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Exploring the linguistic styles of students with a propensity for alcoholism and students with symptoms of depression

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EXPLORING THE LINGUISTIC STYLES OF STUDENTS WITH A
PROPENSITY FOR ALOCHOLISM AND STUDENTS WITH SYMPTOMS OF
DEPRESSION

by

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A thesis submitted in partial fulfillment of the requirements
for the Honors in the Major Program in Psychology
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at University of Central Florida
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ABSTRACT

The present study investigated whether participants with a high propensity for alcoholism demonstrate the same linguistic pattern previously established for depression in response to a personal essay. It was hypothesized that students with a higher propensity for alcoholism would display a similar linguistic style when compared to those with symptoms of depression; specifically students with a higher propensity for alcohol abuse or dependence would use more first person singular pronouns and less first person plural pronouns. They were also hypothesized to use more negative emotion words similar to those with symptoms of depression. Participants completed a writing exercise that was analyzed using the Linguistic Inquiry Word Count software (Pennebaker, Booth, & Francis, 2007). The data was analyzed using Pearson Bivariate Correlations. The participants completed a writing exercise, the Alcohol Use Disorders Identification Test, the Beck Depression Inventory, Marlowe-Crowne Short Form, and a short demographic survey, respectively. The correlation between s propensity for alcoholism and symptoms of depression was not significant and the linguistic patterns varied substantially from the hypotheses. Even though the hypotheses were not supported, there were significant correlations between propensity for alcoholism and linguistic choices. The potential for linguistic analysis to be developed into an indirect assessment of alcohol dependence is discussed as a way to minimize the difficulties surrounding self-report methods.

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INTRODUCTION

In today's society, alcohol use is widely accepted and often promoted, particularly among college-aged students. Alcohol companies spend billions of dollars each year to advertise the benefits of drinking their product (Federal Trade Commission, 2007). According to the Centers for Disease Control and Prevention (CDC), 50% of people over the age of eighteen had at least twelve drinks in the past year (2012). Despite the efforts of these corporations to portray the effects of drinking alcohol as essentially positive, alcohol abuse/dependence are destructive health and safety issues. Alcohol abuse is defined as alcohol use that has resulted in adverse social, physical or mental consequences (American Psychiatric Association, 2000; Babor, Higgins-Biddle, Saunders & Monteiro, 2001). Babor et al. (2001) also conveyed that alcohol dependence occurs when a person has a strong desire to consume alcohol despite all the consequences. Those dependent on alcohol lose control over the amount of alcohol they drink, and their drinking becomes a higher priority over other commitments. Dependence also occurs when there is an increase in tolerance to amount consumed and also when symptoms of physical withdrawal occur when alcohol use is abstained. In 2009, 23.5 million people over the age of 12 were admitted for treatment for alcohol or illicit drug abuse and dependence (National Institute on Drug Abuse, 2011). In this same year, the CDC reported 15,183 deaths due to alcoholic liver disease, and 24,518 died from alcohol-related incidents not including accidents and homicide (2012). Finding a way to minimize this epidemic has been a topic of research for many years, but actually assessing alcohol use in order to recognize and diagnose abuse and dependency is problematic. Some of the diagnostic concerns are detailed below.

Self-Report Methods of Diagnosis

Many medical doctors do not assess alcohol use and therefore fail to detect alcohol abuse/dependency in their patients. This includes hospitals and even primary care doctors. Many patients admitted into the intensive care unit fall into the category of alcohol abuse or dependence, yet go undiagnosed (Moss & Burnham, 2007). A survey conducted by the National Center on Addiction and Substance Abuse (CASA, 2000) at Columbia University investigated how primary care physicians and their patients deal with substance abuse disorders. This survey found that less than one-third of the doctors actually screened patients for substance abuse. CASA also discovered that almost 41% of the doctors surveyed found it difficult to discuss alcohol abuse with their patients. One of the reasons why the doctors did not screen for alcohol abuse/dependency was because patients who have such a problem tend not to be honest when asked about the amount of alcohol they consume. Patients who were surveyed acknowledged lying to their primary care physicians (Califano, 2000). Similarly, many of the physicians disclosed that they did not routinely refer patients to counseling either.

