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A study of several issues related to adolescent alcohol use: Parental participation in research, frequent heavy drinking, subjective expected utility and relationships among risk factors

Smith, Laura Kay, Ph.D.
The Ohio State University, 1989
A STUDY OF SEVERAL ISSUES RELATED TO ADOLESCENT ALCOHOL USE:

PARENTAL PARTICIPATION IN RESEARCH,

FREQUENT HEAVY DRINKING,

SUBJECTIVE EXPECTED UTILITY

AND RELATIONSHIPS AMONG RISK FACTORS

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of the Ohio State University

By

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*****

The Ohio State University
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CHAPTER I
INTRODUCTION

In recent years there has been a growing interest in the societal and personal costs attributable to alcohol abuse. Concomitently there has grown the realization that these costs are not assumed solely by adults and that adolescents also suffer ill effects from alcohol abuse. For example, alcohol-related deaths (accidents, suicide, homicides) have been cited as one factor leading to an overall rise in the death rate for people between the ages of 15 and 24 during the last 25 years (American Business Men's Research Foundation, 1980; cited in Ried, Martenson and Weaver, 1987). The study of adolescent alcohol use and abuse has thus become a major research topic in recent years. Numerous variables have been studies in relation to adolescent alcohol use. For the sake of brevity, this paper will not present an exhaustive review of all of the variables associated with alcohol use but will instead present background theory and research for those factors which are the focus of this research project.

The interrelationships of parent and peer sources of influence will be one area of interest to this study. This also happens to be one of the more thoroughly investigated facets of adolescent substance use. Much of the research on parent/family factors in alcohol use derives from social control theory (Hirschi, 1969).
According to social control theory, delinquency (including substance abuse) is a natural tendency and will result whenever an individual fails to remain under the control of conventional society. Social control includes the rewards and punishments that come to be expected as a result of one's behavior. Rewards and punishments can be either internal (self-generated or external (social). The extent to which an individual derives reinforcement or gratification from engaging in conventional behavior, is engaged in rewarding social relationships which would be jeopardized by delinquent activity and expects to feel guilty or uncomfortable if conventional norms are violated will determine that individual's propensity to engage in delinquent, non-conventional activities such as substance use/abuse. Some important aspects of socialization, according to this theory, include bonding to conventional groups and activities (e.g. family, school, church) and the extent to which traditional norms are internalized.

Research does support the existence of a link between a lack of bonding or commitment to conventional activities and substance use. Negative correlations have been obtained between drinking level and grade point average (Jessor and Jessor, 1977), commitment to academic performance (Johnson, 1986; Wilsnack and Wilsnack, 1980) and school sentiment (Ried et.al., 1987). Negative relationships between church attendance and substance use have also been observed (Jessor and Jessor, 1977; Napier, Goe and Bachtel, 1984). Substance use is related positively to tolerance of
deviance from traditional norms (Jessor and Jessor, 1977; McLaughlin, Baer, Burnside, and Pokorny, 1985). Wilsnack and Wilsnack (1980) found a relationship between alcohol use and rejection of "social obligations" (e.g. generosity, reasonableness, helpfulness) among adolescent males. They found males to be more negative towards social obligations in general and suggest that this may help to account for sex differences in alcohol use/abuse.

Research on familial factors indicates that there may be differences between families of abstainers and those of substance users. Research by Demone (1973) found higher parental confidence, better communication and a higher sense of obligation to parents among nondrinking adolescent males. Jessor and Jessor (1977) found perceived parental support and control to be negatively related to alcohol use among male adolescents (the corresponding correlations were not significant for their female subjects).

Nurturance and closeness between parent and child have been cited as important variables by Mercer and Kohn (1980) and Ried et. al. (1987). Presumably, affection and attachment to parents influence drug or alcohol use by enhancing the internalization of conventional norms and increasing the costs of non-conventional behavior (e.g. upsetting parents will be more punishing when the parental relationship is highly valued).

Control theory also suggests that delinquent behavior will be held in check if the child expects a loss of love or disapproval from parents. Thus, parents' normative expectations (as perceived by the adolescent) and values with respect to alcohol use will
be relevant factors according to this theory. Ried et al. (1987) have found negative relationships between alcohol use and adolescents' perceptions of their parents' normative expectations for alcohol use and reinforcement of abstinence. Weak but significant relationships between parental norms or attitudes and adolescent alcohol use have also been obtained by other authors (Kandel and Andrews, 1987; Bank et al., 1985).

Another child-rearing variable which may be a significant contributor to alcohol abuse is monitoring - the extent to which parents keep track of their teenagers (i.e. know who they are with and what they are doing) while either the parents or children are outside of the home (Patterson and Stouthamer-Loeber, 1984). Adolescents who are not well monitored may have more opportunities to use alcohol and may also expect fewer negative consequences from alcohol use since their parents are unlikely to discover that they drink. Dishion and Loeber (1985) found a negative relationship between parental monitoring and alcohol use among delinquent alcohol users. Nondelinquent alcohol users did not differ from abstainers on this variable.

While the studies reviewed above can be construed as supportive of control theory, there are some serious limitations to this theory as originally proposed. Initially, delinquency was viewed as a natural state and was predicted to occur whenever conventional socialization was found wanting. The potential impact of negative or deviant socialization (e.g. "peer pressure") was relatively ignored. Research indicates, however, that negative
Influences can play an important role in adolescent drinking. Modeling of alcohol use by parents, for example, has been found to relate to adolescent alcohol use in a number of studies (McLaughlin et al., 1985; Margulies, Kessler and Kandel, 1977).

Research findings also indicate that the influence of the peer world is a powerful determinant of drinking behavior. A number of studies have found a strong relationship between adolescent drinking and peer alcohol use (Jessor, Chase and Donovan, 1980; Dishion and Loeber, 1985; Kandel and Andrews, 1987; Ried et al., 1987; McLaughlin et al., 1985). Each of these studies compared the relative strengths of a variety of predictors of alcohol use and each found that the perception of peer alcohol use was the best predictor of alcohol use among adolescents.

While the consistent and large association between peer alcohol use and self-use is impressive, some issues do remain unresolved. For example, from a causal perspective, it is unclear whether peer pressure causes adolescents to drink or the observed correlation is due to alcohol-using adolescents choosing to befriend other alcohol users. Margulies et al. (1977) did find, in a longitudinal study, that perceived peer drinking and peer involvement predicted later adolescent alcohol use. Downs (1987), in a one-year longitudinal study, found a reciprocal relationship between adolescent alcohol use and close friend drinking level: Baseline scores on the Adolescent Alcohol Involvement Scale predicted close friend drinking level at follow-up and baseline friend alcohol use predicted
follow-up scores on the Quantity-Frequency Index. Another issue regarding peer influence concerns the objective accuracy of adolescents' perceptions of their peers' drinking level. Bauman and Fisher (1986) found that the correlation between a given individual's alcohol use and that of his/her friend is higher when that individual's perception of the friend's alcohol use is used, as opposed to an actual self-report of alcohol use by the friend named. The extent to which this disparity can be attributed to biased perceptions on the part of the subject as opposed to the friend's hesitancy in reporting his/her true alcohol use is unclear.

While the problems just listed do cloud interpretation of the sizable associations between an adolescent's alcohol use and that of his/her peers, the importance of negative socialization influences - and the inadequacy of strict control theories - is apparent. Elliott, Huizinga and Ageton (1985) have integrated control theory with concepts from Social Learning Theory in a manner which explains the known data in a more satisfactory fashion. Their integration hypothesizes that substance use will be determined largely by the perceived costs and benefits of engaging in such activity. Perceived costs and benefits will themselves be determined by those individuals or groups which control the adolescent's resources. Given the developmental shift in adolescence away from the world of parents and towards the peer world, it can be expected that the norms and values
of peers will assume greater direct influence on adolescent
substance use than parenting variables.

Elliott et al. suggest that, because bonds to conventional
influences (i.e. the family) precede exposure to deviant (peer)
influences, the quality of these former bonds may affect the
degree to which an adolescent will select (or be selected by)
deviant vs. conventional peers. Strong attachment to conventional
groups would be expected to militate against the formation of
attachments to deviant peers. Weak attachments to conventional
groups, together with strong attachments to deviant peers, would
be most predictive of substance use and other forms of delinquency. In sum, differential bonding, together with the associated expectations of costs and benefits for deviant vs. conventional behavior, determine to a large extent whether adolescents will use or abuse alcohol.

The integrated theory can account for the research which
has been described. It also indicates that an adolescent's
expectations concerning alcohol use are important and further
suggests that the costs and benefits of alcohol use may be
perceived and valued differently by different adolescents.
For example, an individual who is not strongly bonded to con-
ventional society may share with a more traditional youth the
expectation that drinking can lead to problems with parents or
the school. However, due to the weakness of conventional bonds
s/he may not be as concerned about this consequence as a more
traditional adolescent. It seems apparent, then, that an
investigation of the costs and benefits of using alcohol, their perceived probability of occurrence and their desirability for the individual adolescent is needed.

The importance of focusing on perceived costs and benefits, as opposed to objective sources of reinforcement and punishment, deserves some comment. Behaviorally-oriented researchers and social learning theorists have become increasingly cognizant of the need to study cognitive factors in learning. Edward Tolman is widely regarded as among the first researchers to demonstrate the role of cognition in a behavioral paradigm. For example, Tolman (1948) showed that rats taught to obtain food at certain locations within a maze could reach the food despite varying starting points because they apparently developed a "cognitive map" of the maze.

Among the first social learning theorists to integrate cognitive factors with behavior is Julian Rotter (1954). His theory is notable for its attempt to integrate situational or environmental factors, cognitive factors and individual goals and needs (which are determined in part by one's own stable, generalized personality characteristics). One of the most important cognitive factors in Rotter's theory is expectancy. Expectancies interact with goals and situations (e.g. one may not work towards a goal if one does not expect to be able to achieve it). Rotter saw expectancies as being determined in part by past reinforcement and punishment experiences.
According to Rotter, reinforcement does not strengthen a specific behavior per se, but instead strengthens an expectancy that a particular behavior or event will be followed by that specific reinforcer in the future. The expectancies that an individual forms through experience will generalize to other situations. In this regard, Rotter is perhaps best known for his theorizing and research on internal vs. external locus of control - the extent to which one believes that reinforcements are determined by one's own behavior vs. chance fate (Rotter, 1966). While Rotter emphasized the role of behavioral learning experiences in the formation of generalized expectancies, later social learning theorists have expanded upon the possible sources of expectancies. For example, Bandura (1977) has stressed the role of vicarious learning, through observation of models in one's immediate environment and in the media.

These theoretical models have implications for alcohol use. They predict that an individual will use alcohol is s/he expects to be reinforced for doing so. These expectancies may be determined by personal experiences as well as vicarious learning through observation of friends, family members and media portrayals of alcohol use.

S. A. Brown, B. A. Christiansen and M. S. Goldman have collaboratively produced a small body of literature concerning the impact of expectations on alcohol use. They have developed a 90-item scale, the Alcohol Expectancy Questionnaire (AEQ) to assess adolescent alcohol expectancies (Goldman, Brown and
Christiansen, in press; cited in Brown, Christiansen and Goldman, 1987). Content and factor analyses have identified seven factors in the AEQ: global positive changes, changes in social behavior, improved cognitive and motor abilities, sexual enhancement, cognitive and motor impairment, increased arousal and relaxation/tension reduction. Brown et al. (1987) describe reliability and validity data for the AEQ which - on the whole - is promising. While internal consistency is high, eight-week test-retest reliability is more moderate (the mean reliability coefficient was .52 in their 1987 study). Criterion, predictive, cross-cultural and discriminant validity have all received support. The authors have found that the AEQ is related to abusive and nonabusive drinking patterns in both adults and adolescents in the U.S.A. and Ireland (Brown, Goldman and Christiansen, 1985; Christiansen, Goldman and Brown, 1985). Expectancies have also been found to predict future drinking after a one year interval in an alcoholism treatment outcome study (Brown, 1985). Christiansen and Goldman (1983) found that adolescents' expectancies concerning the consequences of alcohol use predicted alcohol use even when demographic and background variables such as age, religiosity and parental drinking were controlled.

Christiansen, Goldman and Inn (1982), in a large sample of 12 to 17 year-old subjects, found that adolescents of all the age ranges held similar gross expectations regarding the consequences of alcohol consumption. However, expectancies
expectancies were found to become more homogenous or crystallized (based on factor analyses for three age ranges) among older adolescents. Christiansen, Goldman and Brown (1985), elaborating on the data from the 1982 study, found a positive correlation between age and expectations of improved social behavior, enhanced power (arousal) and decreased tension as a result of alcohol use. The expectation that alcohol use will enhance cognitive and motor functioning was lower among older teens, except among those who were problem drinkers. Christiansen et al. (1985) note that their sample of hospitalized alcoholics demonstrated elevated expectations for cognitive and motor functions as well and suggest that this correspondence between adolescent problem drinkers and hospitalized alcoholics may indicate an etiologic role for expectancies in the development of alcoholism. This hypothesis has received support from a recent longitudinal study (Christiansen, Smith, Roehling and Goldman, 1989). The authors administered the AEQ and a drinking styles questionnaire to a large sample of seventh and eighth grade students. One year later, they re-administered the measures to the same sample of adolescents. Alcohol-related expectancies, particularly those related to social behavior, significantly predicted problem drinking one year later.

Expectancies may become self-perpetuating by influencing the subjective effects of alcohol use, at least at low doses.
Research with the balanced placebo design demonstrates the powerful effect of simply believing that one has consumed alcohol. This method has been used rather extensively (Abrams and Niaura, 1987). It employs a 2 X 2 Factorial design which controls for both expectancy set and pharmacological action. Subjects are given drinks and told either that they contain an alcoholic (vodka) or nonalcoholic (tonic) beverage. The beverage itself either contains alcohol or it does not. This results in four conditions: (1) the subject is told he is being given alcohol and is given alcohol; (2) the subject is told he is getting alcohol but is actually given tonic; (3) the subject is told that he is receiving tonic but is given alcohol; and (4) the subject is told he is being given tonic and actually receives tonic. For ethical reasons, this experimental design has been utilized only with adults.

A number of different phenomena (that are often attributed to alcohol) have been studied using this design. For example, Lang, Goeckner, Adesso and Marlatt (1975) studied aggression in heavy drinking males by exposing half of the subjects in each of the four alcohol/placebo conditions to provocation (an insulting confederate). All subjects were then given the opportunity to "shock" the confederate. The authors found main effects for provocation and expectancy, but no effects for actual alcohol consumption. Thus, the belief that one had consumed alcohol led to increased aggression, but actual alcohol consumption did not. In a study of alcohol expectancies
and social anxiety, Wilson and Abrams (1977) subjected adult males to one of four alcohol/placebo conditions and then assigned them the task of trying to create "a favorable impression" on a female confederate. Subjects who believed that they had consumed alcohol demonstrated lower physiological arousal (as assessed by heart rate acceleration) during the social interaction than other subjects. Actual alcohol consumption had no impact. An attempt to replicate this finding with adult females led to the opposite result: Women who believed that they had consumed alcohol demonstrated higher physiological arousal (Abrams and Wilson, 1979).

Only one study has attempted to link alcohol expectancies as assessed by the Alcohol Exectancy Questionnaire with outcomes of the balanced placebo design. Sher (1985) used the balanced placebo design with adult males and also varied social settings (group vs. alone), time since beverages were consumed (at five half-hour intervals) and expectancies for global, positive changes due to alcohol use (high vs. low expectancies). He found expectancies to interact with beverage and time such that men who had higher expectancies for changes due to alcohol use reported higher levels of intoxication in the placebo condition than subjects who expected fewer changes (the effect was fairly short-lived, however). Expectancies also interacted with setting and time such that subjects with higher expectancies reported more intoxication in the group setting immediately after drinking. The results of this study indicate
that expectancies regarding the effects of alcohol may influence the subjective experience of alcohol (or placebo) consumption in adults. Alcohol-related expectancies may therefore lead to a self-fulfilling prophecy. As the effects of alcohol are likely to be attributed to the alcohol itself instead of placebo effects, alcohol-related expectancies may gain strength over time. This may help to account for Christiansen et al.'s (1982) findings that alcohol expectancies tend to be more crystallized or homogenous among older adolescents.

While the research described above on the expected consequences for alcohol use is an important contribution, there are some limitations to such a restricted focus. As previously stated, the value or significance an adolescent places on an expected outcome may also help to determine the extent to which it influences drinking behavior. A scale measuring both the desirability and subjective or perceived probability of various positive and negative drinking outcomes has been developed (Bauman and Bryan, 1980). This scale is derived from utility theory and is a measure of Subjective Expected Utility (SEU). The basic tenet of utility theory is that behavior will vary depending on the balance of positive and negative consequences for a behavior. SEU is described by Bauman and Bryan as "the degree to which the positive consequences outweigh the negative consequences expected from behavior when the desirability and subjective probability of each consequence have been taken into account."
The authors have developed a questionnaire to assess SEU for alcoholic beverages in older children and young adolescents (their questionnaire was developed during pilot research on 10 to 13 year olds). The questionnaire is composed of two separate lists. It requires the children to rate (on a four-point scale) the extent to which they would like or dislike 57 different consequences of drinking alcohol. The second part of the questionnaire requires the child to rate (on a four-point scale) the probability that they would actually experience each of the 57 consequences if they were to consume a specified, weekly amount of liquor. The child's SEU score is obtained by multiplying the numerical value for the desirability of each consequence by the numerical value for the perceived probability of the corresponding consequence on the second part of the scale. The 57 products thus obtained are then summed to yield a total SEU score.

Bauman and Bryan found that scores on their SEU scale were moderately correlated with drinking experience in their sample of fifth and sixth grade children. Bauman, Fisher, Bryan and Chenoweth (1985) conducted a one-year longitudinal study of 1339 adolescents whose SEU for alcohol use and drinking experience were first assessed in seventh grade. SEU at initial testing did help to predict whether or not abstainers would try alcohol one year later. Among those children who were not abstainers at first testing, a reciprocal relationship was found between SEU and alcohol use: Round one SEU did predict later alcohol use.
(even with round one alcohol use controlled) and round one alcohol use predicted SEU one year later. This finding (of a reciprocal relationship) is consistent with the notion that expectations regarding the effects of alcohol use may influence one's actual experiences with alcohol such that expectancies become strengthened and confirmed over time.

Bauman and Bryan (1983) hypothesized that, given the widely documented gender differences in alcohol use, males and females may be expected to differ in terms of SEU for alcohol use. In a sample of seventh graders, they found that males drank more than females and had higher SEU scores. In fact, when SEU's impact was adjusted through analysis of covariance, sex differences were no longer apparent. Thus, SEU accounted for the sex difference in alcohol use in this study.

Bauman (1986) reports the results of a factor analytic study of his SEU scale. He had children complete the entire scale separately for beer and hard liquor and obtained seven factors for beer and six for hard liquor. Both types of alcoholic beverages yielded factors which were considered by Bauman to represent psychological, physical, pleasure, deviance, peer relationships and image expectations. The SEU for beer also yielded a factor representing expectations of trouble with others (e.g. parents, school, police).

Bauman et. al.'s SEU scale is a promising measure for use with older children and young adolescents. Unfortunately, its format and item content are not appropriate for use with older adolescents.
(e.g. it does not assess SEU for alcohol use with regards to enhancing heterosexual interactions). An analogous scale - i.e. one which assesses both desirability and subjective probability of consequences for alcohol use - does not exist for older adolescents. The study of SEU does have potential significance for predicting alcohol use and mediating the influence of family and peer cultures. Given its promise, the lack of an assessment tool for use with older adolescents and the absence of research linking socialization influences with SEU is an oversight in the literature which deserves to be addressed.
CHAPTER II
PURPOSE OF THE PRESENT STUDY

The present study proposes to address four separate, but related, issues. The first issue is concerned with the need for a measure of SEU in older adolescents. To achieve this aim, some rewording of directions and response alternatives (so as to make them more developmentally appropriate) was conducted with the Bauman SEU scale. Redundant or inappropriate items were eliminated and other items added in order to assess areas not currently being tapped by this scale. The literature on expectancies was combed to serve as an aid and guide to item selection. Items were sought with particular reference to several factors which previous research indicates are important to adolescents. This includes trouble with adults/legal authorities, negative physiological and psychological effects, global feelings of pleasure, relaxation, changes in social behavior, enhanced heterosexual relations and increased arousal/power. Test-retest reliability and criterion validity (in terms of correlations with alcohol use) were assessed.

