hao" which translates directly as "the condition of my heart is not good," and implies that one is in a bad mood. (Tseng & Wu, 1985).

Finally, there is some evidence that the gender difference in depression is reversed in Asian samples. In a recent study incorporating Southeast Asian populations, males were found to suffer a higher rate of major depressive disorder than females (Beiser, Cargo, & Woodbury, 1994).

Unfortunately, the literature does not contain any studies that address ethnic differences in the association between rumination and depression. Similarly, there are no
studies that address differences amongst Asian populations in the association between pessimistic attributional style and depression. Despite the lack of such studies, the above literature suggests that the manifestation of depression, as well as the way in which it is perceived and subsequently reported, is different among Asian populations than it is amongst Caucasian population. To this end, the possibility remains that a high number of Asian participants influenced the findings in the present study as they pertain to depression and the variables with which it is associated.

**Implications**

Although this research is based on normative undergraduate participants, the results of this study have clinical implications. Other researchers have shown that despite a lack of clinical-level depression, depressive symptoms are associated with greater use of physical health care resources (Schraedley, Gotlib, & Hayward, 1999). Therefore, the early identification of, and intervention for, individuals at relative risk for significant depressive symptoms could feasibly alleviate some stress from the beleaguered health care system. In addition to cognitive-behavioral therapy specifically targeted at depression, cognitive-behavioral therapy targeted at changing pessimistic attributional style has been shown to yield positive changes in depressive symptoms and other psychosocial variables (Schwartz, Kaslow, Seeley, & Lewinsohn, 2000).

Some researchers have argued that depression as it is experienced by most undergraduates, that is subclinically, is a far cry from the paralyzing effects of clinical depression. Subclinical depression refers to a collection of symptoms of depression that do
not meet criteria sufficient for a diagnosis of depression either because the duration of the episode is too short or because the number of symptoms is insufficient. Regardless of this, it has been shown that subclinical depression is a significant risk factor for a major depressive episode (one that does meet diagnostic criteria) and should be targeted for preventive intervention and treatment (Kessler, Zhao, Blazer, & Swartz, 1997). This study provides information regarding variables that may be associated with subclinical depression. In particular, a pessimistic attributional style may increase the strength of the association between rumination and depression. It might therefore be important to develop two-pronged approaches to depressed clients who are both ruminators and pessimists. In addition, wine consumption among depressed women may be an area where a quick screening question can identify unexpected comorbid substance abuse.

One way of integrating the findings from the present study into real-life utility would be through the development of a battery of questionnaires (comprising those that were administered in the present study) that could be used as a supplement to clinical assessment. Validation could be achieved by comparing the scores of those with clinically problematic depression or alcohol consumption to those of a normative population. If the profiles of the clinical participants differ significantly from the normative participants, it could be argued that these questionnaires may be used as a screen for problematic alcohol use or depression. Much as the Beck Depression Inventory has been used as an objective indicator of effectiveness of interventions, repeated administrations of measures of coping styles, attributional styles, and negative life events may shed more light on the dynamic associations shared by these variables.
The lack of a gender difference in depression (as measured with the Beck Depression Inventory), despite the copious literature attesting to such a difference, is a reminder that researchers come to view certain phenomena as universal when in truth they may be highly socially and culturally determined. Although culture was not identified in the present study, the literature above—and the simple fact that gender difference in depression was not reproduced here—suggests that clinicians should be aware of the potential role of culture and context in psychological research, while avoiding stereotyping individuals based on their ethnic or racial heritage. For example, psychological instruments that have been used and validated with a given cultural group should be considered when such an option is available.

One of the main goals of this study was to consolidate previous recommendations regarding interventions for depression and those for alcohol consumption. The central theme that emerges from the findings of this study is that individuals often do not fit the empirically-determined schemata that have been developed. Pessimism is not always directly associated with depression. Women do not always exhibit higher rates of depression than men, and distraction is not a better protective coping style for everyone. Therefore, a major implication of this study is that the issues raised here serve the interests of blending research with practice by emphasizing the need for targeted interventions that are based on profiles at the individual level. The primary implication of this study is that the associations between given pairs of variables are dependent upon the associations with other variables. By being aware of potential mediating and moderating influences of certain variables on the associations between others, researchers may be more likely to entertain multivariate considerations in future studies.
**Future Directions**

