Alcohol personality characteristics and undergraduate condom use

Brian Alan Daskivich
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Author’s Signature B. A. Daskivich

Date: February 9, 1995

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Alcohol, Personality Characteristics, and Undergraduate Condom Use

by

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B. A., San Diego State University, 1992

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Approved by

Chair, Board of Examiners

Dean, Graduate School

Date

February 13, 1995
Interventions promoting increased condom use could result in substantial disease prevention in highly sexually active populations, such as college undergraduates. In efforts to increase condom use, numerous variables relevant to this behavior have been examined. One of those variables has been the use of alcohol. At present, the link between alcohol use and risky sexual behavior, such as failure to use condoms, appears to be unclear at best. Some studies have found alcohol use to be associated with risky sexual behavior, others have not shown this association. This inconsistency suggests that other individual or situational variables may be at work. The present study focused on individuals' tendencies toward risk-taking, impulsivity, and seeking new experiences as three personality characteristics that may be operating in this context. This study utilized a correlational approach to examine the degree to which these three personality variables are associated with condom use/non-use in retrospective accounts of most-recent sexual behavior of heterosexuals between the ages of 18 and 21. A hybrid hierarchical/stepwise regression approach was used to build a model which identified variables which differentiated individuals who did and did not incidentally use a condom in their most recent sexual contact (n=117). Neither alcohol nor personality measures contributed significant explanatory variance in the behavioral criterion. However, the use of birth-control pills and withdrawal as methods of contraception were found to be significant markers for condom non-use. This model was then cross-validated using a separate group of participants (n=58) that were not included in the original derivation of the logistic regression equation. Predicted criterion assignments for the cross-validation group correlated positively and significantly with observed values. The present study found a ubiquitous pattern of heavy alcohol use and problems associated with its use. Hence, two high base-rate behaviors (i.e., unprotected sex and drinking) fail to show a significant correlation. Multiple longitudinal measures might be necessary to reveal cohort differences, as it is known that many college "heavy drinkers" abate this habit after graduation (Donovan, Jessor, & Jessor, 1983). Perhaps patterns of condom use vary in some similar fashion.
ACKNOWLEDGEMENTS

Many thanks to Dr. James Walsh, Dr. Jennifer Waltz, and Carol Van Valkenburg for their help throughout this project. A special thanks to my committee chair, Dr. John Bradley, for his frequently solicited and freely given guidance. And to my wife, Kim—thank you for all the support you have provided, in many forms.
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Importance of Using Condoms

As of May 1991, over 179,000 cases of AIDS and 113,000 AIDS-related deaths were reported in the United States (Centers for Disease Control [CDC], 1991). By April 1993, a total of 289,320 AIDS cases and 179,748 AIDS-related deaths had been reported to the CDC (CDC, 1993a). Over 47,000 new AIDS cases and almost 30,000 deaths were reported in 1992 alone (CDC, 1993b). Keeping in mind that the numbers of cases reported to the Centers for Disease Control probably only represent about 80% of actual cases, and many other people have died of AIDS-related diseases that did not meet previous definitions of AIDS (National Commission on AIDS, 1993), the magnitude of the problem is great.

While infection rates have been slowing in some populations, others have been on the rise. The number of new AIDS diagnoses in homosexual men and intravenous drug users is leveling off; AIDS diagnoses due to heterosexual transmission is continuing to increase (CDC, 1992; National Commission on AIDS, 1993). From 1991 to 1992 there was a 17% increase in AIDS cases attributable to heterosexual contact, a 9% increase in AIDS cases among females, and a 65% increase
in AIDS cases for adolescents between 13 and 19 years old (CDC, 1993b). Among adults, Catania et al. (1992) reported that condom use was less than 20% in risky sexual encounters. Also, 15% to 30% of adults reported having unprotected sex with multiple partners (Catania et al., 1992); other authors have obtained similar findings (Valdiserri, Arena, Proctor, & Bonati, 1989). As of 1990, there were about 30,000 actual cases of HIV-positive college students in the United States (Fisher & Misovich, 1990). As a result, there has been much attention focused on reducing the transmission of HIV in college populations as well.

Consequently, the importance of promoting safer-sex practices, such as condom use, has become the goal of many investigations and public health interventions (e.g., Boldero, Moore, & Rosenthal, 1992; Jemmott, Jemmott, & Fong, 1992; Leigh, 1990a; Leigh, 1993). Public health experts (Cochran, Mays, Ciarletta, Caruso, & Mallon, 1992; National Commission on AIDS, 1993) recognize condom use as an effective means of reducing the likelihood of transmission of HIV and AIDS as well as other sexually transmitted diseases (STD's). Latex condoms are the only contraceptives available that can block the passage of STD microorganisms, including HIV (Boyd & Wandersman, 1991). Condoms are safe to use and have few side effects, such as allergic reactions to latex (Byer & Shainberg, 1991). In short, promoting increased
condom use in highly sexually active populations, such as college students, could result in substantial disease risk reduction (Boyd & Wandersman, 1991).

The Relationship Between Alcohol Use and Risky Sexual Activity

Many recent studies have focused on the relationship between the use of alcohol and sexually risky behavior, in terms of potential HIV transmission (e.g., Leigh, 1990a & 1990b; Leigh, 1993; Leigh & Stall 1993; Stall, 1988; Trocki & Leigh, 1991). If alcohol use leads to risky sexual behavior, "understanding dynamics of this relationship can contribute to research and preventive and educational efforts to contain the spread of AIDS" (Leigh & Stall, 1993, p. 1035). Due to the highly personal and private nature of the behaviors being studied (i.e., sexual behaviors), it is difficult make causal interpretations from the data procured in correlational studies. Given the criterion variable, it would not be ethically and methodologically feasible to collect data from a controlled experiment.

Findings regarding the substance use/risky sexual behavior relationship appear to be inconsistent across methodologies. Leigh and Stall (1993) offer an excellent summary of findings and research designs for the investigation of this
relationship, the main points of which will briefly be presented here. Recent studies of this relationship fall into three categories, termed by Leigh and Stall (1993) as global association studies, situational studies, and event analyses. In short, global association studies involve general (quantity and frequency) measures of substance use and general measures of risky sexual behaviors. Situational studies examine substance use only in conjunction with sexual activity. Event analyses focus on specific, discreet sexual events and associated circumstances.

Some global association studies have shown that the majority but not all heavy drinkers "tend to have more sexual partners and use condoms less consistently" (Leigh & Stall, 1993, p. 1036). However, as described by Leigh (1993) there are two major criticisms of this type of analysis. First, it cannot be determined that a direct relationship exists between substance use and risky sexual behavior; correlations may be the result of other variables (e.g., personality tendencies such as risk-taking or general impulsivity). Secondly, the existing "correlational data do not indicate whether the occasions on which an individual used alcohol were the same occasions on which she or he had sex (or risky sex)" (Leigh, 1993, p. 490). Thus, it is possible that a heavy drinker may frequently have risky sex
primarily when sober (Leigh & Stall, 1993).