As previously stated, most measures of attitudes regarding alcohol use have only assessed expectations concerning what would happen when alcohol is consumed. While the current writer found
It reasonable that the desirability of outcomes plays a predictive role as well, this assertion has not been empirically assessed. Therefore, as part of the validation efforts for this scale, the two sections of the SEU scale were scored separately so that desirability and expectations could be independently assessed and their relative (and combined) prediction of alcohol use analyzed.

The second major area of inquiry concerns the relationship of various factors previously implicated in adolescent alcohol use/abuse to both SEU and drinking behavior. Measures were obtained from adolescents to assess their frequency and quantity of alcohol use, problems experienced due to drinking and situations/contexts in which they use alcohol. They completed these questionnaires for themselves and were also asked to complete the quantity-frequency measure for two of their best friends. Adolescents also completed measures of involvement and attachment to parents and peers and indicated their perceptions of their parents' alcohol use patterns. Parents were sent surveys asking them to report on their parenting practices with regards to disciplining the adolescent.

It was hypothesized that peer and parent attachment and involvement relate to drinking in part through their impact on SEU. Thus, SEU may mediate the effects of parent and peer attachment and involvement. Adolescents who experience a large amount of harsh discipline and who are weakly attached to the family (but strongly attached to peers) were hypothesized to have a higher
SEU for alcohol use. That is, the number of expected desirable consequences would outweigh those expected outcomes which are not desirable. More specifically, it was hypothesized that adolescents who are weakly attached to parents will rate negative outcomes of alcohol use (e.g. problems with parents/authorities) as less aversive than will parentally attached adolescents. Adolescents who are more strongly attached to peers were hypothesized to place a higher value on alcohol outcomes involving peer relationships and heterosexual interactions than those adolescents who are not strongly attached to the peer world. Parental and peer modeling of alcohol use was also hypothesized to influence adolescent alcohol use through its impact on SEU.

A third major area of interest for this study is concerned with the question of whether or not there is a subgroup of adolescents who drink a great deal but do not experience serious problems. Blane (1979) has reviewed data indicating that many young individuals go through a period of their lives in which they engage in frequent heavy drinking. Most of the data indicates that these frequent heavy drinkers gradually reduce their alcohol intake and that few of them remain heavy or problem drinkers in their middle to late adult life. This subgroup of alcohol users has been well documented among college and military samples but they are thought to be rare in high school (Blane and Hewitt, 1977; cited in Blane, 1979). By assessing quantity and frequency data separately from problems due to drinking and from a survey of drinking contexts, this study attempted to discern whether or
not there exists among those adolescents who consume a large amount of alcohol a subgroup who experience few alcohol-related problems.

The fourth and final goal of this study is to investigate several different methods for increasing the number of responses to the mailed surveys. The use of mailed questionnaires and surveys is among the more common methods of data collection. Generally speaking, however, the percentage of surveys completed and returned tends to be low. It is quite likely that parents from disrupted households (which are more likely to harbor problem drinkers) are less likely to return questionnaires than the general population. While a great deal of research has been devoted to the elucidation of psychological principles of influence and persuasion, this body of research has not been applied to the task of enhancing participation rates in psychology research. This paper took three well-known and verified principles and attempted to utilize them with the parents who received questionnaires in this study.

The principles to be described here are discussed in a 1985 text by Robert Cialdini which is devoted to influence practices. The contrast principle concerns the manner in which an individual often perceives an object differently when it is preceded by a slightly different object of the same class. There is a general tendency for people to exaggerate the differences between the two objects and thus see the second object as more different from the first one than it actually is. For example,
research finds that men tend to downgrade the appearance of an average-looking female if her picture was preceded by a picture of a beautiful woman - they accentuate the differences in beauty (Kenrick and Gutierrez, 1980). The present study attempted to capitalize on the contrast principle by sending out a standard request for participation and following it (for those who did not yet reply) with a letter offering a small monetary inducement (5 dollars). Presumably, the delayed monetary inducement would seem like a larger inducement, and would be more motivating, than a condition in which the monetary offer was advanced in the first letter.

The second principle to be addressed is the principle of reciprocation. This principle simply states that people will be more likely to carry out a request if they feel indebted to the individual who is requesting a favor. For this study, a condition was added in which parents were given a five dollar bill with the very first letter and survey. It was presented to them as a payment in advance for returning the surveys (if they do indeed decide to do so). It was made clear to them that they were not required to return the surveys and could still keep the money even if they decided not to participate. Based on research reviewed by Cialdini, it was hypothesized that a larger number of surveys would be returned utilizing this approach than in a control condition.

The last principle intended for inclusion in this study was conformity (Cialdini also calls this "social proof"). Simply
put, people will often modify their behavior so as to make it conform to the behavior of similar others. In an ambiguous situation, an individual may be especially dependent of the behavior of others to serve as a guide. It can be assumed that a parent who receives a questionnaire in the mail from researchers is also in a somewhat ambiguous situation and, if given cues as to what other parents do in a similar situation, may conform their behavior accordingly. In this experiment, a group of letters was to be sent to parents after the initial mailing in which some information was included to tell the parents of how many others responded to the survey so far. Assuming that at least 50% of surveys from the first mailings did get returned, it would be possible to inform the parents in this condition (without distorting the truth) that many/most parents have responded to the surveys. It was hypothesized that providing parents with "social proof" that filling out and returning the questionnaires is an acceptable favor to many/most parents, they would be more willing to return the surveys themselves. As will be described below, however, fewer than 50% of parents responded to the initial surveys, so this condition could not be carried out.
CHAPTER III
DESCRIPTION OF MEASURES

Subjective Expected Utility (SEU) - Adolescents' SEU was assessed with a 112-item scale which was developed by this researcher. It is based closely on Bauman's SEU scale and uses a number of items from his scale. However, some redundant items were dropped and new items were added to this scale. Research on the role of expectations in alcohol use and measures of alcohol expectancies served as guides to item selection. Other changes were made in terms of wording for directions. The scale is composed of two parts. Part One assesses outcome desirability. It asks the adolescent to read a short description of a consequence and indicate their evaluation of it on a three-point scale. Part one is further subdivided into two lists, one composed of positive consequences of alcohol use and the other of negative consequences. The adolescent is asked to indicate how much they would "like" the positive items and how much they would "be upset" by the negative items using a three-point scale. Part Two assesses expectations regarding the probability that a given consequence will be personally experienced by the adolescent if s/he uses alcohol. It presents the same consequences as Part One and asks the adolescent to indicate on a five-point scale how likely they think it is that they would experience the outcome if they had
"a few alcoholic drinks." Because some of the consequences were best construed as long-range consequences of using alcohol (e.g. having poor health) these items are presented in a separate section and the adolescent is required to indicate how likely it is the event would occur "if they had several drinks each week." A copy of the scale can be found in Appendix A.

For the scoring of Part One (assessment of outcome desirability), answers which indicate that the positive consequences for alcohol use would be "liked a lot" are rated +3, "like it a little" is rated +2 and "wouldn't really care" is rated +1. Item scoring is similar for the negative consequences of alcohol use. On Part Two, (assessment of subjective probability) those answers indicating that the adolescent is "sure" that a positive consequence would accrue if alcohol is used would receive a score of +5, those indicating such an event would "probably" occur are rated +4, those saying the chances are "even" would receive a score of +3, "probably not" is scored +2 and "sure it would not happen" is scored +1. Each adolescent's measure of SEU is calculated by multiplying the numerical value of the subjective probability of a consequence by the numerical value of the desirability of the consequence. Of the 56 products thus obtained, 32 are derived from items assessing positive expectancies and evaluations for alcohol use and the remaining 24 represent negative expectancies/evaluations. The positive expectancies are summed to the total SEU score and the negative items are subtracted from the total SEU score. This scoring method is essentially equivalent
to that used by Bauman, who assigned negative numbers to the negative items and then added them to the Total Score. Higher scores on the SEU scale indicate a more positive expected utility for alcohol use.

The items of the SEU scale lend themselves to a number of possible subscales. A total of ten subscales were created from the scale. Items of Part One were used to create a "Total Evaluation" score. This was accomplished by summing positive items (the first 32) and subtracting the values of negative items. Items from Part Two were used to create a "Total Expectancy" score in an analogous fashion: Items assessing positive expectancies for alcohol use were summed and negative expectancies were subtracted from the score. Also obtained were a Negative Evaluation and Negative Expectancy score. The Negative Evaluation score was obtained by summing the evaluations of negative consequences in Part One of the scale (item numbers 33 - 56) and the Negative Expectancy score was a summation of corresponding negative items from Part Two. Positive Evaluation and Positive Expectancy scores were obtained in an analogous fashion, using evaluative ratings of positive consequences from Part One and expectancy ratings of positive consequences from Part Two. Items of the SEU scale can also be subdivided into those which represent long-term aspects of alcohol use and those representing short-term consequences. This division was considered to be of possible relevance for expectancies in particular (e.g. long-term consequences may be denied or unexpected).
Thus, Part Two (which contains the expectancy items) was subdivided to yield Short-term and Long-term Consequences Scales. Social Evaluation and Social Expectancy scores were obtained using items that pertain to peer relationships (item numbers 9 - 19 on Part One and corresponding items from Part Two).

To summarize the subscales of the SEU, the ten scales derived and what they intend to measure are listed here. The Total Evaluation Scale is a composite measure assessing the extent to which the adolescent rates favorable consequences of alcohol use as highly desirable and negative consequences aversive. Higher scores indicate that positive consequences are seen as desirable and negative consequences as relatively irrelevant. The Total Expectancy Scale is a composite measure assessing the extent to which adolescents believe that positive and negative consequences will occur for them if they use alcohol. Higher scores indicate greater expectancies for positive outcomes and low expectancies for negative outcomes. The Negative Evaluation Scale assesses the extent to which negative consequences of alcohol use are seen as undesirable or aversive. Higher scores indicate that negative consequences are seen as aversive. The Negative Expectancy Scale assesses the extent to which adolescents expect negative consequences of alcohol use to actually happen to them if they use alcohol. Higher scores indicate greater expectations that the negative consequences would actually happen. The Positive Evaluation Scale assesses the extent to which positive consequences of alcohol use are seen as desirable. High scores
indicate that positive consequences are seen as desirable. The Positive Expectancy Scale assesses the extent to which adolescents expect positive consequences of alcohol use to actually happen to them if they use alcohol. Higher scores indicate greater expectations that the positive consequences would actually occur. The Short-Term Consequences Scale assesses the extent to which adolescents believe the immediate consequences of alcohol use would be experienced by them. Higher scores indicate greater expectations that the short-term consequences will be personally experienced if alcohol is consumed. The Long Term Consequences Scale assesses the extent to which adolescents believe that long-term consequences of alcohol use (which are primarily negative) would be experienced by them. Higher scores indicate that the adolescent does not expect negative long-term consequences to occur. The Social Evaluation Scale assesses the desirability of positive social outcomes to the adolescent. Higher scores indicate higher value placed on improved socialization. The Social Expectancy Scale assesses the extent to which adolescents actually expect positive social outcomes to be personally experienced if they use alcohol. Higher scores indicate greater expectation for improved socialization.

Problem Drinking Scale - This scale uses a format similar to one used by Bauman (1980) and the Jessors (1977) in their research on problem drinking. The primary difference between the scale developed for this study and that used by these other authors is that the present list is more inclusive. Relevant research
was combed in order to put together a comprehensive list of alcohol-related problems. This yielded 23 items representing consequences that might be expected from drinking (e.g. losing a good friend, getting a poor test grade). The adolescents were asked to indicate which items had happened to them at some time in their lives. This scale is scored by simply summing up the number of items endorsed by the adolescent. A copy of the Problem Drinking Scale is presented in Appendix B.

**Quantity and Frequency of Alcohol use** - This variable was assessed using part of a measure developed by Graham et al. (1984). Their scale was designed to assess the use of cigarettes, marijuana and alcohol as well as intentions of using these drugs in the future. The subscales for drunkenness and both recent and lifetime alcohol use were used in this study. These scales have been found to have good internal consistency and the test-retest coefficient for lifetime alcohol use and drunkenness subscales are good. The test-retest coefficient for the recent alcohol use subscale is marginal but this is to be expected given that the items only concern recent use.

Items for this scale are presented in a multiple choice format, with the adolescent selecting, for each item, the response most appropriate for himself/herself. The responses are assigned numeric values (a higher number is associated with a response indicating a higher drinking level). These numeric values can be summed to yield subscale scores or a total score.
In order to assess perceptions of friends' alcohol use, another scale was made, using the same items but with the wording altered so as to indicate that it is now the friends' alcohol use which is being assessed. Adolescents filled out one scale for each of their two best friends. The total scores for the two friends were combined into one overall measure of friends' alcohol use. This measure provides estimates of perceived modeling of alcohol use from one's peer group. Copies of both the self and friend-report measures are presented in Appendix C.

**Drinking Context** - This measure assesses the contextual aspects of adolescent drinking in four spheres: Time, drinking companions, location and situation/activity when drinking. The focus for this measurement is on the breadth (number) of contexts. Items were derived from a review of literature, including assessment tools that are currently in use. Many assessment questionnaires (e.g. the Adolescent Alcohol Involvement Scale) do not separate level of drinking, alcohol-related problems and contextual factors from each other. This scale represents an attempt to separate context from these other factors.

The scale is composed of a list of different types of situations involving alcohol use. The subject is asked to indicate which of the situations they have been involved in during the past month. Scoring is accomplished by summing up the number of items endorsed by the adolescent as having occurred. A copy of this scale is presented in Appendix D.
Attachment to Parents - This variable was assessed with a scale adapted from Johnson (1986). His ten-item scale was found to have a high degree of internal consistency in his research. The scale for this study consists of 13 items concerning the adolescent's perceptions of how much they can "count on" their parents and how pleasantly they interact with each other. Six questions concern the mother, six concern the father and one concerns the entire family. Responses are recorded on a six-point likert scale, with higher scores indicating greater attachment, and numerical values are summed into a total score. A copy of this scale can be found in Appendix E.

Attachment to Peers - This variable was assessed with a scale which is identical to that used by Johnson (1986). He reported good internal consistency for this six-item scale. The items employ four-point likert scales and concern the extent to which adolescents rely on their friends for support and guidance, with higher values indicating greater attachment to peers. Numerical values are summed into a total score. A copy of this scale can be found in Appendix F.

Family and Peer Involvement - This variable was assessed in both global and specific terms. The global assessment consisted of a question concerning the average number of hours the adolescent spends each week engaged in activities with parents and peers. A more specific assessment involved asking the students to list, for the previous weekend, all of the activities they had engaged in with both parents and peers. They were asked to indicate both
the activities themselves and also estimate the number of hours spent in each activity. They then indicated, on a five-point scale, how much they enjoyed the activity engaged in. Overall scores for involvement with parents and peers were obtained by summing up the average number of hours spent by the adolescent with parents/peers and the number of hours spent with parents/peers over the weekend. Overall enjoyment scores were obtained by averaging the responses given to indicate how much the adolescent enjoyed the previous weekends' activities and computing Z scores. A copy of this questionnaire is presented in Appendix G.

Parental Modeling of alcohol use - The items assessing this variable have been selected and adapted from measures used by Bauman (1980). The scale consists of three multiple choice items for each parent. They concern the adolescents' perceptions of their parents' use of alcohol. Responses can be summed separately for each parent or combined into a total score, with higher scores indicating greater parental alcohol use. The scale is presented in Appendix H.

Parental Measures:

Parents were sent two of each questionnaire with a request that both parents respond to the survey (if there were two parents in the home). They were also sent a "general information" sheet to obtain data on demographic variables (family size, parental education and parental occupation).
Parental Discipline - Parents were sent the Harsh Discipline scale to assess disciplinary attitudes (Weinberger and Ford, 1987). This is a seven-item scale assessing parental beliefs and practices with regards to harsh discipline. Parents indicate how true or false each item is for them using a five-point likert-type scale. Responses are summed to yield an overall score for acceptance and use of harsh discipline. The authors are still developing this scale but report adequate psychometric qualities in their research so far. A copy can be found in Appendix I.

Parental Induction Measure - Discipline practices were also assessed with a modification of a parental induction measure developed by Hoffman (1960). He originally developed it for use in structured interviews. For this study, it was composed of brief vignettes describing two adolescent behavior problems (e.g. not complying with a request) and parents were supplied with a list of alternative responses that "many parents make" to the problem. They were asked to indicate, on a four-point scale, how often they use each alternative response to deal with the problem. Hoffman categorizes responses into three dimensions of disciplinary tactics: Power assertion, love withdrawal and tactics involving explanations. Scores for each of these dimensions were obtained. Also, parents were asked to rank order the three most frequently used responses. A copy of this scale is presented in Appendix J.
Parental reports of alcohol use and religiosity - In order to assess alcohol use and religiosity, a scale for measuring "leisure activities" was developed. This scale contains questions about the number and extent of activities and social contacts the parents regularly engage in. Imbedded in these questions are items concerning alcohol use and religiosity. A multiple-choice format is used, with parents circling responses to indicate how often each act is engaged in. Responses correspond with numerical values, which are summed to yield scores. The questionnaire's items were scored in order to yield values in six areas: General activity involvement, social contacts, alcohol use, religiosity, TV viewing and involvement with teenage children. A copy of this measure is presented in Appendix K.
CHAPTER IV

PROCEDURES

Adolescent-report measures were self-administered by students during two 50-minute class periods in the subjects' school. Students were informed of the confidentiality of their responses. The primary researcher, together with one or more assistants, was available to answer questions. Two separate sessions were scheduled in order to ensure that all adolescents could complete the measures without being unduly rushed. Questionnaires were divided into two separate packets, to be administered on the two days of testing. Packets consisted of a manilla folder in which was contained the surveys (all stapled into one hand-out) and an optical scanning sheet, upon which responses were marked with a number two pencil. The packet for Day One included the SEU scale, Problem Drinking Scale, and both parental and peer attachment measures. The packet for day 2 included the Quantity-Frequency Index, Friend and Parent Alcohol use measures, Context Scale, and Parent and Peer Involvement survey. Few adolescents had difficulty completing the surveys within time limits or understanding how to use the scanning sheets. The first day's packet was completed by most students within 30 - 40 minutes and the second day's packet was completed within 15 - 30 minutes by most students. Adolescents who were absent on Day 1
but present on Day 2 were given the packet from Day 1 to complete first, followed by the Day 2 packet. Most of these students were able to complete both survey packets. Approximately 12% of the subjects only completed the first day's data packet, primarily due to absences and drop-outs (refusals to complete both packets).

A subsample of students took the SEU scale a second time, approximately two weeks after the initial administration, so that test-retest reliability coefficients could be computed. This subsample of three classes was drawn randomly from the total sample of students, and was fairly representative of the total sample in terms of gender and grade. A total of 54 subjects completed the SEU scale a second time.

Data was collected from parents via mailed solicitations. Parents were randomly assigned to one of four separate groups, which were to receive different types of letters. The control group was sent a questionnaire in the mail with a letter briefly describing the current study and offering a five dollar inducement to parents responding by a certain date (approximately two weeks after letters were sent out). One week after the due date another questionnaire was sent to those parents who did not yet respond, reminding parents of the study and offering the same monetary inducement as was previously described.

The "perceptual contrast" group was sent the same questionnaire and initial letter as those parents who were in the control group except that the monetary inducement was not included. They were simply given the description of the study and a request to respond
by a certain date. One week after that date, those who did not yet respond were sent a second letter reminding them of the study and, for the first time, offering a monetary inducement.