Even when medical doctors do refer patients to psychological counseling, diagnosing alcohol abuse and dependence disorders remains complicated. Counselors also find it challenging to correctly identify alcohol abuse/dependence due to the fact that the typical diagnostic techniques involve self-report methods. Clinical interviews and questionnaires ask clients directly about behaviors such as alcohol and substance use. This method invites someone, perhaps already experiencing regret and denial, to inaccurately respond and to minimize their drinking behaviors. According to the National Institute on Alcohol Abuse and Alcoholism (NIAAA, 2004), the problem with using self-report is uncertainty as to whether the person

provided accurate information. In addition, ensuring that the respondent is not under the influence during the self-report period increases the likelihood of accurate responses (NIAAA, 2004). Therefore, testing alcohol levels prior to conducting a clinical interview and/or administering self-report measures facilitates accuracy; however, this can be costly. Ultimately, self-report techniques will continue to be used because they are the least costly, but they carry the greatest risk of under diagnosis. Finding an inexpensive and indirect measure to assess alcohol use would help alleviate the issue of under diagnosing alcohol abuse and dependence based on self-report.

Diagnosis of depression through self-report techniques has many of the same issues as diagnosing alcohol dependence through self-report. However, a way to diagnose depression indirectly, without using self-reports, may be in progress. These techniques investigate subtle differences in linguistic choices made without awareness.

Linguistic Choice as a Psychological Fingerprint

James Pennebaker began studying the linguistic styles of individuals several decades ago (Pennebaker, 2011). His research found that subtle, often subconscious, linguistic choices reveal important information about a person. Most people are aware that just listening to the way a person speaks, such as their tone and dialect, can reveal that person's mood, upbringing, and where they grew up. However, analyzing the *words* individuals select and assemble also provides valuable information about that person (Groom & Pennebaker, 2012). Pennebaker conducted several studies, which analyzed writing samples in the forms of essays, journals, and even open-ended questions (Groom & Pennebaker, 2002). According to Groom and Pennebaker (2002), language not only tells a lot about a person's personality and health, it is actually

personal and unique for each individual like a fingerprint. The tool used to accomplish this research was the Linguistic Inquiry Word Count (LIWC) software program (Pennebaker & Graybeal, 2001). This program is a reliable and valid tool for analyzing individual linguistic styles. LIWC analyzes a word document by searching for over 2,300 words or word stems (Pennebaker, Mehl, Niederhoffer, 2003). These words have been categorized into 70 linguistic dimensions. According to Pennebaker et al. (2003), “These dimensions include standard language categories, psychological processes, relativity-related words, and traditional content dimensions” (p. 553). The categories originate from linguistics and psychological theories. Some examples of these categories include ‘singular pronouns’, ‘plural pronouns’, ‘cognitive process words’, and ‘emotion words’. LIWC is also designed so that the researcher can create desired categories, for instance ‘literal phrases’ such as “*you know*”. Even Freud analyzed the linguistic style of individuals. He thoroughly believed that spoken mistakes, also known as “Freudian slips,” provided a brief glimpse into unconscious motives and desires. He believed there was a profound hidden meaning behind the spoken mistake. Groom and Pennebaker (2002) also believe that analyzing language reveals information about the individual.

Analyzing a language sample has advantages. First, collecting the data is easier because participants do not have to go to a lab. Researchers can collect writing samples from already written journals, class assignments or interviews. For example, there was even a case study done on the Australian explorer, Henry Hellyer, years after his suicide (Baddeley, Daniel, & Pennebaker, 2011). The second advantage is that analyzing the linguistic style of an individual is less direct which makes it more accurate. This resolves several of the problems that self-reports incur.

Research has been conducted to show that people who score high on a depression self-report share similar writing styles (Rude et al., 2004). Theories of depression propose that people with depression tend to have a negative perception of the world and themselves (Beck, 1967 as cited by Rude et al., 2004). Stirman and Pennebaker (2001) performed a study on suicidal and non-suicidal poets. Although the study did not directly measure depression, Rude et al. (2004) inferred that suicidal poets were more depressed than non-suicidal poets. The study analyzed the writings of 9 poets who committed suicide, and 9 poets who did not using the LIWC program. The results found that the suicidal poets used more ‘first singular pronouns’ such as *I*, *me*, or *my* and less ‘plural pronouns’ such as *we*, *us*, *our* (Stirman & Pennebaker, 2001). Bucci and Freedman (as cited by Rude et al., 2004) also found that depressed people used more singular pronouns. Pennebaker (2011) believes that the reason depressed individuals use more first person singular pronouns is because they are focused more on themselves.

Rude et al. (2004) explored language patterns of depressed and depression-prone individuals in the context of an essay. The predictions aligned with the previous research. The results of the study revealed that depressed students had a negative focus and self-preoccupation. These findings suggest that depressed people are preoccupied with negative thoughts and heightened self-awareness. Rude et al. concluded that the language of formally depressed students shows signs of vulnerability to future depression.