The findings related to coping styles are particularly compelling. Men who ruminate are significantly more depressed than their counterparts who do not. Similarly, women who utilize distraction have better outcomes than women who do not. Future studies should be conducted with the purpose of expanding our understanding of the construct of distraction (rumination, as evidenced by the Cronbach's Alphas of this and other studies, is already a well-defined response style). The Response Styles Questionnaire includes 22 items on the rumination scale, but only 11 on the distraction scale. This discrepancy merits the attention of researchers, particularly given the evidence for the desirable associations that distraction shares with the other variables in the present study. The construct of distraction needs to be further fleshed out, and perhaps an expanded distraction scale is needed in order to do so. In particular, future studies may add to our understanding of the magnitude of the contribution of distraction to the prediction of alcohol consumption.

Another area ripe for investigation is that of cultural differences in attributional style, coping styles, and the role of gender. In particular, future studies are needed to address the different ways that these variables interact in predicting depression and alcohol consumption among a variety of cultures. In addition, the question arises as to whether self-report questionnaires are applicable cross-culturally. To address this question, further studies are needed to provide cultural, racial, or ethnic “norms” for coping styles and alcohol consumption in particular.
Finally, future studies are needed to address the methodological limitations previously mentioned. Larger clinically- and ethnically-heterogeneous samples are required to provide a more convincing test of the hypotheses addressed in this study. Similarly, cognitive priming procedures, and tests of specific cognitive vulnerability are needed. Finally, longitudinal study design is crucial for gaining further knowledge about the temporal relationship among negative life events, pessimistic attributional style, rumination, distraction, alcohol consumption and depression.
References


presented at the 101st Annual Convention of the American Psychological Association, Toronto, Ontario, Canada.


Appendices

Appendix A
Consent Form

B. I. Goldstein, M. Ed.
Dr. S. Miezitis
Alcohol Use and Depression

UNIVERSITY OF CALGARY
INFORMED CONSENT FORM

Research Project Title: Coping style and Attributional Style as Mediators of Adolescent Alcohol Use and Depression.
Investigators: B. I. Goldstein, M. Ed. and Dr. S. Miezitis

This consent form, a copy of which has been given to you, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, please ask. Please take the time to read this form carefully and to understand any accompanying information.

This research study is concerned with factors that affect alcohol use and depression (or symptoms of depression) in young adults (aged 16-21). In particular, we are studying the roles that coping and attributional style play. Both coping style and attributional style, as well as the other variables in this study, will be discussed during the debriefing.

The study will require approximately 60-70 minutes during which time you will be asked to fill in five questionnaires. The questionnaires deal with symptoms of depression, types of responses to symptoms of depression, stressful life events, alcohol use, and explanations that you make for various types of events (both positive and negative) in your life.

Some of the items/questions in these questionnaires will lead you to think about symptoms of depression that you may or may not have experienced. Other questions will lead you to think about ways with which you cope with such symptoms. Finally, some questions will lead you to recall stressful events which may or may not have occurred in the past three months. It is possible that thinking about these topics may trigger some strong feelings for you. You may become upset because of this. If you sense that this is the case, and you'd prefer not to respond to such topics right now, please feel free to decline participation at this point. We will fully understand your decision if you wish to withdraw and encourage you to do so if you feel it will be too upsetting. We only want you to proceed if you are certain you want to spend time thinking about your thoughts and emotions, and your responses to them.

If you are interested in learning more about this topic, we will be pleased to send you a summary of the results of this study once they have been compiled (probably in about 3 months). This summary will outline, in general terms, the factors we found to be associated with alcohol use and symptoms of depression, and present insights into this that we have gained from the study. If you would like to receive a copy of this summary, please put the address to which you would like it sent in the following space.
All of the information we collect from you (i.e., your questionnaire answers) will be stored so that your name is not associated with it (using an arbitrary participant number). The write-up of the data will not include any information that can be linked to you in any way. The research materials will be stored with complete security. Please feel free to ask any questions about this aspect of the study.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a participant. In no way does this waive your legal rights nor release the investigators, sponsors, or involved institutions from their legal and professional responsibilities. You are free to not answer specific items or questions in interviews or on questionnaires. You are free to withdraw from the study at any time without penalty. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation. If you have further questions concerning matters related to this research, please contact:

B. I. Goldstein: Ph.D candidate, Department of Human Development and Applied Psychology, The University of Toronto. Medical student, Faculty of Medicine, The University of Calgary; 282-7394, or bgoldste@ucalgary.ca