The "reciprocation" group was sent the same questionnaire as the other groups and was given the same basic information about the study. They also were sent, however, a five dollar bill which was presented as "payment in advance" for responding to the survey or for at least taking the time to consider it. They were informed that they were under no obligation at all to respond and need not send the money back but were requested to complete and mail the questionnaire by a certain date (approximately two weeks after the questionnaire was sent). Those not responding by the due date were sent a reminder simply asking them again to participate.

The "conformity" group was to be sent questionnaires and letters only after some of the questionnaires had been received from parents in the other groups. They were to be sent the same basic information about the study as other parents and, as the control subjects, receive a monetary inducement. They were also to be given information about the number of people who already responded to the questionnaire along with some statements about the willingness of many/most parents to respond to the survey. Unfortunately, less than half of the parents responded to the surveys in the conditions described above (the actual proportions are discussed in the results section below). Therefore, this condition could not be carried out successfully without having to mislead parents. As a consequence, all remaining
parents in the study were sent the questionnaires and letters that had been used in the contrast condition. Copies of the letters discussed here are presented in Appendix L.

SUBJECTS:

Adolescents - Subjects were selected from grades 10 through 12 of a suburban public high school. The majority of the students came from lower middle class or working class backgrounds. Students received flyers explaining the study which they were instructed to bring home to parents for review (see Appendix M for a copy of this flyer). If parents disapproved of their child's participation, they signed the form and returned it to school with their adolescent. School officials suggested this method as the most desirable way to insure that a fairly large percentage of adolescents in the school were available for the study. Adolescents were also given the opportunity to refuse participation without threat of negative consequences. They completed consent forms at the beginning of data collection. A copy of the consent form is included in Appendix N.

A total of 29 classes were made available to the researcher. Class rosters indicated that 255 tenth graders, 269 eleventh graders and 266 twelfth graders were enrolled in these 29 classes. Out of the entire sample, a total of 617 adolescents completed the first day's questionnaire packet (composed of the SEU scale, Problem Drinking Scale and Family/Peer attachment scales). A total of 543 subjects completed both days' packets. The sample was fairly proportionate in terms of gender and grade.
Parents - Questionnaires were mailed to 493 of the parents of adolescents for whom complete data was obtained (parental addresses were not available for all subjects and some students did not live with parents). In the initial mailing, 93 questionnaires were sent to parents in each of three conditions: Control, Contrast, and Reciprocation. The remaining 214 subjects were included in the contrast condition. Responses were obtained from a total of 172 mothers and 75 fathers. Sixty-nine of these families returned questionnaires for both parents. In all, responses were received from 36.5 percent of the sample.
CHAPTER V

RESULTS

This study involved four separate areas of inquiry: Impact of varying compliance strategies for increasing responses to mailed questionnaires, the extension of Bauman's SEU scale for use with adolescents and its psychometric characteristics (including reliability and predictive validity relative to expectancy scales); the question of whether or not heavy drinking exists separately from alcohol-related problems, and the interrelationships of various factors to alcohol use and alcohol problems. Data analyses and results of these four investigations will be described separately for each area. First, however, the sample of subjects will be described in reference to their alcohol use characteristics.

DESCRIPTION OF SAMPLE:

The Quantity-Frequency Index was completed by a total of 523 adolescents. Table 1 presents a selection of items from this scale along with response characteristics for subjects varying in grade and gender. This table provides some information on this sample's alcohol-use characteristics. It shows that, as would be expected, frequency of alcohol use and typical levels of consumption both increased with grade level. Also, as expected, the history of intoxication or "drunkeness" reported increased with grade. Males appeared less likely to engage in rare use and more likely to engage in frequent
use. Almost 1 in 4 males (23.36%) reported drinking weekly, whereas for females the figure was 17.56%. Males also reported consuming more alcohol per drinking occasion, with over one third (38.93%) consuming more than 5 per occasion on average. For females the figure was 22.58%. One in 4 males (25%) reported being "drunk" over 20 times in their lives. In short, while males appeared to engage in more frequent and heavy alcohol use, a significant minority of females also appeared to engage in alcohol use which is both frequent and heavy in consumption level.

Table 2 presents specific items from the Problem Drinking scale, with the percentage of subjects experiencing each problem displayed by gender and grade. The table indicates that alcohol has a significant impact on the social and school lives of a surprising number of children. Most problems appeared to increase in frequency across grade, which may be expected given that directions required the adolescent to endorse each item "if it ever happened", with no time limit specified. The one exception to this trend concerned DUI arrests (item number 9) and having ever had a car accident (number 10). This may be a simple statistical variation, but could also indicate some potentially significant differences in the sample of tenth graders. For example, it may include some adolescents who have more serious problems and therefore drop out of school before reaching the later grades.

Some of the alcohol-related problems which are more commonplace and directly linked to the pharmacological effects of alcohol (hangover, illness, passing out) appeared to be fairly evenly
distributed across gender. Some of the more antisocial concommit-
ents of alcohol use (e.g. arrest for DUI, commission of crimes) 
appeared more common in males.

While item interpretation is made difficult by the fact that 
terms were not operationally defined or specified (e.g. "fights" could 
be physical or verbal and nature or severity of "crimes" is unknown), 
alcohol-related problems appear widespread. Over one third of all 
adolescents have felt guilty about something they have done while 
drinking and approximately 1 in 10 report that they have worried that 
they may have a drinking problem. Approximately half of all adol-
escents have experienced hangovers, illness and memory loss (whether 
this represents blackouts or not is not clear). One third of the 
adolescents have fainted or "passed out" due to alcohol use. Approx-
imately one fourth have gotten into arguments or fights that they 
attribute to alcohol use.

COMPLIANCE MANIPULATION:

Chi-square was used to determine whether response rates varied 
significantly between the three conditions. There were two separate 
mailings to parents and responses were therefore received in two 
"waves". Of the 279 questionnaires initially sent (93 per condition), 
71 families responded. Among this sample of subjects, the chi-square 
reached significance (Chi-Square = 15.57, alpha < .01, df = 2). 
Nineteen responses were received from those subjects who were offered 
money (condition I), 15 from those offered nothing (condition II), and 
37 from those who received five dollars with the original survey 
(condition III). While it is not possible to make definitive
<table>
<thead>
<tr>
<th></th>
<th>Female (n=279)</th>
<th>Male (n=244)</th>
<th>Grade 10 (n=161)</th>
<th>Grade 11 (n=174)</th>
<th>Grade 12 (n=185)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) S's who have never tasted alcohol</td>
<td>6.1%</td>
<td>6.97%</td>
<td>7.45%</td>
<td>4.59%</td>
<td>7.57%</td>
</tr>
<tr>
<td>2) S's who used alcohol in past month</td>
<td>60.57%</td>
<td>61.47%</td>
<td>52.17%</td>
<td>63.22%</td>
<td>66.49%</td>
</tr>
<tr>
<td>3) S's who used alcohol on 1-3 days in past month</td>
<td>35.12%</td>
<td>29.92%</td>
<td>36.65%</td>
<td>28.16%</td>
<td>32.97%</td>
</tr>
<tr>
<td>4) S's who used alcohol 4 - 14 days in past month</td>
<td>20.78%</td>
<td>20.90%</td>
<td>9.32%</td>
<td>26.44%</td>
<td>25.95%</td>
</tr>
<tr>
<td>5) S's who used alcohol on 15 or more days in past month</td>
<td>1.43%</td>
<td>6.97%</td>
<td>4.97%</td>
<td>4.02%</td>
<td>3.24%</td>
</tr>
<tr>
<td>6) S's who used alcohol in past week</td>
<td>32.26%</td>
<td>37.7%</td>
<td>26.09%</td>
<td>36.78%</td>
<td>41.08%</td>
</tr>
<tr>
<td>7) S's who use alcohol once per week on average</td>
<td>17.56%</td>
<td>23.36%</td>
<td>13.66%</td>
<td>22.41%</td>
<td>24.32%</td>
</tr>
<tr>
<td>8) S's who have 2 or fewer drinks per episode</td>
<td>49.46%</td>
<td>42.22%</td>
<td>55.9%</td>
<td>44.25%</td>
<td>39.46%</td>
</tr>
<tr>
<td>9) S's who drink 3-4 per episode</td>
<td>27.96%</td>
<td>18.86%</td>
<td>17.39%</td>
<td>23.56%</td>
<td>29.73%</td>
</tr>
<tr>
<td>10) S's who drink 5 or more per episode</td>
<td>22.58%</td>
<td>38.93%</td>
<td>26.71%</td>
<td>32.18%</td>
<td>30.81%</td>
</tr>
<tr>
<td>11) S's who have ever been &quot;drunk&quot;</td>
<td>64.88%</td>
<td>68.03%</td>
<td>60.25%</td>
<td>67.24%</td>
<td>70.81%</td>
</tr>
<tr>
<td>12) S's who have been &quot;drunk&quot; 20 times or more</td>
<td>12.9%</td>
<td>25%</td>
<td>12.42%</td>
<td>21.26%</td>
<td>21.08%</td>
</tr>
</tbody>
</table>
### TABLE 2

**FREQUENCY OF STUDENTS EXPERIENCING SPECIFIC ALCOHOL-RELATED PROBLEMS ACROSS GENDER AND GRADE**

(Expressed in Percentages)

<table>
<thead>
<tr>
<th></th>
<th>Sex: Female</th>
<th>Male</th>
<th>Grade: 10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=319</td>
<td>n=278</td>
<td>n=176</td>
<td>n=207</td>
<td>n=208</td>
</tr>
<tr>
<td>1) fainted or</td>
<td>27.9%</td>
<td>33.45%</td>
<td>24.43%</td>
<td>26.57%</td>
<td>39.42%</td>
</tr>
<tr>
<td>passed out</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) Got ill</td>
<td>53.29%</td>
<td>52.88%</td>
<td>44.32%</td>
<td>49.28%</td>
<td>63.94%</td>
</tr>
<tr>
<td>3) Had a hangover</td>
<td>51.72%</td>
<td>53.96%</td>
<td>49.43%</td>
<td>47.83%</td>
<td>60.10%</td>
</tr>
<tr>
<td>4) Forgot something said or done</td>
<td>44.03%</td>
<td>49.28%</td>
<td>37.71%</td>
<td>48.31%</td>
<td>51.44%</td>
</tr>
<tr>
<td>5) Missed school</td>
<td>12.85%</td>
<td>16.55%</td>
<td>13.64%</td>
<td>14.49%</td>
<td>14.42%</td>
</tr>
<tr>
<td>6) Missed work</td>
<td>8.15%</td>
<td>11.15%</td>
<td>7.95%</td>
<td>9.18%</td>
<td>10.58%</td>
</tr>
<tr>
<td>7) Got into a fight</td>
<td>23.2%</td>
<td>26.62%</td>
<td>19.89%</td>
<td>25.12%</td>
<td>28.85%</td>
</tr>
<tr>
<td>8) Committed a crime</td>
<td>7.21%</td>
<td>19.42%</td>
<td>13.07%</td>
<td>10.63%</td>
<td>14.42%</td>
</tr>
<tr>
<td>9) Got arrested for driving under the influence</td>
<td>2.19%</td>
<td>6.83%</td>
<td>6.82%</td>
<td>3.38%</td>
<td>2.88%</td>
</tr>
<tr>
<td>10) Got into a car accident</td>
<td>5.96%</td>
<td>9.39%</td>
<td>9.66%</td>
<td>5.83%</td>
<td>7.21%</td>
</tr>
<tr>
<td>11) Felt guilty about something done while drinking</td>
<td>34.17%</td>
<td>36.33%</td>
<td>28.41%</td>
<td>29.47%</td>
<td>46.15%</td>
</tr>
<tr>
<td>12) Worried about having a drinking problem</td>
<td>10.34%</td>
<td>12.23%</td>
<td>9.66%</td>
<td>10.14%</td>
<td>12.98%</td>
</tr>
</tbody>
</table>
statements regarding which condition caused the statistic to reach significance based on chi-square, it appeared that it was largely due to the disproportionately high number of responses to Condition III (52% of the entire sample). Therefore, an analytic comparison was calculated to determine whether Condition III accounted for a disproportionate share of the variation among cells (Keppel and Saufley, 1980). The obtained Chi-Square statistic was 22.514 (alpha < .01, df = 1).

Reminder letters were sent three weeks after the initial mailing and an additional 45 responses were received. When Chi-Square was performed with the final sample of 116, group differences remained significant at the 5% level (Chi-Square = 7.64, df = 2, alpha < .05). Once again, an analytic comparison was used to determine whether the cell variation indicated by the Chi-Square statistic was due to a disproportionately high response rate for Condition III. The obtained Chi-Square was 7.09, which is significant at the .01 level (df = 1).

Interestingly, it was observed on the initial mailing that families were about as likely to respond to a survey when no money was offered as they were to respond when money was offered. An analytic comparison contrasting the control condition (offering five dollars) and the contrast condition (in which money was not initially offered) yielded a Chi-Square of .94 (df = 1), which is not significant. Table 3 shows the number of respondents per condition after each mailing, as well as the final percent responding.

Analysis of variance was conducted on some of the independent variables included in the parental surveys to determine whether
TABLE 3

NUMBER OF RESPONSES RECEIVED FROM PARENTS
BY CONDITION AND MAILING

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Contrast</th>
<th>Reciprocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responses to first mailing</td>
<td>19</td>
<td>15</td>
<td>37</td>
</tr>
<tr>
<td>Responses to second mailing</td>
<td>17</td>
<td>16</td>
<td>12</td>
</tr>
<tr>
<td>Total number of responses/percent of subjects responding</td>
<td>36/38.7%</td>
<td>31/33.3%</td>
<td>49/52.7%</td>
</tr>
</tbody>
</table>
subjects responding in the three conditions differed on such variables as education, occupational status, and disciplinary practices. No significant differences were obtained. T-tests were performed to determine whether adolescents whose parents responded differed from those whose parents did not respond in terms of alcohol use, SEU scale and subscales, and family/peer attachment. Problem drinking, SEU, Total Expectancy, Long-Term Consequences, Negative Evaluation, and Negative Expectancy scales all differed between the two groups at the .05 level of significance. Inspection of the means revealed that adolescents whose parents responded reported fewer alcohol-related problems and lower scores on the SEU, Expectancy Total, and Long-term Consequences Scales (indicating less favorable attitudes regarding the expected utility of alcohol use and higher expectations for experiencing the long-term, negative consequences of alcohol use) and higher scores on the Negative Expectancy and Negative Evaluation Scales (indicating that they are more likely to expect negative consequences to occur if they use alcohol and would find those consequences more aversive).

FREQUENT HEAVY DRINKING AMONG ADOLESCENTS:

The purpose of these analyses was to determine whether there exists a group of adolescents who can be termed Frequent Heavy Drinkers who do not experience severe problems due to drinking, what their characteristics are and how they differ from heavy drinkers who do have alcohol-related problems. To accomplish this, Room's widely accepted criterion of consuming five or more alcoholic drinks at
least once per week was used to identify a sample of subjects who could be categorized as Frequent Heavy Drinkers (Room, 1972; cited in Blane, 1979). The scale for assessing quantity and frequency of alcohol use contained the information necessary for categorization of subjects according to this criterion.

Out of the 543 subjects who completed this measure, 66 or 12.15% fit Room's criterion for frequent heavy drinking. Males were twice as likely to be Frequent Heavy Drinkers as females: 17.2% of males and 8.6% of females were so classified. This sample was further subdivided into those whose scores on the Problem Drinking Scale fell in the upper and lower quartiles for the entire sample of students. Problem drinking scores were available from 617 students. The upper and lower quartiles were 8 and 0 respectively. Thus, students scoring 8 or more on the Problem Drinking Scale were classified as "problematic" Frequent Heavy Drinkers and those with 0 as "non-problematic" Frequent Heavy Drinkers. Forty-three of the frequent heavy drinkers could be classified into one of these two categories. Of these, however, only one could be classified as "non-problematic".

One possible explanation for the above finding was that the Problem Drinking scale contained both negative events that could be considered unrelated to drinking behavior per se (e.g. fighting, school problems, legal difficulties) as well as negative events which are direct effects of alcohol consumption (i.e. having a hangover, getting sick, passing out). Problems directly related to alcohol use were more frequently endorsed. In fact, two experiences
(having a hangover and getting sick) were endorsed by over half (53%) of the entire sample of 617 students. Thus, a Frequent Heavy Drinker could score above the quartile (which, at 0, is quite low) and be classified as problematic even if s/he only endorsed these apparently commonplace experiences. Therefore, another analysis was conducted in which the Problem Drinking scale was reduced by two items (the two endorsed by over half of the sample). Upper and lower quartiles were 6 and 0, respectively. Even with these modified criteria, only one subject (out of the 46 subjects who could be classified as a non-problematic Frequent Heavy Drinker (the same subject who was so-classified using the original criterion).

The above analyses indicate that Frequent Heavy Drinkers who do not experience alcohol-related problems are almost nonexistent. One final analysis was conducted in order to determine whether some Frequent Heavy Drinkers, while not problem-free, may be below the median for alcohol-related problems. The median score was 3 (using the Problem Drinking scale that had been reduced by 2 items). Only four Frequent Heavy Drinkers' Problem Drinking scores were below this value. Due to the lack of Frequent Heavy Drinkers with few alcohol-related problems, t-tests for differentiating subgroups of Frequent Heavy drinkers on other independent variables were not conducted. However, a discriminant function analysis was carried out to determine which of the variables best distinguished Frequent Heavy Drinkers from other subjects. Predictor variables included all parent, peer and SEU variables as well as the Problem Drinking Scale. The results of this analysis are depicted in Table 4.
TABLE 4

DISCRIMINANT FUNCTION ANALYSIS TO DISTINGUISH
FREQUENT HEAVY DRINKERS FROM NON-FREQUENT HEAVY DRINKERS

<table>
<thead>
<tr>
<th>Variable Entered</th>
<th>Partial R-Square</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Friends' Alcohol use</td>
<td>.304</td>
<td>144.77</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p&lt;.0001</td>
</tr>
<tr>
<td>2) Total Expectancy Scale</td>
<td>.06</td>
<td>21.19</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p&lt;.0001</td>
</tr>
<tr>
<td>3) Problem Drinking Scale</td>
<td>.035</td>
<td>12.03</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p=.0006</td>
</tr>
<tr>
<td>4) Negative Evaluation Scale</td>
<td>.01</td>
<td>3.23</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p=.07</td>
</tr>
</tbody>
</table>
The discriminant analysis indicates that peer modeling is the best predictor of Frequent Heavy Drinker status. The Total Expectancy score and Negative Evaluation Scale from the SEU scale also predict Frequent Heavy Drinker status, indicating greater expectations for positive consequences of alcohol use relative to negative consequences, as well as less concern over negative outcomes, in the Frequent Heavy Drinkers. As would be expected, alcohol-related problems (as indicated by the Problem Drinking Scale) also predict Frequent Heavy Drinker status. As will be seen later in this paper, the pattern of findings seen here does not diverge greatly from that found in the regression analyses for prediction of the Quantity-Frequency Index (from which Frequent Heavy Drinker status is obtained).

SEU SCALE

The construction and scoring for this scale have been previously described. This section will describe basic psychometric properties of the scale (internal and test-retest reliability, criterion validity) as well as analyses to determine whether the inclusion of an evaluative or desirability component of alcohol-related consequences (as opposed to a simple assessment of expected consequences) improves prediction and explanation of alcohol use. These analyses are not intended to be an in-depth investigation of the psychometric properties of the SEU. Rather, the rationale is to first assess whether attempts to extend Bauman's scale to adolescents are relatively successful and, establishing that goal, to determine whether the concept of SEU is more useful and viable than expectancy. Also, some of the
theoretically-based hypotheses regarding the inter-relationships of disparate correlates of alcohol use that are described in another section of this paper require expectancy and evaluation measures.

**Reliability:** Test-retest reliability was assessed for the SEU score by obtaining correlation coefficients between the first and second administration of this scale. A correlation of .81 was obtained ($n = 51$, $p = .0001$). Thus, SEU scores do appear to be relatively stable over a two to three week interval.