Pennebaker and King (1999) found that the language used in students’ assignments correlated with health behaviors. The results of this study discovered that there was a negative correlation between illness-related behavior and the ‘making distinction’ category in LIWC. The ‘making distinction’ LIWC category consists of four text categories: 1) ‘inclusive words’: *with*,

both; 2) 'exclusive words': *either, but*; 3) 'tentative words': *depends, hopefully*, and 4) 'negation words': *neither, not*. The correlation revealed that the greater the use of these 'making distinction' words, the better their health behaviors were, including less alcohol and cigarette use (Pennebaker & King, 1999). Thus, relationships between linguistic patterns and health behaviors have been established, paving the way to explore specific health-related behavioral choices in relation to language use.

Alcoholism and Depression

Several studies have investigated the relationship between alcohol abuse and depression. Hasin, Tsai, Endicott, and Mueller (as cited by Gonzalez, Reynolds, & Skewes, 2011) stated, "Depression is an important determinant in the development and course of alcoholism" (p. 303). Lamis, Malone, and Langhinrichsen-Rohling (2010) found that depressive symptoms predicted alcohol use. The study revealed that students who are depressed have a higher tendency to consume alcohol. Gonzalez et al. (2011) found that drinking alcohol positively correlated with depression. This research suggests that the link between alcohol use and depression results from people using alcohol to cope with negative feelings. Many college students have social motives for drinking with their peers. Their drinking involves social interaction and camaraderie. However, students who drink to cope with negative emotions are more likely to incur alcohol-related problems (Gonzalez et al., 2011). Similarly, Treeby and Bruno (2012) found that shame-prone individuals are more likely to drink with the motive of diminishing negative affective states. Individuals in their study were given the *Test of Self-Conscious Affect-3 short version*, which measures shame-proneness. A person that is shame-prone tends respond to an unpleasant situation with disgrace, for example they would say, "I am a terrible person". Whereas, a person

who is not shame-prone in the same situation might say, “I will fix my mistake” (Treeby & Bruno, 2012). The relationship between alcohol abuse/ dependence, depression, and linguistic styles led to the current study.

The present study investigated the linguistic styles of students with a propensity for alcohol abuse/dependence as well as students who showed symptoms of depression. Past research has found that alcohol problems were found in African American and European American students who displayed signs of depression (Dennhardt & Murphy, 2011). As noted above, previous research linked alcohol abuse/dependence with depression (Boden & Fergusson, 2011; Dennhardt & Murphy, 2011; Gonzalez et al., 2011; Lamis et al., 2010; Treeby & Bruno, 2012). Research has also found that depressed individuals display a certain linguistic style (Rude et al., 2004). The present study will add to this body of research on the relationship between alcohol and depression. This study is in an initial step towards investigating a way to predict alcohol abuse/dependence through linguistic analysis which provides an indirect manner minimizing issues associated with self-report. Furthermore, the current study could lead to a way of predicting alcohol abuse prior to an individual becoming alcohol dependent, thus facilitating early intervention.

HYPOTHESES

It was predicted that individuals with a higher propensity for alcohol abuse or dependence would display similar linguistic styles as those with depressed symptoms. The hypotheses were derived from previous research (Bucci, Freedman; Rude et al., 2004; Stirman, Pennebaker, 2001) on depression and linguistic styles; specifically:

H₁: Students with a higher propensity for alcoholism will use more first person singular pronouns.

H₂: Students with a higher propensity for alcoholism will use less first person plural pronouns.

H₃: Students with higher propensity for alcoholism will use more negative emotion words similar to those with symptoms of depression.

METHODS

Participants

Thirty-four participants over the age 18 with the mean age of 22.82 ($SD = 5.04$) years took part in this experiment. The participants were recruited from the University of Central Florida's Psychology Department's online research participation system. They could earn extra credit applied to certain psychology courses in accordance with course syllabi.