Dr. S. Miezitis: Professor of Psychology, OISE/The University of Toronto. smiezitis@oise.utoronto.ca

If you have any questions concerning your participation in this project, you may also contact the Psychology Department Ethics Committee (T. B. Rogers; A255B; 220-6378; email tbrogers@acs.ucalgary.ca

Participant:
Gender (please circle one): F/M Age:
Date:

Investigator:

Date

A copy of this consent form has been given to you to keep for your records and reference. This research has the ethical approval of the Psychology Department Ethics Committee (Human Participants).
Appendix B:  
Sign-up poster

Alcohol Use and Depressive Thoughts amongst Young Adults (ages 16-21)

The purpose of this study is to learn about alcohol consumption as well as depressive thoughts amongst young adults. Participants will be asked to complete 5 questionnaires on these and related topics.

Primary Investigator: Benjamin Goldstein

Time Required: approximately 35-45 minutes

Bonus Credit: one (1) bonus credit

Special Requirements: Participants must be male.
Participants must be fluent in English.
Participants must be 16-21 years of age.

Location of Study Administration 251F

The study will be conducted on weekdays between January 18th and March 13th.

Please come to room 251F on: MONDAYS/WEDNESDAYS, 10am-12:30pm
TUESDAYS/THURSDAYS, 9am-10:30am; 12:30pm-3pm.

Individual appointments are not required, but please sign-up at least one day prior.

Should you wish to participate in the study but would prefer a different time, please call 282-7394 and leave a message regarding how you wish to be reached to schedule an appointment. Alternatively, send an e-mail message to bgoldste@ucalgary.ca
Appendix C:

Khavari Alcohol Test

This is a series of questions about the use of alcoholic beverages. What beverages people drink, how much, and how often. Please check the statement that best applies to you, or write in the answer.

1. How often do you usually drink beer?

   - daily
   - 3 or 4 times a week
   - twice a week
   - once a week
   - 3 or 4 times a month
   - twice a month
   - once a month
   - 3 or 4 times a year
   - twice a year
   - once a year
   - I have tried beer; but I don’t drink beer
   - never had beer

2. Think of all the times you have had beer recently. When you drink beer, how much beer do YOU USUALLY DRINK each time?

   CANS OR GLASSES?

   - 1
   - 2
   - 3
   - 4
   - 5
   - 6
   - 7
   - 8
   - 9
   - 10
   - 11
   - 12
   - 13
   - 14
   - 15

   - More? ____________

   - I don’t drink beer

3. Each time you drink beer, what is the MOST YOU DRINK?

   CANS OR GLASSES?

   - 1
   - 2
   - 3
   - 4
   - 5
   - 6
   - 7
   - 8
   - 9
   - 10
   - 11
   - 12
   - 13
   - 14
   - 15

   - More? ____________

   - I don’t drink beer
4. About **HOW OFTEN** do you drink this much beer?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Choice 1</th>
<th>Choice 2</th>
<th>Choice 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
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<td>___</td>
<td>___</td>
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<tr>
<td>3 or 4 times a week</td>
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<tr>
<td>Twice a week</td>
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<td>Once a week</td>
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<tr>
<td>3 or 4 times a month</td>
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</tbody>
</table>

___ I don’t drink beer

------------------------------------------------------------------------------------------------------------------

5. How often do you usually have **wine**, or a punch containing wine?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Choice 1</th>
<th>Choice 2</th>
<th>Choice 3</th>
</tr>
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<tbody>
<tr>
<td>Daily</td>
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<td>3 or 4 times a week</td>
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<td>3 or 4 times a month</td>
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<td>Twice a month</td>
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</tbody>
</table>

___ I have tried wine, but I don’t drink wine

___ I never had wine

------------------------------------------------------------------------------------------------------------------

6. Think of all the times you have had **wine** recently. When you drink wine, how much wine or a punch containing wine do **YOU** **USUALLY DRINK** each time?

**GLASSES?**

<table>
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<tr>
<th>Number of Glasses</th>
<th>Choice 1</th>
<th>Choice 2</th>
<th>Choice 3</th>
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</table>

___ I don’t drink wine

------------------------------------------------------------------------------------------------------------------
7. Each time you drink wine or a punch containing wine, what is the MOST YOU DRINK?

GLASSES?