Internal consistency was computed by first obtaining a correlation between odd and even items of the SEU scale and then correcting this result using the Spearman-Brown formula (Cronbach, 1970). The obtained coefficient was $.964$ ($n = 578$, $p = .0001$). Items of the SEU scale thus appear to be consistent with each other and in what they measure.

**Criterion Validity:** Correlation coefficients between the SEU score and the two dependent variables of interest, alcohol-related problems and extent of alcohol consumption, are $.32$ ($n = 617$, $p = .0001$) and $.45$ ($n = 534$, $p = .0001$), respectively. Some preliminary support for the criterion validity of the SEU scale was thus obtained. It is concluded that this study was successful in extending the Bauman SEU scale to adolescents.

**Utility of SEU:** An informal comparison of correlation coefficients between the dependent variables and both SEU and Expectancy Total indicates that the two are equally predictive of the alcohol use measures. Correlations between the Quantity-Frequency Index and the SEU and Expectancy Total are $.45$ and $.46$, respectively. Corresponding correlations for alcohol-related problems are $.32$ and $.31$
Regression analyses were used to determine whether SEU helps predict alcohol use measures after expectancy has already been taken into account. The results for these are shown in Table 5. For both dependent variables, a regression analysis was conducted using only Expectancy Total as a predictor. R-square values were .21 and .09 for Quantity-Frequency Index and Problem Drinking, respectively. Adding SEU to the regression equation did not add significantly to the variance accounted for in the Quantity-Frequency Index. R-square was only incremented by .004. F-test for the significance of this increment yielded an F value of 2.87 (p = .09, n = 534). For the Problem Drinking Scale, addition of SEU to the equation incremented R-square by .008. F-test for the significance of this increment yielded an F-value of 5.32 (p = .02, n = 617). While the actual increment in R-square is small for the Problem Drinking Scale, it does reach significance. However, this may be due to the larger N in this analysis.

Regression analyses were also performed entering only the evaluative component of the SEU scale first and then running the analysis with expectancy added into the equation. These are included in Table 6. R-squares for the Quantity-Frequency Index and Problem Drinking scale were .09 and .07, respectively. The inclusion of expectancy added significantly to prediction for both of the dependent variables. The Quantity-Frequency Index was incremented by .125 to .21 (F = 84.4, p = .0001, n = 534). The Problem Drinking scale was incremented by .03 (F = 22.7, p = .0001, n = 617). Thus, the evaluative component of the SEU scale does significantly predict the dependent variables,
TABLE 5
MULTIPLE LINEAR REGRESSION ANALYSES FOR DETERMINING PREDICTIVE UTILITY OF SEU BEYOND EXPECTANCY

<table>
<thead>
<tr>
<th>Dependent Variable: Quantity-Frequency Index</th>
<th>n = 533</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable entered</td>
<td>R-Square Change</td>
</tr>
<tr>
<td>Step 1:</td>
<td></td>
</tr>
<tr>
<td>Total Expectancy</td>
<td>.212</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2:</td>
<td></td>
</tr>
<tr>
<td>SEU</td>
<td>.004</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dependent Variable: Problem Drinking</th>
<th>n = 616</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable entered</td>
<td>R-Square Change</td>
</tr>
<tr>
<td>Step 1:</td>
<td></td>
</tr>
<tr>
<td>Total Expectancy</td>
<td>.095</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2:</td>
<td></td>
</tr>
<tr>
<td>SEU</td>
<td>.008</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
but the expectancy component adds significantly to the prediction of variance, above that explained by the desirability of consequences alone.

Stepwise Multiple Regression was conducted with both dependent variables to help determine which scores or subscores from the SEU scale best predict the dependent variables. Independent variables included in both stepwise procedures were SEU scale, Total Expectancy Scale, Total Evaluative Scale, Long-term Consequences scale, Negative Expectancy Scale, Positive Expectancy Scale, Negative Evaluation Scale and Positive Evaluation Scale.

Results of these analyses are included in Table 7. They show that, for the Quantity-Frequency Index, Total Expectancy score was the best single predictor of alcohol use. The Negative Evaluation subtest (which requires students to indicate how aversive the negative consequences of alcohol use would be) was the only other variable to enter the model. For the Problem Drinking scale, the Short-term Consequences Scale was the single best predictor of alcohol-related problems. The Negative Evaluation subtest was the only other variable to enter the model. While the Negative Evaluation Scale appears to predict both dependent variables, the Positive Evaluation Scale does not. In fact, Positive Evaluation Scale did not correlate significantly with the Quantity-Frequency Index ($r = -.08$, $p = .069$, $n = 534$) or alcohol-related problems ($r = -.03$, $p = .51$, $n = 617$). Relationships among the SEU scale's subtests and other variables of interest to this study will be elaborated further elsewhere.


<table>
<thead>
<tr>
<th>Variable entered</th>
<th>R-Square Change</th>
<th>F-Value</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Evaluation</td>
<td>.087</td>
<td>50.75</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td><strong>Step 2:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expectancy Total</td>
<td>.125</td>
<td>84.40</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable entered</th>
<th>R-Square Change</th>
<th>F-Value</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Evaluation</td>
<td>.071</td>
<td>47.01</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td><strong>Step 2:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expectancy Total</td>
<td>.033</td>
<td>22.71</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>
TABLE 7
STEPWISE MULTIPLE REGRESSION FOR DETERMINATION OF SEU SCALES WHICH BEST PREDICT DEPENDENT VARIABLES

Dependent Variable: Quantity-Frequency Index
n = 533

<table>
<thead>
<tr>
<th>Variable entered</th>
<th>R-Square Change</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Expectancy</td>
<td>.212</td>
<td>143.18</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p &lt; .0001</td>
</tr>
<tr>
<td>Step 2:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative Evaluation</td>
<td>.045</td>
<td>32.36</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p &lt; .0001</td>
</tr>
</tbody>
</table>

Dependent Variable: Problem Drinking
n = 616

<table>
<thead>
<tr>
<th>Variable entered</th>
<th>R-Square Change</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short-term Consequences</td>
<td>.105</td>
<td>72.34</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p &lt; .0001</td>
</tr>
<tr>
<td>Step 2:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative Evaluation</td>
<td>.039</td>
<td>27.56</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p &lt; .0001</td>
</tr>
<tr>
<td>Step 3:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Evaluation</td>
<td>.008</td>
<td>5.65</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p = .018</td>
</tr>
</tbody>
</table>
INTERRELATIONSHIPS AMONG VARIABLES

The purpose of this section is to analyze the interrelationships of peer, family and cognitive (expectancy and evaluation) factors that were previously discussed as influencing alcohol use and abuse. In order to accomplish this, correlation tables were computed, including all variables assessed. Additionally, multiple regression was used to determine the relative contributions of certain variables with others controlled. Stepwise regression procedures were used to determine the best predictors of alcohol use and abuse.

Before describing these analyses, and their results, in full detail, the relationships of gender and grade to some of the independent and dependent variables will be briefly discussed. Gender and age are often strongly related to alcohol use patterns, but are not strongly weighted in the theoretical treatments of alcohol use that are included in this paper. T-tests were used to assess the relationship of gender to the following variables: Parent and peer alcohol use, SEU scale and all of its subtests, Context Scale, Quantity-Frequency Index, and peer alcohol use.

Males and females were found to differ significantly on both Quantity-Frequency of alcohol use ($t = 2.7$, $p = .007$) and Problem Drinking Scale ($t = 2.5$, $p = .01$). They were also found to differ significantly on the SEU score ($t = -2.59$, $p = .01$), Long-term consequences scale ($t = -5.1$, $p = .0001$), and the Negative Evaluation Scale ($t = 4.1$, $p = .0001$). Inspection of the means reveals that males use more alcohol and experience more alcohol-related problems. Males also expect fewer long-term (negative) consequences from alcohol
use and evaluate the possible negative consequences as less aversive than females do. This difference in negative expectancies and evaluations probably accounts for the Total SEU and Total Evaluation Scales differing significantly.

ANOVA's for determining differences between subjects of varying grade level revealed significant differences for the Quantity-Frequency Index ($F = 3.97, p = .008$) and perception of friends' alcohol use ($F = 3.63, p = .013$). While there was a trend towards difference on the Problem Drinking Scale ($F = 2.33, p = .07$) the difference was not significant. There were no grade-related differences on the SEU scale or any of its subtests. Inspection of the means shows that alcohol use increases as grade level increases. Cognitive factors associated with alcohol use (SEU and subtests) do not appear to vary by grade level.

The sex differences described above raised concern over whether intercorrelations of the independent and dependent variables in this study may also vary by gender and thus make a single correlation table misleading. Correlation tables were computed separately for both sexes and corresponding correlation coefficients compared using Fisher's $r$ to $Z'$ conversion. The correlations that were compared included correlations of all family attachment, friend alcohol use and SEU scales with the Quantity-Frequency Index and Problem Drinking Scale. Several correlations did differ between the sexes. The correlations of both the Quantity-Frequency Index and the perception of friend alcohol use with the Problem Drinking Scale were higher for females than males ($Z' = 3.63$ and $3.05$, respectively, $Z'$ critical
The correlation between paternal alcohol use and Quantity-Frequency Index differed between sexes at the 5% significance level ($Z' = 2.20$, $Z'$ Critical for alpha = .05 is 1.96) with the correlation between the father's and subject's own alcohol use being higher among males. No other correlations (including attachment and cognitive variables) differed between the sexes. It was therefore deemed acceptable that all subjects be collapsed into one sample for the computation of correlation coefficients. The correlation tables for the variables in this study are included in tables 8 through 12. Before discussing these tables, two other issues will be addressed.

Due to the nature of the data collection procedures (i.e. data from students was collected over two days, data from parents collected through mailed surveys), the number of subjects included in the computation of correlation coefficients varies considerably. The sample of subjects completing surveys on both data collection days may differ from those only filling out data on one day. In fact, this was confirmed via a T-test of the difference between means on the Problem Drinking Scale for those students filling out one vs. two days' surveys. The obtained T-score was 19.24, with subjects who finished both days' surveys endorsing a significantly lower mean number of alcohol-related problems than those only completing the first days' data. Correlation coefficients between the first days' variables (SEU scale and its subtests, Problem Drinking Scale, Family and Peer Attachment) will therefore include a larger N and a more varied sample (in terms of alcohol use/abuse). These two factors may
increase the size of the correlation coefficients and lower the size of the correlation needed for significance. While it is possible to throw out all observations with missing values for computing correlations, the loss of so much data, from subjects of most interest to this study, is not desirable. Also, regression analyses, which are more appropriate for comparing the relative prediction of the independent variables to the dependent variables, do correct for this problem.

Another factor needs to be considered in interpreting the correlation tables. Due to the large number of variables assessed, there are many correlation coefficients available for review. This makes the probability of Type I error quite high unless a very conservative alpha is used. Even with an alpha of .01, usually considered to be quite conservative, approximately 17 false positives would likely accrue. Therefore, only correlations with p values of .001 or less will be considered significant for this study.

Turning first to correlates of the Quantity-Frequency Index, it can be seen that, as expected, one's quantity and frequency of alcohol use is significantly correlated with other aspects of alcohol use such as alcohol-related problems and contextual factors. The Quantity-Frequency Index also correlates with modeling influences from both parents \( (r = .16, p < .0001) \) and peers \( (r = .70, p < .0001) \). While the Quantity-Frequency Index does not correlate significantly with attachment to peers \( (r = .033) \), it is negatively correlated with attachment to the family \( (r = -.15, p < .001) \). Also, the Quantity-Frequency Index correlates positively with time spent with
TABLE 8
CORRELATES OF ALCOHOL USE VARIABLES WITH PEER AND PARENT VARIABLES

<p>| | | | | | | | | | | | | | | | |</p>
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>1) QF Index</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2) Problem drinking</td>
<td>.59</td>
<td>.59</td>
<td>&lt; .001</td>
<td></td>
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</tr>
<tr>
<td>3) Context scale</td>
<td>.63</td>
<td>.44</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4) Parent modeling</td>
<td>.16</td>
<td>.12</td>
<td>.18</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>5) Peer modeling</td>
<td>.70</td>
<td>.46</td>
<td>.46</td>
<td>.12</td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>6) Parent time</td>
<td>-.27</td>
<td>-.23</td>
<td>-.19</td>
<td>.02</td>
<td>-.24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>7) Peer time</td>
<td>.18</td>
<td>.13</td>
<td>.16*</td>
<td>-.04</td>
<td>.15</td>
<td>.06</td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>8) Parent attachment</td>
<td>-.15</td>
<td>-.19*</td>
<td>-.11</td>
<td>.00</td>
<td>-.11</td>
<td>.14</td>
<td>-.15</td>
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<td></td>
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</tr>
<tr>
<td>9) Peer attachment</td>
<td>.03</td>
<td>-.09*</td>
<td>.05</td>
<td>-.01</td>
<td>.00</td>
<td>-.01</td>
<td>.01</td>
<td>.19*</td>
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**LEGEND:** (1) QF Index = Quantity-Frequency Index; (5) Parent time = time spend with parents in previous weekend (plus general estimate of time spent with parents); (6) Peer time = time spend with peers in previous weekend (plus general estimate of time spent with peers); (10) Parent fun rating = standardized rating of how much adolescent enjoyed the previous weekend's activities with parents; (11) Peer fun rating = standardized rating of how much adolescent enjoyed the previous weekend activities with peers.
### TABLE 9
CORRELATIONS OF ALCOHOL USE AND SEU VARIABLES

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n = 534 for all correlations except those subscripted with a 'c', for which n = 616.

a - p < .005
b - p < .001
c - p < .0001
### Table 10

**Correlates of SEU Scales with Parent and Peer Variables**

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**Legend:**
- PA.MOD = Parental Modeling
- PE.MO = Peer Modeling
- PA.TI = time with parents
- PE.TI = time with peers
- PA.AT = attachment to parents
- PE.AT = attachment to peers
- PA.FU = fun rating for time spent with parents
- PE.FU = fun rating for time spent with peers

EXPTOT = Expectancy total; VALTOT = Total Evaluation Scale; SHORTCON = Short-term Consequences Scale; LONGCONS = Long-term Consequences Scale; NEGVAL = Negative Evaluation Scale; NEGE XP = Negative Expectancy Scale; POSEVAL = Positive Evaluation Scale; POSEX P = Positive Expectancy Scale; SOCEVAL = Social Evaluation Scale; SOCEXP = Social Expectancy Scale.

\( n = 534 \) for all correlations except those using parental and peer attachment variables (\( n = 617 \))

- a - \( p < .005 \)
- b - \( p < .001 \)
- c - \( p < .0001 \)
TABLE 11
CORRELATIONS BETWEEN MATERNAL-REPORT VARIABLES
n = 175

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<th>Occup</th>
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<th>Power</th>
<th>LoveW</th>
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LEGEND: 1) Mat.Alc. = Maternal-reported alcohol use; 2) Social = Maternal Social contacts; 3) Time = overall estimate of time spent with adolescent child; 4) TV = Overall estimate of time spent watching TV; 5) Church = number of church contacts per week; 6) Occup = Occupational prestige rating (based on Stevens and Featherman, 1981); 7) HarshD = Harsh Discipline Scale; 8) Power = Power Assertion rating on Hoffman Scale; 9) LoveW = Love Withdrawal rating on Hoffman Scale; 10) Conseq = linking of behavior and consequences scale of Hoffman Scale.

a - p < .01
b - p < .001
c - p < .0001
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**LEGEND:**
1) Pat.Alc. = Paternal-reported alcohol use; 2) Social = Father's social contacts; 3) Time = Overall estimate of time spent with adolescent; 4) TV = Overall estimate of time spent watching television; 5) Church = Number of church contacts per week; 6) Occup = Father's occupational prestige rating (based on Stevens and Featherman, 1981); 7) HarshD = Score on Harsh Discipline Scale; 8) Power = Power Assertion Scale from Hoffman Scale; 9) LoveW = Love Withdrawal Scale from Hoffman Scale; 10) Conseq = Linking of behavior with consequences scale from Hoffman Scale.

- p < .01
- p < .001
- p < .0001
peers ($r = .18, p < .0001$) and negatively with time spent with parents ($r = -.27, p < .0001$). Thus, as predicted, adolescents who are not strongly attached to parents, do not spend much time with parents and who spend a fairly large amount of time with peers are more likely to use alcohol. In terms of cognitive factors, the Quantity-Frequency Index is correlated with SEU ($r = .45, p < .0001$) and Total Expectancy ($r = .46, p < .0001$) as well as most subscales of the SEU. One notable exception is the subscale assessing evaluation of positive consequences of alcohol use, the Positive Evaluation Scale ($r = -.08$). Thus, alcohol use is associated with more positive expectations regarding the outcome of alcohol use and less negative expectations. Additionally, negative consequences of alcohol use tend to be regarded as less aversive among adolescents who drink more alcohol. The possible positive consequences, however, are not necessarily more important or highly valued, although they are seen as more likely. The Quantity-Frequency Index correlates with only one of the scales from the parents' questionnaires: Maternal church attendance ($r = -.24, p < .0001$).

The correlates of the Problem Drinking Scale tend to parallel those of the Quantity-Frequency Index. Alcohol-related problems tend to be associated with other measures of alcohol use (e.g. Quantity-Frequency Index and Context Scale) and with modeling influences. The correlation between the Problem Drinking Scale and parental alcohol use is similar in size to that between the Quantity-Frequency Index and parental alcohol use, but only approaches significance given the conservative alpha adopted here ($r = .12, p = .005$). Problem
drinking is negatively correlated with attachment to family \( (r = -0.19, p < 0.0001) \) and time spent with parents \( (r = -0.23, p < 0.0001) \). No significant correlation between peer attachment and the Problem Drinking Scale is seen but the correlation between the Problem Drinking Scale and time spent with peers does approach significance \( (r = 0.13, p < 0.005) \). The relationship between the Problem Drinking Scale and the SEU scale and subscales closely parallels that seen between the Quantity-Frequency Index and the SEU scales. Thus, adolescents who report a higher number of alcohol-related problems tend to expect more positive consequences from alcohol use than their non-problem drinking peers \( (r = 0.31, p < 0.0001) \). They evaluate the potential negative consequences as less aversive \( (r = -0.27, p < 0.0001) \) but do not evaluate positive consequences as any more rewarding or important compared to non-problem drinking peers \( (r = -0.03) \). Among data from parental questionnaires, the pattern of correlates once again approximates the pattern seen for the Quantity-Frequency Index - maternal church attendance is negatively correlated with the Problem Drinking Scale \( (r = -0.25, p < 0.0001) \).

One stated goal of this study is to investigate the relationship of family and peer variables to cognitive (SEU, Expectancy, Evaluation) factors. It can be seen from Table 10 that attachment to parents is inversely correlated with the SEU scale \( (r = -0.22, p < 0.0001) \), Total Expectancy Scale \( (r = -0.18, p < 0.0001) \) and Positive Expectancy Scale \( (r = -0.13, p < 0.0001) \). Parental attachment is also correlated with Negative Expectancy \( (r = 0.15, p < 0.0001) \) and
Negative Evaluation ($r = -.13$, $p < .0001$). Parental attachment is also correlated with Negative Expectancy ($r = .15$, $p < .0001$) and Negative Evaluation ($r = .33$, $p < .0001$) Scales but is not correlated with Positive Evaluation Scale ($r = .06$). Similarly, the amount of time spent with parents is related negatively to the SEU ($r = -.23$, $p < .0001$) and Total Expectancy ($r = -.23$, $p < .0001$) scores and correlates positively with Negative Expectancy ($r = .24$, $p < .0001$) and Negative Evaluation ($r = .18$, $p < .0001$) Scales. Thus, in general, adolescents who rate themselves as feeling more closely attached to parents and who report spending more time with parents tend to see alcohol as having little utility for them; they tend to expect more negative consequences and fewer positive consequences from alcohol use. They tend to evaluate negative consequences as more aversive than less strongly attached peers but do not rate positive consequences as any less important or desirable.

