COPING STYLE, RISK FACTORS AND INDIVIDUAL DIFFERENCES AS PREDICTORS FOR PROBLEMATIC INTERNET USE AND RISKY DRINKING IN A COLLEGE STUDENT SAMPLE

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ABSTRACT

Internet use and alcohol use are prominent in the lives of college students. Campus life involves frequent usage of both and as such there is potential for overuse and abuse. Problematic behavior encapsulating either has been shown to be potentially detrimental to collegiate success both academically and socially. Research has implicated that one potential function of alcohol consumption is avoidance coping, conceptualized as negatively reinforced behavior that can become cyclical and is considered maladaptive. This present study aims to determine if this may hold true for internet use as well, the hypothesis is that avoidant coping would be predictive of either behavior along with risk factors and specific individual differences. A sample of college students responded to a battery of online questionnaires measuring coping behavior (COPE), psychopathology (BSI), loneliness (UCLA), personality (NEO-FFI), and impulsivity (UPPS-P), among other measures. Results: Data collected from this sample supported the first hypothesis, avoidant coping was significantly predictive of problematic internet use along with extraversion and negative urgency. Risky drinking was predicted by lack of acceptance coping and also negatively predicted by conscientiousness. Findings from this study could have implications to prevention on campus of problematic behavior. Limitations and future directions for research are discussed.

Keywords: problematic internet use, alcohol, coping, college students
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DEDICATION

I dedicate this thesis to my infinitely supportive mother. She has always been a source of support, encouragement and hope even through the toughest of times.
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Problematic Internet Use

Internet use has grown over the past decade into a more prominent function of everyday life. The internet can serve many purposes including entertainment, social networking and a near infinite source of information. In recent years connectivity has saturated other technologies beyond just computers, to a point that internet access is available on cellular phones, personal devices, and even some televisions. The effect of this saturation and accessibility is pervasive, leaving most developed populations “connected” more often than not. This relationship is also mutual, as television and films are made available online as well. The vulnerability with this powerful technology is that there are so many potential highly rewarding activities in which one can engage. Large amounts of time can dissipate while a user is accessing endless amounts of information or other entertainment. In some cases activities can “feel” highly productive and time spent becomes distorted as one is psychologically engaged in the web (Skadberg & Kimmel, 2004). For example a user may start with an original intention toward a mundane action such as checking e-mail but as web link after web link chain together hours can be lost to the “net”. However, time spent online is not necessarily uniquely indicative of problematic use. In fact, motivations for internet use and experienced outcomes from use, not time spent online, have been shown to be predictive of psychological well-being (Weiser, 2001). In this study, it was found that even though participants spent similar amounts of time online, social or escape based needs associated with negative psychological impact versus more utilitarian needs which associated with positive psychological impact (Weiser, 2001).
Problematic internet use (PIU) has been conceptualized as “internet addiction”, described as a preoccupation with use, loss of control over how much time is spent online, and negative life consequences resulting from excessive use (Young, 1998). Excessive use has been documented as up to 40-80 hours time spent online in a week, with sessions lasting 20 consecutive hours on occasion. Obvious repercussions can result from this extreme expenditure of time, such as irregular sleep, and neglect of daily activities such as personal hygiene (Young, 1998). In extreme cases, time may be allocated to only the bare necessities of survival with the rest of the time sanctioned into online activity (Leon & Rotunda, 2000). This conceptualization of problematic internet use is most comparable to “gambling addiction” which shares similar diagnostic criteria as defined by DSM-IV (Young, 2009). Argument exists in the literature whether or not these types of behaviors constitute impulse disorders, compulsive behaviors or if they fit into the larger scope of “behavioral addictions” (Widyanto & McMurran, 2006). Some argue that true addiction, by definition, requires a chemical substance to cause physiological effects upon the body (ASAM, 2011). However, a different conceptualization of behavioral “addiction” has been discussed (Shaffer & Albanese, 2005). Researchers supporting this viewpoint argue that behavioral addictions share some of the same negative consequences and can be just as habitual and difficult to cease as true addictions (Grant, Potenza, Weinstein, & Gorelick, 2010). While there is said to be no physiological dependence occurring in a behavioral addiction, empirical evidence of psychological dependence, withdrawal, and tolerance symptoms has been disputed in a series of papers and resulting commentaries (Hollander, 2006; Parashar & Varma, 2007; Block, 2007). Young (2009) discussed the potential that “pathological computer use” could be added to the upcoming DSM-V. The proposed criteria would encompass online behavior similar in description to PIU, but also offline computer use behaviors as well
(Dell’Osso, Altamura, Allen, Marazziti, & Hollander, 2006). Examples supporting proposed criteria featured cases where users found it impossible to control their computer use; felt reduced when they were away from the computer and over time felt a growing need for faster and better computer equipment (Hollander & Stein, 2006). In earlier years, where a personal computer (PC) was still considered novel technology, it was especially difficult to discern pathological computer use from internet use, this dilemma still presents a problem for clinicians and researchers and is only further complicated by the introduction of other technologies (cell phones, other mobile devices) which allow internet access.

There are a few specific internet uses known to hook and maintain problematic use in vulnerable users which have been split into different subtypes, used for the proposed diagnosis of “Pathological Computer Use”. These subtypes include online gaming, online sexual preoccupations, and e-mailing/texting (Young, 2009). Leung (2004) used a sample of 699 participants between the ages of 16-24, the goal of the study was to determine among this generation what factors were predictive of PIU how did addicts differ from members of the same generation who were not internet addicted. Data collected included demographic information, PIU severity, perceived seductive properties of the internet, internet uses, and other general mass media use such as television. Results showed that internet addicted individuals tended to be younger, female, more emotionally open online and more likely to use socially interactive functions of the internet, particularly online based video games (Leung, 2004).

In an investigation of general video game use, Porter, Starcevic, Berle, & Fenech (2010) found that of video game players, problem users were significantly more likely to play online games, in particular Massively Multiplayer Online Role-Playing Games (MMORPG). In addition, they found that problem users had significantly fewer real life friends suggesting that as
time spent in the virtual world increased, real life interactions were neglected and in some cases faded away due to increased importance of the game to the player. Some characteristics of MMORPG’s are that players interact with each other in a persistent world. In this world, characters grow in power as they spend increasing amounts of time completing quests and adventures either solo or in groups with other online users. The social component of this style of game is a very powerful draw, but these games also fulfill a need for fantasy, allowing players to become completely engrained within a role, often very different from the one they portray in real life interactions. A male player can fulfill the role of a female character; an average citizen can play as a powerful warrior, defeating enemies and reaping fame and fortune along the way. These accomplishments can be very reinforcing, even preferable over real life goals and aspirations in some cases (Young, 2009). Ultimately, as a player succeeds more and more in the game world they may fall behind increasingly in real life and a vicious cycle can emerge. The cycle being that, as one spends more time in virtual environments a player may start to place greater importance on them, resulting on reduced importance of their real world environments. Greater success within a game world may be immediately reinforcing, but ultimately as failure occurs in the players real-life it can become more aversive to spend time in one’s own skin, making “escape” into the virtual world an increasingly favorable option. This can be especially catastrophic to college students whose academic progress is closely documented by grades. Neglect of studies or class attendance could quickly lead to failure and eventual drop out.

A case study observed by Leon & Rotunda (2000) further illustrates the destructive potential of excessive online game playing. A 27 year old male college student who had been described as “outgoing” by his peers was documented spending eight or more hours a day on average online. While this time spent in and of itself is not necessarily problematic, additional
negative consequences were of concern. Within a year of the student becoming involved in an
online game, his social activity diminished and his sleep patterns changed. He began sleeping all
day so he could play all night with other select players, he dropped all but two of his college
courses and his social life and grades continued to deteriorate. Offline peers noticed he had
changed socially and would become very irritable at times, especially around the subject of his
online use. He started to hide or lie about his online game playing and would be very upset when
the game was unavailable. Within this year he was not involved in, nor did he seek treatment,
even when he was close to being evicted from his apartment. Whether or not all of these
complications were a result of his excessive internet use is unknown, it was argued that he met
criteria for Schizoid Personality Disorder and Circadian Rhythm Disorder as well. Since it was a
case study the causality cannot be assumed.

Vulnerability in College Students

Several studies have found correlations which point to a specific vulnerability to the
negative effects of internet usage among college students (Kubey, Lavin & Barrows, 2001;
Nalwa & Anand, 2003; Scherer, 1997). University life incorporates multiple demands for
internet use, addressing social, academic, and entertainment dimensions. Social constructs for the
modern student are determined by far more than just simple face to face interactions (Kalpidou,
Costin, & Morris, 2011). Academic assignments and studies can require extensive access to
information and the accessibility of the internet propagates its’ use. Most college campuses
provide free access to the internet, and over the years more and more college students own
personal computers. Students newly living on their own are given free rein over their own
schedules, and without parental restrictions they are able to use the internet at virtually anytime
they please, including during class on mobile devices or laptop computers. One study based on
exit interviews investigating the dismissal of students with moderately high SAT scores found that 43% of them had failed as a result of excessive online use, commonly between the hours of 12 and 8 a.m. (Kandell, 1998). There seems to be no more recent data on dropouts as a result of internet use but it is worth considering that the increased availability of the internet, coupled with recent technological advances and growing acceptance would only increase this negative effect. As mentioned before, some students bring their mobile devices to class to take notes on but could just as easily use them to access the internet; as a result they could be not only ignoring study time outside of class but also not be receiving valuable information in class. Combining these two behaviors would certainly not represent an effective strategy for academic success in college.

General consensus in the literature is that 8-13% of college students engage in problem internet use, however the data could have been biased because those who are internet addicted may not be present in class during data collection (Morahan-Martin, 2000; Scherer, 1997; Welsh, 1999). The above example illustrates what is known as “Berkson’s Bias”, a sampling bias which occurs due to a sampling methodology potentially excluding a subgroup of participants (Berkson, 1946). An important consideration with a rapidly growing technology such as the internet is that more recent data may show higher prevalence; especially when considering that the social networking site “Facebook” did not establish widespread popularity until 2005. This site became wildly popular among college students; it embodies a strong reinforcer for internet use that also promotes habitual patterns of behavior comprised of monitoring and maintaining one’s own profile and social network. The site originally began in 2004 with exclusive access granted to those with an e-mail address associated with a university. However, in 2006 it was opened to anyone over the age of 13 (Urista, Dong, & Day, 2009). Due to this initial exclusivity,
involvement made a student feel as if they were included as a member of an “in” group. The effects of perceived or actual inclusion in a seemingly exclusive group have been shown to be reinforcing and can affect the prestige and popularity of the target group (Bernstein, 2010). A finding such as this might offer partial explanation for the explosion in popularity of this particular social networking site among college students.

College Student Drinking

The college student life can be a highly stressful experience with increasing academic demands, adjustment to a newly autonomous environment, and novel social interactions. In accordance with these high stress levels, college students find various ways to cope, engaging in both effective and ineffective strategies. Those showing deficits in effective coping may resort to drinking alcohol as a means of escape from negative affect (Abrams & Niura, 1987). Alcohol consumption is both normative and extremely prevalent in college populations (Wechsler, Dowdall, Davenport, & Castillo, 1995). College students engage in binge drinking with their peers often, and in some social groups it is the main motivating interaction, sometimes even a requirement for inclusion in activities of the respective group. To the majority of the college population, alcohol would be illegal to obtain and use, but due to various social and environmental factors, alcohol remains highly accessible. The accessibility of alcoholic beverages on a college campus is comparable to internet connection because upon arrival to begin the semester, just as students are provided with online access, they are also exposed to parties and other social involvements where drinking is a central theme.