____ 1 ____ 5 ____ 9 ____ 13
____ 2 ____ 6 ____10 ____ 14
____ 3 ____ 7 ____11 ____ 15
____ 4 ____ 8 ____12 ____ More? __________

____ I don’t drink wine

*************************************************************************

8. About HOW OFTEN do you drink this much wine?

____ daily ____ twice a month
____ 3 or 4 times a week ____ once a month
____ twice a week ____ 3 or 4 times a year
____ once a week ____ twice a year
____ 3 or 4 times a month ____ once a year

____ I don’t drink wine

*************************************************************************

9. How often do you usually have drinks containing whiskey or liquor (such as martinis, manhattans, highballs, or straight drinks)?

____ daily ____ once a month
____ 3 or 4 times a week ____ 3 or 4 times a year
____ twice a week ____ twice a year
____ once a week ____ once a year
____ 3 or 4 times a month ____ I have tried whiskey and liquor but
____ twice a month ____ I don’t drink them
____ twice a month ____ never had whiskey or liquor

*************************************************************************
10. Think of all the times you had drinks containing *whiskey* or *liquor* recently. When you drink whiskey or liquor, how much do YOU USUALLY DRINK?

**DRINKS?**

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<td>4</td>
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<td>12</td>
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how many?

___ I don’t drink Whiskey or liquor

11. Each time you drink *whiskey* or *liquor*, what is the MOST YOU DRINK?

**DRINKS?**

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</table>

how many?

___ I don’t drink whiskey or liquor

12. About HOW OFTEN do you drink this much *whiskey* or *liquor*?

___ daily
___ 3 or 4 times a week
___ twice a week
___ once a week
___ 3 or 4 times a month

___ twice a month
___ once a month
___ 3 or 4 times a year
___ twice a year
___ once a year

___ I don’t drink whiskey or liquor
Appendix D:
Attributional Style Questionnaire

ATTRIBUTIONAL STYLE QUESTIONNAIRE

DIRECTIONS
1) Read each situation and vividly and imagine it happening to you.
2) Decide what you believe would be the one major cause of the situation if it happened to you.
3) Write this cause in the blank provided.
4) Answer three questions about the cause by circling one number per question. Do not circle the words.
5) Go on to the next situation.

SITUATIONS

YOU MEET A FRIEND WHO COMPLIMENTS YOU ON YOUR APPEARANCE

1) Write down the one major cause: ____________________________________________

2) Is the cause of your friend's compliment due to something about you or something about other people or circumstances?
   
   Totally due to other 1 2 3 4 5 6 7 Totally due to me people or circumstances

3) In the future when you are with your friend, will this cause again be present?
   
   Will never again be present 1 2 3 4 5 6 7 Will always be present

4) Is the cause something that just affects interacting with friends, or does it also influence other areas of your life?
   
   Influences just this particular situation 1 2 3 4 5 6 7 Influences all situations
YOU HAVE BEEN LOOKING FOR A JOB UNSUCCESSFULLY FOR SOME TIME.

5) Write down the one major cause: ____________________________________________

6) Is the cause of your unsuccessful job search due to something about you or something about other people or circumstances?

   Totally due to other 1 2 3 4 5 6 7   Totally due to me
   people or circumstances

7) In the future when you look for a job, will this cause again be present?

   Will never again be present 1 2 3 4 5 6 7   Will always be present

8) Is the cause something that just influences looking for a job, or does it also influence other areas of your life?

   Influences just this particular situation 1 2 3 4 5 6 7   Influences all situations

YOU BECOME VERY RICH.

9) Write down the one major cause: ____________________________________________

10) Is the cause of your becoming rich due to something about you or something about other people or circumstances?

    Totally due to other 1 2 3 4 5 6 7   Totally due to me
    people or circumstances

11) In your financial future, will this cause again be present?

    Will never again be present 1 2 3 4 5 6 7   Will always be present

12) Is the cause something that just affects obtaining money, or does it also influence other areas of your life?

    Influences just this particular situation 1 2 3 4 5 6 7   Influences all situations
A FRIEND COMES TO YOU WITH A PROBLEM AND YOU DON'T TRY TO HELP HIM/HER.