Materials

Writing Exercise. In order to collect writing samples for analysis, participants were asked to write about personal experiences shaping their identities. The writing prompt instructed participants: *“For this experiment write about a past event that has shaped who you are today. Please write about your experience before the event, what caused the event and how you are different now as a result of this event. Describe this in your own words and include details. You can use a word processing document and then copy and paste below. There is no time limit on this task so take as much time as you need.”*

The Alcohol Use Disorders Identification Test (AUDIT: Babor et al. 2001). The AUDIT was utilized to measure students' drinking patterns. It consisted of 10 items asking about three domains: alcohol use, dependence symptoms, and harmful alcohol use. Each of these domains were represented by 3-4 questions. The first domain included questions such as, *“how often do you have a drink containing alcohol?”* The second domain included questions such as, *“how often during the last year have you found that you were not able to stop drinking once you had started?”* An example of a question in the third domain was, *“how often during the last year have you had a feeling of guilt or remorse after drinking?”* All the questions were answered on a 5-point scale from 0 to 4, with scores indicating risk. Scores correspond to four zones of risk

with the lowest recommending alcohol education and the highest recommending referral to specialist and treatment. A score of 0-7 is zone 1, a score of 8-15 is zone 2, a score of 16-19 is zone 3, and a score of 20-40 is zone 4. The AUDIT was selected due to strong concurrent validity demonstrated by high correlation with the Michigan Alcohol Screening Test ($r = .88$) on both males and females. It also has proven reliability ($r = .86$) on a test-retest study (Babor, Higgins-Biddle, Saunders & Monteiro, 2001). The entire scale is reproduced in Appendix A.

Beck Depression Inventory (BDI-II: Shean, Baldwin, 2008). The BDI-II is a 21-item self-report scale that measures how severe depression symptoms were in the participant. Each item referred to a different topic related to depression such as, “sadness or pessimism.” Responses were rated on a scale from 0 to 3. Scores ranging from 10-18 were considered mild to moderate depression, scores ranging from 19-29 were considered moderate to severe depression and scores ranging 30-63 were considered severe depression. The internal consistency for the original Beck Depression Inventory (BDI) was .81 and the concurrent validity between the BDI and the Zung Depression Scale was .76 (Beck, 1988). The newer version of the BDI was chosen because it improved upon the original to correspond more closely with the *DSM-IVR* criteria for major depressive disorder (Shean & Baldwin, 2008). The entire scale is reproduced in Appendix B.

Marlowe Crowne, Short Form (Crowne & Marlowe, 1960). The short form of the Marlowe Crowne (M-C Form C) is a 13-item true or false survey that determines if the participant was selecting socially desirable answers instead of truthful answers. An example includes, “no matter who I’m talking to, I’m always a good listener.” (Responding ‘true’ indicates a socially desirable answer). The short form was appropriate due to the high internal

consistency level of 0.76. It also had a high correlation with the 30-item Marlowe-Crowne Standard Scale ($r = .95, p < .00$). Refer to Appendix C for the scale used in this study.

Demographics Scale. A basic survey was used to collect demographic information. This survey included questions about educational level, major, living situation, and family history of alcoholism. Complete scale is presented in Appendix D.

Linguistic Inquiry Word Count (LIWC, Pennebaker et al., 2007). LIWC is a software program that analyzes words from text files. It categorizes them across 70 dimensions. One word could be counted in several of the dimensions. An example would be the word “laughing”, which would fall under the positive emotion and present tense categories.

Procedure

Participants logged into the SONA website and chose the study titled “Personality and Coping Skills.” The informed consent form was displayed first. The participants were informed they would be completing a writing study followed by a brief questionnaire. They were also informed that their participation would be completely anonymous. The informed consent document can be found in Appendix E. After providing consent, participants were asked to write about a personal life experience, given the prompt above. The participants had an unlimited amount of time to complete the writing portion. After the writing task was completed, the participants were asked to complete the AUDIT (Babor et al. 2001), BDI-II (Shean & Baldwin, 2008), Marlowe-Crowne Short Form (Crowne & Marlowe, 1960), and the short demographic survey. The study concluded with the debriefing form, reported in Appendix F.

RESULTS

Before the hypotheses were tested, descriptive statistics were calculated. The means and standard deviations for the 3 psychological scales are reported in Table 1. Next, intercorrelations among the psychological measures were established using Pearson bivariate correlations. Contrary to previous findings, there was not a significant correlation between the scores on the AUDIT and scores on the BDI-II. Furthermore, scores on the Marlowe–Crowne did not significantly correlate with either AUDIT or BDI-II scores, indicating that social desirability did not play a role in student responses. Table 2 displays correlations between AUDIT, BDI-II and Marlowe-Crowne Short Form.