College students drink for a variety of reasons including social inclusion, coping, relaxation, as well as enjoyment (LaBrie, Hummer, & Pedersen, 2007). In some cases these
reasons can be moderated by the expected outcome a college student feels they may experience as a result of their drinking. Social Learning Theory (SLT) posits that cognitive beliefs are important factors in predicting behavioral outcomes and has been used to explain alcohol use and its consequences (Bandura, 1977). More specifically the model behind SLT states that those who experience stress and suffer from a coping deficit are more likely to utilize a maladaptive coping strategy such as alcohol consumption (Britton, 2004).

Merrill & Read (2010) used a four dimensional approach which considered enhancement, coping, social reinforcement, and conformity motives. The social reinforcement and enhancement motives were conceptualized to be driven by positive reinforcement, both internal (enhancement) and external (social reinforcement) while coping and conformity motives were driven by negative reinforcement, both internal (coping) and external (conformity). Merrill & Read (2010) argued that all of these dimensions could link to pathways consistent with SLT. Specifically they stated that there is support for higher rates of problem alcohol use associated with the internally reinforcing motives of coping and enhancement. Data collected in this study showed that those who drink with coping motives were directly associated with higher occurrence of academic/occupational problems, risky behaviors, poor self-care, and blackouts. These findings support a view that students drinking to cope may be struggling with multiple areas of collegiate life.

Coping Behavior

Coping is an important function that can aid in dealing with everyday stresses of life. While researchers agree that coping is important, there is dispute over how to conceptualize and group individual coping behaviors. Coping behavior has been conceptualized to fit into one of
three categories; problem focused, emotion focused, and avoidance coping. The first two are typically considered adaptive coping strategies because they can lead to a resolution, while avoidance coping is considered maladaptive because it does not and can, in some cases, only stress a situation further (Britton, 2004). In one article reviewing categorical assignment of coping behavior, over 100 different categorical systems were considered, but none of them agreed on a same set of categories (Skinner, Edge, Altman, & Sherwood, 2003). Part of this problem stems from the specificity of different studies coming from various fields of research. Certain coping behaviors and stressors are relevant to some interests such as substance abuse but not applicable to other areas. Regardless, there is a general consensus in the research that avoidance coping, or utilizing a behavior to reduce negative affect is maladaptive and can be of significant concern. These negatively reinforced behaviors can consist of substance use or simply an attempt to dissociate oneself from stressful thoughts, but ultimately they may only contribute to a larger unsolved problem.

Internet Use as a Potential Coping Mechanism

Li, Zhang, Li, Zhen, & Wang (2009) hypothesized that stressful life events were related to generalized problematic internet use (GPIU) and that this relationship was mediated by coping style. Using a sample of about 650 college students the proposed model was tested using self-report measures. Results showed that GPIU was prevalent in 13.6% of the sample and that the frequency of stressful life events was significantly higher than the non-GPIU group. In addition, participants in the GPIU were more likely to avoidance based coping strategies and a significant correlation was found between frequency of stressful life events, avoidant coping, and GPIU. Data from this sample supported their proposed model and avoidant coping was shown to be a mediator for the relationship between stress and GPIU. The results of this study make sense
when applying the same model of avoidant coping as a mediator between stress and alcohol use. Stemming from this evidence, the present study seeks to test the following model. Stress is considered aversive and individuals will seek to reduce it. Some will cope with stress adaptively, while others exhibiting a coping deficit will utilize avoidant coping strategies. The behavior for avoiding stress is largely determined by individual differences. Those who are higher in loneliness, lower in sensation seeking, or higher in introversion may be at higher risk of using the internet as a means to avoidance. However, those who are lower in social loneliness, higher in sensation seeking, and more extroverted may be more likely to use alcohol as means for avoidance. Since coping through avoidance will never lead to an adaptive resolution, presumably the initial stressors that were avoided will still be problematic and could increase in severity. More severe stressors may lead to more aggressive attempts at avoidance and thus a destructive cycle can emerge. This is a proposed pathway for which problematic internet use can be both initiated and maintained over time.

As stated before, links have been made between problematic internet use and problematic gambling. Findings among the literature of compulsive gambling behavior are arguably applicable to the much briefer literature behind problematic internet use. Of course, a formal investigation would have to be made to determine any true correlations between the two behaviors, but for the purposes of conceptualization the similarities are helpful. Wood & Griffiths (2007) argued that problem gamblers used gambling as a maladaptive; emotion focused coping style to help them deal with day to day stress. They hypothesized that problem gamblers use gambling behavior to cope by altering their arousal and emotional states. Ultimately, they thought that problem gamblers used gambling in place of more adaptive coping strategies and that as a result may cause more harm to themselves by financial loss and life disturbance from
ignoring problems that may be facing them. They interviewed self identified “problem gamblers” about their motivation to gamble and how their gambling fit into their life. What they found was that these gamblers main reason for continuing their gambling was escape, even with the realization that the behavior was not doing anything to relinquish any long term problems (Wood & Griffiths, 2007). However, what gambling did do was help these people “block out” or modify their mood so that stresses and issues were no longer troubling them while they were engaged in the gambling behavior. This explanation is very comparable to escape via internet use because like gambling, being online can be psychologically engaging, to the point of mood modification and temporary removal from emotional distress (Young, 2009).

Problematic Internet Use and Alcohol Use: Bridging the Gap

Alcohol and internet use may seem like fundamentally different behaviors, but previous research has attempted to compare these two variables. One study conducted on adolescents in Taiwan found associations between internet addiction and problematic alcohol use in accordance with problem behavior theory (Ko, Yen, Yen, Chen, Weng & Chen, 2008). Problem behavior theory states that problem behaviors such as substance use and compulsive behaviors will have similar expectations from the user as well as similar negative consequences (Jessor & Jessor, 1977). In this study, Ko et al. (2008) discussed the possibility that both alcohol and internet use may serve as a coping mechanism for complications like stress, failures, low self-esteem and poor life satisfaction, however they did not explicitly measure it within the study. They hinted that coping motivations were separate for these two behaviors even though ultimately they both served as a coping mechanism via negative reinforcement. Another study on Taiwanese
adolescents examined their internet and substance use. Results showed that those who met criteria for problem use of the internet and substances showed higher prevalence of psychiatric symptoms, in particular hostility and depression but also, interestingly, lower levels of anxiety (Yen, Ko, Yen, Chen, Chung, & Chen, 2008). The lowered levels of measured anxiety could suggest that these problematic internet and substance users were less affected by acute exposures to stress because they may utilize escape based coping strategies. This claim is supported by evidence that individuals higher in hostility are more likely to use escape-avoidance based coping strategies (Mcormick & Smith, 1995; Vandervoort, 2006).

Individual differences in those who may engage in problematic internet use versus harmful alcohol use are important to consider. Research has shown that college students higher in internet dependence scored lower on measures of sensation seeking (Lavin, Marvin & McLarney, 1999). In addition, higher levels of internet use have been associated with higher levels of loneliness, in particular emotional loneliness over social loneliness (Jia-Yan, 2004). Emotional loneliness is characterized by lacking social support or truly meaningful relationships while social loneliness is characterized by the feeling that one does not belong or have a wide enough social network. Contrarily those sampled from a group, which was referred by their university for problem alcohol use were lower in social loneliness than a control (Yeh, 2002). This could suggest that drinking is a more social activity and those that drink more in general are more social and outgoing. Differences in introversion and extroversion between these two groups may be an important factor to consider. A previous study found that self-identified internet “addicts” scored higher on measures of introversion (Petrie and Gunn, 1998). Yen, Ko, Yen, Chen & Chen (2009) sought to compare personality in college students who engaged in harmful alcohol use and those with internet addiction. They found that harmful alcohol users were more
likely to have internet addiction, in particular male students, and that both were associated with higher levels of depression. Higher levels of depression could indicate a higher degree of failure and complication, potentially as a result of maladaptive avoidance based coping strategies. Results also showed that those with internet addiction were higher in behavioral inhibition while harmful alcohol users higher in behavioral activation. Behavioral inhibition refers to an increased sensitivity to punishment and is the inverse of behavioral activation, which refers to an increased sensitivity to reward (Gray, 1982; Carver & White, 1994) In light of the results of Yen et al. (2009) it could be conceptualized that those who are more anxious toward punishment may experience greater stress, and when combined with a coping deficit, be more likely to utilize a maladaptive coping strategy. Following this logic, it could be possible that internet addicts might be more likely to use their time online as an avoidance coping mechanism than heavy drinkers. Punishment could stem from life struggles and failures and consequently a vicious cycle could emerge from avoiding confrontation of problems, which in turn could snowball into larger complications.

Harmful alcohol use was found to be associated with greater response and drive to rewards and fun seeking, however this was also true for those with internet addiction (Yen et al., 2009). These results suggest that problematic users were more susceptible to the rewarding properties of both alcohol and the internet. Contrarily, Yen et al., (2009) suggests that harmful alcohol users, who are lower in behavior inhibition, might be more likely to drink large amounts without considering the negative consequences, which may be more anxiety provoking to others. Punishing properties that normally limit regular drinkers from pushing the limits on their alcohol consumption might not be as salient to problematic drinkers.
Present Study

While studies examining internet and alcohol use have hinted at interactions with coping, to the best of our knowledge no study has compared these two variables while explicitly measuring coping behavior and motivation. The present study seeks to examine if, under the assumption that internet use can be a negatively reinforced behavior via removal from negative affect, those who use the internet in greater frequency and magnitude will exhibit greater utilization of avoidance coping strategies. I hypothesize that levels of avoidance coping will be similarly high in problematic internet users and higher risk drinkers. In addition I hypothesize that online gamers, and in particular MMORPG players will be at the upper end of the spectrum in escape avoidance coping behavior and degree of internet dependence. I also seek to determine if there are individual differences between internet users and drinkers. Previous investigations have found that problematic internet users were lower in sensation seeking, and higher in loneliness. My hypothesis is that this will be true for the present sample as well and that the opposite will be true for problem drinkers. Support for this premise lies in that drinking is mainly a social activity in college and entire social support systems become built around the act. College students are less likely to drink alone because so many of their peers are doing it as well and they prefer to partake in consumption with others.

Hypothesis 1

Utilization of avoidant coping strategies will be predictive of a higher score on a measure of PIU or negative consequences from alcohol consumption.

Hypothesis 2
Engagement with interactive online activities such as online gaming will be associated with higher measured levels of PIU.

Hypothesis 3

Measures of individual differences such as personality and impulsivity will be predictive of participant score on a measure of PIU or risky drinking.

METHOD

Pilot Study

Rationale

A preliminary study was conducted to help gain prospective insight into the mechanisms behind conducting research using online data collection, and also to evaluate which measure of PIU should be used in the present study. On this particular mid-sized southeastern university a formal investigation into the prevalence of PIU within the student body had not yet been attempted.

Procedure

An online survey was created using SelectSurvey, a survey tool offered by the university, to for data collection purposes. A link to the survey was e-mailed to all current Psychology majors (approx. 500 students) during the summer semester. Compensation was offered for participation via a lottery system which gave opportunity to win a $50 gift card; deemed appropriate for the time and effort involved in participation. The online survey collected data on
simple demographics, some investigatory questions of general computer and internet practices, along with several established measures of PIU described below.

Materials

Online Cognition Scale (OCS; Davis, Flett, & Besser, 2002) [See Appendix 1A]

This scale was designed as a theory driven, multi-dimensional measure of PIU. The OCS is composed of 36 items focused particularly on cognitions over behaviors. Participants rate each item on level of agreeableness to a Likert scale ranging from 1 = strongly disagree to 7 = strongly agree. The OCS has four subscales which address loneliness/depression, diminished impulse control, social comfort, and distraction. Internal consistency for this measure is high (α=.94).