13) Write down the one major cause: ____________________________________________

14) Is the cause of your not helping your friend due to something about you or something about other people or circumstances?

| Totally due to other | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Totally due to me people or circumstances |

15) In the future when a friend comes to you with a problem, will this cause again be present?

| Will never again be present | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Will always be present |

16) Is the cause something that just affects what happens when a friend comes to you with a problem, or does it also influence other areas of your life?

| Influences just this particular situation | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Influences all situations |

YOU GIVE AN IMPORTANT TALK IN FRONT OF A GROUP AND THE AUDIENCE REACTS NEGATIVELY.

17) Write down the one major cause: ____________________________________________

18) Is the cause of the audience's negative reaction due to something about you or something about other people or circumstances?

| Totally due to other | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Totally due to me people or circumstances |

19) In the future when you give talks, will this cause again be present?

| Will never again be present | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Will always be present |

20) Is the cause something that just influences giving talks, or does it also influence other areas of your life?
Influences just this particular situation 1 2 3 4 5 6 7 Influences all situations

YOU DO A PROJECT WHICH IS HIGHLY PRAISED.

21) Write down the one major cause: __________________________________________

22) Is the cause of your being praised due to something about you or something about other people or circumstances?

   Totally due to other 1 2 3 4 5 6 7 Totally due to me people or circumstances

23) In the future when you do a project, will this cause again be present?

   Will never again be present 1 2 3 4 5 6 7 Will always be present

24) Is the cause something that just affects doing projects, or does it also influence other areas of your life?

   Influences just this particular situation 1 2 3 4 5 6 7 Influences all situations

YOU MEET A FRIEND WHO ACTS HOSTILELY TOWARDS YOU

25) Write down the one major cause: __________________________________________

26) Is the cause of your friend acting hostile due to something about you or something about other people or circumstances?

   Totally due to other 1 2 3 4 5 6 7 Totally due to me people or circumstances

27) In the future when interacting with friends, will this cause again be present?

   Will never again be present 1 2 3 4 5 6 7 Will always be present
28) Is the cause something that just affects interacting with friends, or does it also influence other areas of your life?

Influences just this particular situation 1 2 3 4 5 6 7 Influences all situations

YOU CAN'T GET ALL THE WORK DONE THAT OTHERS EXPECT OF YOU.

29) Write down the one major cause: _____________________________

30) Is the cause of your not getting the work done due to something about you or something about other people or circumstances?

Totally due to other people or circumstances 1 2 3 4 5 6 7 Totally due to me

31) In the future when doing work that others expect, will this cause again be present?

Will never again be present 1 2 3 4 5 6 7 Will always be present

32) Is the cause something that just affects doing work that others expect of you, or does it also influence other areas of your life?

Influences just this particular situation 1 2 3 4 5 6 7 Influences all situations

YOUR SPOUSE (BOYFRIEND/GIRLFRIEND) HAS BEEN TREATING YOU MORE LOVINGLY.

33) Write down the one major cause: _____________________________

34) Is the cause of your spouse (boyfriend/girlfriend) treating you more lovingly due to something about you or something about other people or circumstances?

Totally due to other people or circumstances 1 2 3 4 5 6 7 Totally due to me
35) In future interactions with your spouse (boyfriend/girlfriend), will this cause again be present?

Will never again 1 2 3 4 5 6 7 Will always be present

36) Is the cause something that just affects how your spouse (boyfriend/girlfriend) treats you, or does it also influence other areas of your life?

Influences just this 1 2 3 4 5 6 7 Influences all particular situation situations

YOU APPLY FOR A POSITION THAT YOU WANT VERY BADLY (E.G., IMPORTANT JOB, GRADUATE SCHOOL ADMISSION, ETC.) AND YOU GET IT.

37) Write down the one major cause: ____________________________________________

38) Is the cause of your getting the position due to something about you or something about other people or circumstances?

Totally due to other 1 2 3 4 5 6 7 Totally due to me people or circumstances

39) In the future when you apply for a position, will this cause again be present?

Will never again 1 2 3 4 5 6 7 Will always be present

40) Is the cause something that just influences applying for a position, or does it also influence other areas of your life?

Influences just this 1 2 3 4 5 6 7 Influences all particular situation situations
YOU GO OUT ON A DATE AND IT GOES BADLY.

41) Write down the one major cause: ________________________________

42) Is the cause of the date going badly due to something about you or something about other people or circumstances?

   Totally due to other people or circumstances
   1 2 3 4 5 6 7
   Totally due to me

43) In the future when you are dating, will this cause again be present?