This is not to say that global measures of alcohol consumption are of no utility in investigating the relationship between risky sex and alcohol use. Taking a global measure of alcohol use in addition to a measure of incidental alcohol use may provide more information than either method in isolation. As an illustration of this point, a heavy drinker may indeed have risky sex when sober (Leigh & Stall, 1993); or a person who uses alcohol infrequently and/or in small amounts may have risky sex only on the rare occasions when he or she did drink heavily. Given these possibilities, it seems rational to measure incidental alcohol use in the context of a person's global drinking behavior.

Situational association studies usually take frequency measures of risky sexual behavior or dichotomize this variable (i.e., did/did not perform such a behavior within a given time period) and frequency measures (also sometimes dichotomized) of substance use with sexual activity. Findings typically show a relationship between sexual activity while under the influence of alcohol or drugs and frequency of risky sexual activity (Leigh & Stall, 1993). The inferences that can be made from these findings are limited because some researchers have not taken into account the proportion of times a person has had sex while using
alcohol or drugs. In addition, whether risky sex and sex with substance use occurred on the same occasions cannot be established (Leigh & Stall, 1993).

Event analyses obtain measures of substance use and risky sexual behavior for a discreet event. Generally, findings from event analysis suggest that "the use of alcohol is related to nonuse of contraception at first intercourse; however, several studies of more recent encounters indicated no relationship of substance use to the use of condoms or other contraceptives" (Leigh & Stall, 1993, p. 1037). A major limitation of event analyses is that, as with global association studies, confounding personality characteristics are not controlled for (Leigh, 1993; Cooper, Skinner, & George, 1990). As noted by Leigh (1993), general risk-taking may underlie both risky sex and substance use. Entertaining this hypothesis was a focus of the present study.

A study by Bradley, Carman, and Petree (1992) using a scale measuring social complications associated with drinking (SOCCOMP; Jessor, Carman, & Grossman, 1968) demonstrated positive associations between drinking-related SOCCOMP item endorsement and scales measuring mean quantity of alcohol consumed per occasion, mean daily frequency of drinking, personal and psychological motives for drinking, and social motives for drinking. Most importantly, these authors found that the amount of additional variance explained by the
SOCCOMP scale was "beyond that associated with quantity and frequency of alcohol consumption" measures (Bradley et al., 1992). This provided a strong rationale for including the SOCCOMP in the present study as another possible explanatory variable in the alcohol/risky sex relationship.

Some studies have conducted a within-subjects analysis comparing events involving substance use with those with no substance use. Using this type of approach, no differences in unprotected sex were found between use and non-use events. And interestingly, a within-subjects study by Leigh (1993) found no relationship, but a between-subjects correlation showed a positive relationship between overall frequency of condom use and overall drinking measures. As noted by Leigh and Stall (1993), this "highlights the possibility that third variables may be responsible for the findings in correlational studies" (p. 1037).

There are many difficulties in drawing conclusions across the studies. Measures and conceptualizations of substance use and sexual risk are not consistent. There seems to be little focus on the alcohol use of sexual partners. Also, some analyses have only compared the extremes of distributions, and there are differences in the variability of samples (Leigh & Stall, 1993). There are also differences in demographics and sampling method used (Leigh & Stall, 1993).
Despite these difficulties, it is clear that there is a positive relationship between substance use and high-risk sex; what is less clear is the level at which this link exists. People who drink more, use more drugs, or do either in conjunction with sex are more likely to engage in high-risk activities. However, results from analyses of specific sexual incidents have only sometimes shown that alcohol or drug use in a particular sexual encounter is associated with the occurrence of risky activities in that encounter (Leigh & Stall, 1993, p.1038).

Possible Confounding Personality Variables

As suggested by Leigh (1993) and Leigh and Stall (1993), a focus of the present study was to investigate the role of selected personality characteristics in the relationship between alcohol and risky sex. Common sense suggests that tendencies toward risk-taking, impulsivity, and sensation-seeking could be possible personality characteristics contributing to both risky sexual behavior and alcohol use (possibly to differential degrees). Some empirical evidence exists to support this contention as well (e.g., Cooper et al., 1990; Donovan, Jessor, & Costa, 1988; Earleywine & Finn, 1991; Sher, Walitzer, Wood, & Brent, 1991; White & Johnson, 1988).

For example, Earleywine and Finn (1991) found that people
who scored high on general measures of sensation-seeking were more likely to drink and be behaviorally disinhibited (U.S. Department of Health and Human Services, 1993). There have also been suggestions that behavioral undercontrol (a construct consisting of similar personality characteristics including impulsivity, sensation seeking, extraversion, rebelliousness, hyperactivity, aggressiveness, and antisociality) may be a prealcoholic trait in males (Sher et al., 1991; Woldt, 1993). In another example, high impulsivity was found to be associated with a high risk-taking personality profile in adolescents (White & Johnson, 1988); although using contraception consistently did not relate to this profile, engaging in sexual intercourse did (White & Johnson, 1988).

According to Jaccard (1974), personality traits infrequently correlate better than .3 with social behavior. Jaccard (1974) suggested this low correlation may be partially attributable to using a highly reliable, multiple item personality scale to be correlated with a single behavioral criterion. For example, Jaccard (1974) found that correlations between two personality scales and aggregate measures of dominance behaviors ($r = .58$ and $.64$) were notably greater than correlations with single-item measures of dominance behavior ($\text{mean } r = .20$).
In short, there appears to be a general notion that personality traits are usually poor predictors of specific social behaviors (Jaccard, 1974; Mischel, 1968; Rushton, Brainerd, & Pressley, 1983). However, minimal empirical evidence exists to support this notion with respect specifically to risky sexual behavior. Although a few studies have failed to find personality variables to be associated with risky sex, other personality characteristics have not been studied. Thus, it may be too early to rule out the role of personality characteristics in risky sexual behavior.

In the spirit of the above arguments, the present study examined three potentially relevant personality variables to determine the amount of variance, if any, contributed by measures of risk-taking, impulsivity, and seeking new experiences in the alcohol/condom-use relationship. It was thought possible that measures of these personality characteristics may contribute to the prediction of either an increased or decreased likelihood that a given person will participate in this particular risky sexual behavior.

A measure of trait inhibition was also included for exploratory purposes. Given that alcohol is known to have a disinhibitory effect (Bushman & Cooper, 1990; Bushman, 1993) and as previously mentioned, behavioral undercontrol may be a
prealcoholic trait in males (Sher et al., 1991; Woldt, 1993), it is possible that using alcohol may mediate trait inhibition. Generally speaking, for individuals having high trait inhibition, behaviors that would normally be under the threshold of inhibition (e.g., interpersonal aggression, engaging in sex, unprotected or not) may be more likely to be exhibited by these persons when they are drinking alcohol than when they are not. The inclusion of this variable was not intended to resolve the third variable hypothesis (e.g., disinhibition leading to alcohol overuse and to impulsive unprotected sex in usually inhibited individuals), but is included merely for exploratory purposes.