After LIWC calculated the proportion of words in each of the linguistic categories per essay, Pearson bivariate correlations were used to test the hypotheses. An alpha level of .05 was applied to the statistical analyses. The results of these analyses revealed no significant correlations with AUDIT and the use of pronouns, indicating that the first two hypotheses were not supported. However, there was a positive correlation with the use of one type of function word, articles, $r = .358, p = .038$. There were no significant correlations between the AUDIT and emotion words, including both positive and negative LIWC categories, thus the third hypothesis was not supported. Even though the hypotheses were not supported, further analyses revealed significant correlations between LIWC categories and both the AUDIT and BDI-II. The AUDIT negatively correlated with 4 categories: human words (such as adult, baby, and girl), $r = -.406, p = .017$; motion words (such as arrive, car, and go), $r = .563, p = .001$; leisure words (such as cook, chat, and movie), $r = .459, p = .006$ and words in the home category (such as apartment,

kitchen, and family), $r = .518, p = .008$. Significant correlations between the AUDIT and linguistic categories are reported in Table 3.

Additionally, there were three significant correlations found with BDI-II scores and linguistic categories. There was a significantly positive correlation with the BDI-II and use of first person singular pronouns (such as I, me, and my), $r = .402, p = .019$. The BDI-II was also positively correlated with family words (such as daughter, husband, and aunt), $r = .487, p = .003$. Inversely, the BDI-II was negatively correlated with auxiliary verbs (such as am, will, and have), $r = .401, p = .019$. Significant correlations between the BDI-II and linguistic categories are reported in Table 4.

Table 1: Means and Standard Deviation of AUDIT, BDI-II, and Marlowe

Scale	<i>Mean</i>	<i>SD</i>
AUDIT SCORE	4.76	4.171
BDI-II SCORE	12.12	11.837
MC SCORE	6.82	2.468

Table 2: Correlations Between AUDIT, BDI-II, and Marlowe Crowne

	AUDIT SCORE	BDI-II SCORE	MC SCORE
AUDIT SCORE	1	.003	-.131
BDI-II SCORE	.003	1	-.245
MC SCORE	-.131	-.245	1

* $p < .05$

Table 3: Correlations Between AUDIT and LIWC Categories

Word Categories	AUDIT	
Human	-.406	*
Motion	.563	*
Leisure	.459	*
Home	.518	*
Article	.358	*

* $p < .05$

Table 4: Correlations Between BDI-II and LIWC Categories

<u>Word Categories</u>	<u>BDI-II</u>	
First Person Singular Pronouns	.402	*
Auxiliary Verbs	-.401	*
Family	.487	*

DISCUSSION

The purpose of the current experiment was to establish whether students with a higher propensity for alcoholism used the same linguistic patterns found in depressed individuals. After analyzing the results, it was interesting to find that all three hypotheses in this study were not confirmed despite previous research finding a high correlation between alcoholism and depression. The results of the present study suggest that there are not similarities in linguistic patterns between students with a propensity for alcoholism and students with symptoms of depression. This experiment did find significant relationships in each group related to linguistic choice. These findings suggest that students with a relatively higher propensity for alcoholism have a unique language pattern, and this pattern is not similar to the pattern for depression.

Pennebaker's previous research found that individuals have a unique pattern of linguistic choice similar to a fingerprint (2011). These unique patterns provide insight into the individual's personality and even social life. Pennebaker's research has specifically looked into the use of 'function words'. Even though there was no relationship between students with a propensity for alcoholism and pronouns, there was a marginal relationship between propensity for alcoholism and use of 'function words'. According to Pennebaker (2011), these 'function words' can disclose an individual's focus. A positive correlation was found with articles (*a, an, the*), which have also been found to be an indicator of concrete thinking (Pennebaker, 2011). Perhaps those with a higher propensity for alcohol abuse tend to write about objects more than actions or feelings.

Additionally, it was found that students who consume more alcohol tend to use less 'human words' such as *adult, baby*. Perhaps students who drink more are more focused on

themselves and less focused on others. This could reflect previous research findings that narcissism is fundamental with the inception of alcoholism (Tiebout, 1944). In this study, students who scored higher on the AUDIT also used more ‘leisure words’ such as *chat*, *movie*. It seems intuitive that the students drinking more alcohol also partake in more leisurely activity. Previous research confirms this intuition; it has been found that students who spend more time attending non-leisurely activities, such as going to class, drink less alcohol (Finlay, Ram, Maggs, & Caldwell, 2012). These findings may assist in future development of an indirect assessment measure for alcohol abuse/dependence.