   Will never again be present
   1 2 3 4 5 6 7
   Will always be present

44) Is the cause something that just influences dating, or does it also influence other areas of your life?

   Influences just this particular situation
   1 2 3 4 5 6 7
   Influences all situations

YOU GET A RAISE.

45) Write down the one major cause: ________________________________

46) Is the cause of your getting a raise due to something about you or something about other people or circumstances?

   Totally due to other people or circumstances
   1 2 3 4 5 6 7
   Totally due to me

47) In the future on your job will this cause again be present?

   Will never again be present
   1 2 3 4 5 6 7
   Will always be present

48) Is this cause something that just affects getting a raise, or does it also influence other areas of your life?

   Influences just this particular situation
   1 2 3 4 5 6 7
   Influences all situations
Appendix E:

Beck Depression Inventory*

BECK INVENTORY

Date

On this questionnaire are groups of statements. Please read each group of statements carefully. Then pick out the one statement in each group which best describes the way you have been feeling the PAST WEEK, INCLUDING TODAY. Circle the number beside the statement you picked. If several statements in the group seem to apply equally well, circle each one. Be sure to read all the statements in each group before making your choice.

1. 0 I do not feel sad.
   1 I feel sad.
   2 I am sad all the time and can’t snap out of it
   3 I am so sad or unhappy that I can’t stand it

2. 0 I am not particularly discouraged about the future
   1 I feel discouraged about the future.
   2 I feel I have nothing to look forward to.
   3 I feel that the future is hopeless and that things cannot improve.

* These two items from the original 21-item inventory are reproduced by permission of The Psychological Corporation, a Harcourt Assessment Company.
Appendix F:

Adolescent Perceived Events Scale

Subject____________________

Date____________________

Life Events

Instructions

On the following pages are a list of events which may or may not have happened to you. Please read each item carefully. If the event has happened to you in the past four months please place an “X” on the line marked EVENT HAS HAPPENED in front of the event. For each event which has happened please fill in your rating of the desirability of the event (how good or bad it was when it happened).

Desirability Rating:

Good (desirable) events are ones which are pleasant or make us happy while bad (undesirable) events are ones that upset us or make us feel scared, sad, or angry. Using the following numbers write down in the blank space marked GOOD-BAD RATING the number which best describes how desirable the event was when it happened to you.

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<th>Extremely Very Bad</th>
<th>Somewhat Slightly Bad</th>
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-4.................. -3........... -2.................. -1.................. 0.................. +1.................. +2.................. +3.................. +4
EVENT HAS HAPPENED
GOOD-BAD
IN PAST 4 MONTHS
RATING

1. _____ Hobbies or activities (watching T.V., reading, playing an instrument, etc.)
2. _____ Doing things/spending time with family members
3. _____ Spending time/talking with boyfriend/girlfriend
4. _____ Marriage or becoming engaged
5. _____ Dating or doing things with people of opposite sex
6. _____ Feeling pressured by friends
7. _____ Family members, relatives, step-parents moving in or out of house
8. _____ Helping other people
9. _____ Fight with or problems with a friend
10. _____ Restrictions at home (having to be in at a certain time, etc.)
11. _____ Death of a family member
12. _____ Family member becoming pregnant or having child
13. _____ Attending school
14. _____ Hospitalization of a family member or relative
15. ____ Falling in love or beginning a relationship with boy/girlfriend

16. ____ Poor relationship between family members and friends

17. ____ Doing poorly on an exam or paper

### EVENT HAS HAPPENED

**GOOD-BAD**

**IN PAST 4 MONTHS**

**RATING**

18. ____ Talking or sharing feelings with friends

19. ____ Being around people who are inconsiderate/offensive

20. ____ Arrest of a family member

21. ____ Getting in trouble or being suspended from school

22. ____ Hassels, arguments, or fight with other students or peers

23. ____ Financial troubles or money worries

24. ____ Getting bad grades or progress reports

25. ____ Having bad classes or teachers

26. ____ Emotional worries (feeling depressed, moody, angry, insecure, etc.)