**Objectives of the Present Study**

The primary objective of this study was to explore the possibility that underlying personality characteristics may act as moderating variables in the alcohol/risky-sex relationship (specifically condom use/non-use). Given the lack of any strong evidence to support such a contention, this hypothesis was framed in a disconfirmatory manner. Therefore, the main hypothesis of the present study was that the set of measures administered to subjects in this study
for risk-taking, impulsivity, and seeking new experiences would not significantly contribute additional explanatory variance in predicting incidental condom-use behavior over and above that associated with alcohol involvement measures. The confirmatory corollary being that the robustness of the incidental behavior/alcohol involvement relationship would be significantly sustained, even after subtracting any incidental behavior variance associated with personality variables as measured.

There were several derivative and exploratory hypotheses, which were to be given a descriptive analysis from the data obtained. First, a significant positive correlation was expected between the measure of global alcohol use and social complications associated with drinking. Such an outcome would have provided a partial replication of the findings of Bradley et al. (1992). In addition, demographic and other variables such as sex, age, and number of years of sexual activity were not expected to significantly contribute additional explanatory variance in predicting incidental condom use behavior over and above that associated with alcohol involvement measures, based on the findings of Boulder et al. (1992). Finally, trait inhibition was to be descriptively analyzed with respect to incidental condom use if a main effect attributable to trait inhibition was found;
persons who scored high on a measure of trait inhibition and who indicated a high level of incidental alcohol involvement in their most recent sexual encounter were expected to be more likely (than persons high in trait inhibition with low alcohol involvement) to have failed to use a condom in that sexual encounter.
CHAPTER 2: METHOD

Participants

For obvious reasons, only heterosexuals (male and female) and homosexual males were to be included in this analysis. 431 University of Montana undergraduates between 18 and 50 years of age completed questionnaires. Due to shortcomings of the instrument, 4 bisexuals were excluded from the analysis. Three homosexual respondents did not provide critical information on the questionnaire (i.e., information about condom use in their most recent sexual encounter) and were also excluded from the analysis. 71 additional participants who either reported that their last sexual encounter was not mutually consensual, or who did not answer this question, were also excluded from the analysis. Of the remaining respondents, 88 males and 119 females were included in the preliminary analysis. Criteria for inclusion in this analysis was as follows: a) the subject reported to have had a sexual encounter; b) was not in a monogamous relationship, defined as less than one year; c) did not report being exclusively lesbian in affective/sexual orientation. All subjects voluntarily participated, and received experimental credits required for their introductory psychology courses.
Questionnaire

Items on the final questionnaire included demographic/personal questions, measures of recent condom-use and birth-control behaviors, condom availability, measures of quantity of alcohol and other drugs consumed immediately prior to/during the sexual encounter both by subjects and their sexual partner, a global alcohol use measure, a social complications of drinking measure, and measures of risk-taking, impulsivity, seeking new experiences, and trait inhibition. Additionally, the type of sexual partner was assessed. It took participants between 15 and 40 minutes to complete the questionnaire.

The following demographic/personal information was requested: age, date of birth, sex, marital status, year in school, overall undergraduate grade point average to date, religious affiliation, ethnic background, sexual orientation, nature of consent by both participants in the most recent sexual encounter, and use of various types of birth control. Participants were also asked if they were presently involved in a monogamous or "steady" relationship which has been monogamous for at least 12 months (as suggested by Trocki, 1990). Type of relationship with partner was assessed by asking the respondents to choose one of the following:
monogamous relationship for at least the last 12 months, monogamous relationship for the past 3 to 12 months, monogamous relationship for less than 3 months, non-monogamous, or other (with a blank for description).

Alcohol and substance use measures were derived from a questionnaire previously used by Bradley et al. (1992), targeting quantity of use. Participants were asked, "If you drank wine the last time you had sex, how much did you drink?" Response options were: did not drink wine, less than 1 glass, 1 or 2 glasses, 3 or 4 glasses, about half a bottle or about 5 glasses, a bottle or more. Subjects were also asked, "If your partner drank wine, how much wine did your partner drink?" Response options were: I don't know the extent of my partner's drinking, did not drink wine, less than 1 glass, 1 or 2 glasses, 3 or 4 glasses, about half a bottle or about 5 glasses, a bottle or more. Similar questions were asked concerning use (frequency and quantity) of beer, liquor, and wine coolers. As suggested by Bradley et al. (1992), quantity of alcohol intake from all sources was calculated for each subject, expressed in ounces of absolute alcohol per occasion of use. Self-reported outcomes associated with problem drinking were measured using the social complications (SOCCOMP) scale (Jessor et al., 1968).

The personality measures that were used include Scale L
(Seeks New Experiences, 19 T/F items) from the Edwards Personality Inventory - Booklet IA (Edwards, 1967), the Impulsivity scale (20 T/F items) from the Personality Research Form A (Jackson, 1974), the Risk-Taking scale (20 T/F items) from the Jackson Personality Inventory (Jackson, 1976), and Scale K (Shy, 18 T/F items) from the Edwards Personality Inventory - Booklet IV (Edwards, 1967). Scale L on the Edwards Personality Inventory is thought to measure tendencies toward seeking new experiences: tasting new foods, searching for new ways to do things, welcoming interruptions in daily routine, buying things that are not affordable, trying almost anything once, fluctuating in likes and dislikes, acting on the spur of the moment, and enjoying exciting activities (Edwards, 1967). For this scale, Edwards reports a Kuder-Richardson Formula coefficient for internal consistency of about .70 (.69 for males, .73 for females), and a correlation of less than -.03 with the Social Desirability Scale of the Minnesota Multiphasic Personality Inventory (MMPI; Hathaway & McKinley, 1967) for both genders (Edwards, 1967).

According to Edwards (1967), Scale K on the Edwards Personality Inventory, Form IV, is thought to measure tendencies toward shyness: becoming easily embarrassed, fearing doing something wrong at a social gathering, feeling
awkward in social situations, belonging to few social organizations, feeling like an outsider at most social gatherings, being anxious in the presence of strangers, remaining in the background on social occasions, and feeling bashful and timid in social situations. This scale has been shown to have a Knuder-Richardson Formula coefficient for internal consistency of .91 for males and females; for males, Scale K has correlations of -.49 and -.59, for males and females respectively, with the MMPI (Hathaway & McKinley, 1967) Social Desirability Scale (Edwards, 1967). It should be noted that the use of this scale in the present study was intended only as a brief measure of trait inhibition for exploratory purposes.