Generalized Problematic Internet Use Scale (GPIUS-2; Caplan, 2010) [See Appendix 1B]

The GPIUS was designed as a measure of generalized PIU base off cognitive-behavioral theory. This is the second iteration of the scale which was simplified and compacted to avoid any extraneous factors. The GPIUS2 consists of just 15 items in which respondents rate their level of agreeableness from 1-5 on a Likert scale. There are four subscales within this measure, preference for online social interaction (POSI), mood regulation, deficient self-regulation, and negative outcomes. Internal consistencies for these 4 factors were (α=.82, .86, .86, .87) respectively.

Internet Addiction Test (IAT; Young, 1998) [See Appendix 1C]
The IAT was designed as a measure of the negative effects associated with excessive internet use. Contrary to the other measures it is more focused on specific behaviors and the frequency of when they occur. This 20 item scale accounts for six factors within its design. This measure demonstrates good internal consistency ($\alpha=.80$).

Conclusions

The pilot study was beneficial in gaining insight into conducting this method of research on this particular campus. Due to restrictions, a smaller sample was collected than previously intended but still an adequate number of responses were obtained. The online data collection methodology was successful and demonstrated benefits to the data collection process. However, our sample turned out to be heavily imbalanced on gender (59 females, 8 males). Providing incentive likely helped increase the number of respondents, so this tactic was employed in the present study as well.

Present Study

Participants

College aged students (18-30 years) were recruited from the UNCW student population. A link to an online survey, created using the SelectSurvey tool made available by the university, was distributed through the campus e-mail system. Participation in the survey was strictly voluntary and incentive was offered in the form of a 1/50 chance to win a $50 gift card to the Amazon.com store.

Non-Completers
Data collected for this study relied upon voluntary participation; thus not every participant ended up completing the entire survey protocol. N=364 was the initial collection volume, however 10 participants responses were invalid for analysis due to being under the age of 18. One response was discarded due to bogus data, defined as impossible or randomly entered values. The survey collection tool provided IP addresses for each response, IP addresses can account for duplicate responses while still maintaining participant anonymity. Twelve “duplicate” responses were identified; these could have been due to glitches on the user side or a participant taking the survey multiple times. In most cases, the more complete response was retained for analysis. The final N=329 were included in analyses that included non-completers.

Completers

N=213 participants (66% of overall participant volume) completed all measures in the survey protocol and provided an e-mail address that would enter them into the prize incentive pool. Non-completers dropped off at various points in the protocol, in some cases in the middle of a given measure.

Demographics

The total sample (N=329) 71% were Female, Age (M=19.5, sd=2.2), 70% were underclassmen (freshmen or sophomore years), 88% Caucasian, and 58% lived on campus in a dorm or apartment. No significant differences were found between completers and non-completers.

Procedure
Participants were surveyed using an online-survey methodology. Previous research has shown that results gathered from online sources and offline sources are often indistinguishable (Krantz, Ballard & Scher, 1997; Krantz & Dalal, 2000). Data was collected and stored in electronic format using the SelectSurvey tool. IP addresses were collected to account for multiple submissions, which were examined and deleted. In the case of more than one entry from the same IP, the submission with the most complete data was kept for analysis. Data remained anonymous despite the collection of IP address because there is no identifying information associated with it. Informed consent was provided prior to the survey, including information for participants to see the final grouped results after the study is completed.

Materials

Demographics. [See Appendix 2A]

Simple demographics information will be collected including age, gender, marital status, employment, year in college, race and living situation. Also included will be investigatory questions regarding general internet behaviors (e.g. “Do you have an active Facebook account?, How many hours do you spend online per week?). This data will be informative, but not critically important for testing the proposed model.

Generalized Problematic Internet Use Scale (GPIUS-2; Caplan, 2010) [See Appendix 1B]

The GPIUS was designed as a measure of generalized PIU base off cognitive-behavioral theory. This is the second iteration of the scale which was simplified and compacted to avoid any extraneous factors. The GPIUS2 consists of just 15 items in which respondents rate their level of
agreeableness from 1-5 on a Likert scale. There are five subscales within this measure, preference for online social interaction (POSI), mood regulation, cognitive preoccupation, compulsive use, and negative outcomes. Internal consistencies for these 4 factors were (α=.82, .86, .86, .87) respectively.

Rutgers Alcohol Problem Index (RAPI; White & Labouvie, 1989). [See Appendix 2B]

The RAPI was designed as a unidimensional, 23-item measure assessment of the frequency that one has experienced various negative consequences as a direct result of alcohol consumption. Respondents rate the amount of times in the past year that negative events have occurred due to alcohol use. Scores are computed and result in a single continuous variable. The RAPI was chosen for the present study for its brevity and application to college student samples. RAPI score serves as our second dependent variable gauging the frequency that participants have experienced problems from their alcohol use.

Perceived Stress Scale (PSS; Cohen, Karmarck, & Mermelstein 1983). [See Appendix 2C]

The PSS was designed as a 14-item measure of the appraised stress one experiences from various life events. This measure has been shown to be reliable in a college student sample (α=.85) as well as test-retest reliability of .85. The PSS was chosen for the present study for its brevity and application to college student samples. It has been shown to be a valid measure of experienced stress levels by and scores have correlated with symptomatology and behavior disturbance. Measuring stress is necessary for the present study to determine the levels of stress
participants are experiencing and if it correlates with problem behaviors, as well as if there are significant differences in stress levels between groups.

Coping Orientations to Problems Experienced (COPE; Carver, Scheier, & Weintraub, 1989). [See Appendix 2D]

The COPE is a 60-item measure which taps multiple dimensions of the construct of coping. Fifteen distinct coping strategies are addressed (Active coping, Planning, Suppression of competing activities, Restraint coping, Seeking social support — instrumental, Seeking social support — emotional, Positive reinterpretation & growth, Acceptance, Turning to religion, Focus on & venting of emotions, Denial, Behavioral disengagement, Mental disengagement, Alcohol-drug disengagement); this coping inventory can be used for investigating both dispositional and situational coping strategies. When measuring dispositional strategy respondents are asked to indicate how much they use a coping strategy when presented with a particular stressor, from 1 (I usually don’t do this at all) to 4 (I usually do this a lot). The COPE was chosen for the present study because it is a widely used, robust measure of coping with good reliability (α=.80) in a college student sample. Other coping measures were reviewed but they were not as applicable because they were not meant to directly measure coping strategies.

Quantity and Frequency Index (QFI; Cahalan, Cisin, & Crossley, 1969). [See Appendix 2E]

The QFI measures the quantity and frequency of alcohol use in the past 90 days. It provides a strong description of participant drinking habits including days drinking, drinks per
week/day, and the peak number of drinks on one occasion during the 90 day span. It is a commonly used, reliable measure with college student samples.

Brief Symptom Inventory (BSI; Derogatis & Melisarotos, 1983) [See Appendix 2F]

The BSI is a 53-item measure used to measure nine primary symptom dimensions (somatization, obsessive-compulsive behavior, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism), and three global indices [Global Severity Index (GSI), Positive Symptom Distress Index (PSDI), and Positive Symptom Total (PST)]. It was designed as a shortened version of the SCL-90 (Symptom Checklist-90), a widely used measure of psychopathology in both clinical and non-clinical populations. Questions regarding current psychological status and distress are answered are on a 5-point scale, from 0 = "not at all", to 4 = "extremely". Raw scores are converted to t-scores using appropriate norms for the sample population. Internal consistency for the scale is high (α=0.71-0.85). The BSI was chosen for the present study for its brevity and as a strong measure of psychopathology to determine if there were major differences in psychological status among groups.

UPPS-P Impulsive Behavior Scale (Whiteside & Lynam, 2001; Cyders & Smith, 2007) [See Appendix 2G]

The UPPS-P is a 59 item measure of impulsive behavior, combining items from the UPPS-R (Whiteside & Lynam, 2001) and the Positive Urgency Measure (PUM; Cyders & Smith, 2007). The combined items end up covering five different subscales, negative urgency, positive urgency, premeditation, perseverance, and sensation seeking. Participants rate items on a scale from 1-4 based on how likely they are to engage in the respective behavior for each item.
Depending on the direction items are worded, some will need to be reverse scored before computing summed scores for each subscale. The UPPS-P was chosen for the present study because it has been shown to be a consistently robust measure of impulsivity in the target population.

**UCLA Loneliness Scale (Russell, 1996) [See Appendix 2H]**

Loneliness will be measured with the UCLA LS, a measure of perceived isolation consisting of 20 items, 11 of which are reverse scored. Although the UCLA LS can be scored as a uni-dimensional measure or with two method factors, factor analysis provided support for unidimensional scoring. Each item is rated from 1 (*not at all true of me*) to 5 (*very true of me*) and summed. The UCLA LS has generally shown high internal consistency (Cramer & Barry, 1999; Russell, 1996), acceptable test-retest reliability after 1 year (Russell, 1996), and has been associated with other measures of loneliness (Cramer & Barry, 1999).

**NEO-FFI-3 (McCrae & Costa, 2007) [See Appendix 2I]**

The NEO-FFI is a widely administered personality questionnaire which measures five factors of personality, neuroticism, extraversion, openness, agreeableness, and conscientiousness using five different subscales. It consists of 60 items that ask the rater to indicate the degree (1-4 scale) that they agree a given trait is consistent with how they view themselves. Reliability for this subscale is good ($\alpha=.85-.90$).
RESULTS

As previously discussed, it was hypothesized that utilization of avoidance based coping style would predict higher scores on the GPIUS and the RAPI. In addition, it was hypothesized that marked individual differences would be predictive of one behavior over the other in differing personalities.

Internet Behavior

All of the participants (100%) indicated they owned a personal computer or laptop, 95% also indicated they had an active account on the popular social networking site called “Facebook”. Participants were asked how many hours they typically spent online in an average week (M=20.8, sd=13), an average weekday (M=5, sd=4.2), and an average weekend day (M=4.2, sd=3.8)

Problematic Internet Use

The GPIUS-2 has 5 subscales that were used in the present study. The “cognitive preoccupation” subscale accounted for 64% of the overall variance for the summed score of this measure. Table 1 shows the range, means, and standard deviations of scores for each subscale.

Table 1

<table>
<thead>
<tr>
<th>Subscales</th>
<th>Range of Scores</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preference for online social interaction</td>
<td>3-21</td>
<td>7.42</td>
<td>3.81</td>
</tr>
<tr>
<td>Mood Regulation</td>
<td>3-21</td>
<td>11.47</td>
<td>5.31</td>
</tr>
<tr>
<td>Cognitive Preoccupation</td>
<td>3-21</td>
<td>7.02</td>
<td>3.66</td>
</tr>
<tr>
<td>Compulsive Internet Use</td>
<td>3-21</td>
<td>6.61</td>
<td>4.22</td>
</tr>
<tr>
<td>Negative Outcomes</td>
<td>3-21</td>
<td>4.50</td>
<td>2.67</td>
</tr>
</tbody>
</table>
Coping Behavior

The COPE measure has 14 subscales, 9 of which are considered adaptive coping strategies while the other 5 are considered maladaptive. Table 2 shows the range, means, and standard deviations of scores for each sub scale.