27. ____ Going to church

28. ____ Meeting new people

29. ____ Parent getting remarried

30. ____ Friend getting married or engaged

31. ____ Friend getting separated or divorced

32. ____ Having few or no friends
33. Arguments or fights between parents

34. Getting good grades or progress reports

35. Having good classes or teachers

36. Drinking or drug use

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EVENT HAS HAPPENED
GOOD-BAD
IN PAST 4 MONTHS
RATING

37. Understanding classes/homework

38. Change in relationship with boy/girlfriend

39. Change in relationship with family member(s)

40. Change in relationship with friend(s)

41. Pressures or expectations by parents

42. Visiting a parent that doesn’t live with you

43. Having plans fall through (not going on a trip, etc.)

44. Visiting with relatives

45. Going to parties, dances, concerts

46. Making love or sexual intercourse

47. Friends getting drunk or drug use

48. Not attending your high school prom

49. Death of a relative
50. ___ Obligations at home .........................................................
51. ___ Spending time alone .......................................................
52. ___ Family member or relative having emotional problems ...........
53. ___ Friend or family member recovering from illness or injury .......
54. ___ Arguments or problems with boy/girlfriend ........................
55. ___ Something bad happened to a friend ................................

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<th>EVENT HAPPENED</th>
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<td>RATING</td>
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56. ___ Change in privileges or responsibilities at home ................
57. ___ Change in health of family member or relative ....................
58. ___ Change in health of a friend ........................................
59. ___ Change in number of friends (make new friends or lose friends) 

60. ___ Parents discover something you didn’t want them to know .........
61. ___ Becoming (or making) pregnant or having child ......................
62. ___ Brother/sister getting engaged or married ...........................
63. ___ Brother/sister getting separated or divorced ........................
64. ___ Not spending enough time with family members or friends ...........
65. ___ School or career change of family member (drops out of school, gets job, etc.) 
66. ___ Advancing a year in school .............................................
67. ___ Living with one parent ................................................
68. ____ Talking on the phone
69. ____ Discussions with parent(s)
70. ____ Homework or studying
71. ____ Taking care of younger brother(s)/sister(s)
72. ____ Change in birth control use
73. ____ Problems or arguments with parents, siblings, or family members
74. ____ Problems or arguments with teachers or principal

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EVENT HAS HAPPENED
GOOD-BAD
IN PAST 4 MONTHS
RATING

75. ____ Spending time at home
76. ____ Changes in alcohol or drug use
77. ____ Making honor roll or other school achievement
78. ____ Applying to/waiting to hear from colleges
79. ____ Negative feelings or worry about appearance
80. ____ Negative feelings or worry about personal health or fitness
81. ____ Doing household chores
82. ____ Something good happens to a friend
83. ____ Alcohol or drug use of a family member/relative
84. ____ Breaking up with or being rejected by boy/girlfriend
85. __ Death of a friend

86 __ Family move

87 __ Losing virginity

88 __ Parent loses job

89 __ Attending your high school prom

90 __ Returning to school after time off

91 __ Parents getting divorced

92 __ Not getting along with parents of friends

93 __ Doing well on an exam or paper

94 __ Spending time/relaxing/going out with friends

95 __ Friend(s) move away or you move away from friends

96 __ Getting punished by parents

97 __ Being in love or having a relationship

98 __ Not having a boyfriend or girlfriend

99 __ Friend having emotional problems

100 __ Friend becoming pregnant or having child
Appendix G:
Response Styles Questionnaire

People think and do many different things when they feel depressed. Please read each of the items below and indicate whether you never, sometimes, often or always think or do each one when you feel down, sad or depressed. Please indicate what you generally do, not what you think you should do.

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<th>Almost Never</th>
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<tbody>
<tr>
<td>1. Ask someone to help you overcome a problem</td>
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<td>2. Write about your feelings in a diary or journal</td>
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<td>3. Think of how someone (or some fictional character) you respect would deal with your current situation</td>
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<td>4. Think “I’m not going to think about how I feel”</td>
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<td>5. Think about how alone you feel</td>
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<td>6. Think “I won’t be able to do my job/work because I feel so badly”</td>
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<td>7. Think about your feelings of fatigue and achiness</td>
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<td>8. Think about how hard it is to concentrate</td>
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<td>9. Try to find something positive in the situation or something you learned</td>
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<td>10. Think “People will see what I’m really like”</td>
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11. Take recreational drugs or drink alcohol

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12. Think “I’m going to do something to make myself feel better”

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13. Help someone else with something in order to distract yourself

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14. Think “What am I doing to deserve this?”

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15. Think about how passive and unmotivated you feel.