There appears to be significant congruence and consistency between self-evaluations using the Edwards Personality Inventory (EPI) and actual evaluations on EPI dimensions given by persons who know the subject well (Edwards and Klockars, 1981). Other authors have reported adequate concurrent validity with scales on other personality inventories, as well as discriminant validity (e.g., Lorr, 1975; Edwards & Abbott, 1973).

High scorers on the Impulsivity scale from the Personality Research Form tend to act on the spur of the moment (without deliberation, readily vent feelings and desires, speak
freely, and may be volatile in expression of emotion (Jackson, 1974). According to Jackson (1974) these persons may be described as "hasty, rash, uninhibited, spontaneous, reckless, irrepressible, quick-thinking, mercurial, impatient, incautious, hurried, impulsive, foolhardy, excitable, [and] impetuous" (Jackson, 1974, p. 7). The Impulsivity scale from the Personality Research form has been shown to have high internal consistency in college samples (Knuder-Richardson formula 20 is .92) and adequate validity coefficients for the purposes at hand, as covered extensively by Jackson (1974). Validity coefficients for this scale range from about .30 with behavior ratings to .70 with other trait ratings (as presented by Jackson, 1974).

High scorers on the Risk-Taking scale of the Jackson Personality Inventory are described as "reckless, bold, impetuous, intrepid, enterprising, incautious, venturesome, daring, [and] rash" (Jackson, 1976, p. 10). They are thought to enjoy gambling, be willing to expose themselves to situations with uncertain outcomes, enjoy perilous adventures, tend to take chances, and are unconcerned with danger (Jackson, 1976). From the descriptions of these scales, there may be some overlap in the constructs that are being measured, particularly with respect to "impulsivity" and "seeks new experiences." Jackson (1977) reported
internal consistency reliability estimates of about .90 (Bentler coefficient theta) in samples of college students. Other authors have shown behavioral correlates such as marijuana use and polydrug use in young adults, as reviewed elsewhere (Adlaf & Smart, 1983; Kohn, Annis, Lei, & Chan, 1985). Extensive reliability and validity data for the Jackson Personality Inventory and Personality Research Form are presented elsewhere (Jackson, 1976; Jackson, 1974). All personality measures were selected for their brevity and applicability for the purposes at hand (Appendix A contains the complete questionnaire and instructions).

**General Procedure**

Sexually active participants were recruited to participate in a study, ostensibly, of sexual behavior. Participants were thoroughly briefed on the requirements of the study, which were explained both verbally and in writing. After this briefing, participants were given an opportunity to withdraw their participation. All persons under 18 years of age were asked to move to an adjacent hallway, where an experimental assistant asked them to sign-in to receive their experimental credits, and then dismissed them.
Pursuit of the data was approved via administrative review by the Institutional Review Board of the University of Montana, and informed consent was obtained from each participant, as documented by participants' signatures on informed consent forms. Consenting participants were required to complete the questionnaire at the end of the briefing session. To increase accuracy and decrease the effects of social-desirability, the questionnaires were administered in a group setting, with each participant sitting at a separate desk. Participants were instructed specifically to not put any identifying information (name, social security number, etc.) anywhere on the form, and were assured that their responses would be completely anonymous and confidential. Participants were asked to place their completed questionnaires in one collection box, their informed consent form/cover sheet in another, and sign-in for their experimental credits as they left the room.

After the questionnaires were collected, they were thoroughly shuffled and an identification number was assigned to each; there was no possible way for even the experimenter to connect any participant's responses with his or her identity. Experimental credits were recorded by having each participant sign his or her name on a sign-in sheet upon completion of the questionnaire. A group debriefing was
conducted after the data was collected; no research participants attended, although they were notified of the time and place of this debriefing before they left the testing area. Participants with individual concerns were provided the opportunity to meet with the experimenter for a private debriefing as soon as possible after the data was collected. A few participants contacted the experimenter for this purpose and were thoroughly debriefed.
Derivation of the Model

A hybrid hierarchical/stepwise logistic regression approach was used to build a model and identify measured variables which differentiated individuals who did and did not incidentally use a condom in their most recent sexual contact. This approach was hierarchical with respect to a priori entry of variable constellations (alcohol involvement, personality, and then all others), and stepwise within groupings of other independent variables, as detailed below.

The alcohol involvement measures were entered first, and a stepwise approach was used within this group of variables. The personality variables were then entered. Again, a stepwise approach was used within this constellation of variables. The remaining variables were then entered using a stepwise approach.

Of the 207 cases that could be included in the analysis, 175 cases (85%) were used in the final analyses. It was decided that the outliers (n=32), ranging from 22 to 49 years of age, be excluded from further analysis because they were
not in the population of interest (traditional undergraduate students) and may have lifestyles markedly different from the younger students, thus introducing factors that would make generalizability to traditional undergraduate populations problematic.

After the preliminary analysis, data obtained from approximately two-thirds of the sample (n=117; 49 males and 68 females) of the 175 remaining mutually consenting, single, and heterosexual participants between 18 and 21 years of age was used to derive a model. As expected, measures of risk-taking, impulsivity, and tendencies toward seeking new experiences did not significantly contribute explanatory variance in predicting incidental condom-use behavior. However, contrary to the main hypothesis, all measures of alcohol use and social complications of drinking failed to do so as well.

Using the hybrid hierarchical/stepwise logistic regression approach described above, two markers of incidental condom non-use were revealed. As shown in Table 1, use of birth-control pills and withdrawal as methods of contraception showed significant inverse relationships to incidental condom using a combined gender model (n=117), and was sustained even looking beyond this combined gender model. These two contraceptive methods were the only variables to contribute
significant explanatory variance in predicting incidental condom-use behavior. Together, these variables accounted for about 15% of the variance in incidental condom-use behavior, as shown below in Table 1.

### Table 1

The Model Derived Using the Logistic Regression Procedure

<table>
<thead>
<tr>
<th>Variable</th>
<th>b</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig</th>
<th>$R^2$</th>
</tr>
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<tbody>
<tr>
<td>Birth-control pills</td>
<td>-1.5335</td>
<td>.4569</td>
<td>11.2638</td>
<td>1</td>
<td>.0008</td>
<td>.0578</td>
</tr>
<tr>
<td>Withdrawal</td>
<td>-2.8505</td>
<td>.6842</td>
<td>17.3576</td>
<td>1</td>
<td>.00005</td>
<td>.0959</td>
</tr>
<tr>
<td>Constant</td>
<td>1.1937</td>
<td>.3048</td>
<td>15.3357</td>
<td>1</td>
<td>.0001</td>
<td></td>
</tr>
</tbody>
</table>

Table 1 shows the regression constant and unstandardized regression coefficients ($b$) for birth-control pills and withdrawal, and their corresponding standard errors (S.E.), Wald statistics (Wald), degrees of freedom (df), significance (Sig), and variance accounted for ($R^2$).