Parental alcohol use is not as strongly related to cognitive factors as the attachment variables. Parental alcohol use is significantly correlated with the Positive Expectancy scale ($r = .15$, $p < .001$) and approaches a significant relationship with the Total Expectancy Score ($r = .12$, $p = .007$). No other cognitive variables correlate with parental alcohol use. Thus, adolescents who report higher alcohol use among parents also tend to expect alcohol use to have more positive consequences for themselves but do not differ from peers in terms of expectations for negative consequences or in the aversiveness/desirability of negative and positive consequences.
For peer variables, self-reports of attachment to peers is positively correlated with the Negative Evaluation Scale \( (r = .29, p < .0001) \) and the Positive Evaluation Scale \( (r = .21, p < .0001) \). Peer attachment does not correlate with any of the expectancy measures. The amount of time reportedly spent with peers does not correlate with any of the SEU scales. Thus, peers who describe themselves as strongly attached to peers tend to evaluate the negative consequences of alcohol use as more aversive and the positive consequences as more desirable than adolescents reporting less attachment to peers. It is unclear why this rather contradictory pair of correlations was obtained or what it means. Whether such a contradiction actually exists or the correlation is due to an acquiescent response set is unclear.

Peer modeling appears to be more consistently related to the SEU scale and its subscales. Peer alcohol use is positively correlated with the SEU \( (r = .34, p < .0001) \), Total Expectancy \( (r = .37, p < .0001) \), Positive Expectancy \( (r = .29, p < .0001) \) and Social Expectancy Scales \( (r = .25, p < .0001) \). Negative correlations were obtained between peer alcohol use and both Negative Evaluation \( (r = -.28, p < .0001) \) and Negative Expectancy \( (r = -.26, p < .0001) \) Scales. No significant correlation was observed between peer alcohol use and the Positive Evaluation Scale \( (r = -.11) \). Thus, adolescents whose close friends drink more tend to see alcohol use as having greater utility for them. More specifically, they expect more positive consequences and fewer negative consequences from
alcohol use and evaluate negative consequences as less aversive than do adolescents whose friends drink less.

As was suggested in the Introduction to this paper, a positive correlation was obtained between scores on the scale assessing the desirability of positive social outcomes (Social Evaluation) and both attachment to peers and time spent with peers. As can be seen from correlations discussed previously, however, alcohol use does not appear to be related to a need for enhanced social functioning.

A positive correlation was obtained between attachment to peers and attachment to parents \((r = .19, p < .0001)\). This may represent a response set or there may be some generalized dependency/sociability that is tapped by both of these subscales. There was no correlation between parental and peer involvement as assessed by time spent with each. Parental attachment was significantly - and negatively - associated with maternal harsh discipline \((r = -.26, p < .001)\) and approached significant correlation with paternal occupational status \((r = .26, p = .004)\). No other parent-report measures correlated with parental attachment. Both maternal and paternal reports of alcohol use were correlated with adolescents' reports of parents' alcohol consumption, lending some validity to these measures \((r = .35, p < .0001\) for reports of maternal alcohol use, \(r = .51, p < .0001)\) and between adolescents' perceptions of alcohol use in mothers and fathers \((r = .35, p < .0001)\). There was a trend
towards a positive relationship between parental and peer alcohol use \( (r = .12, p = .007) \).

**Regression Analyses:** Independent variables were entered into regression analyses in three steps for each of the two dependent variables (Problem Drinking Scale and Quantity-Frequency Index). In the first step, variables related to parental influence were entered into the model. This included four variables: Parental alcohol use, parental attachment, time spent with parents, and the Z score for the mean ratings of how much the adolescents enjoyed the previous weekend's activities with parents. The second multiple regression analysis included both the parental variables and four peer influence variables: Peer alcohol use, attachment to peers, amount of time spent with peers and Z score for the mean rating of how much the adolescents enjoyed the previous weekend's activities with peers. The third analysis included all of the parent and peer variables just described as well as the SEU score. At each of the three steps, R-Square was obtained so that increments in R-Square due to the additions of subsequent variables could be assessed. Table 13 presents the results of these analyses.

For the Quantity-Frequency Index, multiple regression analysis with the four parental variables yields an R-Square of .11. The addition of peer variables increments the R-Square by .4 to .51. This represents a significant increase in the proportion of variance accounted for in the Quantity-Frequency Index. The addition of the SEU scale increments R-Square by .04, which is statistically significant \( (F = 45, p = .0001) \).
### TABLE 13

**MULTIPLE LINEAR REGRESSIONS ASSESSING CONTRIBUTIONS OF PARENT, PEER AND SEU VARIABLES**

**Dependent variable:** Quantity-Frequency Index  
**n = 533**

<table>
<thead>
<tr>
<th>Variable Entered</th>
<th>R-Square Change</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1:</strong></td>
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</tr>
<tr>
<td>Parent Variables</td>
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<td>16.42</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Step 2:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peer Variables</td>
<td>.402</td>
<td>108.06</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>p &lt; .0001</strong></td>
</tr>
<tr>
<td><strong>Step 3:</strong></td>
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<td></td>
</tr>
<tr>
<td>SEU</td>
<td>.039</td>
<td>45.87</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>p &lt; .0001</strong></td>
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</tbody>
</table>

**Dependent Variable:** Problem-Drinking Scale  
**n = 533**

<table>
<thead>
<tr>
<th>Variable Entered</th>
<th>R-Square Change</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent Variables</td>
<td>.092</td>
<td>13.35</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>p &lt; .0001</strong></td>
</tr>
<tr>
<td><strong>Step 2:</strong></td>
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<td></td>
</tr>
<tr>
<td>Peer Variables</td>
<td>.169</td>
<td>30.00</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Step 3:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEU</td>
<td>.017</td>
<td>12.06</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>p &lt; .01</strong></td>
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</tbody>
</table>
For the Problem Drinking Scale, results parallel those for the Quantity-Frequency Index, one exception being that, in general, the independent variables do not account for as much variance in the Problem Drinking Scale as they do in the Quantity-Frequency Index. Parental variables alone yield an R-Square of .09 (F = 13.35, p < .0001). The addition of peer variables raises the R-Square to .26 and the SEU scale increments R-Square by .02 to .28. Both of these increments are statistically significant.

For both the Quantity-Frequency Index and the Problem Drinking Scale, peer-related variables appear to account for the largest proportion of variance in the dependent variables. This observation is given added support by the results of stepwise regression analyses conducted on both dependent variables using the eight parent and peer variables listed above as well as total SEU and Expectancy scores as independent variables. The results of these analyses are depicted in Table 14.

For the Quantity-Frequency Index, perceptions of peer alcohol use enters first into the model, yielding an R-Square of .48. The next variable to enter the model is the Total Expectancy score, which increments R-Square by .05. Time spent with peers, time spent with parents and parental alcohol use also enter the model.

Results of stepwise multiple regression on the Problem Drinking Scale are very similar to those obtained for the Quantity-Frequency Index. They are presented in Table 14. Peer alcohol use enters the model first, yielding an R-Square of .21. The SEU scale enters the
the model next, incrementing R-Square by .03. Family Attachment also enters the model. As with the other set of regression analyses, the independent variables account for less of the variance in the Problem Drinking Scale than in the Quantity-Frequency Index.
### TABLE 14

**STEPWISE REGRESSIONS INCLUDING ALL PARENT AND PEER VARIABLES AS WELL AS SEU**

**Dependent Variable: Quantity-Frequency Index**

\[ n = 533 \]

<table>
<thead>
<tr>
<th>Variable Entered</th>
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</thead>
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<td></td>
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<td>p &lt; .0001</td>
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<tr>
<td>Step 2: SEU</td>
<td>.054</td>
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<tr>
<td></td>
<td></td>
<td>p &lt; .0001</td>
</tr>
<tr>
<td>Step 3: Time spent</td>
<td>.006</td>
<td>6.99</td>
</tr>
<tr>
<td>with friends</td>
<td></td>
<td>p &lt; .008</td>
</tr>
<tr>
<td>Step 4: Time spent</td>
<td>.006</td>
<td>7.24</td>
</tr>
<tr>
<td>with parents</td>
<td></td>
<td>p = .007</td>
</tr>
<tr>
<td>Step 5: Parental modelling</td>
<td>.005</td>
<td>5.71</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p = .017</td>
</tr>
</tbody>
</table>

**Dependent Variable: Problem Drinking Scale**

\[ n = 533 \]

<table>
<thead>
<tr>
<th>Variables entered</th>
<th>R-Square Change</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: Peer modelling</td>
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<td>139.81</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p &lt; .0001</td>
</tr>
<tr>
<td>Step 2: SEU</td>
<td>.028</td>
<td>19.17</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p &lt; .0001</td>
</tr>
<tr>
<td>Step 3: Parental Attachment</td>
<td>.009</td>
<td>5.96</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p = .015</td>
</tr>
</tbody>
</table>
Compliance Study:

The final results of this manipulation revealed significant differences in response rates across the three conditions. While the overall response to the questionnaires was not unlike that experienced in other studies, providing subjects with compensation in advance led to a significant increase in participation. Approximately half of the parents receiving cash in advance responded, compared to roughly one third of the parents in other conditions.

One conclusion from this study is that small monetary inducements (as were offered in the control condition) are essentially ineffective for motivating subjects to respond to surveys. Those individuals who do respond to such inducements would also be likely to respond if simply requested to participate. Researchers who are on a tight budget may wish to forego the use of monetary inducements when requesting participation. Presumably, a larger inducement would enhance compliance, but the size of the inducement needed to significantly enlarge one's subject pool is unknown.

The contrast condition, in which initial mailings offered no inducement whereas the reminder letter did, was no more or less effective than the control condition. It would be interesting to
learn whether this condition would have been equally effective if the reminder letter contained no monetary inducements. The response to the first letter in this condition suggests that a simple reminder may have been equally effective. The results do not suggest that this condition enhanced compliance. However, this type of procedure would serve as another economical alternative for survey research.

The reciprocation condition significantly enhanced response rates to mailings. This increased response rate appeared to be more pronounced with the initial mailing. It is possible that, in this type of procedure, any subsequent reminders would be even more successful if the money recipient's presumed debt to the giver was subtly reinforced. This was specifically avoided in the current study for ethical reasons. This condition was of course the most expensive to finance, but it would appear to be a reasonable option for the researcher when such money is available, particularly when time or labor constraints preclude using reminder letters to follow up initial mailings.

It was stated at the beginning of this paper that compliance strategies were of interest in part because of the desire to obtain participation from populations which are often poorly represented in research samples. This study found that the three compliance strategies did not differ in terms of the characteristics of subjects responding. It also confirmed that survey respondents may differ significantly from nonresponders in characteristics that are of importance to researchers. In this study, children of parents who responded to surveys appeared to differ from children of nonresponders.
on alcohol use and alcohol expectancy/value measures. The need to find effective strategies to enhance participation in research, particularly among families of troubled youths, is in need of further study. One important implication of this study is that monetary inducements, if used, may need to be substantial to be effective. Frequent follow-ups may also be needed. Because this issue is of critical importance to improving the quality of research, it is an area deserving of more intensive and systematic study.

**Frequent Heavy Drinkers:**

This study found that 8.6 percent of adolescent females and 17.2 percent of adolescent males could be classified as Frequent Heavy Drinkers based on their self-reports of alcohol consumption. It is difficult to compare this finding with prevalence rates from other studies of adolescents because different criteria for frequent or problem drinking are used in the various studies. Blane (1979) reviews studies of frequent heavy drinking in college and military samples, which are not directly comparable to this sample. He suggests that frequent heavy drinking is much less common among adolescents than among young adults. However, the prevalence of frequent heavy drinking in this sample is comparable with the prevalence rates cited for one of the most extensive studies of frequent heavy drinking. Engs (1977) reported data on 1128 college men and women from 13 different institutions and found that 20 percent of the men and 4 percent of the women fell into the Frequent Heavy Drinker category. This prevalence rate indicates that the current sample of adolescents was similar to Engs' sample in terms of frequent heavy
drinking among males. Frequent heavy drinking appears to be more prevalent in this sample of adolescent females than in Engs' population of college-age females.

Reasons for this apparently high incidence of frequent heavy drinking among this sample may include cohort effects and demographic differences. Some authors have noted increases in rates of alcohol use and problem drinking among adolescents (Braucht, 1981). Increased use of alcohol may be more pronounced among females as female sex roles become less constricting (Wilsnack and Wilsnack, 1979). Differences in SES, family background and other demographic variables may also play a role; the current sample of lower-middle class subjects is likely to differ significantly from university students in this respect.

One purpose of this study was to determine whether a subgroup of Frequent Heavy Drinkers who experience relatively few alcohol-related problems could be identified. It was found that Frequent Heavy Drinkers who do not experience potentially serious alcohol-related problems are very rare. For this reason, the proposed analyses of how subgroups of Frequent Heavy Drinkers differed from each other could not be carried out.

The findings of this study are somewhat contradictory to those of Sadava (1985). He noted that several studies have revealed a very modest relationship between alcohol consumption levels and alcohol problems. He argued that personality, family, environmental and behavioral variables may explain differential rates of vulnerability to alcohol-related problems. While most of the articles he reviewed
Included adult samples, two studies included adolescents. Gilksman and Smythe (1982; cited in Sadava, 1985) found a correlation of .39 between weekly intake and adverse consequences. Jessor, Donovan and Widmer (1980; cited in Sadava, 1985) found correlations ranging from .38 to .53 between average intake and a number of different adverse consequences. The current study obtained a correlation of .59 (p < .0001) between the Quantity-Frequency Index and Problem Drinking. One reason for the higher correlation in this study may be the inclusion of more items in the Quantity-Frequency Index, including some which assess "drunkeness." It is also possible that the relationship between alcohol-related problems and consumption levels is stronger among Frequent Heavy Drinkers than in the general adolescent population, and that once a certain level of alcohol consumption is reached, problems become inevitable. It would appear that, among adolescents, frequent heavy drinking is almost always associated with significant and potentially dangerous problems. Some research has indicated that many adolescent heavy alcohol users "mature out" of problem behavior and excessive drinking, becoming more conventional as they grow older (Donovan, Jessor and Jessor, 1983). While this may be true for some individuals, the current study indicates that frequent heavy drinking among adolescents nevertheless warrants serious concern, as adolescents are not able to avoid the potentially serious consequences of frequent heavy drinking.

SEU Scale:

Preliminary support for the reliability and validity of this scale was obtained. It can be concluded that the attempt to adapt
Bauman's SEU scale for use with adolescents was successful. In terms of whether or not the use of both expectancy and evaluation of consequences is superior to expectancy alone, the answer is more equivocal. The results described here indicate that, in terms of prediction, the SEU scale adds little predictive power beyond that available from expectancy scale. Both the SEU and Total Expectancy Scales correlate to a similar degree with the Quantity-Frequency Index and Problem Drinking Scales. While the prediction of Problem Drinking was enhanced by the addition of evaluative ratings, the additional variance contributed was small. It was clear that expectancy did contribute to the prediction of both dependent variables above and beyond the predictive value of evaluative ratings alone. Given the extra length and cumbersome scoring associated with the SEU scale, researchers interested solely in prediction may wish to use only the expectancy portion of the scale.

There are a number of possible reasons for the relatively small benefit of using combined expectancy - evaluation items for predicting alcohol use variables. One finding of this set of analyses was that evaluative ratings for the negative consequences of alcohol use did significantly predict both the Quantity-Frequency Index and the Problem Drinking Scale. Evaluative ratings for negative consequences (the Negative Evaluation Scale) predicted the dependent variables independently of the effects of expectancy alone. Evaluative ratings for positive consequences (Positive Evaluation Scale), however, did not add to the prediction of the dependent variables. Even the correlation coefficients between the dependent variables and the
evaluative ratings for positive consequences failed to reach significance. Thus, the use of evaluative ratings for positive consequences in computing the SEU score probably added to the error variance in the regression equation and reduced the SEU scale's predictive utility.

Another factor to consider is multicollinearity. The correlation table reveals that expectancy and evaluative functions are not independent. For example, the correlation between the Total Expectancy Scale and the Total Evaluation Scale is .62 (n = 617, p = .0001). Thus, although expectancies and values are conceptually independent, in reality these cognitive factors may be less distinct. The difficulty of separating expectancy from other cognitive variables (such as values and attitudes) has been discussed by other researchers in the field of alcohol expectancies (Goldman, Brown and Christiansen, 1987) but no research has addressed how this may relate to alcohol expectancies.

The independence of cognitive constructs has been questioned by studies outside the area of alcohol research. For example, Bandura's self-efficacy theory of behavioral change posits a difference between self-efficacy (one's belief in their ability to successfully perform a behavior) and outcome expectations (the outcome one expects from engaging in the behavior) (Bandura, 1977). Some research, however, has found that self-efficacy for a given task can actually be increased through manipulation of outcome expectancies (offering a reward for success) (Maddux, Sherer and Rogers, 1982). This study demonstrates that outcome expectations can influence other cognitive variables.
Precise reasons for the lack of independence between expectancy and evaluation processes in this study are not clear. The processes may influence each other as in the study of similar processes by Maddux et. al. (e.g., a subject may minimize the significance of negative, long-term consequences s/he sees as unlikely), a third variable may influence both processes (e.g. a tendency towards denial may lead an individual to deny the aversiveness and the likelihood of negative consequences), or the correlation between the two constructs may simply reflect a response set.

It is concluded that, while the use of evaluative ratings for positive consequences of alcohol use does not enhance prediction (relative to the use of expectancy items alone), the use of evaluative ratings for negative consequences does show some promise as a predictor and may have theoretical significance as well (as will be discussed below). The scale warrants further research, including factor analysis. This will allow comparisons between the current scale and Bauman's SEU scale (as well as expectancy scales such as the Adolescent Expectancy Questionnaire). The current study utilized subscales derived rationally (e.g. by dividing long-term from short-term consequences and negative from positive consequences). One limitation to the rationally derived subscales is that there is considerable overlap and shared variance among subscales. Among the more serious is the overlap between the Short-term and Positive Expectancies Scales and the Long-term and Negative Expectancies Scales. This makes it difficult to interpret the precise meaning of some of the correlations and regression equations obtained. Thus,
validational efforts (i.e. factor analysis) are in order. It was noted that students often found the SEU scale to be long and tedious. Item analyses would be beneficial in helping to shorten the scale by removing non-contributory items.

Correlational Analyses and Subject Description:

This study provided descriptive data which make it possible to offer inferences about alcohol use characteristics in a sample of primarily white, lower middle and working class adolescents. While response biases (including the possibility for both exaggeration and minimization of alcohol use and alcohol-related problems) make specific statements difficult, the data do indicate that a fairly substantial minority of adolescents drink frequently and heavily and experience numerous alcohol-related problems. Some alcohol-related problems, such as illness and hangover, have apparently been experienced by a majority of adolescents. In addition to providing information on the general characteristics of the sample, the role of demographic factors such as sex and grade were also addressed.

Sex Differences: The finding that males and females differ in terms of quantity and frequency of alcohol use and in problem drinking is consistent with most of the previous research addressing this question (Hartford and Miles, 1978). The significant sex difference in the SEU scale is consistent with the findings of Bauman and Bryan (1984) reviewed earlier. While their study illustrated the importance of SEU as a mediating variable accounting for sex differences in alcohol use, it did not provide specifics as to how females' cognitions about alcohol use may differ from those of males. The
current study found that the Long-Term Consequences, Negative Evaluation and Total Evaluation Scales differed significantly between the sexes. Thus, females are more likely to anticipate long-term (negative) consequences, seeing them as a real possibility for themselves, and evaluate the negative consequences of alcohol use as more aversive than males. The sexes do not differ in terms of their expectations for enhanced socialization and positive consequences, and their evaluations of how desirable these consequences are.