Table 2
*Range of scores, means, and standard deviations of the COPE subscales.*

<table>
<thead>
<tr>
<th>Subscales</th>
<th>Range of Scores</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Coping</td>
<td>6-16</td>
<td>11.13</td>
<td>2.14</td>
</tr>
<tr>
<td>Planning</td>
<td>6-16</td>
<td>11.87</td>
<td>2.51</td>
</tr>
<tr>
<td>Suppression of competing activities</td>
<td>4-15</td>
<td>9.33</td>
<td>2.17</td>
</tr>
<tr>
<td>Restraint Coping</td>
<td>4-16</td>
<td>9.50</td>
<td>2.33</td>
</tr>
<tr>
<td>Seeking social support for instrumental reasons</td>
<td>4-16</td>
<td>10.71</td>
<td>2.79</td>
</tr>
<tr>
<td>Seeking social support for emotional reasons</td>
<td>4-16</td>
<td>10.22</td>
<td>3.34</td>
</tr>
<tr>
<td>Positive reinterpretation and growth</td>
<td>4-16</td>
<td>12.04</td>
<td>2.63</td>
</tr>
<tr>
<td>Acceptance</td>
<td>5-16</td>
<td>11.22</td>
<td>2.57</td>
</tr>
<tr>
<td>Turning to religion</td>
<td>4-16</td>
<td>8.06</td>
<td>4.14</td>
</tr>
<tr>
<td>Focus on and venting emotions</td>
<td>4-16</td>
<td>9.14</td>
<td>3.06</td>
</tr>
<tr>
<td>Denial</td>
<td>4-16</td>
<td>5.73</td>
<td>2.29</td>
</tr>
<tr>
<td>Behavioral Disengagement</td>
<td>4-15</td>
<td>6.11</td>
<td>2.20</td>
</tr>
<tr>
<td>Mental Disengagement</td>
<td>6-16</td>
<td>10.03</td>
<td>2.35</td>
</tr>
<tr>
<td>Alcohol-drug Disengagement</td>
<td>4-16</td>
<td>5.70</td>
<td>2.81</td>
</tr>
</tbody>
</table>

Alcohol Consumption & Consequences

In regard to the Quantity Frequency Index (QFI) 68% reported consuming alcohol in the past 90 days, 15.8% indicated they had never drank alcohol and the remaining 16.1% reported not drinking the past 90 days. Out of those who did not drink the most common reasons given were, being underage (30%), moral disapproval (16%) and health reasons or concern they may develop an alcohol problem (15%). Mean number of drinking days for those that had drank in
the last 90 days ranged from 1-80 (M=17.4, sd=16.8). Seventy-two percent reported that their drinking had stayed about the same over the past 90 days, while 13% reported drinking more, 10% drank less than usual, and 1% claimed to have quit drinking over this time period.

The RAPI was used as a measure of consequences resulting from alcohol consumption. There are no individual subscales; instead, all items are summed to compute a global score for this measure. Scores ranged from 0-48, (M=4.21, sd=7.68).

Risk Factors

The PSS was used as a measure of perceived stress levels. There are no individual subscales; all items are summed to compute a global score. Scores ranged from 3-46, (M=23.98, sd=7.49).

The UCLA was used as a measure of subjective loneliness. There are no individual subscales; all items are summed to compute a global score. Some items are reversed scored and required transformation before computing the global score. Scores ranged from 20-75, (M=40.81, sd=10.60).

The BSI was used as measure of psychopathology. This measure uses 9 subscales, each measuring different domains of psychopathology. A global summed score is also useful for this measure. Global scores ranged from 0-159, (M=24.03, sd=27.47). The depression subscale accounted for about 77% of the overall variance in this global score. Table 3 below shows the range, means, and standard deviations for each subscale.
Table 3

*Range of scores, means, and standard deviations of the BSI subscales.*

<table>
<thead>
<tr>
<th>Subscales</th>
<th>Range of Scores</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Somatization</td>
<td>0-19</td>
<td>2.13</td>
<td>3.51</td>
</tr>
<tr>
<td>Obsession-Compulsion</td>
<td>0-19</td>
<td>4.13</td>
<td>4.80</td>
</tr>
<tr>
<td>Interpersonal Sensitivity</td>
<td>0-16</td>
<td>2.43</td>
<td>3.16</td>
</tr>
<tr>
<td>Depression</td>
<td>0-21</td>
<td>3.36</td>
<td>4.36</td>
</tr>
<tr>
<td>Anxiety</td>
<td>0-20</td>
<td>2.35</td>
<td>3.40</td>
</tr>
<tr>
<td>Hostility</td>
<td>0-20</td>
<td>1.96</td>
<td>2.66</td>
</tr>
<tr>
<td>Phobic Anxiety</td>
<td>0-14</td>
<td>1.04</td>
<td>2.25</td>
</tr>
<tr>
<td>Paranoid Ideation</td>
<td>0-16</td>
<td>2.00</td>
<td>2.89</td>
</tr>
<tr>
<td>Psychoticism</td>
<td>0-15</td>
<td>2.00</td>
<td>2.81</td>
</tr>
</tbody>
</table>

Individual Differences

The NEO-FFI contains 5 subscales measuring 5 domains of personality. Table 4 below shows the range, means and standard deviations for each subscale.

Table 4

*Range of scores, means, and standard deviations of the NEO-FFI subscales.*

<table>
<thead>
<tr>
<th>Subscales</th>
<th>Range of Scores</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuroticism</td>
<td>15-45</td>
<td>32.29</td>
<td>7.97</td>
</tr>
<tr>
<td>Extraversion</td>
<td>21-58</td>
<td>41.03</td>
<td>6.72</td>
</tr>
<tr>
<td>Openness</td>
<td>19-46</td>
<td>33.17</td>
<td>5.77</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>23-48</td>
<td>36.84</td>
<td>5.28</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>24-60</td>
<td>44.37</td>
<td>7.33</td>
</tr>
</tbody>
</table>

The UPPS-P consists of five subscales. Table 5 below shows the range, means, and standard deviations of each subscale.
Table 5
Range of scores, means, and standard deviations of the UPPS-P subscales

<table>
<thead>
<tr>
<th>Subscales</th>
<th>Range of Scores</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative Urgency</td>
<td>15-43</td>
<td>30.27</td>
<td>3.74</td>
</tr>
<tr>
<td>Lack of Premeditation</td>
<td>15-44</td>
<td>25.50</td>
<td>4.25</td>
</tr>
<tr>
<td>Lack of Perseverance</td>
<td>15-34</td>
<td>24.03</td>
<td>2.71</td>
</tr>
<tr>
<td>Sensation Seeking</td>
<td>12-47</td>
<td>32.89</td>
<td>4.25</td>
</tr>
<tr>
<td>Positive Urgency</td>
<td>13-49</td>
<td>23.36</td>
<td>7.18</td>
</tr>
</tbody>
</table>

Hypothesis Testing

All hypotheses were tested using two separate regressions with nearly identical procedures. Figure 1 below displays what items were included in each regression and how each was blocked and entered according to theoretical relevance to the overall model. All regression coefficients were read from the final block, which incorporated variance of all items entered into the complete model. This was done as a stringent procedure to ensure that significant results were determined considering all other predictors in the same equation.
Table 6

**Hierarchical Linear Regression predicting GPIUS score (R=.711)**

<table>
<thead>
<tr>
<th>Predictor</th>
<th>F</th>
<th>( R^2 )</th>
<th>( R^2 ) change</th>
<th>( F ) change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control variables</td>
<td>1.788</td>
<td>.027</td>
<td>.027</td>
<td>1.788</td>
</tr>
<tr>
<td>Block 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual differences</td>
<td>4.445**</td>
<td>.241</td>
<td>.214</td>
<td>5.126**</td>
</tr>
<tr>
<td>Block 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet use</td>
<td>3.164**</td>
<td>.327</td>
<td>.086</td>
<td>1.671</td>
</tr>
<tr>
<td>Block 4</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Risk factors</td>
<td>2.780**</td>
<td>.402</td>
<td>.075</td>
<td>1.637</td>
</tr>
<tr>
<td>Block 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coping strategy</td>
<td>2.739**</td>
<td>.505</td>
<td>.103</td>
<td>1.977*</td>
</tr>
</tbody>
</table>

*a Control variables consisted of age, gender, and education level.
*b Individual differences consisted of subscales from the NEO, subscales from the UPPS-P.
*c Risk factors consisted of subscales from the BSI, PSS score, UCLA score.
*d Coping Strategy consisted of subscales from the COPE.
*p<.05. **p<.001

Table 7

**Hierarchical Linear Regression predicting RAPI score (R=.816)**

<table>
<thead>
<tr>
<th>Predictor</th>
<th>F</th>
<th>( R^2 )</th>
<th>( R^2 ) change</th>
<th>( F ) change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control variables</td>
<td>2.345</td>
<td>.060</td>
<td>.060</td>
<td>2.345</td>
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<tr>
<td>Block 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual differences</td>
<td>3.601**</td>
<td>.319</td>
<td>.259</td>
<td>3.798**</td>
</tr>
<tr>
<td>Block 3</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Alcohol use</td>
<td>5.433**</td>
<td>.434</td>
<td>.116</td>
<td>20.241**</td>
</tr>
<tr>
<td>Block 4</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Risk factors</td>
<td>4.560**</td>
<td>.577</td>
<td>.142</td>
<td>2.437*</td>
</tr>
<tr>
<td>Block 5</td>
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</tr>
<tr>
<td>Coping strategy</td>
<td>3.497**</td>
<td>.666</td>
<td>.089</td>
<td>1.277</td>
</tr>
</tbody>
</table>

*a Control variables consisted of age, gender, and education level.
*b Individual differences consisted of subscales from the NEO, subscales from the UPPS-P.
*c Risk factors consisted of subscales from the BSI, PSS score, UCLA score.
*d Coping Strategy consisted of subscales from the COPE.
*p<.05. **p<.001.
Table 8

Bivariate Correlations Among Predictor Variables

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
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<th>12</th>
<th>13</th>
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<tbody>
<tr>
<td>1</td>
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<tr>
<td>2</td>
<td>-.359**</td>
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<tr>
<td>3</td>
<td>.513**</td>
<td>.353**</td>
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<td>4</td>
<td>.527**</td>
<td>-.704**</td>
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** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).
Hypothesis 1

Coping Strategy as a predictor for Problematic Internet Use

It was hypothesized that maladaptive coping strategies, particularly those that were avoidance based, would predict higher scores on the GPIUS. Taken together, the COPE subscales provided a significant model for predicting PIU, $F(53,195) = 2.74$, $p<.001$. When each subscale was examined individually as a predictor variable, mental disengagement significantly predicted a higher score on the GPIUS, $b=.263$, $t(195)=3.167$, $p=.002$. However, active coping significantly predicted a lower score, $b=-.230$, $t(195)=-2.250$, $p=.026$, and also the humor subscale, $b=-.205$, $t(195)=-2.142$, $p=.017$. All other coping subscales were not found to be significant predictors for PIU.

Coping Strategy as a predictor for Alcohol Problems

An identical procedure was used for analyzing this hypothesis, except that the dependent variable was replaced by the summed score for the RAPI. The model using COPE subscales was significant, $F(41,113) = 3.497$, $p<.001$. The acceptance subscale was a significant negative predictor for the RAPI, $b=-.218$, $t(113)=-2.176$, $p=.033$

Hypothesis 2

Online game-playing as a predictor for Problematic Internet Use

Participants reported how many hours they spent playing “Massively Multiplayer Online Games” in an average week, range 0-10 hrs, $(M=.179, sd=1.01)$ and also “Other online games”, 0-23 hrs, $(M=.696, sd=2.26)$. Neither of these variables significantly GPIUS score.

Hypothesis 3
Individual Differences predictive of Problematic Internet Use

Taken together, the NEO-FFI and UPPS-P subscales provided a significant model for predicting PIU, F(13,195) = 4.445, p<.001. When each subscale was examined individually as a predictor variable, Extraversion significantly predicted a higher score on the GPIUS, b=.276, t(195)= 2.749, p=.007 from the NEO-FFI. Negative urgency significantly predicted GPIUS score, b=.237, t(195)= 2.323, p=.022, from the UPPS-P. None of the subscales negatively predicted GPIUS score.

Individual Differences predictive of Problematic Alcohol Use

Taken together, the NEO-FFI and UPPS-P subscales provided a significant model for predicting RAPI score, F(13,113) = 3.601, p<.001. When each subscale was examined individually as a predictor variable, Conscientiousness significantly negatively predicted score on the RAPI, b= -.258, t(195)= -2.292, p=.025 from the NEO-FFI.