### Cross-Validation

In order to test the hypothesis that predicted criterion assignments for the cross-validation group would correlate positively and significantly with observed values, the original logistic regression equation was then cross-validated using the remaining 58 participants.
(21 males, 37 females) that were not included in the original derivation of the logistic regression equation. A chi-square statistic showed that predicted values were positively and significantly correlated with observed values ($\chi^2 = 7.03$, df = 1, p. = .008). Using the model derived, 69% of the observed values were correctly classified based on predicted values, as shown in Table 2 on the following page.
Table 2

Chi-square Classification Table for Predicted Incidental Condom-Use by Observed Incidental Condom-Use

<table>
<thead>
<tr>
<th>Predicted</th>
<th>Observed</th>
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<td>yes</td>
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<td>Total</td>
<td>46.6</td>
<td>53.4</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chi-Square Value DF Significance
Continuity Correction 7.03450 1 0.00800

Table 2 shows observed and predicted values for incidental condom-use in the cross-validation sample (n=58), and continuity-corrected chi-square statistic.
Based on the preliminary analysis, all but one of the derivative and exploratory hypotheses were not descriptively analyzed with respect to the behavioral criterion, due to minimal variability in age, sexual orientation, religion, and ethnicity. Neither these variables nor number of years of sexual activity contributed significant explanatory variance in predicting incidental condom use behavior. Since trait inhibition also failed to contribute significant explanatory variance in predicting incidental condom use behavior, the proposed exploratory analysis of this variable was not warranted. However, the hypothesized significant positive correlation between the measure of global alcohol use and social complications associated with drinking was supported ($r = .40, df = 1, p < .01$). Tables 3 and 4, on the following pages, show selected variables' mean and standard deviation for males and females respectively.
### Table 3

Mean and Standard Deviation of Selected Variables for Males  
(n=70)

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Mean</th>
<th>ST DEV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (in years)</td>
<td>19.13</td>
<td>1.14</td>
</tr>
<tr>
<td>Years in College</td>
<td>0.60</td>
<td>0.77</td>
</tr>
<tr>
<td>Years Sexually Active</td>
<td>2.41</td>
<td>1.68</td>
</tr>
<tr>
<td>Age at First Intercourse</td>
<td>16.71</td>
<td>1.52</td>
</tr>
<tr>
<td>Global Alcohol Quantity(^a)</td>
<td>10.18</td>
<td>5.13</td>
</tr>
<tr>
<td>Global Alcohol Frequency(^b)</td>
<td>0.50</td>
<td>0.50</td>
</tr>
<tr>
<td>Subject's Incidental Alcohol Use(^c)</td>
<td>4.06</td>
<td>3.76</td>
</tr>
<tr>
<td>Partner's Incidental Alcohol Use(^d)</td>
<td>2.77</td>
<td>3.08</td>
</tr>
<tr>
<td>Alcohol Involvement (4 item scale)</td>
<td>1.11</td>
<td>1.08</td>
</tr>
<tr>
<td>SOCCOMP</td>
<td>6.20</td>
<td>3.29</td>
</tr>
<tr>
<td>Risk-Taking</td>
<td>9.79</td>
<td>4.14</td>
</tr>
<tr>
<td>Seeks-New-Experiences</td>
<td>12.31</td>
<td>3.28</td>
</tr>
<tr>
<td>Impulsivity</td>
<td>11.53</td>
<td>3.86</td>
</tr>
<tr>
<td>Shy (Trait Inhibition)</td>
<td>6.13</td>
<td>4.39</td>
</tr>
</tbody>
</table>

**Note.** The composition of this sample is as follows: 100% single, 100% heterosexual, 100% non-monogamous ("monogamous" for less than 12 months), and 91% caucasian. 67% of males reported that a condom was used in their most recent sexual encounter.

\(^a\) Alcohol use is expressed in mean absolute ounces of alcohol consumed per drinking occasion.

\(^b\) Alcohol use is expressed in mean daily frequency of drinking.

\(^c\) Alcohol use is expressed in mean absolute ounces of alcohol consumed by subject prior to most recent sexual encounter.

\(^d\) Alcohol use is expressed in mean absolute ounces of alcohol consumed by subject's partner prior to most recent sexual encounter.
Table 4
Mean and Standard Deviation of Selected Variables for Females (n=105)

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Mean</th>
<th>ST DEV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (in years)</td>
<td>18.59</td>
<td>0.90</td>
</tr>
<tr>
<td>Years in College</td>
<td>0.32</td>
<td>0.60</td>
</tr>
<tr>
<td>Years Sexually Active</td>
<td>2.11</td>
<td>1.45</td>
</tr>
<tr>
<td>Age at First Intercourse</td>
<td>16.49</td>
<td>1.41</td>
</tr>
<tr>
<td>Global Alcohol Quantity(^a)</td>
<td>10.00</td>
<td>5.78</td>
</tr>
<tr>
<td>Global Alcohol Frequency(^b)</td>
<td>0.25</td>
<td>0.28</td>
</tr>
<tr>
<td>Subject's Incidental Alcohol Use(^c)</td>
<td>3.66</td>
<td>5.60</td>
</tr>
<tr>
<td>Partner's Incidental Alcohol Use(^d)</td>
<td>2.82</td>
<td>4.48</td>
</tr>
<tr>
<td>Alcohol Involvement (4 item scale)</td>
<td>0.83</td>
<td>1.03</td>
</tr>
<tr>
<td>SOCCOMP</td>
<td>5.29</td>
<td>3.51</td>
</tr>
<tr>
<td>Risk-Taking</td>
<td>7.56</td>
<td>4.14</td>
</tr>
<tr>
<td>Seeks-New-Experiences</td>
<td>11.63</td>
<td>3.68</td>
</tr>
<tr>
<td>Impulsivity</td>
<td>11.40</td>
<td>4.14</td>
</tr>
<tr>
<td>Shy (Trait Inhibition)</td>
<td>5.65</td>
<td>4.38</td>
</tr>
</tbody>
</table>

Note. The composition of this sample is as follows: 100% single, 100% heterosexual, 100% non-monogamous ("monogamous" for less than 12 months), and 99% caucasian. 54% of females reported that a condom was used in their most recent sexual encounter.

\(^a\)Alcohol use is expressed in mean absolute ounces of alcohol consumed per drinking occasion.

\(^b\)Alcohol use is expressed in mean daily frequency of drinking.

\(^c\)Alcohol use is expressed in mean absolute ounces of alcohol consumed by subject prior to most recent sexual encounter.