Previous research studies on sex differences in alcohol expectancies have not yielded directly comparable results. Brown, Goldman, Inn and Anderson (1980) administered their Alcohol Expectancy Questionnaire to a large and heterogenous sample of high school and college students as well as alcoholic inpatients. They found their female subjects to have expectations of generally positive social experiences when drinking, whereas males were more apt to expect arousal and potentially aggressive behavior. Rohsenow (1983) felt that differences in drinking habits would account for the sex differences observed by Brown et.al. and replicated their study on a sample of college social drinkers, statistically controlling for drinking habits. Rohsenow found that women expected to experience less pleasure and relaxation and more cognitive and motor impairment after a few drinks, but did not differ from men in terms of expected aggression. The results of the current study are inconsistent with those of both Rohsenow and Brown et.al. in that females did not appear to differ from males in terms of either positive or social expectancies. The results are, however, consistent with Rohsenow's in terms of
negative expectancies: Both studies found females to expect more negative consequences of alcohol use.

The lack of any sex differences in the social subscale is interesting in light of previous research using the balanced placebo design and survey research on social acceptance of alcohol use in females. Abrams and Wilson (1979) found that college females who believed that they had consumed alcohol demonstrated elevated physiological arousal and behavioral manifestations of anxiety (as rated by trained observers) in response to a social situation. The amount of beverage consumed was not associated with anxiety. Previous research by the same authors with college males found the opposite results: Males who believed that they had consumed alcohol were less anxious in a social situation (Wilson and Abrams, 1977). In a related study, Knovsky and Wilsnack (1982) set up a naturalistic party setting where alcoholic beverages were served and assessed male and female college students' self-concepts as the party progressed. They observed that males' self-concepts improved as alcohol use increased whereas females' self-concepts decreased. The authors of the above studies have suggested that females may fear losing control in social settings if alcohol is consumed. It is also suggested that decrements in self-concept observed in this study may be related to traditional societal attitudes which do not encourage alcohol use in females.

For example, Maddox and McCall (1964, cited in Wilsnack and Wilsnack, 1979) report that both adults and adolescents disapprove more strongly of alcohol use in females than males. The lack of sex differences in social expectancies observed in the current study may be related
to declines in the extent to which alcohol use is met with disapproval (Wilsnack and Wilsnack, 1979). It is also possible that, as alcohol use among females continues to increase and they become more experienced with using alcohol, anxiety and concern associated with its use may be declining.

It has been suggested by Rohsenow that "...it is not the anticipated aversive consequences of drinking per se that result in some people choosing to drink little but rather the expectancy that there will be relatively few positive consequences of drinking for themselves" (p. 755, 1983). The current study appears to contradict this. As will be elaborated upon below, the extent to which an individual expects that the negative, long-range consequences of alcohol use can affect him/her and the aversiveness of these consequences does relate to alcohol use and appears to be a critical factor in differentiating males' from females' cognitions regarding alcohol. The results suggest that females may drink less than males in part because of these expectations and evaluations.

**Grade:** The grade differences in alcohol use (for self and peers) is consistent with previous research (Harford and Mills, 1978). The lack of any grade differences for the SEU scale and its ten subscales is consistent with previous research using the Adolescent Expectancy Questionnaire (Christiansen and Goldman, 1983). Christiansen, Goldman and Inn (1982) found stable expectations for effects of alcohol across a sample of 12 to 19 year-old adolescents. The authors suggested that alcohol-related expectancies may precede experience with alcohol. Christiansen et.al.'s 1989 longitudinal study
(previously described in the introduction to this paper) provided strong substantiating evidence for this hypothesis. While the cross-sectional nature of the current study precludes any definite conclusion, the results do provide further evidence for the stability of alcohol-related cognitions across ages.

**Intercorrelations:** The pattern of intercorrelations obtained is consistent with much of the previous research. Both modeling variables (parent and peer) are significantly correlated with the alcohol use variables. While parent and adolescent reports of the parents' alcohol use did correlate with each other, parental reports of alcohol use did not correlate highly with their children's reports of their own alcohol use/abuse. This may be attributable in part to restrictions in the range of scores due to the homogeneity of the sample of parents responding and lack of sensitivity of the parental questionnaire (alcohol use was assessed with only three items).

The importance of parental attachment and involvement is confirmed by this study. The attachment scale utilized in this study was adopted from Johnson (1986) whose stated goal was to assess the construct from the adolescent's own subjective sense of reality. Thus, the items tapped adolescents' subjective impressions of the extent to which they could turn to parents for support, enjoy interactions with parents, and feel cared for by parents. The subjective nature of items makes it more difficult to draw conclusions regarding the behavioral interactions of the adolescents' families than studies which assess specific child-rearing practices (e.g. Mercer and Kohn, 1980). However, the role of the adolescents' subjective
impressions about the parent-child relationship is supported by this study. The involvement scale was more objective, requiring subjects to list more factual information (recollections of the previous weekend's activities and how much time was spent with parents and peers). Results indicate that, as adolescent alcohol use increases, time involvement with parents tends to decrease.

Alcohol-using adolescents are no more attached to peers than other adolescents, but they do spend more of their time with their friends. As stated, they are less strongly attached to parents and spend less time with them. Social learning conceptualizations of alcohol use posit that alcohol abuse can develop through a process of reciprocal determinism: As individuals become involved with deviant peers and spend less time among conventional influences, their behavior may become even more deviant and isolate them even further from conventional socialization (Abrams and Niaura, 1987). The pattern of correlations obtained describe a situation where such a process may be on-going: Alcohol using adolescents tend to be less attached to parents, spend less time with them, and spend more time with friends who appear to be alcohol users like themselves. It is suggested from the above that alcohol-using adolescents have a unique milieu in which positive socialization forces are not prominent, and which may become more destructive as time progresses.

SEU and the Total Expectancy scale were also significantly associated with alcohol use variables. More interesting, however, was the differential importance of the SEU scale's subscales. Alcohol use is clearly associated with expectations that positive,
short-term outcomes will accrue while the long-term, negative consequences will not be personally experienced. Alcohol use and problem drinking does not appear to be motivated by a greater need for positive consequences (as indicated by the Positive Evaluation subscale), but is related to a lack of concern about negative consequences (as indicated by the Negative Evaluation subscale).

This last finding (low evaluation of aversiveness for negative outcomes) is open to interpretation. It is possible that alcohol users simply deny or minimize the impact of the negative effects of alcohol (as well as their likelihood of occurrence). Another possibility, which was discussed in the Introduction of this paper, is that adolescent drinkers are simply not as concerned about the negative effects of alcohol. Many of the items on the SEU scale which assess negative consequences pertain to antisocial behavior and irresponsibility. These are two characteristics which have been associated with alcohol abuse in a number of other studies (Jessor and Jessor, 1977; Kandel, 1980; Wilsnack and Wilsnack, 1980). Alcohol abusers are prone to engage in some of the behaviors which are considered to be negative consequences of alcohol abuse.

The important role of expectancies and evaluations of negative consequences has not been emphasized in previous literature. Christiansen and Goldman (1983), using the Alcohol Expectancy Questionnaire (AEQ), found no correlation between negative expectancies and alcohol use styles. They suggest, on that basis, that alcohol prevention programs should not stress negative aspects of alcohol use because they do not relate to alcohol use. One likely reason for these
conflicting findings is that the AEQ does not consistently word questionnaire items in a manner which reflects personal expectancies. Some of their negative expectancy items assess general knowledge of the negative effects of alcohol, as opposed to the belief that they will actually occur. Rohsenow (1983) found among his college student subjects a general tendency for people to expect alcohol to influence others more so than oneself. This bias was evident for both positive and negative expectancies, but was strongest for expectations regarding aggression and power. Thus, while actual knowledge of negative consequences may not influence alcohol use substantially, one's personal expectancy regarding the likelihood of negative outcomes (which may not correspond closely with knowledge about alcohol) does relate to alcohol use.

The relationship of both parental time involvement and parental attachment with the SEU subscales supports the hypothesis that family relationships may modify cognitions about alcohol. As previously stated, parental attachment and time involvement were associated with greater concern about the negative consequences of alcohol use. Adolescents who are less strongly attached to parents and spend less time with them appear less concerned about experiencing the negative consequences of alcohol use. Parental alcohol use correlated with Positive Expectancies but was not correlated with the Negative Evaluation or Negative Expectancy scales. Parental modeling thus appears to have little impact on how adolescents evaluate negative consequences or their expectancies regarding the likelihood of negative consequences. Rather, the quality of the parent-child relationship
emerges as a more relevant variable in predicting these factors. Parental alcohol use and parental attachment were not significantly related to each other and predict alcohol-related cognitions (expectancies/evaluations) in different manners. Modeling and attachment appear to be two distinct socializing influences, and may influence alcohol use in different ways.

The results described here help to provide a link between studies of expectancy and parent/peer variables by showing that attachment to members of conventional society is related to expectancies and evaluations of the consequences of alcohol use.

**Regression Analyses:**

The addition of peer variables adds significantly to the prediction of alcohol use even with parental variables controlled. This indicates that the influence of the peer world cannot be explained as being solely due to the parental factors. In fact, the apparent overlap between peer and parent variables is not extensive in this study. Perceptions of peer alcohol use appear to be the strongest correlate of alcohol abuse. This finding is consistent with other research studies (e.g. Jessor et al., 1980; Ried et al., 1987; McLaughlin et al., 1985).

The strongly predictive nature of peer alcohol use may be due to a number of factors. It may be that, as Zucker (1979) has suggested, the peer world assumes greater control over an adolescent's life during this stage of development. How an adolescent may choose (or be chosen by) a more deviant peer group is not clear. The present study hypothesized that parental factors would be a salient factor
in this process but persuasive evidence was not obtained. In a longitudinal study, Huba, Dent and Bentler (1980; cited in Sadava, 1987) did find that adolescents with many adult drinking models are predisposed to seek out and/or perceive heavy-drinking peers (the obtained correlation in this study between peer and parent alcohol use was .12, p = .007). It is possible that the more proximal nature of the peer influence variables is partially responsible for their rather large independent contribution to predicting alcohol use. Family variables may influence friendship selection, but once an adolescent has been integrated into a peer group, the group itself (via conformity pressures) may greatly influence the specifics of alcohol consumption. This possibility was discussed earlier, in the discussion of correlation coefficients, when it was suggested that adolescent alcohol abusers may become involved in a unique milieu, which becomes a more powerful socializing force over time and with increasing isolation from the family.

SEU contributes to the prediction of alcohol use variables even with family and peer variables controlled, although there remains substantial overlap among the variables. While background variables may help to account for SEU, other factors appear to influence it as well. The role of mass media and cultural beliefs surrounding alcohol use may be significant factors influencing SEU, which have not been extensively investigated. Also, as discussed in the Introduction, experience with alcohol may influence expectancies (e.g. it may strengthen them).
Summary:

In the introduction to this study, Elliott et al.'s integration of control theory and social learning theory was described. One of their suggestions is that a link may exist between bonding to conventional vs. deviant socializing agents and an adolescent's perceptions of costs and benefits associated with alcohol use. This study appears to have demonstrated such a link. Specifically, adolescents who are more weakly attached to parents evaluate the costs of alcohol use as less aversive. It appears that attachment and bonding are more relevant to the link between alcohol use and negative evaluations than parental modeling, which mostly enhances positive expectancy. This supports the notion that lack of reinforcement and rejection of conventional values may influence negative evaluations.

It would appear that alcohol-using adolescents are also immersed in a different social learning environment, as evidenced by low attachment to parents, little time spent with parents and much time spent with peers. The Social Learning concept of reciprocal determinism suggests that involvement with a deviant milieu may increase deviance, therefore isolating the adolescent further from conventional controls.

Limitations of the Current Study:

One of the primary limitations to this study is that it is cross-sectional in nature. While this is not a problem for the first three goals of this paper (compliance, Frequent Heavy drinking, analyses of the SEU Scale), it limits the confidence that can be placed in some of the causal interpretations offered for the
correlation coefficients and regression analyses. One of the most problematic issues in interpreting these correlations is ambiguity over directionality. For example, it is conceivable that, rather than family attachment influencing SEU, an adolescent's current extensive alcohol use (associated with SEU) leads to family conflicts and low scores on the family attachment measures. A longitudinal study would be ideal for determining causality.

Another concern is multicollinearity. This study included many variables which were significantly correlated with each other. This problem would be difficult to avoid completely. As Sadava has stated, "Unless one is to retreat to using only simple sovereign theories, multicollinearity is a reality that must be accepted and recognized." (1987, p. 120). This factor would be most problematic for the regression analyses performed to address the fourth goal. For the multiple regression analyses, variables were entered into the equation in blocks and only their combined R-Square analyzed. This helps to reduce some of the interpretive difficulties that would result from attempting to enter each independent variable separately (Pedhazur, 1982, p. 246). This was not done for the stepwise regressions. Consequently, the stepwise regressions may not be appropriate for attempting to discern the relative importance of different variables.

Another limitation is the lack of significant correlations between data derived from parents and data from adolescents. This can be attributed to a number of factors. One important factor is that parents who responded to the surveys were likely to differ
from those who did not respond, as indicated by the significant differences between children of parents who responded vs. those who did not. Children of parents who responded to the survey used less alcohol and differed on several SEU subtests. Thus, the parental respondents represented a more restricted range of the total sample, reducing variability in the obtained scores and thereby reducing the likelihood of obtaining significant correlations. Some of the measures may have also been inadequate. Some of the measures obtained were based on only a few multiple-choice questions with a limited range of choice options. This again restricts the range of scores and reduces the size of correlations. Surveys were kept brief in order to enhance participation. A more limited set of variables, which could be assessed with a more expanded set of items, may have yielded more useful data.

Directions for Future Research:

The results of this study have provided directions for research in several different areas. As was previously stated, the use of compliance strategies/inducements in order to enhance participation has been ignored. The current study indicates that further research into the factors influencing participation and inducements that would be effective/necessary holds promise for improving the efficiency and cost-effectiveness of data collection. Also, the failure of traditional survey research to access high-risk, troubled families was highlighted in this study. The development of strategies for enhancing participation of high-risk families (e.g. by using large inducements or through studies offering treatment) is worthy of increased attention and effort.
Some of the needed scale development for the SEU have already been described. The importance of evaluations of negative consequences was supported in this study and may enhance prediction and explanation of alcohol abuse. The independence of expectancy and evaluation, however, is questionable. Future research into the nature of these cognitive variables may shed light on how evaluation and expectancy interact. It would be interesting to study whether manipulations of one of these cognitive variables would influence the other. For example, one could attempt to alter negative expectancies for alcohol use through a training program and assess whether the negative consequences discussed become more aversive to adolescents as they appear more realistic and likely.

This study suggests that a relationship exists between alcohol use and parental factors, expectancies about the consequences of alcohol use and evaluations of the aversiveness of negative consequences of alcohol use. The predictive power of parental factors may wane, however, as adolescents become older and fall under the influence of the peer world. A longitudinal study would be the most desirable means of establishing a causal connection between the parent-child relationship and expectancies, evaluations and alcohol use. However, the contribution of family relationships to these variables can also be studied through treatment studies which target the family relationship and assess whether improved parental relationships lead to changes in alcohol use and expectancies/evaluations of the consequences of alcohol use.
Unfortunately, very few studies have attempted to alter parenting styles or family functioning in order to impact on alcohol use. Those which have been conducted tend to utilize behavioral contracting, rather than targeting the variables implicated in the current study (e.g. Bry, Conby and Bisgay, 1986). Also, most prevention efforts are school-based and focus on increasing knowledge and/or developing social skills to resist peer pressure to use alcohol/drugs (Tobler, 1986). What is needed is a study that targets parenting skills and the parent-child interaction in order to increase adolescents' attachment and involvement with parents. Measures of attachment, involvement, SEU and alcohol use could then be assessed before and after treatment to determine whether the adolescent's cost/benefit analysis (i.e. the importance or aversiveness of different alcohol-related consequences) changes as their relationship with parents improves.

Montemayor (1985) has developed a promising parent-training program for pre and early adolescents who are at risk for substance abuse. It is intended as a preventative intervention. The skill-training program addresses several variables that have been associated with alcohol abuse: Parental modeling of alcohol use, low monitoring, lack of communication, poor attachment/bonding, and lack of appropriate discipline. The breadth of this training program should insure greater treatment impact. The current study indicates, for example, that parental modeling and parental attachment may influence expectancies and evaluations in different ways. Thus, both of these factors may need to be addressed separately in order
to enhance treatment efficacy. Montemayor's program does separately address these different influences. It appears to be a promising treatment strategy for addressing the inter-relationships of family, expectancy/evaluation, and alcohol use variables.

Conclusion:

This paper has addressed four separate research questions. While the results have allowed for fairly conclusive statements on some hypotheses (e.g. the question of whether non-problematic Frequent Heavy Drinkers exist), its primary strength may lie in the implications for new research directions in compliance, assessment and explanation of adolescent alcohol use.
REFERENCES


Jessor, R., and Jessor, S. L. (1977). *Problem Behavior and Psycho-
social Adjustment: A Longitudinal Study of Youth*. New York:
Academic Press.


A. Inkeles, N. J. Smelser, and R. H. Turner (Eds.) *Annual Review
Review.

socialization by parents and peers. *The International Journal
of the Addictions*, 22, 319 - 342.

of a general theory of deviant behavior: Self-derogation and
adolescent drug use. *Journal of Health and Social Behavior*, 23,
274 - 294.

Kenrick, D. T., and Gutierres, S. E. (1980). Contrast effects in
judgments of attractiveness: When beauty becomes a social prob-

Keppel, G. and Saufley, W. H. (1980). *Introduction to Design and

Lang, A. R., Goeckner, D. J., Adesso, V. J. and Marlatt, G. A.
(1975). The effects of alcohol and aggression in male social

Maddox, G. L. and McCall, B. C. (1964). Drinking among teenagers:
A sociological interpretation of alcohol use by high-school
students (Monograph No. 4). New Brunswick, NJ: Rutgers Center
of Alcohol Studies.

expectancy and outcome expectancy: Their relationship and their
effects on behavioral intentions. *Cognitive Therapy and Research*,
6, 207 - 211.

tudinal study of onset of drinking among high-school students.
*Journal of Studies on Alcohol*, 38, 897 - 912.

McLaughlin, R. J., Baer, P. E., Burnside, M. A., and Pokorny, A. D.
(1985). Psychosocial correlates of alcohol use at two age levels
during adolescence. *Journal of Studies on Alcohol*, 46, 212 -
218.


APPENDIX A

SUBJECTIVE EXPECTED UTILITY SCALE
PREFERENCES AND EXPECTATIONS SCALE

PART I:
For each of the following, we would like you to fill in, on your answer sheet, the number which shows how you personally would feel about the things listed. For the first section, each sentence describes things that some people would like to have happen to them or things they wish would change for them. Please read each sentence and think about how much you would like it. If you don’t really care whether it happens or not, fill in the number 1 circle on your answer sheet, if you would like it a little, blacken the number 2 circle and if you would like it a lot, fill in the number 3 circle.

HOW MUCH WOULD YOU LIKE TO:

1. Feel better about the world?
2. Feel more relaxed?
3. Be in a better mood?
4. Be less bored?
5. Be able to forget problems?
6. Be able to relieve anger or frustration?
7. Feel less tense?
8. Enjoy special occasions more?
9. Be able to join in more with other people?
10. Be friendlier?
11. Have more friends?
12. Be less shy?
13. Have an easier time talking to people?
14. Be able to relate your feelings and ideas better?
15. Meet more people?
16. Feel more important while with a group of friends?
17. Have an easier time talking to the opposite sex?
18. Be more relaxed with the opposite sex?
19. Be able to feel more romantic or sexy on dates?
20. Be better able to stand up to other people?
21. Feel stronger or more powerful?
22. Be able to fight better or more easily?
23. Be able to understand things better?
24. Do better in athletics?
25. Do better at school?
26. Feel more alert?
27. Be able to think of ideas quicker or more easily?
28. Like yourself more?
29. Feel more like an adult?
30. Respect yourself more?
31. Feel like less of a failure?
32. Feel more satisfied with yourself?
This next section lists things that many people would be upset about. Please read each sentence and think about how upset you would be about what it describes. If you wouldn't really care whether it happened or not, fill in the number 1 circle on your answer sheet, if it would upset you a little, fill in the number 2 circle and if it would upset you a lot, blacken the number 3 circle.