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16. Remind yourself that these feelings won’t last

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17. Think “I am embarrassing my family/friends/mate”

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18. Analyze recent events to try to understand why you are depressed

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19. Think about how you don’t seem to feel anything anymore

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20. Daydream, fantasize or think about good things

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21. Think “Why can’t I get going?”

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22. Think “Why do I always react this way?”

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23. Watch TV to distract yourself

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24. Go to a favorite place to get your mind off your feelings

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<td>25. Go away by yourself and think about why you feel this way</td>
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<td>26. Talk it out with someone whose opinions you respect (i.e. friend/family/clergy)</td>
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<td>27. Think “I’ll concentrate on something other than how I feel”</td>
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<td>28. Write down what you are thinking about and analyze it</td>
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<td>29. Do something that has made you feel better in the past</td>
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<td>30. Think about a recent situation, wishing it had gone better</td>
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<td>31. Think “I’m going to go out and have some fun”</td>
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<td>32. Make a plan to overcome a problem</td>
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<td>33. Stay around people</td>
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<td>34. Think “I am ruining everything”</td>
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<td>35. Concentrate on your work</td>
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<td>36. Think “There must be something wrong with me or I wouldn’t feel this way”</td>
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<td>37. Think “I am disappointing my friends/family/mate”</td>
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<td>38. Deny how you are feeling</td>
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<td>39. Think “I’ve ruined another school year/job/relationship”</td>
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<td>40 I have problems other people don’t have?”</td>
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<td>41. Do something reckless or dangerous</td>
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<td>42. Think “Why can’t I handle things better?”</td>
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<tr>
<td>43 Think about how sad you feel</td>
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<td>44. Think about all your shortcomings, failings, faults, mistakes</td>
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<td>45. Do something you enjoy</td>
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<td>46. Think about how you don’t feel up to doing anything</td>
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<td>47. Think “I have no right to feel this way—I am really selfish”</td>
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<td>48. Think “My friends are getting sick of me and my problems”</td>
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<td>49. Call your therapist to talk about your feelings</td>
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<td>50. Decide to try to improve some area of your life</td>
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<td>51. Think “I am disappointing God”</td>
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<td>52. Do something fun with a friend</td>
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<td>53. Analyze your personality to try to understand why you are depressed</td>
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<td>54. Go to sleep to escape how you feel</td>
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<td>55. Take your feelings out on someone else</td>
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<td>56. Go someplace alone to think about your feelings</td>
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<td>57. Deliberately do something to make yourself feel worse</td>
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<td>58. Eat</td>
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<td>59. Pray</td>
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<td>60. Read</td>
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<td>61. Think about how angry you are with yourself</td>
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<td>62. Think about how angry you with someone else</td>
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<td>63. Think back to other times you have felt depressed</td>
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<td>64. Take prescription medications to make yourself feel better</td>
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<td>65. Think “I’ve got things under control”</td>
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<td>66. Think “No one wants to be around me because of my mood”</td>
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<td>67. Listen to sad music</td>
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<td>68. Isolate yourself and think about the reasons why you feel sad</td>
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<td>69. Think “I must really have serious problems or I wouldn’t feel this way so often”</td>
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70. Try to understand yourself by focusing on your depressed feelings

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71. Do something active to get your mind off of your feelings (i.e. jog/aerobics/exercise)

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Figure 1: Path Model Portraying Study Rationale

Pessimism=Attributional Style Questionnaire
Neg. Events=Adolescent Perceived Events Scale
Ruminate=Rumination scale of Response Styles Questionnaire
Distract=Distraction scale of Response Styles Questionnaire
Alcohol=Overall scale of Khavari Alcohol test
Depression=Beck Depression Inventory
Figure 2: Results of Path Model for Females

* p < 0.05
Pessimism = Attributional Style Questionnaire
Neg Events = Adolescent Perceived Events Scale
Ruminate = Rumination scale of Response Styles Questionnaire
Distract = Distraction scale of Response Styles Questionnaire
Alcohol = Overall scale of Khavari Alcohol Test
Depression = Beck Depression Inventory
Figure 3: Results of Path Model for Males

*p < .05
Pessimism = Attributional Style Questionnaire
Neg Events = Adolescent Perceived Events Scale
Ruminate = Rumination scale of Response Styles Questionnaire
Distract = Distraction scales of Response Styles Questionnaire
Alcohol = Overall scale of Khavari Alcohol Test
Depression = Beck Depression Inventory