\(^d\)Alcohol use is expressed in mean absolute ounces of alcohol consumed by subject's partner prior to most recent sexual encounter.
The main hypothesis was only partially supported. As expected, measures of risk-taking, impulsivity, and tendencies toward seeking new experiences did not significantly contribute explanatory variance in predicting incidental condom-use behavior. It may be possible that these traits were not adequately measured. On the other hand, perhaps the frequency of unprotected sex was so ubiquitous that little room was left for the modest effects of the personality traits, as measured by the Edwards Personality Inventory (Edwards, 1967), Jackson Personality Inventory (Jackson, 1974), and the Personality Research Form (Jackson, 1976).

However, contrary to the main hypothesis, all measures of alcohol use and social complications of drinking failed to contribute significant explanatory criterion variance as well. Thus, the incidental behavior/alcohol involvement relationship was not sustained in the present study. This finding may be an artifact of the extremely high baselines for reported alcohol consumption and unprotected sex in this sample (n=175). 53% of all participants reported consuming
at least 2.5 ounces of absolute alcohol prior to their most recent sexual encounter (26% report consuming at least twice that amount). 50% of all participants report consuming at least 9.2 ounces of absolute alcohol consumed per drinking occasion (on the average); 50% of participants reported having 1-2 drinking episodes each week. Almost 40% of the participants reported that their partners also consumed at least 2.5 ounces of absolute alcohol prior to their most recent sexual encounter. Again, the present data, like previous studies (e.g., Donovan & Jessor, 1978; 1985), show a ubiquitous pattern of heavy alcohol use and problems associated with its use. Hence, two high base-rate behaviors in this college sample (i.e., unprotected sex and heavy drinking) fail to show a significant correlation.

Contrary to expectations, two variables outside of the alcohol and personality variable constellations showed a significant inverse relationship to incidental condom use in a combined gender model, although this combined gender model was looked beyond. Using birth-control pills and withdrawal as methods of contraception were the only independent variables to contribute significant explanatory variance (about 15%) in predicting incidental condom-use behavior. Additionally, using only these variables, almost 70% of the observed values were correctly classified based on predicted
criterion assignments for the cross-validation group. Given that these two markers account for only about 15% of the variance in incidental condom use, the correct classification proportion of 70% may appear to be exceedingly high. This is possible due to the relatively high base-rate for condom use in this sample (about 61% in a combined gender model). However, using these two markers allows for a gain, over base-rate, of roughly 10% in correct classifications of observed values based on predicted values.

The finding that participants in this study using either one of the most reliable methods of preventing pregnancy (birth-control pills) or the least reliable (withdrawal) has interesting implications. Although purely speculative, it may be that these traditional undergraduates are not concerned about HIV infection; 41% of participants in relationships that have been "monogamous" for less than a year did not use a condom during their most recent sexual encounter. It is also possible that this may be the first sexual partner for at least some of these participants, and that their partner is also just beginning a sexual history. Support for this possibility may be found in that almost 35% of the participants report that it has been a year or less since they began having intercourse. Thus, some may believe that they are at minimal risk for HIV infection at this time,
if both partners are truly monogamous. Some authors have
found that using a condom requires a higher degree of
communication and agreement between partners to use them
correctly than does using birth-control pills (Boldero et
al., 1992). This observation may suggest that, if
contraception is the goal, those using birth-control pills
are less likely to use a condom.

A myth that becoming infected with HIV is not likely to
occur in a place like Missoula could also be operating,
although I am again being purely speculative. This would
account for taking at least some precautions against
pregnancy, in the form of birth-control pills, but none
against HIV transmission. Boyd and Wandersman (1991) found
that subjects' fear of AIDS and susceptibility to this
disease explain 18% of the variance in condom use. It is
possible that University of Montana (UM) students' perceived
susceptibility to HIV and AIDS is markedly lower than their
perceived susceptibility to pregnancy.

Based on the preliminary analysis, all but one of the
derivative and exploratory hypotheses were not descriptively
analyzed with respect to the behavioral criterion, due to
minimal variability in age, sexual orientation, religion, and
ethnicity. These variables, as well as number of years of
sexual activity, did not contribute significant explanatory
variance in predicting incidental condom use behavior. As trait inhibition also did not contribute significant explanatory variance in predicting incidental condom use behavior, the proposed exploratory analysis of this variable was not warranted.

The hypothesis that a significant positive correlation between the measure of global alcohol use and social complications associated with drinking was supported ($r = .40$, $df = 1$, $p < .01$). This offers some concurrent validity for the measures of alcohol-use behavior used in the present study. This finding also suggests that the use of alcohol is associated with subjects' reported drinking-related problems, and serves as a partial replication of the findings of Bradley et al. (1992).

Based on the findings of the present study, multiple longitudinal measures might be necessary to reveal cohort differences. It is known that many college "heavy drinkers" abate this habit after graduation (Donovan, Jessor, & Jessor, 1983). Perhaps patterns of condom use vary in some similar fashion.
REFERENCES


APPENDIX A: QUESTIONNAIRE AND INSTRUCTIONS

General Instructions

Please do not put your name anywhere on this form. This questionnaire is designed to assess a variety of behaviors. Try to answer all questions as best you can. The questionnaire is divided into different sections, so please do not skip any parts. Remember that your answers are anonymous and confidential, so please be as honest as you can. If you have any questions, please ask.

Questionnaire

Part I: For the following questions, please fill in the blank or circle the appropriate answer.

1. Age:______ 2. Date of Birth (month/day/year):____/____/____

3. Sex: Male / Female

4. Marital Status:
   single/ married/ divorced/ widowed/ separated

5. Year in school:
   freshman/ sophomore/ junior/ senior/ graduate student

6. Overall undergraduate G.P.A. to date:_____________________

7. Your religious affiliation:
   Catholic/ Jewish/ Mormon/ Protestant/ None/ Other: _______

8. Ethnic background:
   White / Non-white

Part II: In this set of questions, we are interested in learning something about the use of alcoholic beverages and drugs. We are going to ask you some of your experiences, if any, with wine, beer, wine coolers, liquor, marijuana, and other substances. We hope you will answer the questions seriously and carefully, even if some seem funny to you.
1. How often do you usually drink wine? (Circle one)
   A. Never
   B. Less than 1 time a year
   C. At least 1 time a year
   D. About 1 or 2 times a month
   E. About 1 or 2 times a week
   F. About 3 or 4 times a week
   G. About one or two times a day

2. When you drink wine, how much do you usually drink at one time? (Circle one)
   A. Never drink wine
   B. Less than 1 glass
   C. 1 or 2 glasses
   D. 3 or 4 glasses
   E. About half a bottle or about 5 glasses
   F. A bottle or more

3. How often do you usually drink beer? (Circle one)
   A. Never
   B. Less than 1 time a year
   C. At least 1 time a year
   D. About 1 or 2 times a month
   E. About 1 or 2 times a week
   F. About 3 or 4 times a week
   G. About one or two times a day

4. When you drink beer, how much do you usually drink at one time? (Circle one)
   A. Never drink beer
   B. Less than 1 bottle
   C. 1 or 2 bottles
   D. 3 or 4 bottles
   E. 5 or 6 bottles
   F. 7 bottles or more