HOW MUCH WOULD IT UPSET YOU TO:

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<th>would'nt really care</th>
<th>upset me a little</th>
<th>upset me a lot</th>
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<td>33. Feel guilty or ashamed?</td>
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<td>34. Have trouble concentrating?</td>
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<td>35. Get addicted to alcohol?</td>
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<td>36. Get in a serious car accident?</td>
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<td>37. Get into trouble with your parents?</td>
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<td>38. Commit a crime?</td>
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<td>39. Get into trouble with the police?</td>
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<td>40. Hurt your parents' feelings?</td>
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<td>41. Get into trouble at school?</td>
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<td>42. Get into a fight?</td>
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<td>43. Say something you regret later?</td>
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<td>44. Have health problems?</td>
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<td>45. Lose control and run into things?</td>
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<td>46. Break or destroy things?</td>
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<td>47. Use up money on alcohol?</td>
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<td>48. Get nauseous and sick to the stomach?</td>
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<td>49. Have a headache?</td>
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<td>50. Gain weight (5 lbs.)?</td>
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<td>51. Die at a younger age?</td>
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<td>52. Be unable to do your school work?</td>
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<td>53. Lose a job (like a part-time or after-school job)?</td>
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<td>54. Have fewer friends?</td>
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<td>55. Do worse in athletics?</td>
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<td>56. Get bad grades in school?</td>
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PART II:

Now we would like you to answer the following questions about what you think might happen or how you might act if you had several beers or drinks of hard liquor (enough to feel the effects but not be drunk). Each sentence describes something that could happen to some people or that some people think could happen if they drink. Please read each sentence and think about whether or not you believe it would happen if you had several drinks of alcohol. If you are sure it would not happen, blacken the number 1 circle on your answer sheet. If you think it probably would not, fill in the number 2 circle, if you feel it has about an even (50/50) chance of happening to you, fill in the number 3 circle, if you feel it probably would happen to you, fill in the number 4 circle and if you are sure it would happen, blacken the number 5 circle.
THINK ABOUT HAVING SEVERAL DRINKS.
WOULD HAVING SEVERAL DRINKS MAKE ME:

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57. Feel better about the world?
58. Feel more relaxed?
59. Be in a better mood?
60. Be less bored?
61. Be able to forget my problems?
62. Be able to relieve anger or frustration?
63. Feel less tense?
64. Enjoy special occasions more?
65. Be able to join in more with other people?
66. Be friendlier?
67. Be less shy?
68. Have an easier time talking to other people?
69. Be able to relate my feelings and ideas better?
70. Meet more people?
71. Feel more important while with a group of friends?
72. Have an easier time talking to the opposite sex?
73. Be more relaxed with the opposite sex?
74. Be able to feel more romantic or sexy on dates?
75. Be better able to stand up to other people?
76. Feel stronger or more powerful?
77. Be able to fight better or more easily?
78. Be able to understand things better?
79. Feel more alert?
80. Be able to think of ideas quicker or more easily?
81. Like myself more?
82. Feel more like an adult?
83. Respect myself more?
84. Feel like less of a failure?
85. Feel more satisfied with myself?
86. Have more trouble concentrating?
87. Get in a serious car accident?
88. Commit a crime?
89. Get into trouble with the police?
90. Get into a fight?
91. Say something I regret later?
92. Lose control and run into things?
93. Break or destroy things?
94. Get nauseous and sick to the stomach?
95. Have a headache?
Now we would like you to think about what might happen to you if you were to have several beers or drinks of hard liquor (enough to feel the effects but not be drunk) several times each week for the next year? (Answer the same way that you did for the other questions in Part II, with a 1 meaning you are sure it would not happen, a 2 meaning it probably would not happen, a 3 meaning it has an even (50/50) chance of happening, a 4 meaning it probably would happen, and a 5 meaning you are sure it would happen.)

**WOULD HAVING SEVERAL DRINKS EACH WEEK MAKE ME:**

| no I am | no, it | even chance | yes, it | yes, I am final sure it would not would not would not would
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96. Gain weight?
97. Have health problems?
98. Use up money on alcohol?
99. Die at a younger age?
100. Get addicted to alcohol?
101. Have more friends?
102. Lose a job?
103. Be unable to do my school work?
104. Have fewer friends?
105. Get bad grades in school?
106. Do worse in athletics?
107. Do better in school?
108. Get into trouble with my parents?
109. Get into trouble at school?
110. Do better in athletics?
111. Hurt my parents' feelings?
112. Feel guilty or ashamed?
APPENDIX B

PROBLEM DRINKING SCALE
DRINKING EXPERIENCES SCALE:

The following sentences list things that happen to some people. Please read each sentence and, if it describes something that has happened to you at some time in your life, fill in the number 1 circle on your answer sheet. If the item has not ever happened to you, fill in the number 2 circle.

1. Lost a good friend due to drinking.
2. Got a low grade on a test due to drinking.
3. Got into trouble with parents due to drinking.
4. Couldn't talk right due to drinking.
5. Got into a fight due to drinking.
6. Damaged property due to drinking.
7. Fainted or passed out due to drinking.
8. Got sick from drinking.
9. Got into a car accident due to drinking.
10. Got into some other kind of accident or somehow hurt self due to drinking.
11. Did not do homework due to drinking.
12. Couldn't remember doing what other people said you did.
13. Got arrested for drunk driving.
14. Got fired from a job due to drinking.
15. Didn't show up for a job (missed work) due to drinking.
16. Missed school due to drinking.
17. Got criticized by a date who thought you drank too much.
18. Committed a crime while drinking.
19. Worried that you had a drinking problem.
20. Had a hangover.
21. Had friends tell you that you drink too much.
22. Felt guilty about something you did while drinking.
23. Got into trouble with a teacher due to drinking.
APPENDIX C

QUANTITY-FREQUENCY INDEX:

REPORT ON OWN AND FRIENDS' ALCOHOL USE
**ALCOHOL USE HABITS QUESTIONNAIRE:**

The following items are filled out as multiple choice questions. For each question, fill in the numbered circle which goes with the one choice that is most correct for you.

1. Have you ever had even a sip of alcohol?  
   1) yes  2) no

If you have answered "yes" to the above question, please answer questions 2 through 8 by filling in the numbered circle on your answer sheet which is correct for you. If you answered "no" to the above question, please go to the next group of questions.

2. How many alcoholic drinks have you had in your whole life?  
   1) only sips  2) part or all of one  3) 2 to 4  4) 5 to 10  5) 11 to 20  6) 21 to 100  7) more than 100

3. How many alcoholic drinks have you had in the last month (30 days)?  
   1) none  2) only sips  3) part or all of one  4) 2 to 4  5) 5 to 10  6) 11 to 20  7) more than 20

4. How many alcoholic drinks have you had in the last week?  
   1) none  2) 1/2 drink or less  3) 1  4) 2 to 4  5) 5 to 10

5. How many days in the last month (30 days) have you had alcohol to drink?  
   1) none  2) 1  3) 2 or 3  4) 4 to 7  5) 8 to 14  6) 15 to 30

6. When you drink alcohol, how many drinks do you usually have?  
   1) 1 or less  2) 2  3) 3  4) 4  5) 5 or more

7. On the average, how often do you drink alcohol?  
   1) don't drink alcohol  2) once a month or less  3) 2 or 3 times a month  4) once per week  5) twice per week  6) more than twice per week
8. Have you ever been drunk?
   1) no 4) 5 to 10 times
   2) only once 5) 11 to 20 times
   3) 2 to 4 times 6) more than 20 times

9. In the last month (30 days) how many times were you drunk?
   1) none 4) 4 to 6 times
   2) once 5) 7 to 10 times
   3) 2 or 3 times 6) more than 10 times

PART II: FRIEND DRINKING HABITS
For this part of the questionnaire we want you to think of the names of two of your best friends around your own age and who go to this school, not including a brother or sister.
We need to find out how well you know what your best friends think and do and how this might influence you. Think about the first best friend, and answer the following questions according to what you think this friend does.

10. Has your friend ever had even a sip of alcohol?
    1) yes 2) no

If you answered "yes" to the above question, please answer questions 11 through 18. If you answered "no" to the above question, please go to the next group of questions.

11. How many alcoholic drinks do you think this friend has had in his or her whole life?
    1) only sips 5) 11 to 20
    2) part or all of one 6) 21 to 100
    3) 2 to 4 7) more than 100
    4) 5 to 10

12. How many alcoholic drinks do you think this friend has had in the last month (30 days)?
    1) none 5) 5 to 10
    2) only sips 6) 11 to 20
    3) part or all of one 7) more than 20
    4) 2 to 4

13. How many alcoholic drinks do you think this friend has had in the last week?
    1) none 4) 2 to 4
    2) 1/2 drink or less 5) 5 to 10
    3) 1

14. How many days in the last month (30 days) do you think your friend has had alcohol to drink?
    1) none 4) 4 to 7
    2) 1 5) 8 to 14
    3) 2 to 3 6) 15 to 30
15. When your friend drinks alcohol, how many drinks does he or she usually have?
   1) 1 or less
   2) 2
   3) 3
   4) 4
   5) 5 or more

16. On the average, how often do you think your friend drinks alcohol?
   1) does not drink
   2) once a month or less
   3) 2 or three times a month
   4) about once per week
   5) about twice per week
   6) more than twice per week

17. Do you think this friend has ever been drunk?
   1) no
   2) only once
   3) 2 to 4 times
   4) 5 to 10 times
   5) 11 to 20 times
   6) more than 20 times

18. In the last month (30 days) how many times do you think this friend has been drunk?
   1) none
   2) once
   3) 2 or 3 times
   4) 4 to 6 times
   5) 7 to 10 times
   6) more than 10 times

Now we would like you to answer the next part of this questionnaire while thinking about the second best friend, who you were asked to think of earlier.

19. Has your friend ever had even a sip of alcohol?
   1) yes
   2) no

If you answered "yes" to the above question, please answer questions 20 through 27. If you answered "no" to the above question, please go to the next group of questions.

20. How many alcoholic drinks do you think this friend has had in his or her whole life?
   1) only sips
   2) part or all of one
   3) 2 to 4
   4) 5 to 10
   5) 11 to 20
   6) 21 to 100
   7) more than 100

21. How many alcoholic drinks do you think this friend has had in the last month (30 days)?
   1) none
   2) only sips
   3) part or all of one
   4) 2 to 4
   5) 5 to 10
   6) 11 to 20
   7) more than 20
22. How many alcoholic drinks do you think this friend has had in the last week?
   1) none                  4) 2 to 4
   2) 1/2 drink or less     5) 5 to 10
   3) 1

23. How many days in the last month (30 days) do you think your friend has had alcohol to drink?
   1) none                  4) 4 to 7
   2) 1                      5) 8 to 14
   3) 2 to 3                 6) 15 to 30

24. When your friend drinks alcohol, how many drinks does he or she usually have?
   1) 1 or less              4) 4
   2) 2                      5) 5 or more
   3) 3

25. On the average, how often do you think your friend drinks alcohol?
   1) does not drink         4) about once per week
   2) once a month or less   5) about twice per week
   3) 2 or three times a month 6) more than twice per week

26. Do you think this friend has ever been drunk?
   1) no                    4) 5 to 10 times
   2) only once             5) 11 to 20 times
   3) 2 to 4 times          6) more than 20 times

27. In the last month (30 days) how many times do you think this friend has been drunk?
   1) none                  4) 4 to 6 times
   2) once                  5) 7 to 10 times
   3) 2 or 3 times          6) more than 10 times
APPENDIX D

DRINKING CONTEXTS QUESTIONNAIRE
DRINKING SITUATIONS QUESTIONNAIRE

Below is a list of situations and events which may have happened to you. Please read through the list and, if the sentence describes something that has happened to you in the last 30 days (1 month) fill in the number 1 circle. If it has not happened to you, fill in the number 2 circle.

1. Have had drinks before noon.
2. Have had drinks with a meal.
3. Have had drinks in the afternoon.
4. Have had drinks at night.
5. Have had drinks on weekends (Friday or Saturday).
6. Have had drinks with parents.
7. Have had drinks with brothers and sisters.
8. Have had drinks with friends your own age.
9. Have had drinks with older friends.
10. Have had drinks while alone.
11. Have had drinks while with a date.
12. Have had drinks at home.
13. Have had drinks on school grounds.
14. Have had drinks at a friend's home.
15. Have had drinks in a car with friends.
16. Have had drinks in a park or other outdoor place.
17. Have had drinks at a party.
18. Have had drinks on a date.
19. Began to drink mainly because friends were drinking.
20. Began to drink mainly because you felt nervous or tense.
21. Began to drink mainly because you felt sad, lonely or sorry for yourself.
22. Began to drink mainly because you were celebrating a special occasion.
23. Began to drink mainly because your parents or relatives offered you a drink.
APPENDIX E:

PARENTAL ATTACHMENT MEASURE
WHAT MY FAMILY IS LIKE:

We would like to know something about the different types of experiences and feelings teens have about their family. For each of the following sentences, please fill in the circled number which best shows how you feel about how true or correct the statement is for you and your family.

1. If I have any kind of a problem, I can count on my mother to help me out.
   never 1 2 3 4 always 5

2. My mother makes me feel that she is there if I need her.
   never 1 2 3 4 always 5

3. My mother teaches me things I want to learn.
   never 1 2 3 4 always 5

4. My mother says nice things about me.
   never 1 2 3 4 always 5

5. I enjoy talking with my mother.
   never 1 2 3 4 always 5

6. I would like to be the kind of person my mother is.
   never 1 2 3 4 always 5

7. If I have any kind of a problem, I can count on my father to help me out.
   never 1 2 3 4 always 5
8. My father makes me feel that he is there if I need him.

never 1 2 3 4 always 5

9. My father teaches me things I want to learn.

never 1 2 3 4 always 5

10. My father says nice things about me.

never 1 2 3 4 always 5

11. I enjoy talking with my father.

Never 1 2 3 4 always 5

12. I would like to be the kind of person my father is.

Never 1 2 3 4 always 5

13. I am happy when I am with my family.

Never 1 2 3 4 always 5
APPENDIX F

PEER ATTACHMENT MEASURE
HOW I FEEL ABOUT MY FRIENDS

We would like to know something about the experiences people have with their friends and some of their feelings about them. For the statements below, please fill in the circled number which shows how true or correct each statement is for you and your friends.

1. I talk about my problems with my best friends.
   never 1 2 3 4 5 always

2. I respect my best friends' opinions about the important things in life.
   never 1 2 3 4 5 always

3. I confide my inner thoughts and feelings with my best friends.
   never 1 2 3 4 5 always

4. I depend on my best friends for advice and guidance.
   never 1 2 3 4 5 always

5. I respect my best friends' judgments about normal everyday matters.
   never 1 2 3 4 5 always

6. I rely on my best friends for support and encouragement when I really need it.
   never 1 2 3 4 5 always
APPENDIX G

PARENT AND PEER INVOLVEMENT MEASURES
HOW I SPEND MY TIME:

We would like to know something about the kinds of things teenagers do with their families and friends and how much time they spend doing different things (such as eating, shopping, going to movies, visiting other people, etc.).

Now we would like you to think about the things you did last weekend (Saturday and Sunday). Please list, below, the different activities that you did and how many hours you spent doing each one. You don’t need to list activities in much detail (a few words is fine) and can estimate how much time you spent. There are 2 separate sections, one for things you did with your parents (or step-parents) and one for things you did with your friends. Please list the things you did with your parents first. Write down what the activity was on the left side and write down how many hours you spent doing it in the middle. On the right side, please indicate how enjoyable each activity was on a scale from 1 to 5, with “1” meaning you did not enjoy it at all, “3” meaning you had an okay or average time and “5” meaning you had a lot of fun.

Things I did with my parents this past weekend

<table>
<thead>
<tr>
<th>What we did</th>
<th>How much time we spent</th>
<th>How much fun I had</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>

Saturday

Sunday
Things I did with my friends this past weekend
What we did  How much time we spent  how much fun I had

Saturday

Sunday

On the Average, about how many hours do you spend each week doing things with your parents (or step-parents) such as shopping, watching TV, doing chores together and eating together.
1) 0 - 5  3) 11 - 15  5) 21 or more
2) 6 - 10  4) 16 - 20

On the average, about how many hours do you spend each week doing things with your friends?
 1) 0 - 5  3) 11 - 15  5) 21 or more
 2) 6 - 10  4) 16 - 20
APPENDIX H

PARENTAL MODELING OF ALCOHOL USE
ALCOHOL AT HOME

Do you have a mother, or a woman who is like a mother to you, living in your home?
1) yes 2) no

If you answered yes to the above question, please answer the following questions by filling in the correct numbered circle. If you answered no to the above question, please go on to the next group of questions.

1. Has your mother, or a woman who is like a mother to you, living in your home, ever drunk beer, wine or hard liquor?
   1) I am sure she has
   2) I think she has
   3) I don't think she has
   4) I am sure she has not

2. On the average, how often do you think she drinks one or more beers, glasses of wine or drinks of hard liquor?
   1) Never drinks one or more
   2) Less than once a year
   3) Less than once a month, but at least once a year
   4) About once a month
   5) Three or four days a month
   6) One to three days a week
   7) Four to six days a week
   8) Every day

3. On the average, how much do you think she has when she drinks:
   1) Never drinks
   2) One to three drinks
   3) Four to six drinks
   4) Seven or more drinks

Do you have a father, or a man who is like a father to you, living in your home?
1. yes 2. no

If you answered yes to the above question, please answer the following questions by filling in the correct numbered circle. If you answered no to the above question, please go on to the next group of questions.

1. Has your father, or a man who is like a father to you, living in your home, ever drunk beer, wine or hard liquor?
   1) I am sure he has
   2) I think he has
   3) I don't think he has
   4) I am sure he has not
2. On the average, how often do you think he drinks one or more beers, glasses of wine or drinks of hard liquor?
1) Never drinks one or more
2) Less than once a year
3) Less than once a month, but at least once a year
4) About once a month
5) Three or four days a month
6) One to three days a week
7) Four to six days a week
8) Every day

3. On the average, how much do you think he has when he drinks:
1) Never drinks
2) One to three drinks
3) Four to six drinks
4) Seven or more drinks
APPENDIX I
HARSH DISCIPLINE SCALE
ATTITUDES TOWARDS DISCIPLINE SCALE:

We would like to know something about parents' attitudes towards using different discipline tactics with their adolescent children. For the following items, please indicate the extent to which each statement is true or false for you and your adolescent child by circling the number of the best answer.

1. I make sure his/her punishments are unpleasant enough that s/he will remember them for a long time.

2. I punish him/her by not letting him/her do things s/he likes for long periods of time.

3. I slap or spank him/her when s/he does something wrong.

4. I get on his/her case in a way that makes him/her angry.

5. S/he feels my punishments are unfair.

6. When s/he really upsets me, I lose my patience and punish him/her more severely than I really mean to.

7. I believe a child must be spanked sometimes to learn respect for his/her elders.
APPENDIX J

PARENTAL INDUCTION MEASURE
RESPONSES TO MISBEHAVIOR SCALE:

In this questionnaire we will describe several situations to you that many parents find to be problematic with their teenage children. Each description is followed by a number of different disciplinary tactics that parents often use when their child is misbehaving. We would like you to read each description and then indicate how often you use each of the disciplinary tactics listed using the rating scales.

1. Imagine that you have something that you want your teenage child to do for you right away. S/he is in the other room watching television. You walk in and tell him/her what you want them to do, and ask him/her to do it right away. s/he says s/he will do it as soon as the program is over, in about a half an hour.