DISCUSSION

Overview

The purpose of this study was to determine if coping style is predictive of problems resulting from alcohol use or internet use in college students. Three-hundred and sixty-four students participated in the online survey for this study; two-hundred and sixteen completed all measures of the survey protocol. Measures were given assessing demographics, internet use, alcohol use, personality, stress and loneliness.

Hypothesis 1
Our hierarchical regression revealed that several coping behaviors were significant predictors for GPIUS score. In order to truly understand the nature of this relationship, it is necessary to explicitly define these constructs and how they may affect one another. From the initial paper introducing the COPE, Carver et al. (1989) define mental disengagement as a behavior that “occurs via a wide variety of activities that serve to distract the person from thinking about the behavioral dimension or goal with which the stressor is interfering”. It is also stated that mental disengagement is a strategy that is potentially employed when conditions prevent behavioral disengagement. Thus, in order to understand mental disengagement, one must also understand behavioral disengagement. Carver et al. (1989) defines behavioral disengagement as “reducing ones efforts to deal with a stressor, even giving up one’s goals that which the stressor is interfering. It may be useful to think of behavioral disengagement along the lines of another term, “hopelessness”. It is also postulated that behavioral disengagement will be associated with one’s own subjective expectations for poor coping outcomes.

The items for the mental disengagement consisted of the following, “I turn to work or other substitute activities to take my mind off things”, “I go to movies or watch TV, to think about it less”, “I day dream about things other than this”, “I sleep more than usual”. Note that the behaviors being asked about in these items in no way directly measure one’s internet use or motivations. Indeed, this subscale was the only one that ended up being a significant positive predictor for PIU, and this finding supports this hypothesis and the previously considered theoretical framework.

Additionally, the active coping subscale was shown to be a significant negative predictor for GPIUS score. This means that individuals in this study that indicated they utilized active coping strategy more frequently scored lower on the GPIUS. Active coping is described by
Carver et al. (1989) as “very similar to the core of what Lazarus & Folkman (1984) term problem-focused coping”. Furthermore, active coping can be thought of as the opposite of avoidance based coping, since it is more focused on solving the problem and thus reducing associated stress. The items for the active coping subscale consisted of the following, “I take additional action to try and get rid of the problem”, “I concentrate my efforts on doing something about it”, “I do what has to be done, one step at a time”, “I take direct action to get around the problem”. A negative relationship was also found for the humor subscale with PIU. This finding is more difficult to interpret and doesn’t directly associate with the construct of avoidant coping.

We also hypothesized that a similarity would be shared in the predictive validity of coping behavior for alcohol consequences. Our second regression revealed that the acceptance subscale of the COPE negatively predicted RAPI score. These findings can be interpreted such that, individuals that utilize acceptance based coping strategy in higher frequency report lower incidence of alcohol problems. The items comprising the acceptance subscale address what is considered primary appraisal or acceptance that an event or stressor is real. However, in the development of the COPE, the authors indicated that in theory there is often a secondary appraisal involving one’s ability to accept that their coping strategy has failed and possibly exacerbated the given stressor (Carver et al., 1989). Interestingly, the COPE subscales have not proven to be strongly inter-correlated, even the conceptually opposing constructs of denial vs. acceptance do not show a strong negative relationship (Carver et al., 1989). While previous literature does not include observation of a relationship between acceptance coping and negative alcohol consequences specifically, other studies have shown that avoidant coping predicts higher incidence of negative consequences (Simpson & Arroyo, 1998; Britton, 2004; Fromme & Rivet, 1994).
Again, in the present study we observed that acceptance negatively predicted the likelihood for a participant to have experienced negative consequences from drinking. Acceptance as part of the coping process is arguably adaptive, especially if coping is conceptualized as a process of behavioral change. In another theory of behavioral change, trans-theoretical model, acceptance and appraisal of the need to change one’s behavior is considered a very key element in the overall process (Prochaska & Velicer, 1997). Thus, if acceptance is conceptualized as an adaptive coping process it is reasonable to suggest that this finding provides partial support for avoidant coping as a predictor of negative alcohol consequences in the present sample.

In general, avoidant coping behaviors are considered maladaptive; however, argument has been made to situations where psychological avoidance can actually be an adaptive or advantageous response. An example of this might be a situation where someone has been diagnosed with chronic or terminal illness, when one has no control over the outcomes of a given situation it could certainly be an adaptive response to avoid thought concerning the given situation. It would be advantageous to reduce one’s subjective stress levels given that they had no control over a situation. Psychological avoidance is considered maladaptive when it prevents an individual from solving a problem, that is causing stress in their lives or achieving a goal, which failure to do so may end up stressing the individual further. This kind of process can become cyclical, when an individual has a deficit in coping skills and in any given stressful situation turns to avoiding the stressor and potentially future problems as well.

Hypothesis 2
I hypothesized that the amount of hours an individual spent playing online games would be predictive of GPIUS score. As stated previously, prior literature has shown that online game playing has been associated with more severe problematic internet use. Statistical analyses found that online game playing was not a significant predictor for PIU in the present study. Furthermore, the percent of the sample that indicated they spent any time playing online games was quite low, comparatively. This is probably the most likely explanation for why our hypothesis was not supported, and contrasted with previous studies. For example, in Porter et al. (2010) they found that individuals scoring higher on a measure of problematic internet use on average played about 4-8 hrs of online games a day. These numbers are much higher than those recorded in the current sample. Granted, Porter et al. (2010) acknowledged that their sample sought out online gamers by recruiting from gaming forums and other online gaming communities.

Hypothesis 3

We hypothesized that separate individual differences would be predictive of problematic internet or alcohol use. Data from the NEO-FFI showed that the extraversion subscale was predictive of a higher score on the GPIUS in the current sample. As defined by the NEO-FFI, extraversion is associated with a disposition to engage in social behavior (McCrae & Costa, 2007). The current finding conflicts with previous findings that extraversion was actually negatively predictive of problematic internet use (Mottram et al. 2009). The discrepancy could be due to the usage of a different measure of PIU in the current study, whereas previous studies had used the IAT (Young, 1996).
Data from the UPPS-P showed that negative urgency was a significant predictor of a higher GPIUS score in the present sample. Negative urgency is described as the tendency to act rashly when in a negative mood, and also is highly associated with the impulsivity domain of neuroticism (Cyders & Smith, 2007). Interestingly, even though neuroticism is typically associated with negative urgency we saw that in the present sample extraversion was actually predictive of problematic internet use, along with negative urgency. In theory, it is logical that tendency to act rashly when under stress predicted PIU, and is supportive of the finding that avoidant coping was also a significant predictor. This finding is also inconsistent with previous research using the UPPS where “lack of perseverance” was found to be predictive of problematic internet use (Mottram & Fleming, 2009). Again, this discrepancy may be due to the usage of the IAT instead of the GPIUS used in the present study.

We hypothesized that individual differences predictive of problematic internet use would vary from those that predicted negative alcohol consequences. In the current sample this hypothesis was supported. Data from the NEO-FFI revealed that conscientiousness was negatively predictive of RAPI score, such that those who scored higher a high score on the conscientiousness personality domain were less likely to have suffered negative consequences from their alcohol consumption. Conscientiousness as a personality construct describes individuals who are more careful, conservative, and vigilant with their decisions and actions and it correlates to higher impulse control. This finding corroborates with a previous finding that conscientiousness predicted lower scores on a different measure of negative alcohol behaviors (DARB), a measure that correlates positively with the RAPI (Isaak, Perkins, & Labatut, 2011).
Even though conscientiousness has theoretical relevance to impulsivity, interestingly none of the UPPS-P subscales turned out to be significant predictors of RAPI score in the current sample.

Limitations

The present study had several limitations. All data collected was self report and thus has weaknesses compared to more direct measurement methodologies. Due to the nature of the study protocol and data being collected it was necessary to use a self report methodology, however future studies should look to overcome this limitation if possible. Second, while the sample was representative of the population from which it was drawn, the generalizability of these findings to separate populations is potentially quite poor. Future studies should utilize a more diverse population. A third limitation was unitary measurement of each observed construct, even those with crucial importance to the proposed hypotheses. Generally, it is better to use multiple measures of the same constructs in order to coordinate results and increase validity. This decision was made to keep the survey protocol brief and increase likelihood of participation, however future studies should attempt to utilize multiple measures for coping behavior, PIU, and personality.

A final limitation concerned data collected regarding quantity and frequency of the participants alcohol use (QFI). Unfortunately, it appeared that this measure did not translate to the online data collection program. This resulted in some problematic responses from participants regarding difficulties answering several of the questions. Ultimately, this data was determined to be unreliable and limited some investigation of the proposed hypotheses.
Implications

The results from the present could have important implications for considerations of intervention for problematic behavior in college student life. Orientation programs on campus strongly address alcohol consumption and stress management but may benefit from including attention to problems related to PIU and maladaptive coping. With the knowledge that college students have a specific vulnerability towards PIU, campus counselors may find effectiveness in questioning students about their internet use patterns, as well as their methods of coping with stress and life issues. Effective adaptive coping is crucial to success as a college student and those that follow a pattern of avoidance may rapidly deteriorate in their academic responsibilities.

Future Research

The present study adds to the current body of literature by investigating coping behavior as a potential explanation for the variance found in PIU and harmful consequences from alcohol use. Due to the limitations of the present study, it’s most important contribution is a direction for future research. Findings of the present study need to be replicated using a potentially different methodology. More objective measures may be helpful in future investigations and also different measures of the same constructs to determine how robust the current findings are in the overall literature. Another direction for future research may be an attempt to target more vulnerable populations to PIU such as online gamers. The present study had low incidence of participants that engaged in more interactive uses of the internet compared to previous studies of PIU.

Another direction for future research should include a formal investigation of how PIU may fit into the previously considered theoretical framework of Problem Behavior Theory.
(Jessor & Jessor, 1977). If PIU is considered to conceptually similar to other addictive behaviors then it would be sensible that it associates well with other problem behaviors and their predictive vulnerabilities. In fact, a very recently published study found that problem behavior theory may not be the most suitable theoretical framework for understanding the construct of PIU (De Leo & Wulfert, 2013). De Leo & Wulfert (2013) found from their data that PIU was associated with internalizing variables such as anxiety and depression and correlated poorly with externalizing variables central to Jessor’s problem behavior theory. While problem behavior theory was not the primary framework of interest in the present study, data collected does not directly support that PIU fits within the tenants of problem behavior. If this was true, scores on GPIUS and RAPI would have likely been predictive of one another in the present dataset. This is still a direction of interest for future research and more studies should be conducted to confirm the validity of problem behavior theory and its application to PIU.

The current study was limited by single time-point data collection, future research may consider using a longitudinal methodology to further clarify PIU and how it may change over time. Particularly in a college student sample, most of the participants in the present study were in their first couple years of study. It may be that as a student evolves, their effective coping mechanisms develop and grow, potentially reflecting a fluctuation in measurement of PIU over one’s collegiate career. If specific life stresses or traumatic events may increase PIU severity this could potentially be evaluated using a longitudinal methodology.