5. How often do you usually drink wine coolers? (Circle one)
   A. Never
   B. Less than 1 time a year
   C. At least 1 time a year
   D. About 1 or 2 times a month
   E. About 1 or 2 times a week
   F. About 3 or 4 times a week
   G. About one or two times a day
6. When you drink wine coolers, how much do you usually drink at one time? (Circle one)
   A. Never drink wine coolers
   B. Less than 1 bottle
   C. 1 or 2 bottles
   D. 3 or 4 bottles
   E. 5 or 6 bottles
   F. 7 bottles or more

7. How often do you usually drink liquor? (Circle one)
   A. Never
   B. Less than 1 time a year
   C. At least 1 time a year
   D. About 1 or 2 times a month
   E. About 1 or 2 times a week
   F. About 3 or 4 times a week
   G. About one or two times a day

8. When you drink liquor, how much do you usually drink at one time? (Circle one)
   A. Never drink liquor
   B. Less than 1 drink
   C. 1 or 2 drinks
   D. 3 or 4 drinks
   E. 5 or 6 drinks
   F. 7 drinks or more

9. How often do you use marijuana? (Circle one)
   A. Never
   B. Less than 1 time a year
   C. At least 1 time a year
   D. About 1 or 2 times a month
   E. About 1 or 2 times a week
   F. About 3 or 4 times a week
   G. About one or two times a day

9. How often do you use other drugs? (Circle one)
   A. Never
   B. Less than 1 time a year
   C. At least 1 time a year
   D. About 1 or 2 times a month
   E. About 1 or 2 times a week
   F. About 3 or 4 times a week
   G. About one or two times a day

10. How many times have you gotten into trouble with your family because of drinking? (Circle one)
    A. Never   B. Once or twice   C. Several times
11. How many times have you driven when you have had a good bit to drink? (Circle one)
   A. Never   B. Once or twice   C. Several times

12. How many times have your friends ever criticized you because of your drinking? (Circle one)
   A. Never   B. Once or twice   C. Several times

13. How many times have you ever had an automobile or motorcycle accident because of drinking? (Circle one)
   A. Never   B. Once or twice   C. Several times

14. How many times have you gotten into trouble with the law or been called before some authority because of drinking? (Circle one)
   A. Never   B. Once or twice   C. Several times

15. How many times have you ever damaged property because of drinking? (Circle one)
   A. Never   B. Once or twice   C. Several times

16. How many times have you ever been injured as a result of your drinking? (Circle one)
   A. Never   B. Once or twice   C. Several times

17. How many times have you gotten ill as a result of your drinking? (Circle one)
   A. Never   B. Once or twice   C. Several times

18. How many times have you ever failed to get home on time because of your drinking? (Circle one)
   A. Never   B. Once or twice   C. Several times

19. How many times have you ever felt that a friendship was damaged because of your drinking? (Circle one)
   A. Never   B. Once or twice   C. Several times

20. How many times have you ever injured others because of your drinking? (Circle one)
   A. Never   B. Once or twice   C. Several times

21. How many times have you ever missed an appointment because of drinking? (Circle one)
   A. Never   B. Once or twice   C. Several times
22. How many times have you gone to school or work while drinking or used alcoholic beverages at school or work? (Circle one)  
A. Never  
B. Once or twice  
C. Several times

23. How many times have you left school or work early or not gone at all because you were drinking? (Circle one)  
A. Never  
B. Once or twice  
C. Several times

24. How many times have you had blackouts (found yourself in a place that you could not remember getting to, or people told you about things you said or did that you could not remember)? (Circle one)  
A. Never  
B. Once or twice  
C. Several times

25. Have you ever felt the need to cut down on your drinking? (Circle one)  
yes / no

26. Have you ever felt annoyed by criticism of your drinking? (Circle one)  
yes / no

27. Have you ever felt guilty about drinking? (Circle one)  
yes / no

28. Did you ever take a drink of alcohol in the morning to get started? (Circle one)  
yes / no

Part III: In this set of questions, we are interested in learning something about the use of alcoholic beverages before having sex. Please think about the last time you had sex, and the events leading up to that particular sexual encounter. We are going to ask you about your experiences, if any, with wine, beer, wine coolers, and liquor the last time you had sex. We are also going to ask you some questions about your sexual partner's use of alcohol just before the last time you had sex. We hope you will answer the questions seriously and carefully, even if some seem funny to you.
1. If you drank wine before you had sex, how much did you drink? (Circle one)
   A. Did not drink wine
   B. Less than 1 glass
   C. 1 or 2 glasses
   D. 3 or 4 glasses
   E. About half a bottle or about 5 glasses
   F. A bottle or more

2. If your partner drank wine before you had sex, how much did your partner drink? (Circle one)
   A. Did not drink wine
   B. Less than 1 glass
   C. 1 or 2 glasses
   D. 3 or 4 glasses
   E. About half a bottle or about 5 glasses
   F. A bottle or more
   G. I don’t know the extent of my partner’s drinking

3. If you drank beer before you had sex, how much did you drink? (Circle one)
   A. Did not drink beer
   B. Less than 1 bottle
   C. 1 or 2 bottles
   D. 3 or 4 bottles
   E. 5 or 6 bottles
   F. 7 bottles or more

4. If your partner drank beer before you had sex, how much did your partner drink? (Circle one)
   A. Did not drink beer
   B. Less than 1 bottle
   C. 1 or 2 bottles
   D. 3 or 4 bottles
   E. 5 or 6 bottles
   F. 7 bottles or more
   G. I don’t know the extent of my partner’s drinking

5. If you drank wine coolers before you had sex, how much did you drink? (Circle one)
   A. Did not drink wine coolers
   B. Less than 1 bottle
   C. 1 or 2 bottles
   D. 3 or 4 bottles
   E. 5 or 6 bottles
   F. 7 bottles or more
6. If your partner drank wine coolers before you had sex, how much did your partner drink? (Circle one)
   A. Did not drink wine coolers
   B. Less than 1 bottle
   C. 1 or 2 bottles
   D. 3 or 4 bottles
   E. 5 or 6 bottles
   F. 7 bottles or more
   G. I don't know the extent of my partner's drinking

7. If you drank liquor before you had sex, how much did you drink? (Circle one)
   A. Did not drink liquor
   B. Less than 1 drink
   C. 1 or 2 drinks
   D. 3 or 4 drinks
   E. 5 or 6 drinks
   F. 7 drinks or more

8. If your partner drank liquor before you had sex, how much liquor did your partner drink? (Circle one)
   A. Did not drink liquor
   B. Less than 1 drink
   C. 1 or 2 drinks
   D. 3 or 4 drinks
   E. 5 or 6 drinks
   F. 7 drinks or more
   G. I don't know the extent of my partner's drinking

Part IV. In this section, we are interested in your sexual behavior. For the next few questions, please fill in the blanks, or circle the letter of the response that best describes your experience. Please answer as honestly and accurately as you can.