As established by previous research, these analyses found a positive relationship between depression symptoms and ‘first person singular pronouns’. Pennebaker (2011) has found that depressed individuals have a greater self-focus, which is displayed in the higher use of first person singular pronouns. It was also found that the students who scored higher on the BDI-II used more ‘family words’. Research has found children with depression come from families with more conflict (Vulic´-Prtoric & Macuka, 2006). The students who scored higher on the BDI-II often wrote about a negative event associated with their family. For example one participant wrote, “ My parents got divorced when I was 18.” This finding was possibly affected by the writing prompt directing the student to write about an event that has shaped them.

Even though the hypotheses for this study were not supported, there were important findings that may assist future research and development of indirect methods for assessing alcohol use/dependence. Propensity for alcoholism was significantly correlated with specific linguistic categories. Using a linguistic analysis in conjunction with traditional self-report can be a more reliable way to indirectly identify alcohol abuse. It would eliminate the problem

underreporting and inaccuracy associated with self-report assessment of alcohol use. A way to indirectly measure alcoholism could also potentially lead to ways to predict detect an individual's excessive alcohol use before the person has become dependent.

There were several factors that have created limitations for this study. The sample size was too small to generalize to the population. In addition, the vast majority of the sample in this study did not fall into the category of high-risk drinkers. Thus, the sample contained an insufficient amount of individuals at risk for alcoholism to adequately test the hypotheses. Another limitation of this study was that in spite of the fact that the AUDIT and BDI-II are widely used, they both have issues with validity because they rely on self-report.

Alcohol abuse and dependence is an ongoing epidemic, which has been particularly resistant to treatment efforts. Overall, this research provides some unique insight on correlations between alcohol use and language, which have not been previously investigated. Although there are limitations, the present study may provide an important step toward understanding a disease that affects millions of individuals and families across the world.

APPENDIX A: ALCOHOL USE DISORDER IDENTIFICATION TEST

Alcohol Use Disorder Identification Test

1. How often do you have a drink containing alcohol?	Never	Monthly or Less	2-4 times a month	2-3 times a week	4 or more times a week
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2	3 or 4	5 or 6	7 to 9	10 or more
3. How often do you have six or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
4. How often during the last year have you found that you were not able to stop drinking once you had started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
5. How often during the last year have you failed to what was normally expected of you because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
8. How often during the last year have you been unable to remember what happened the night before because of your drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
9. How you or someone else been injured because of your drinking?	No		Yes, but not in the last year		Yes, during the last year
10. Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?	No		Yes, but not in the last year		Yes, during the last year

APPENDIX B: BECK DEPRESSION INVENTORY SCALE

Beck Depression Inventory II Scale

1. Sadness

I do not feel sad
I feel sad much of the time
I feel sad all the time
I am so sad or unhappy that I can't stand it

2. Pessimism

I am not discouraged about my future
I feel more discouraged about my future than I used to be.
I do not expect things to work out for me
I feel my future is hopeless and will only get worse

3. Past Failure

I do not feel like a failure
I have failed more than I should have
As I look back, I see a lot of failures
I feel I am a total failure as a person

4. Loss of Pleasure

I get as much pleasure as I ever did from the things I enjoy
I don't enjoy things as much as I used to.
I get very little pleasure from the things I used to enjoy
I can't get any pleasure from the things I used to enjoy

5. Guilty Feelings

I don't feel particularly guilty
I feel guilty over many things I have done or should have done
I feel quite guilty most of the time
I feel guilty all of the time

6. Punishment Feelings

I don't feel like I am being punished
I feel I may be punished
I expect to be punished
I feel I am being punished

7. Self-Dislike

I feel the same about myself as ever
I have lost confidence in myself
I am disappointed in myself
I dislike myself

8. Self-Criticalness

I don't criticize or blame myself more than usual
I am more critical of myself than I used to be
I criticize myself for all of my faults
I blame myself for everything bad that happens

9. Suicidal Thoughts or Wishes

I don't have any thoughts of killing myself
I have thoughts of killing myself, but I would not carry them out
I would like to kill myself
I would kill myself if I had the chance

10. Crying

I don't cry anymore than I used to
I cry more than I used to
I cry over every little thing
I feel like crying, but I can't

11. Agitation

I am no more restless or wound up than usual
I feel more restless or wound up than usual
I am so restless or agitated that it's hard to stay still
I am so restless or agitated that I have to keep moving or doing something

12. Loss of Interest

I have not lost interest in other people or activities
I am less interested in other people or things than before
I have lost most of my interest in other people or things
It's hard to get interested in anything

13. Indecisiveness

I make decisions about as well as ever
I find it more difficult to make decisions than usual
I have much greater difficulty in making decisions than I used to
I have trouble making any decisions