Finally, in interest of parsimony and ease of access to information, it is recommended that researchers can convene and agree on a universal research term to describe the construct of problematic internet use. Agreement on a universally effective measurement could also help both coordinate results and make them directly comparable in the greater literature. This is difficult to
do because the landscape of internet use and user experience is rapidly changing as new technologies develop and grow in popularity. For example, it is only in recent years that Smartphone technology has become ubiquitous to the point that many users have internet access readily available to them in their pockets or purses. This fact further complicates how a researcher can operationally define “time spent online” or the feeling that one is “connected to the web”. It is actually worth consideration that internet use on a mobile device may represent a completely different subset of behaviors, and thus may be conceptually different than traditional use of a desktop computer for internet access. Future research might consider that mobile internet use comprises a separate construct with its own predictive qualities and theoretical considerations. In the case of problematic users, constant access could represent increased vulnerability and a pathway to greater severity of negative life effects. Going forward, flexibility is necessary in how emerging technologies may impact the construct of internet use and by extension PIU.
REFERENCES


Appendix

[1A]:

Online Cognition Scale (OCS; 36 item)

1) I am most comfortable online.

   1   2   3   4   5   6   7

   Strongly Disagree       Strongly Agree

2) I feel safest when I am on the Internet.

3) You can get to know a person better on the Internet than in person.

4) I often find it peaceful to be online.

5) I can be myself online.

6) I get more respect online than “in real life.”

7) People accept me for who I am online.

8) Online relationships can be more fulfilling than offline ones.

9) I am at my best when I am online.

10) I wish my friends and family knew how people regard me online.

11) The Internet is more “real” than real life.

12) I say or do things on the Internet that I could never do offline.

13) When I am online, I can be carefree.

14) Few people love me other than those I know online.

15) I am less lonely when I am online.

16) I cannot see myself ever without the Internet for too long.

17) The Internet is an important part of my life.

18) I feel helpless when I don’t have access to the Internet.

19) I am bothered by my inability to stop using the Internet so much.

20) I often keep thinking about something I experienced online well after I have logged off.
21) When I am on the Internet, I often feel a kind of “rush” or emotional high.

22) I use the Internet more than I ought to.

23) People complain that I use the Internet too much.

24) I never stay on longer than I had planned.

25) When I am not online, I often think about the Internet.

26) The offline world is less exciting than what you can do online.

27) I can’t stop thinking about the Internet.

28) Even though there are times when I would like to, I can’t cut down my use of the Internet.

29) My use of the Internet sometimes seems beyond my control.

30) When I am online I don’t think about my responsibilities.

31) When I have nothing better to do, I go online.

32) I find that I go online more when I have something else I am supposed to do.

33) When I am online, I don’t need to think about offline problems.

34) I sometimes use the Internet to procrastinate.

35) I often use the Internet to avoid doing unpleasant things.

36) Using the Internet is a way to forget about the things I must do but don’t really want to do.

[1B]:

Generalized Problematic Internet Use Scale (GPIUS; 29 item)

1) I use Internet to talk with others when I feel isolated.

   1  2  3  4  5
   Strongly Disagree  Strongly Agree

2) I seek others online when I feel isolated.

3) I use the Internet to make myself feel better when I’m down.
4) I go online to make myself feel better when I’m down.
5) I feel I am treated better online than in face-to-face relationships.
6) I feel safer relating to others online rather than face-to-face.
7) I am more confident socializing online than offline.
8) I am more comfortable with computers than people.
9) I feel I am treated better online than offline.
10) I got in trouble at work/school because I was online.
11) I have missed class or work because I was online.
12) I feel worthless offline, but I am someone online.
13) I have missed social events because of being online.
14) I have unsuccessfully attempted to control my use of the internet.
15) I have been unable to reduce my time online.
16) I feel guilt about the time I have spent online.
17) I have tried to stop using the Internet for long periods of time.
18) I sometimes lose track of time while online.
19) I use the Internet for longer time than I expect to.
20) I have spent a good deal of time online.
21) I have gone online for longer periods of time than I intended.
22) I am preoccupied with the Internet if I can’t connect for some time.
23) I miss being online if I can’t go on it.
24) When I am not online, I wonder what is happening online.
25) I feel lost if can’t go online.
26) It is hard to stop thinking about what is waiting for me online.
27) I don’t worry about how I look when socializing online.
28) I don’t worry about relationship commitment when socializing online.
29) I have control over how others perceive me online.
[1C]:

Internet Addiction Test (IAT; 20-item)

1. How often do you find that you stay on-line longer than you intended?

1  2  3  4  5

Rarely  Always

2. How often do you neglect household chores to spend more time on-line?

3. How often do you prefer the excitement of the Internet to intimacy with your partner?

4. How often do you form new relationships with fellow on-line users?

5. How often do others in your life complain to you about the amount of time you spend on-line?

6. How often do your grades or school work suffer because of the amount of time you spend on-line?

7. How often do you check your e-mail before something else that you need to do?

8. How often does your job performance or productivity suffer because of the Internet?

9. How often do you become defensive or secretive when anyone asks you what you do on-line?

10. How often do you block out disturbing thoughts about your life with soothing thoughts of the Internet?

11. How often do you find yourself anticipating when you will go on-line again?

12. How often do you fear that life without the Internet would be boring, empty, and joyless?

13. How often do you snap, yell, or act annoyed if someone bothers you while you are on-line?

14. How often do you lose sleep due to late-night log-ins?

15. How often do you feel preoccupied with the Internet when off-line, or fantasize about being on-line?

16. How often do you find yourself saying "just a few more minutes" when on-line?

17. How often do you try to cut down the amount of time you spend on-line and fail?

18. How often do you try to hide how long you've been on-line?

19. How often do you choose to spend more time on-line over going out with others?
20. How often do you feel depressed, moody, or nervous when you are off-line, which goes away once you are back on-line?

[2A]:

We are interested in studying student internet use. In order to do so we need your help. Please honestly and thoroughly answer the questions presented in the present study. Your participation is entirely voluntary. At any time you may stop your involvement or decline to answer any question without being treated differently by the researcher. Any document received from the researcher is ANONYMOUS. Please do not write your name on any of the forms presented to you today. If you have any questions about this study or want to learn more about the results, please contact Elan Perry ESP2572@UNCW.EDU or Dr. Nora Noel NOELN@UNCW.EDU in the psychology department. In addition, if you have questions about your rights as a participant, you may contact the Chair of the UNCW Institutional Review Board, Dr. Candace Gauthier (Gauthierc@uncw.edu). Thank you for your participation.

SELECT ONE

Age: ______

Gender:  
1. Male
2. Female

Education Level:  
1. < high school
2. High school graduate
3. College Freshman
4. College Sophomore
5. College Junior
6. College Senior
7. College grad but not grad student
8. Grad Student
9. Other_______________

Marital Status: 1. Married
2. Single
3. Divorced/separated
4. Steady dating situation
5. Other_______________

Employment Status: 1. Employed Full time
2. Employed Part-time
3. Full time Student
4. Unemployed
5. Full Time Student and Employed Part-Time
6. Other_______________

Primary Ethnic Background: 1. African-American
2. American Indian/Alaska Native
3. Asian/Pacific Islander
4. Hispanic
5. White/Caucasian
6. Biracial
7. Other_______________
Do you own a computer/laptop?  

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Do you have an active Facebook account?  

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On average how many hours a week do you typically spend online?  _____

On an average weekday (Mon-Thurs) how many hours do you spend online?  _____

On an average weekend day how many hours do you spend online?  _____

Of the time you spend online how much of it is spent on….

Social Networking? (Facebook, IM chats etc…)  

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Checking/writing E-mail?  

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Browsing/Surfing the web?  

|   | " | "|

Viewing Pornography?

Playing Massively Multiplayer Online Games (e.g. World of Warcraft etc…)?

Playing other online games?

Watching videos (T.V/Movies)?

Reading news/working on assignments?

Online shopping?

[2B]:

RUTGERS ALCOHOL PROBLEM INDEX RAPI (23-item version)

Different things happen to people while they are drinking ALCOHOL or because of their ALCOHOL drinking. Several of these things are listed below. Indicate how many times each of these things happened to you WITHIN THE LAST YEAR.
Use the following code:
0 = None
1 = 1-2 times
2 = 3-5 times
3 = More than 5 times

HOW MANY TIMES HAS THIS HAPPENED TO YOU WHILE YOU WERE DRINKING OR BECAUSE OF YOUR DRINKING DURING THE LAST YEAR?

0 1 2 3 Not able to do your homework or study for a test
0 1 2 3 Got into fights with other people (friends, relatives, strangers)
0 1 2 3 Missed out on other things because you spent too much money on alcohol
0 1 2 3 Went to work or school high or drunk
0 1 2 3 Caused shame or embarrassment to someone
0 1 2 3 Neglected your responsibilities
0 1 2 3 Relatives avoided you
0 1 2 3 Felt that you needed more alcohol than you used to in order to get the same effect
0 1 2 3 Tried to control your drinking (tried to drink only at certain times of the day or in certain places, that is, tried to change your pattern of drinking)
0 1 2 3 Had withdrawal symptoms, that is, felt sick because you stopped or cut down on drinking
0 1 2 3 Noticed a change in your personality
0 1 2 3 Felt that you had a problem with alcohol
0 1 2 3 Missed a day (or part of a day) of school or work
0 1 2 3 Wanted to stop drinking but couldn't
0 1 2 3 Suddenly found yourself in a place that you could not remember getting to
0 1 2 3 Passed out or fainted suddenly
0 1 2 3 Had a fight, argument or bad feeling with a friend
0 1 2 3 Had a fight, argument or bad feeling with a family member
0 1 2 3 Kept drinking when you promised yourself not to
0 1 2 3 Felt you were going crazy
0 1 2 3 Had a bad time
0 1 2 3 Felt physically or psychologically dependent on alcohol
0 1 2 3 Was told by a friend, neighbor or relative to stop or cut down drinking

[2C]:

Perceived Stress Scale (PSS; 14 item)

1. In the last month, how often have you been upset because of something that happened unexpectedly?

2. In the last month, how often have you felt that you were unable to control the important things in your life?

3. In the last month, how often have you felt nervous and “stressed”?

4. In the last month, how often have you dealt successfully with day to day problems and annoyances?

5. In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?
6. In the last month, how often have you felt confident about your ability to handle your personal problems?

7. In the last month, how often have you felt that things were going your way?

8. In the last month, how often have you found that you could not cope with all the things that you had to do?

9. In the last month, how often have you been able to control irritations in your life?

10. In the last month, how often have you felt that you were on top of things?

11. In the last month, how often have you been angered because of things that happened that were outside of your control?

12. In the last month, how often have you found yourself thinking about things that you have to accomplish?

13. In the last month, how often have you been able to control the way you spend your time?

14. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

[2D]:

COPE (60 item)

1. I try to grow as a person as a result of the experience.
2. I turn to work or other substitute activities to take my mind off things.
3. I get upset and let my emotions out.
4. I try to get advice from someone about what to do.
5. I concentrate my efforts on doing something about it.
6. I say to myself "this isn't real."
7. I put my trust in God.
8. I laugh about the situation.
9. I admit to myself that I can't deal with it, and quit trying.
10. I restrain myself from doing anything too quickly.

11. I discuss my feelings with someone.
12. I use alcohol or drugs to make myself feel better.
13. I get used to the idea that it happened.
14. I talk to someone to find out more about the situation.
15. I keep myself from getting distracted by other thoughts or activities.
16. I daydream about things other than this.
17. I get upset, and am really aware of it.
18. I seek God's help.
19. I make a plan of action.
20. I make jokes about it.

21. I accept that this has happened and that it can't be changed.
22. I hold off doing anything about it until the situation permits.
23. I try to get emotional support from friends or relatives.
24. I just give up trying to reach my goal.
25. I take additional action to try to get rid of the problem.
26. I try to lose myself for a while by drinking alcohol or taking drugs.
27. I refuse to believe that it has happened.
28. I let my feelings out.
29. I try to see it in a different light, to make it seem more positive.
30. I talk to someone who could do something concrete about the problem.