1. Was a condom available the last time you had sex? Yes / No

2. Did you use a condom the last time you had sex? Yes / No
3. Did you or your partner use any of the following types of birth control at the time of your last sexual encounter? Please circle all that apply:
   a. birth control pills
   b. diaphragm
   c. norplant
   d. intrauterine device (IUD)
   e. spermicidal foam, cream, or jelly
   f. contraceptive sponge
   g. cervical cap
   h. sterilization
   i. withdrawal
   j. OTHER (please list): ______________________

4. Was the last time you had sex mutually consensual (agreed to) for both you and your partner? In other words, did you and your partner agree to have sexual relations without coercion or pressure? Circle the choice that best describes your last sexual encounter in this respect.
   a. It was consensual for both me and my partner.
   b. It was consensual for me but NOT my partner.
   c. It was consensual for my partner but NOT for me.

5. At what age did you first have sexual intercourse (fill in the blank with your best estimate)? ______________________ years of age.

6. What is your affective/sexual orientation?
   A. Heterosexual  B. Homosexual  C. Bisexual

7. Please circle the choice that best describes the relationship with your most recent sexual partner. "Strictly monogamous" means that you and your partner engage in sexual relations only with each other.
   A. strictly monogamous or "steady" relationship for at least the last 12 months or longer.
   B. strictly monogamous or "steady" relationship for the past 3 to 12 months.
   C. strictly monogamous or "steady" relationship for less than 3 months.
   D. non-monogamous.
   E. OTHER (please describe): ______________________

Part V. Now we are going to ask you to answer some other questions about yourself. Simply answer TRUE or FALSE. Please be as honest and sincere as possible.
1. When I want something, I'll sometimes go out on a limb to get it.  T / F

2. I rarely make even small bets.  T / F

3. I would enjoy bluffing my way into an exclusive club or private party.  T / F

4. If I invested any money in stocks, it would probably only be in safe stocks from large, well-known companies.  T / F

5. If the possible reward was very high, I would not hesitate putting my money into a new business that could fail.  T / F

6. When in school, I rarely took the chance of bluffing my way through an assignment.  T / F

7. People have told me that I seem to enjoy taking chances.  T / F

8. Skindiving in the ocean would be much too dangerous for me.  T / F

9. The thought of investing in stocks excites me.  T / F

10. I rarely, if ever, take risks when there is another alternative.  T / F

11. I enjoy taking risks.  T / F

12. I would prefer a stable position with a moderate salary to one with a higher salary but less security.  T / F

13. Taking risks does not bother me if the gains involved are high.  T / F

14. I consider security an important element in every aspect of my life.  T / F

15. I would enjoy the challenge of a project that could mean either a promotion or loss of a job.  T / F

16. I try to avoid situations that have uncertain outcomes.  T / F
17. I think I would enjoy almost any type of gambling. T / F
18. I would participate only in business undertakings that are relatively certain. T / F
19. In games I usually "go for broke" rather than playing it safe. T / F
20. I probably would not take the chance of borrowing money for a business deal even if it might be profitable. T / F
21. I admire free, spontaneous people. T / F
22. I have a reserved and cautious attitude toward life. T / F
23. I find that I sometimes forget to "look before I leap." T / F
24. Rarely, if ever, do I do anything reckless. T / F
25. The people I know who say the first thing they think of are some of my most interesting acquaintances. T / F
26. I am not an "impulse-bu yer." T / F
27. I have often broken things because of carelessness. T / F
28. I make certain that I speak softly when I am in a public place. T / F
29. I enjoy arguments that require good quick thinking more than knowledge. T / F
30. I am not one of those people who blurt out things without thinking. T / F
31. I often get bored at having to concentrate on one thing at a time. T / F
32. I always try to be fully prepared before I begin working on anything. T / F
33. It seems that emotion has more influence over me than does calm meditation. T / F
34. I generally rely on careful reasoning in making up my mind. T / F

35. Often I stop in the middle of one activity in order to start something else. T / F

36. If I am playing a game of skill, I attempt to plan each move thoroughly before acting. T / F

37. Most people feel that I act spontaneously. T / F

38. I think that people who fall in love impulsively are quite immature. T / F

39. Life is no fun unless it is lived in a carefree way. T / F

40. I like to take care of things one at a time. T / F

**Part VI.** This set of questions contains a number of statements that other people may or may not use in describing you. If you believe that people who know you well would say that the statement describes you, circle "T" for TRUE. If people who know you well would say that the statement does not describe you, circle "F" for FALSE.

1. You like to try foods you've never tasted before. T / F

2. You think a new way of doing something is almost always going to be better than the old way. T / F

3. You often wish that something exciting would happen to you. T / F

4. You enjoy searching for new ways to do things. T / F

5. You sometimes do things that are dangerous just for the thrill of it. T / F

6. You are changeable in your likes and dislikes. T / F

7. You buy things you can't really afford. T / F

8. You like to experiment and try new things. T / F

9. You will try almost anything once. T / F
10. You are usually one of the first to participate in any new fad or fashion.  T / F

11. You have a reputation for doing unpredictable things. T / F

12. You can usually be counted on to suggest something new to do when in a group. T / F

13. You like to travel.  T / F

14. You welcome any interruption in your daily routine. T / F

15. You enjoy dining in some restaurant where you have not been before.  T / F

16. You are the sort of person who changes your opinions and attitudes from day to day.  T / F

17. You have been known to carefully plan a holiday or vacation and then decide to do something else at the last minute.  T / F

18. You enjoy doing things on the spur of the moment.  T / F

19. You frequently do something on impulse.  T / F

20. You are easily embarrassed in social situations.  T / F

21. You belong to few social groups or organizations.  T / F

22. You have a fear of doing something wrong at a social gathering.  T / F

23. You are shy and timid in a large social gathering.  T / F

24. You give others the impression of being awkward in social situations.  T / F

25. You know how to put your best foot forward in a social situation.  T / F

26. You have little interest in social organizations or clubs.  T / F
27. You feel you are an outsider at most social gatherings. T / F

28. You are anxious in the presence of strangers. T / F

29. You find it difficult to be comfortable with someone you don't know very well. T / F

30. You try to remain in the background as much as possible at social occasions. T / F

31. You don't like to attend social gatherings. T / F

32. You are bashful and timid in social situations. T / F

33. You try to avoid social situations in which you don't know the accepted standards of behavior. T / F

34. You talk very little at social gatherings. T / F

35. You are uncomfortable if you become the center of attention at a social gathering. T / F

36. You can usually be found in a corner by yourself at a social gathering. T / F

37. You enjoy almost any social occasion that gives you an opportunity to meet new people. T / F