What do you usually do when something like that happens? For each option listed below, please indicate with a check mark how likely you are to use it.

a. Hit or spank him/her.
____ usually  ____ sometimes  ____ rarely  ____ never

b. Tell him/her that they ought to be ashamed of themselves for being so selfish.
____ usually  ____ sometimes  ____ rarely  ____ never

c. Show him/her that I’m mad or disappointed.
____ usually  ____ sometimes  ____ rarely  ____ never

d. Tell him/her that if s/he doesn’t do it right away, s/he won’t be able to have something s/he likes or do something s/he likes to do.
____ usually  ____ sometimes  ____ rarely  ____ never

e. Tell him/her that I’m angry or give him/her an angry look.
____ usually  ____ sometimes  ____ rarely  ____ never

f. Tell him/her that I’ll hit or spank them if they don’t do it.
____ usually  ____ sometimes  ____ rarely  ____ never
g. Show him/her I don't like it by not talking to them for a while.
____usually  ___sometimes  ___rarely  ___never

h. Remind him/her of how much I do for him/her or how hard I work.
____usually  ___sometimes  ___rarely  ___never

i. Go over and turn off the television set.
____usually  ___sometimes  ___rarely  ___never

j. Tell him/her to go ahead, watch the program, but not to come to me when s/he needs help.
____usually  ___sometimes  ___rarely  ___never

k. Tell him/her to go ahead, watch the program as long as s/he does what I want as soon as its over.
____usually  ___sometimes  ___rarely  ___never

l. Tell him/her that's all right, I'll do it myself.
____usually  ___sometimes  ___rarely  ___never

m. Not say a word, just go and do it myself.
____usually  ___sometimes  ___rarely  ___never

n. Tell his/her other parent and let them handle it.
____usually  ___sometimes  ___rarely  ___never

o. Tell him/her to go ahead, watch the program, but not to come around later and say s/he's sorry.
____usually  ___sometimes  ___rarely  ___never

Now we would like you to go back and check how often you have done each thing listed above in the type of situation described. Put a 1, 2, and 3 next to the things you have done most often, second most often, and third most often.
2. Every child, when he can’t have his own way, sometimes gets angry. Here is a list of things some parents do when a child or teenager gets angry and talks back. Please try to remember what you usually do when your teenage son or daughter gets angry and talks back. Please check how often you do each thing or something like it.

a. Hit or spank him/her.
____usually  ____sometimes  ____rarely  ____never

b. Make him/her leave the room.
____usually  ____sometimes  ____rarely  ____never

c. Tell him/her s/he ought to be ashamed of themselves.
____usually  ____sometimes  ____rarely  ____never

d. Show him/her that I’m hurt or disappointed by what they said.
____usually  ____sometimes  ____rarely  ____never

e. Not let him/her have something s/he likes or do something s/he likes to do.
____usually  ____sometimes  ____rarely  ____never

f. Tell him/her I’m angry at him/her or give them an angry look.
____usually  ____sometimes  ____rarely  ____never

g. Tell him/her that now I know s/he doesn’t care about me.
____usually  ____sometimes  ____rarely  ____never

h. Tell him/her I’ll hit or spank him/her if s/he ever talks to me like that again.
____usually  ____sometimes  ____rarely  ____never

i. Show him/her I don’t like it by not talking to him/her for a while.
____usually  ____sometimes  ____rarely  ____never

j. Ask him/her how s/he can talk like that after all we do for him/her.
____usually  ____sometimes  ____rarely  ____never
k. Tell his/her other parent and let them handle it.

____usually ____sometimes ____rarely ____never

l. Tell him/her I won't talk to him/her or have anything to do with him/her if that's the way s/he's going to act.

____usually ____sometimes ____rarely ____never

m. Do nothing.

____usually ____sometimes ____rarely ____never

Now we would like you to go back and check how often you have done each thing listed above in the type of situation described. Put a 1, 2 and 3 next to the things you have done most often, second most often, and third most often.
APPENDIX K

LEISURE ACTIVITIES QUESTIONNAIRE
LEISURE ACTIVITIES QUESTIONNAIRE:

The following is a questionnaire concerning leisure activities. For each item, please indicate the number of times (if any) you have engaged in that activity in the last month.

1. How many sporting events have you attended in the last month (examples of sporting events are high school and college basketball or wrestling matches).
   1. none  4. three
   2. one   5. four
   3. two   6. five or more

2. How many theatrical/musical events have you attended in the last month? (e.g. school or professional plays, musicals, operas, orchestras).
   1. none  4. three
   2. one   5. four
   3. two   6. five or more

3. How many movies have you seen (in movie houses outside the home) in the last month?
   1. none  4. three
   2. one   5. four
   3. two   6. five or more

4. How many times have you dined out (excluding fast food restaurants) in the last month?
   1. none  4. three or four
   2. once  5. five or six
   3. twice 6. seven or more

5. How many times have you attended educational or cultural activities in the last month? (e.g. museums, night classes)
   1. none  4. three
   2. once  5. four
   3. twice 6. five or more

6. How many days have you gone to night clubs or taverns in the last month?
   1. none  4. four or five
   2. once  5. six or seven
   3. two or three 6. eight or more

7. How many times have you entertained friend in your home in the last month?
   1. none  4. four or five
   2. once  5. six or seven
   3. two or three 6. eight or more
8. How many times have you visited at a friend’s home in the last month?
   1. none  4. four or five
   2. once  5. six or seven
   3. two or three  6. eight or more

9. How many times have you attended church-related activities in the last month?
   1. none  4. four or five
   2. once  5. six or seven
   3. two or three  6. eight or more

10. How many times have you attended club or organizational meetings in the last month (e.g. bridge playing club, book club, charity, lodges)?
    1. none  4. four or five
    2. one  5. six or seven
    3. two or three  6. eight or more

For the following items, please answer according to how frequently or how much time you spend on each activity each week.

11. How many hours of television do you watch, on the average, each week;
    1. 0 - 5  5. 21 - 25
    2. 6 - 10  6. 26 - 30
    3. 11 - 15  7. 31 - 35
    4. 16 - 20  8. 35 or more

12. How many hours do you read (books, newspapers, magazines), on the average, each week;
    1. 0 - 2  4. 11 - 15
    2. 3 - 5  5. 16 or more
    3. 6 - 10

13. How many hours do you spend on a hobby (e.g. knitting, sewing, crafts, woodwork, etc.), on the average, each week;
    1. 0 - 2  4. 11 - 15
    2. 3 - 5  5. 16 or more
    3. 6 - 10

14. On the average, how many hours do you spend each week engaged in activities with your teenage child (either alone or along with the rest of the family) including recreation, meals, family visits, and chores done together?
    1. 0 - 5  4. 16 - 20
    2. 6 - 10  5. 21 - 25
    3. 11 - 15  6. 26 or more
15. **On the average**, how many times each week do you have some contact with friends (either seeing them to visit or talking on the phone):
   1. 0 - 2  
   2. 3 - 5  
   3. 6 - 10  
   4. 11 - 15 
   5. 16 - 20 
   6. 21 or more  

16. **On the average**, how many hours do you spend each week away from the children (either at home or out for the evening/day) with your spouse or (if you are single) on a date:
   1. 0 - 2  
   2. 3 - 5  
   3. 6 - 10  
   4. 11 - 15 
   5. 16 - 20 
   6. 21 or more  

17. **On the average**, how many times each week do you engage in some kind of sport or exercise (e.g. bicycling, aerobics, walking, skiing, organized athletic activities such as volleyball):
   1. 0  
   2. 1  
   3. 2  
   4. 3  
   5. 4  
   6. 5 or more  

18. **On the average**, how many days each week do you have a few drinks (either alone or with others)?
   1. 0  
   2. 1 or 2  
   3. 3  
   4. 4  
   5. 5  
   6. 6 or 7  

19. When you drink, how many drinks do you usually have?
   1. don't drink  
   2. 1 or less  
   3. 2  
   4. 3  
   5. 4  
   6. 5 or 6  
   7. 7 or more  
   8. 8 or more
APPENDIX L

LETTERS TO PARENTS
Dear Parent(s);

We (Dr. Steven J. Beck and Laura K. Smith) are interested in studying parents' child-rearing practices and how they cope with the stresses of parenthood. We are currently conducting a study of how parents of teenage children cope with the discipline of their children and also how they relax in their free time. In order to conduct this study we have obtained a list of parents' names from Westland High School. This is how we came to send a questionnaire to your home.

This questionnaire is for research purposes only. If you decide to complete it and send it back to us, we can assure you that your responses will remain completely confidential and will be seen only by individuals associated with the study. No one at your child's school will see this questionnaire. We are asking that parents not sign their names to these questionnaires in order to further guarantee confidentiality. The code numbers on the questionnaires will allow the primary experimenter to determine who each questionnaire is from so that payment can be sent (this is explained below).

Whether or not you decide to participate in this study by completing the enclosed questionnaire and returning it in the self-addressed, stamped envelope provided is completely up to you. We do hope however, that you will help us in this research, which we feel will lead us to better understand child-rearing practices among Ohio parents.

Also, If you return the fully completed questionnaire to us by _____, we will send you a five dollar bill as a small payment for your time and effort in helping us.

If you have any questions, please feel free to contact Dr. Steven Beck at 292-6849 or Laura Smith at 292-6649.
Thank you.

Sincerely,

Steven J. Beck, Ph.D.

***Initial letter - Control Condition***
Dear Parent(s):

You may have received a letter from us approximately two or three weeks ago in which a study we are currently conducting was described. We are now sending this letter as a reminder for those parents who may have simply forgotten to respond or perhaps lost the questionnaire materials. The study involves the assessment of disciplinary practices and leisure activities among parents of teenage children. A copy of the questionnaire is enclosed.

This questionnaire is for research purposes only. If you decide to complete it and send it back to us, we can assure you that your responses will remain completely confidential and will be seen only by individuals associated with the study. No one at your child's school will see this questionnaire. We are asking that parents not sign their names to these questionnaires in order to further guarantee confidentiality. The code numbers on the questionnaire will allow the primary experimenter to determine who each questionnaire is from so that payment can be sent (this is explained below).

Whether or not you decide to participate in this study by completing the enclosed questionnaire and returning it in the self-addressed, stamped envelope is completely up to you. We do hope however, that you will help us in this research, which we feel will lead us to better understand child-rearing practices among Ohio parents.

Also, if you return the fully completed questionnaire to us by , we will send you a five dollar bill as a small payment for your time and effort in helping us.

If you have any questions, please feel free to contact Dr. Steven Beck at 292-6849 or Laura Smith at 292-6649. Thank you.

Sincerely,

Steven J. Beck, Ph.D.

***Follow-up letter - Control Condition***
Dear Parent(s);

We (Dr. Steven J. Beck and Laura K. Smith) are interested in studying parents' child-rearing practices and how they cope with the stresses of parenthood. We are currently conducting a study of how parents of teenage children cope with the discipline of their children and also how they relax in their free time. In order to conduct this study we have obtained a list of parents' names from Westland High School. This is how we came to send a questionnaire to your home.

This questionnaire is for research purposes only. If you decide to complete it and send it back to us, we can assure you that your responses will remain completely confidential and will be seen only by individuals closely associated with the study. No one at your child's school will see this questionnaire. We are asking that parents not sign their names to these questionnaires in order to further guarantee confidentiality.

Enclosed with the questionnaire you will find a five dollar bill. We enclosed it because we wish to reimburse people for completing the questionnaire right away. Even if you do not wish to participate in this study, however, you may keep the money. You are under no obligation to complete the questionnaire and are not required to return the money. We do hope, however, that you will decide to help us in this research, which we feel will lead us to a better understanding of child-rearing practices among Ohio parents.

If you have any questions, please feel free to contact Dr. Steven Beck at 292-6849 or Laura Smith at 292-6649. Thank you.

Sincerely,

Steven J. Beck, Ph.D.

***Initial letter - Reciprocation condition***
Dear Parent(s):

You may have received a letter from us approximately two or three weeks ago in which a study we are currently conducting was described. We are now sending this letter as a reminder for those parents who may have simply forgotten to respond or perhaps lost the questionnaire materials. The study involves the assessment of disciplinary practices and leisure activities among parents of teenage children. A copy of the questionnaire is enclosed.

This questionnaire is for research purposes only. If you decide to complete it and send it back to us, we can assure you that your responses will remain completely confidential and will be seen only by individuals associated with the study. No one at your child's school will see this questionnaire. We are asking that parents not sign their names to these questionnaires in order to further guarantee confidentiality.

Whether or not you decide to participate in this study by completing the enclosed questionnaire and returning it in the self-addressed, stamped envelope provided is completely up to you. We do hope however, that you will help us in this research, which we feel will lead us to better understand child-rearing practices among Ohio parents.

If you have any questions, please feel free to contact Dr. Steven Beck at 292-6849 or Laura Smith at 292-6649.

Thank you.

Sincerely,

Steven J. Beck, Ph.D.

***Follow-up letter - Reciprocation Condition***
Dear Parent(s):

We (Dr. Steven J. Beck and Laura K. Smith) are interested in studying parents' child-rearing practices and how they cope with the stresses of parenthood. We are currently conducting a study of how parents of teenage children cope with the discipline of their children and also how they relax in their free time. In order to conduct this study we have obtained a list of parents' names from Westland High School. This is how we came to send a questionnaire to your home.

This questionnaire is for research purposes only. If you decide to complete it and send it back to us, we can assure you that your responses will remain completely confidential and will be seen only by individuals associated with the study. No one at your child's school will see this questionnaire. We are asking that parents not sign their names to these questionnaires in order to further guarantee confidentiality.

Whether or not you decide to participate in this study by completing the enclosed questionnaire and returning it in the self-addressed, stamped envelope provided is completely up to you. We do hope however, that you will help us in this research, which we feel will lead us to better understand child-rearing practices among Ohio parents. We are requesting that parents try to have these forms completed and mailed by _____.

If you have any questions, please feel free to contact Dr. Steven Beck at 292-6849 or Laura Smith at 292-6649.

Thank you.

Sincerely,

Steven J. Beck, Ph.D.
Dear Parent(s):

You may have received a letter from us approximately three weeks ago in which a study we are currently conducting was described. We are now sending this letter as a reminder for those parents who may have simply forgotten to respond or perhaps lost the questionnaire materials. We would also like to extend to parents an offer to reimburse them for their time and trouble in completing these questionnaires. If the enclosed questionnaire is sent back to us by _____, we will send you a five dollar bill as payment for your time and effort in helping us. The study involves the assessment of disciplinary practices and leisure activities among parents of teenage children. A copy of the questionnaire is enclosed.

This questionnaire is for research purposes only. If you decide to complete it and send it back to us, we can assure you that your responses will remain completely confidential and will be seen only by individuals associated with the study. No one at your child's school will see this questionnaire. We are asking that parents not sign their names to these questionnaires in order to further guarantee confidentiality. The code numbers on the questionnaires will allow the primary experimenter to determine who each questionnaire is from so that payment can be sent.

Whether or not you decide to participate in this study by completing the enclosed questionnaire and returning it in the self-addressed, stamped envelope provided is completely up to you. We do hope however, that you will help us in this research, which we feel will lead us to better understand child-rearing practices among Ohio parents.

Also, remember that if you return the fully completed questionnaire to us by _____, we will send you a five dollar bill as a small payment for your time and effort in helping us.

If you have any questions, please feel free to contact Dr. Steven Beck at 292-6849 or Laura Smith at 292-6649.

Thank you.

Sincerely,

Steven J. Beck, Ph.D.

***Follow-up letter - Perceptual Contrast Condition***
Dear Parent(s):

We (Dr. Steven J. Beck and Laura K. Smith) are interested in studying parents' child-rearing practices and how they cope with the stresses of parenthood. We are currently conducting a study of how parents of teenage children cope with the discipline of their children and also how they relax in their free time. In order to conduct this study we have obtained a list of parents' names from Westland High School. This is how we came to send a questionnaire to your home.

This questionnaire is for research purposes only. If you decide to complete it and send it back to us, we can assure you that your responses will remain completely confidential and will be seen only by individuals associated with the study. No one at your child's school will see this questionnaire. We are asking that parents not sign their names to these questionnaires in order to further guarantee confidentiality. The code numbers on the questionnaires will allow the primary experimenter to determine who each questionnaire is from so that payment can be sent (this is explained below).

Whether or not you decide to participate in this study by completing the enclosed questionnaire and returning it in the self-addressed, stamped envelope provided is completely up to you. Most of the parents we have sent questionnaires to so far have participated in this project. Of ___ questionnaires sent out so far, we have already received back ___ , or ___ % of them. We have been most pleased with the willingness of parents to help us with this research, which we feel will lead us to better understand child-rearing practices among Ohio parents.

If you return the fully completed questionnaire to us by ___, we will send you a five dollar bill as a small payment for your time and effort in helping us.

If you have any questions, please feel free to contact Dr. Steven Beck at 292-6849 or Laura Smith at 292-6649.

Thank you.

Sincerely,

Steven J. Beck, Ph.D.

***Initial letter - Conformity Condition***
Dear Parent(s);

You may have received a letter from us approximately two or three weeks ago in which a study we are currently conducting was described. We are now sending this letter as a reminder for those parents who may have simply forgotten to respond or perhaps lost the questionnaire materials. The study involves the assessment of disciplinary practices and leisure activities among parents of teenage children. A copy of the questionnaire is enclosed.

This questionnaire is for research purposes only. If you decide to complete it and send it back to us, we can assure you that your responses will remain completely confidential and will be seen only by individuals closely associated with the study. No one at your child's school will see this questionnaire. We are asking that parents not sign their names to these questionnaires in order to further guarantee confidentiality. The code numbers on the questionnaires will allow the primary experimenter to determine who each questionnaire is from so that payment can be sent (this is explained below).

Whether or not you decide to participate in this study by completing the enclosed questionnaire and returning it in the self-addressed, stamped envelope provided is completely up to you. Most of the parents we have sent questionnaires to so far have participated in this project. Of questionnaires sent out so far, we have already received back ____ or ____% of them. We have been very pleased with the willingness of parents to help us with this research, which we feel will lead us to better understand child-rearing practices among Ohio parents.

Also, if you return the fully completed questionnaire to us by _____, we will send you a five dollar bill as a small payment for your time and effort in helping us.

If you have any questions, please feel free to contact Dr. Steven Beck at 292-6849 or Laura Smith at 292-6649. Thank you.

Sincerely,

Steven J. Beck, Ph.D.

***Follow-up letter - Conformity Condition***
APPENDIX M

ANNOUNCEMENT FLYER FOR SUBJECT RECRUITMENT
ANNOUNCEMENT

Dr. Steven Beck and Laura Smith of Ohio State University will be conducting a research study assessing adolescents' perceptions of alcohol use. Sophomores, Juniors and Seniors are being asked to participate in this study, which involves filling out a number of paper-and-pencil surveys. All answers on these surveys are confidential and will only be seen by research personnel at OSU. This study will also include surveys to be sent to parents of children in the study. Again, all information will be confidential and will only be seen by research personnel at OSU.

While participation is desired it is not required. Deciding not to participate will not affect a student's standing at school. Students are also free to leave the study at any time and there will be no negative consequences for doing so.

If parents do not want their child to participate in this study, they may sign this form at the bottom and have their child return it to school.

If you have any questions, please contact Steven Beck at 292-6849.

IF YOU DO NOT WANT YOUR CHILD TO PARTICIPATE, PLEASE SIGN HERE AND HAVE YOUR CHILD RETURN THIS FORM TO SCHOOL:
I consent to participating in (or my child's participation in) research entitled: Alcohol Use and Its Correlates in Adolescent High School Students.

[Signature]

(Principal Investigator)

or his/her authorized representative has explained the purpose of the study, the procedures to be followed, and the expected duration of my (my child's) participation. Possible benefits of the study have been described as have alternative procedures, if such procedures are applicable and available.

I acknowledge that I have had the opportunity to obtain additional information regarding the study and that any questions I have raised have been answered to my full satisfaction. Further, I understand that I am (my child is) free to withdraw consent at any time and to discontinue participation in the study without prejudice to me (my child). The information obtained from me (my child) will remain confidential unless I specifically agree otherwise by placing my initials here ____________.

Finally, I acknowledge that I have read and fully understand the consent form. I sign it freely and voluntarily.

Date: __________________________ Signed: ________________________

[Signature]

(Participant)

Signed: ______________________

(Principal Investigator or his/her Authorized Representative)

Signed: ______________________

(Person Authorized to Consent for Participant - If Required)

Witness: ______________________

HS-027 (Rev. 12-81) -- To be used only in connection with social and behavioral research.