31. I sleep more than usual.
32. I try to come up with a strategy about what to do.
33. I focus on dealing with this problem, and if necessary let other things slide a little.
34. I get sympathy and understanding from someone.
35. I drink alcohol or take drugs, in order to think about it less.
36. I kid around about it.
37. I give up the attempt to get what I want.
38. I look for something good in what is happening.
39. I think about how I might best handle the problem.
40. I pretend that it hasn't really happened.

41. I make sure not to make matters worse by acting too soon.
42. I try hard to prevent other things from interfering with my efforts at dealing with this.
43. I go to movies or watch TV, to think about it less.
44. I accept the reality of the fact that it happened.
45. I ask people who have had similar experiences what they did.
46. I feel a lot of emotional distress and I find myself expressing those feelings a lot.
47. I take direct action to get around the problem.
48. I try to find comfort in my religion.
49. I force myself to wait for the right time to do something.
50. I make fun of the situation.

51. I reduce the amount of effort I'm putting into solving the problem.
52. I talk to someone about how I feel.
53. I use alcohol or drugs to help me get through it.
54. I learn to live with it.
55. I put aside other activities in order to concentrate on this.
56. I think hard about what steps to take.
57. I act as though it hasn't even happened.
58. I do what has to be done, one step at a time.
59. I learn something from the experience.
60. I pray more than usual.

[2E]:

MODIFIED QFI

59
I. Frequency of alcohol use in last three months:

a. ___ If you have never had an alcoholic beverage (beer, wine or liquor) in your life, check here and go to Ic.

b. ___ If you have not had any alcoholic beverage in the LAST THREE MONTHS, check here and go on to Ic.

c. If you checked Ia or Ib, please check the reasons for deciding not to drink (check all that apply)

   1. ___ Not old enough (it's illegal)
   2. ___ Religious or moral disapproval of alcohol use
   3. ___ Health Reasons (e.g. illness, pregnancy)
   4. ___ Concern that you might have (or develop) an alcohol problem
   5. ___ Other (specify)

d. If you did not check Ia, b, or c, please answer the following questions:

   During the LAST THREE MONTHS (about 90 days) about how many days would you estimate that you drank at least one alcoholic beverage? (Think about weekends, parties, stressful events, celebrations with friends, meals, and so on). **Remember to estimate between 1 and 90 days:**

   ______ Days

e. During the LAST THREE MONTHS (about 90 days), have you experienced a major change on your drinking habits?

   1. ___ No, my drinking stayed the same as usual
2. __ Yes, I quit drinking altogether

3. __ Yes, I started drinking for the first time

4. __ Yes, I started drinking much more than I usually do

5. __ Yes, I started drinking much less than I usually do

II. Varieties of alcohol used in the last three months

a. Think carefully about all the times in the LAST THREE MONTHS that you drank any HARD LIQUOR (including, for example, scotch, gin, bourbon, creme de menthe, khalua, schnapps, mixed drinks or similar beverages with high alcohol content.

1. In the last THREE MONTHS, how often did you drink HARD LIQUOR?
   _almost everyday  _5-6 days/wk  _3-4 days/wk  _1-2 days/wk
   _1-3 days/month  _less than once per month  _Never (go to II b)

2. In the last THREE MONTHS, on the average, how much HARD LIQUOR did you drink PER DAY on the days you drank?
   _4 or more pints  _1-3 pints  _8-10 shots/drinks
   _5-7 shots/drinks  _3-4 shots/drinks  _1-2 shots/drinks

b. Think carefully about all the times in the LAST THREE MONTHS that you drank any WINE (including, for example, table wine, dinner wine, dessert wine, port, or sherry).

1. In the last THREE MONTHS, how often did you drink WINE?
   _almost everyday  _5-6 days/wk  _3-4 days/wk  _1-2 days/wk
   _1-3 days/month  _less than once per month  _Never (go to II c)
2. In the last THREE MONTHS, on the average, how much WINE did you drink PER DAY on the days you drank?

- _5 fifths or more  _3-4 fifths  _2 fifths  _1 fifth
- _16 oz (3-4 wine glasses or 2 water glasses)  _8 oz (1-2 wine glasses)

c. Think carefully about all the times in the LAST THREE MONTHS that you drank any BEER or similar low alcohol beverages (including, for example, beer, ale, wine coolers, Zima, light or ice beer).

1. In the last THREE MONTHS, how often did you drink BEER?

- _almost everyday  _5-6 days/wk  _3-4 days/wk  _1-2 days/wk
- _1-3 days/month  _less than once per month  _Never (go to III)

2. In the last THREE MONTHS, on the average, how much BEER did you drink PER DAY on the days you drank?

- _16 or more 12 oz cans or bottles (or 6 or more quarts)
- _13 - 15 12 oz cans or bottles (5 - 6 quarts)
- _11 - 12 12 oz cans or bottles (4 - 5 quarts)
- _8 - 10 12 oz cans or bottles (3 - 4 quarts)
- _3 - 7 12 oz cans or bottles (1 - 2 quarts)
- _1 - 2 12 oz cans or bottles

III. Quantity of alcohol used in the last three months

a. People often drink more than one type of alcoholic beverage on a given day. In addition, their drinking often varies depending on whether it is a weekday or weekend. Therefore, we want you to think of a TYPICAL WEEKDAY on which you drank, and estimate the amounts of each of these three beverages you had to drink.

(Example: "On Thursdays, when I would get together with friends, I would drink about three 12 oz beers and two mixed drinks")
1. Estimated average drinking on a TYPICAL WEEKDAY in the LAST THREE MONTHS:

Now we want you to think of a typical WEEKEND DAY (Friday, Saturday or Sunday) on which you typically drank, and estimate your average drinking on that day.

2. Estimated average drinking on a TYPICAL WEEKEND DAY in the LAST THREE MONTHS:

3. Finally, of all the days in the last three months, what is the LARGEST AMOUNT of alcohol you have had in one 24 hour period?

go to next page

OTHER SUBSTANCE USE

How often have you used any of these psychoactive substances in the LAST THREE MONTHS?

Code frequency of use according to the following:

0 = Never
1 = 1 or 2 times in the last three months
2 = once per month
3 = once every two weeks
4 = once per week
5 = 2 - 4 times per week
6 = almost everyday

<table>
<thead>
<tr>
<th>Substance</th>
<th>Frequency of Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td></td>
</tr>
</tbody>
</table>
Caffeine
Nicotine
Marijuana
Hashish
Crack
Cocaine
Amphetamines (not prescribed)
Barbiturates (not prescribed)
Benzodiazapines (not prescribed)
Other Tranquilizers
Heroin
Other opiates (not prescribed)
Hallucinogens
Inhalants
Birth Control
Any drugs by injection ever

Current Prescribed medications:
Amphetamines
Barbiturates
Benzodiazapines
Other Tranquilizers
Opiates (e.g. Methadone, Darvon)
Antidepressants (e.g. Prozac)
Antipsychotics (e.g. Haldol)
Antimanic (e.g. Lithium)
Other psychoactive medication

______________  ______________

Please continue on the next page

Do you feel you currently have a drinking or drug problem? N Y
(What substances and when did the problems first begin?)

Have you ever in the past had a problem with or been dependent on any of these substances? N Y
(what? and when did it first become a problem? When did it stop being a problem?)

Have you ever "needed" a drink, or a "hit" or a dose of a drug first thing in the morning? N Y
Have you ever had a **blackout** (a period of time when you continued to behave normally, but didn't remember at all the next day) from alcohol or other drugs? N  Y (what substances?)

Have you ever had bad "shakes" or high fevers, seizures, hallucinations, heavy sweating or other such withdrawal symptoms when you have gone without drinking or substance use for awhile? N  Y

Have you ever attended a self-help group (like Alcoholics Anonymous, or Women for Sobriety, or Narcotics Anonymous) for yourself? N  Y

Have you ever had treatment for an alcohol or drug problem? N  Y
Do, or did, any of your family members have an alcohol or drug problem? N Y

If yes, closest relative and what kind of problem (alcohol, drugs or both?)

[2F]:

Brief Symptom Inventory (BSI; 53 item)

“Here I have a list of problems people sometimes have. As I read each one to you, I want you to tell me HOW MUCH THAT PROBLEM HAS DISTRESSED OR BOTHERED YOU DURING THE PAST 7 DAYS INCLUDING TODAY. These are the answers I want you to use. [Hand card and read answers.] Do you have any questions?”

DURING THE PAST 7 DAYS, how much were you distressed by:
1. Nervousness or shakiness inside 0 1 2 3 4 R
2. Faintness or dizziness 0 1 2 3 4 R
3. The idea that someone else can control your thoughts 0 1 2 3 4 R
4. Feeling others are to blame for most of your troubles 0 1 2 3 4 R
5. Trouble remembering things 0 1 2 3 4 R
6. Feeling easily annoyed or irritated 0 1 2 3 4 R
7. Pains in the heart or chest 0 1 2 3 4 R
8. Feeling afraid in open spaces 0 1 2 3 4 R
9. Thoughts of ending your life 0 1 2 3 4 R

DURING THE PAST 7 DAYS, how much were you distressed by:
10. Feeling that most people cannot be trusted 0 1 2 3 4 R
11. Poor appetite 0 1 2 3 4 R
12. Suddenly scared for no reason 0 1 2 3 4 R
13. Temper outbursts that you could not control 0 1 2 3 4 R
14. Feeling lonely even when you are with people 0 1 2 3 4 R
15. Feeling blocked in getting things done 0 1 2 3 4 R
16. Feeling lonely 0 1 2 3 4 R
17. Feeling blue 0 1 2 3 4 R
18. Feeling no interest in things 0 1 2 3 4 R

DURING THE PAST 7 DAYS, how much were you distressed by:
19. Feeling fearful 0 1 2 3 4 R
20. Your feelings being easily hurt 0 1 2 3 4 R
21. Feeling that people are unfriendly or dislike you 0 1 2 3 4 R
22. Feeling inferior to others 0 1 2 3 4 R
23. Nausea or upset stomach 0 1 2 3 4 R
24. Feeling that you are watched or talked about by others 0 1 2 3 4 R
25. Trouble falling asleep 0 1 2 3 4 R
26. Having to check and double check what you do 0 1 2 3 4 R
27. Difficulty making decisions 0 1 2 3 4 R

DURING THE PAST 7 DAYS, how much were you distressed by:
28. Feeling afraid to travel on buses, subways, or trains 0 1 2 3 4 R
29. Trouble getting your breath 0 1 2 3 4 R
30. Hot or cold spells 0 1 2 3 4 R
31. Having to avoid certain things, places, or activities because they frighten you 0 1 2 3 4 R
32. Your mind going blank 0 1 2 3 4 R
33. Numbness or tingling in parts of your body 0 1 2 3 4 R
34. The idea that you should be punished for your sins 0 1 2 3 4 R
35. Feeling hopeless about the future 0 1 2 3 4 R
36. Trouble concentrating 0 1 2 3 4 R

DURING THE PAST 7 DAYS, how much were you distressed by:
37. Feeling weak in parts of your body 0 1 2 3 4 R
38. Feeling tense or keyed up 0 1 2 3 4 R
39. Thoughts of death or dying 0 1 2 3 4 R
40. Having urges to beat, injure, or harm someone 0 1 2 3 4 R
41. Having urges to break or smash things 0 1 2 3 4 R
42. Feeling very self-conscious with others 0 1 2 3 4 R
43. Feeling uneasy in crowds 0 1 2 3 4 R
44. Never feeling close to another person 0 1 2 3 4 R
45. Spells of terror or panic 0 1 2 3 4 R

DURING THE PAST 7 DAYS, how much were you distressed by:
46. Getting into frequent arguments 0 1 2 3 4 R
47. Feeling nervous when you are left alone 0 1 2 3 4 R
48. Others not giving you proper credit for your achievements 0 1 2 3 4 R
49. Feeling so restless you couldn’t sit still 0 1 2 3 4 R
50. Feelings of worthlessness 0 1 2 3 4 R
51. Feeling that people will take advantage of you if you let them 0 1 2 3 4 R
52. Feeling of guilt 0 1 2 3 4 R
53. The idea that something is wrong with your mind 0 1 2 3 4 R
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[2G]:

UPPS-P

This questionnaire contains 59 statements. Read each statement carefully. For each statement, circle the response that best represents your opinion.