14. Worthlessness

I do not feel I am worthless
I don't consider myself as worthwhile and useful as I used to
I feel more worthless as compared to other people
I feel utterly worthless

15. Loss of Energy

I have as much energy as ever

I have less energy than I used to have
I don't have enough energy to do very much
I don't have enough energy to do anything

16. Changes in Sleep Pattern

I have not experienced any change in my sleeping pattern
I sleep somewhat more than usual
I sleep somewhat less than usual
I sleep a lot more than usual
I sleep a lot less than usual
I sleep most of the day
I wake up 1-2 hours early and can't get back to sleep

17. Irritability

I am no more irritable than usual
I am more irritable than usual
I am much more irritable than usual
I am irritable all the time

18. Changes in Appetite

I have not experienced any change in my appetite
My appetite is somewhat less than usual
My appetite is somewhat greater than usual
My appetite is much less than before
My appetite is much greater than usual
I have no appetite at all
I crave food all the time

19. Concentration Difficulty

I can concentrate as well as ever
I can't concentrate as well as usual
It's hard to keep my mind on anything for very long
I find I can't concentrate on anything

20. Tiredness or Fatigue

I am no more tired or fatigued than usual
I get more tired or fatigued more easily than usual
I am too tired or fatigued to do a lot of the things I used to do
I am too tired or fatigued to do most of the things I used to do

21. Loss of Interest in Sex

I have not noticed any recent change in my interest in sex
I am less interested in sex than I use to be
I am much less interested in sex now

I have lost interest in sex completely

APPENDIX C: MARLOWE CROWNE SOCIAL DESIRABILITY SCALE

Marlowe Crowne Social Desirability Scale

True False

It is sometimes hard for me to go on with my work if I am not encouraged.

I sometimes feel resentful when I don't get my way.

On a few occasions, I have given up doing something because I have thought too little of my ability.

There have been times when I felt like rebelling against people in authority even though I knew they were right.

No matter who I am talking to, I'm always a good listener.

There have been occasions when I took advantage of someone.

I'm always willing to admit it when I make a mistake.

I sometimes try to get even rather than forgive or forget.

I am always courteous, even to people who are disagreeable.

I have never been irked when people expressed ideas very different my own.

There have been times when I was quite jealous of the good fortune of others.

I am sometimes irritated by people who ask favors of me.

I have never deliberately said something that hurt someone's feelings.

APPENDIX D: DEMOGRAPHICS SCALE

Demographic Survey

Please answer each of the following questions about yourself.

What is your age? _____

What is your gender? Male Female

What is your ethnical background?

American Indian or Alaskan Native

Asian

Black or African American (Not of Hispanic origin)

Hispanic or Latino

Native Hawaiian or Other Pacific Islander

White or Caucasian (Not of Hispanic origin)

What year in college are you

Freshman

Sophomore

Junior

Senior

Other, please explain: _____

What is your major? (Psychology, Business, Education, etc) _____

What is your overall GPA? _____

Where do you live?

Campus

UCF affiliated Apartments

Apartment

Frat/ Sorority House

House

Other

What is the closest campus to you?

Main (Orlando)

Regional, please specify: _____

Who do you live with?

Parents/ guardian

Family/ siblings

Roommates

Significant other

Self

Other, please explain: _____

Are you currently rushing or planning to rush with a sorority or fraternity?

Yes

No

Have you ever had treatment for alcohol abuse or dependence, including attending at least one Alcoholics Anonymous meeting?

Yes, please describe _____

No

Do you have any family history for alcoholism?

Yes, please describe _____

No

APPENDIX E: INFORMED CONSENT

Informed Consent

Researchers at the University of Central Florida (UCF) study many topics. To do this we need the help of people who agree to take part in a research study. You are being invited to take part in a research study, which will include about 250 people at UCF. You have been asked to take part in this research study because you are a student in a psychology class.

You must be 18 years of age or older to be included in the research study.

The person doing this research is Dr. Shannon N. Whitten of the Psychology Department at the University of Central Florida. UCF students learning about research are helping to do this study as part of the research team. Their names are: Sarah Sanders

What you should know about a research study:

- Someone will explain this research study to you.
- A research study is something you volunteer for.
- Whether or not you take part is up to you.
- You should take part in this study only because you want to.
- You can choose not to take part in the research study.
- You can agree to take part now and later change your mind.
- Whatever you decide it will not be held against you.
- Feel free to ask all the questions you want before you decide.

Purpose of the research study: The purpose of this study is to look at the relationship between personality and coping skills.