ANSWER SCALE:
<table>
<thead>
<tr>
<th></th>
<th>Extremely Uncharacteristic of me</th>
<th>Uncharacteristic of me</th>
<th>Characteristic of me</th>
<th>Extremely of me</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I have a reserved and cautious attitude toward life.</td>
<td>1</td>
<td>2</td>
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<td></td>
<td></td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I have trouble controlling my impulses.</td>
<td>1</td>
<td>2</td>
<td></td>
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<td></td>
<td></td>
<td>3</td>
<td>4</td>
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<tr>
<td>3</td>
<td>I generally seek new and exciting experiences and sensations.</td>
<td>1</td>
<td>2</td>
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<td>3</td>
<td>4</td>
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<tr>
<td>4</td>
<td>I generally like to see things through to the end.</td>
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<td>3</td>
<td>4</td>
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<tr>
<td>5</td>
<td>When I am very happy, I can’t seem to stop myself from doing things that can have bad consequences.</td>
<td>1</td>
<td>2</td>
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<td></td>
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<td>3</td>
<td>4</td>
<td></td>
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<tr>
<td>6</td>
<td>My thinking is usually careful and purposeful.</td>
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<td>2</td>
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<td></td>
<td>3</td>
<td>4</td>
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<tr>
<td>7</td>
<td>I have trouble resisting my craving (for food, cigarettes, etc.).</td>
<td>1</td>
<td>2</td>
<td></td>
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<td></td>
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<td>3</td>
<td>4</td>
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</tr>
<tr>
<td>8</td>
<td>I’ll try anything once.</td>
<td>1</td>
<td>2</td>
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<td>3</td>
<td>4</td>
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<tr>
<td>9</td>
<td>I tend to give up easily.</td>
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<td>2</td>
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<td>3</td>
<td>4</td>
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<tr>
<td>10</td>
<td>When I am in a great mood, I tend to get into situations that could cause me problems.</td>
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<td>2</td>
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<td>3</td>
<td>4</td>
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<tr>
<td>11</td>
<td>I am not one of those people to blurt out things without thinking.</td>
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<td>2</td>
<td></td>
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<td></td>
<td></td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>I often get involved in things I later wish I could get out of.</td>
<td>1</td>
<td>2</td>
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<tr>
<td></td>
<td></td>
<td>3</td>
<td>4</td>
<td></td>
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<tr>
<td>13</td>
<td>I like sports and games in which you have to choose your next move more quickly.</td>
<td>1</td>
<td>2</td>
<td></td>
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<td></td>
<td></td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>
14) Unfinished tasks really bother me. ................................................................. 1 2
   3  4

15) When I am very happy, I tend to do things that may cause problems in my life. 1 2
   3  4

16) I like to stop and think things over before I do them. ...................................... 1 2
   3  4

17) When I feel bad, I will often do things I later regret in order to make myself feel better now. ................................................................. 1 2
   3  4

18) I would enjoy water skiing. ................................................................. 1 2
   3  4

19) Once I get going on something I hate to stop. ............................................ 1 2
   3  4

20) I tend to lose control when I am in a great mood. ................................... 1 2
   3  4

21) I don’t like to start a project until I know exactly how to proceed. ............ 1 2
   3  4

22) Sometimes when I feel bad, I can’t seem to stop what I am doing even though it is making me feel worse. ................................................................. 1 2
   3  4

23) I quite enjoy taking risks. ........................................................................ 1 2
   3  4

24) I concentrate easily. ................................................................................ 1 2
   3  4

25) When I am really ecstatic, I tend to get out of control. ............................ 1 2
   3  4

26) I tend to value and follow a rational, “sensible” approach to things. ....... 1 2
   3  4

27) When I am upset I often act without thinking. ......................................... 1 2
   3  4

28) I would enjoy parachute jumping. ............................................................. 1 2
   3  4
29) I finish what I start. ................................................................. 1

30) Others would say I make bad choices when I am extremely happy about something. ................................................................. 1

31) I usually make up my mind through careful reasoning. ................................................................. 1

32) When I feel rejected, I will often say things that I later regret. ................................................................. 1

33) I welcome new and exciting experiences and sensations, even if they are a little frightening and unconventional. ................................................................. 1

34) I am pretty good about pacing myself so as to get things done on time. ................................................................. 1

35) Others are shocked or worried about the things I do when I am feeling very excited. ................................................................. 1

36) I am a cautious person. ................................................................. 1

37) It is hard for me to resist acting on my feelings. ................................................................. 1

38) Would like to learn to fly an airplane. ................................................................. 1

39) I am a productive person who always gets the job done. ................................................................. 1

40) When I get really happy about something, I tend to do things that can have bad consequences. ................................................................. 1

41) Before I get into a new situation, I like to find out what to expect from it. ................................................................. 1

42) I often make matters worse because I act without thinking when I am upset. ................................................................. 1

43) I sometimes like doing things that are a bit frightening. ................................................................. 1
44) Once I start a project, I almost always finish it.  
3 4

45) When overjoyed, I feel like I can’t stop myself from going overboard.  
3 4

46) I usually think carefully before doing anything.  
3 4

47) In the heat of an argument, I will often say things that I later regret.  
3 4

48) I would enjoy the sensation of skiing very fast down a high mountain slope.  
3 4

49) There are so many little jobs that need to be done that I sometimes just ignore them all.  
3 4

50) When I am really excited, I tend not to think of the consequences of my actions.  
3 4

51) Before making up my mind, I consider all the advantages and disadvantages.  
3 4

52) When I am very happy, I feel like it is OK to give in to cravings or overindulge.  
3 4

53) I am always able to keep my feeling under control.  
3 4

54) I would like to go scuba diving.  
3 4

55) I am surprised at the things I do while in a great mood.  
3 4

56) Sometimes I do things on impulse that I later regret.  
3 4

57) I tend to act without thinking when I am really excited.  
3 4

58) I would enjoy fast driving.  
3 4

59) When I am really happy, I often find myself in situations that I normally
wouldn’t be comfortable with.

[2H]:

UCLA LONELINESS SCALE (20 item)

INSTRUCTIONS: Indicate how often each of the statements below is descriptive of you. C indicates “I often feel this way” S indicates “I sometimes feel this way” R indicates “I rarely feel this way” N indicates “I never feel this way”

1. I am unhappy doing so many things alone O S R N
2. I have nobody to talk to O S R N
3. I cannot tolerate being so alone O S R N
4. I lack companionship O S R N
5. I feel as if nobody really understands me O S R N
6. I find myself waiting for people to call or write O S R N
7. There is no one I can turn to O S R N
8. I am no longer close to anyone O S R N
9. My interests and ideas are not shared by those around me O S R N
10. I feel left out O S R N
11. I feel completely alone O S R N
12. I am unable to reach out and communicate with those around me O S R N
13. My social relationships are superficial O S R N
14. I feel starved for company O S R N
15. No one really knows me well O S R N
16. I feel isolated from others O S R N
17. I am unhappy being so withdrawn O S R N
18. It is difficult for me to make friends O S R N
19. I feel shut out and excluded by others O S R N
20. People are around me but not with me O S R N

[2I]:

NEO-FFI (60 item)

Please read each statement carefully and then circle the number that best represents your opinion of yourself according to the answer choices below.

Strongly Disagree
Disagree Neutral Agree Strongly

Agree

1. I am not a worrier 1 2 3 4 5
2. I like to have a lot of people around me 1 2 3 4 5
3. I don’t like to waste my time daydreaming 1 2 3 4 5
4. I try to be courteous to everyone I meet 1 2 3 4 5
5. I keep my belongings clean and neat 1 2 3 4 5
6. I often feel inferior to others 1 2 3 4 5
7. I laugh easily 1 2 3 4 5
8. Once I find the right way to do something, I stick to it 1 2 3 4 5
9. I often get into arguments with my family and co-workers 1 2 3 4 5
10. I’m pretty good about pacing myself so as to get things done on time 1 2 3 4 5
11. When I’m under a great deal of stress, sometimes I feel like I’m going to pieces 1 2 3 4 5
12. I don’t consider myself especially “lighthearted” 1 2 3 4 5
13. I am intrigued by the patterns I find in art and nature 1 2 3 4 5
14. Some people think I’m selfish and egotistical 1 2 3 4 5
15. I am not a very methodical person 1 2 3 4 5
16. I rarely feel lonely or blue 1 2 3 4 5
17. I really enjoy talking to people 1 2 3 4 5
18. I believe letting students hear controversial speakers can only confuse and mislead them 1 2 3 4 5
19. I would rather cooperate with others than compete with them 1 2 3 4 5
20. I try to perform all the tasks assigned to me conscientiously 1 2 3 4 5
21. I often feel tense and jittery 1 2 3 4 5
22. I like to be where the action is 1 2 3 4 5
23. Poetry has little or no effect on me 1 2 3 4 5
24. I tend to be cynical and skeptical of others’ intentions 1 2 3 4 5
25. I have a clear set of goals and work toward them in an orderly fashion 1 2 3 4 5
26. Sometimes I feel completely worthless 1 2 3 4 5
27. I usually prefer to do things alone 1 2 3 4 5
28. I often try new and foreign foods 1 2 3 4 5
29. I believe that most people will take advantage of you if you let them 1 2 3 4 5
30. I waste a lot of time before settling down to work 1 2 3 4 5
31. I rarely feel fearful or anxious 1 2 3 4 5
32. I often feel as if I’m bursting with energy 1 2 3 4 5
33. I seldom notice the moods or feelings that different environments produce 1 2 3 4 5
34. Most people I know like me 1 2 3 4 5
35. I work hard to accomplish my goals 1 2 3 4 5
36. I often get angry at the way people treat me 1 2 3 4 5
37. I am a cheerful, high-spirited person 1 2 3 4 5
38. I believe we should look to our religious authorities for decisions on moral issues 1 2 3 4 5
39. Some people think of me as cold and calculating 1 2 3 4 5
40. When I make a commitment, I can always be counted on to follow through 1 2 3 4 5
41. Too often, when things go wrong, I get discouraged and feel like giving up 1 2 3 4 5
42. I am not a cheerful optimist 1 2 3 4 5
43. Sometimes when I am reading poetry or looking at a work of art, I feel a chill or wave of excitement 1 2 3 4 5
44. I am hard-headed and tough-minded in my abilities 1 2 3 4 5
45. Sometimes I’m not as dependable or reliable as I should be 1 2 3 4 5
46. I am seldom sad or depressed 1 2 3 4 5
47. My life is fast-paced 1 2 3 4 5
48. I have little interest in speculating on the nature of the universe or the human condition 1 2 3 4 5
49. I generally try to be thoughtful and considerate 1 2 3 4 5
50. I am a productive person who always gets the job done 1 2 3 4 5
51. I often feel helpless and want someone else to solve my problems 1 2 3 4 5
52. I am a very active person 1 2 3 4 5
53. I have a lot of intellectual curiosity 1 2 3 4 5
54. If I don’t like people, I let them know it 1 2 3 4 5
55. I never seem to be able to get organized 1 2 3 4 5
56. At times I have been so ashamed I just want to hide 1 2 3 4 5
57. I would rather go my own way than be a leader of others 1 2 3 4 5
58. I often enjoy playing with theories or abstract ideas 1 2 3 4 5
59. If necessary, I am willing to manipulate people to get what I want 1 2 3 4 5
60. I strive for excellence in everything I do 1 2 3 4 5