What you will be asked to do in the study: You will be asked to complete a writing exercise about a personal experience. Once you have finished you will be asked to complete several scales as well as asked several questions about yourself.

Location: The experiment is conducted on-line through the UCF SONA system.

Time required: We expect that you will be in this research study for one hour.

Risks: There are no reasonably foreseeable risks or discomforts involved in taking part in this study.

Benefits:

We cannot promise any benefits to you or others from your taking part in this research.

However, possible benefits include learning more about the research process from the perspective of a participant in that process.

Alternatives:

Instead of being in this research study, your choices may include: other experiments listed on SONA or extra credit opportunities offered through the Psychology Department.

Compensation or payment:

There is no direct compensation for taking part in this study. It is possible, however, that extra credit may be offered for your participation, but this benefit is at the discretion of your instructor. If you choose not to participate, you may notify your instructor and ask for an alternative assignment of equal effort for equal credit. There will be no penalty.

Anonymous research: This study is anonymous. That means that no one, not even members of the research team, will know that the information you gave came from you.

Study contact for questions about the study or to report a problem: If you have questions, concerns, or complaints, or think the research has hurt you, talk to Sarah Sanders at srsanders@knights.ucf.edu Dr. Whitten at swhitten@mail.ucf.edu

IRB contact about your rights in the study or to report a complaint: Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (UCF IRB). This research has been reviewed and approved by the IRB. For information about the rights of people who take part in research, please contact: Institutional Review Board, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901. You may also talk to them for any of the following:

- The research team is not answering your questions, concerns, or complaints.
- You cannot reach the research team.
- You want to talk to someone besides the research team.
- You want to get information or provide input about this research.

APPENDIX F: DEBRIEFING FORM

Debriefing Form

During this study, you were asked to complete a writing exercise about a personal experience followed by completing several questions about yourself. You were told that the purpose of the study was to look at the relationship between personality and coping skills. The actual purpose of the study was to compare linguistic styles of students with a higher propensity for alcoholism to students who displayed symptoms of depression.

We did not tell you everything about the purpose of the study because if you were to know, your answers may have been altered. The use of deception was necessary so that results could be as accurate as possible.

All data collected during the study is confidential and will be used only for the purpose of the study. The responses in this study are de-identified and cannot be linked to you.

If this content has caused an emotional reaction to any of the materials presented, or concern specific to the content regarding alcohol consumption, please notify the following resources for further services and information:

Alcoholics Anonymous

Brevard Intergroup

720 E. New Haven Ave

STE 3

Melbourne, Fl 32901

321.724.2247

Central Florida Intergroup

283 Live Oaks Blvd

Building 6

Casselberry, Fl 32707

407.260.5408

UCF Counseling Center

(407) 823-2811

IRB contact about your rights in the study or to report a complaint: Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (UCF IRB). This research has been reviewed and approved by the IRB. For information about the rights of people who take part in research, please contact: Institutional Review Board, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901.

Please again accept our appreciation for your participation in this study.

APPENDIX G: IRB APPROVAL LETTER



University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Approval of Human Research

From: **UCF Institutional Review Board #1**
FWA00000351, IRB00001138

To: **Shannon N. Whitten and Co-PI: Sarah Sanders**

Date: **February 27, 2013**

Dear Researcher:

On 2/27/2013 the IRB approved the following human participant research until 2/26/2014 inclusive:

Type of Review: Submission Correction for UCF Initial Review Submission Form
Project Title: Personality and Coping Skills
Investigator: Shannon N. Whitten
IRB Number: SBE-13-09096
Funding Agency:
Grant Title:
Research ID: N/A

The scientific merit of the research was considered during the IRB review. The Continuing Review Application must be submitted 30 days prior to the expiration date for studies that were previously expedited, and 60 days prior to the expiration date for research that was previously reviewed at a convened meeting. Do not make changes to the study (i.e., protocol, methodology, consent form, personnel, site, etc.) before obtaining IRB approval. A Modification Form cannot be used to extend the approval period of a study. All forms may be completed and submitted online at <https://iris.research.ucf.edu>.

If continuing review approval is not granted before the expiration date of 2/26/2014, approval of this research expires on that date. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

Use of the approved, stamped consent document(s) is required. The new form supersedes all previous versions, which are now invalid for further use. Only approved investigators (or other approved key study personnel) may solicit consent for research participation. Participants or their representatives must receive a copy of the consent form(s).

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Sophia Dziegielewski, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

Signature applied by Patria Davis on 02/27/2013 09:46:38 AM EST

IRB Coordinator

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