12-2016

The Link between Greek Involvement and Alcohol Consumption: A Utilization of the Theory of Planned Behavior to Examine Fundamental Influences

Alex Knoll
University of South Carolina – Aiken

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A Thesis Presented to the

Faculty of the Department of Psychology

University of South Carolina Aiken

In Partial Fulfillment

of the Requirements for the Degree

Master of Science

By

Alex Knoll

November 2016

Abstract

Elevated levels of alcohol consumption among college students associated with Greek life are a well-documented occurrence in the United States (Baer, 1994; Capone et al., 2007). Many studies have sought to understand the precise influence(s) responsible for facilitating such inflated amounts of alcohol consumption behaviors. This study utilized the theory of planned behavior in an attempt to ascertain the most salient influences that may be contributing to Greek and non-Greek collegiate alcohol consumption. Specifically, one's attitudes, perception of acceptable norms, and their perceived level of control over their behaviors were examined in relation to alcohol consumption.

An undergraduate collegiate sample ($N = 259$) was collected from Sewanee: The University of the South, the University of South Carolina, and the online survey service Mturk. The study was administered to participants via online survey. The results of the study confirmed the hypothesis that more involved Greek students consume more alcohol. Additionally, it was found that a participant's attitude and perceived level of behavioral control was related to their level of alcohol consumption, but the subjective norms component was not found to be a predictor of drinking behavior. Finally, participants' level of behavioral control was found to be a significant moderator between Greek life and alcohol consumption.

Clinical implications of these findings suggest that alcohol intervention programs should focus on bolstering individual's perceived level of control over their drinking behaviors. Additionally, focusing on altering one's attitude towards drinking may be

beneficial in reducing overall alcohol consumption, as it was shown that those who endorsed more positive attitudes of alcohol consumption drank more heavily.

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Alcohol Use and College Students

Alcohol misuse is a problem that affects many college campuses worldwide. The National Institute of Health (NIH; 2015) has reported that college drinking is an extremely widespread occurrence, reporting that four out of five college students consume alcohol. Further, it reports that of those who drink alcohol, half engage in binge drinking behavior. Binge drinking is defined as consuming five or more drinks for males and four for females within a two-hour period (NIH, 2015). In fact, the NIH (2015) reported that students have begun to see the overconsumption of alcohol as almost a prerequisite, perhaps ritualistic, aspect synonymous with obtaining a higher education. This type of behavior comes with serious health concerns and is potentially a fatal behavior. Almost 2,000 students a year die from alcohol related incidents, over half a million will suffer an alcohol related injury, and almost 100,000 students under the influence of alcohol are victims of sexual assault (NIH, 2015). Despite these staggering statistics, the over consumption of alcohol continues, and it has been shown that college students outdrink their non-college peers in amount of alcohol consumed (Gfroerer, Greenbalt, & Wright, 1997; O'Malley & Johnston, 2002). It is clear that this is a serious and alarming problem, and one that has prompted many intervention programs intended to curb the alcohol use of incoming freshman and students who have encountered disciplinary actions due to consumption of alcohol.

Perhaps a large contributing factor to the elevated statistics regarding general college students' alcohol consumption is the inclusion of Greek-related college students within this demographic. In a survey of over 3,000 Greek members that belonged to a particular fraternity present in 32 states, it was found that 97% of Greek members use alcohol, 86% were binge drinkers, and 64% of participants were frequent bingers (Caudill et al., 2006). According to McCabe et al. (2005), Greek organizations are social institutions that contain their own sets of initiation rites, rules, and governing bodies. They also often have their own specific housing units for members. Often alcohol is include within the ritualistic nature of certain events, and the private housing aspect also aids in the facilitation of binge drinking behaviors and general over consumption of alcohol (Baer, 1994; Capone, Wood, Borsari, & Laird, 2007; Sher, Bartholow, & Nanda, 2001; Wechsler, Dowdall, Davenport, & Castillo, 1995; Wechsler, Lee, Kuo, & Lee 2000). Wechsler et al. (2000) found that two out of three college students who lived in Greek housing were binge drinkers. Additionally, they found that those who were not binge drinkers but lived in Greek housing were among the highest at risk to suffer negative secondhand effects of binge drinking, such as being awakened at night, having to take care of a drunk student/friend, or being in a confrontation with another (Wechsler et al., 2000). This suggests a strong link between environment and behavior, as those who live in Greek housing had the highest ratio of binge drinkers when compared to other college housing demographics (Wechsler et al., 2000). These findings could also arise from the inherent nature of Greek-only housing itself, where the environment is less regulated than the on-campus, dormitory style housing units. With all of this in mind, it would be irresponsible to state that Greek drinking behaviors are influenced solely by the

influences of one's immediate surroundings. Though this has been shown to be a strong contributing factor, other avenues of influence should be considered.

Greek Students and Salient Influences on Alcohol Consumption

When considering the alcohol consumption patterns of Greek involved college students, it is of paramount importance to review sources of social influence. There are many different socially focused components within addiction literature that seek to explain the underlying function of alcohol use and abuse, such as normative perceptions, important referents, modeling, and socialization. Normative perceptions are comprised of descriptive and injunctive norms and play a large role in determining alcohol use behaviors. According to Borsari and Carey (2003), descriptive norms refer to the perception that an individual has regarding how often others engage in a particular activity. Alternatively, injunctive norms refer to the amount of alcohol consumption that an individual considers to be acceptable. As such, this takes more into consideration the rules of a certain society and what is considered morally appropriate in regards to one's own behavior. Injunctive norms can be formed on a smaller scale than simply society as a whole, as perceptions about acceptable behaviors can form in respect to a specific peer group (Borsari & Carey, 2003).

These normative perceptions deal heavily with matters concerning one's peer group. As such, these peer groups themselves can be seen to be a hugely influential factor in determining one's behaviors (Petraitis, Flay, & Miller, 1995). Without the existence of important peer group referents, these norms would likely cease to hold as much sway over behavior determination as they do. It is described in social learning theory (SLT) how the behavior of important referents through the process of modeling can have

significant influence on an individual's behavior (Bandura, 1963). When adolescents see individuals that are important to them (such as their parents) engaging in behaviors like unwinding after a long day at work by having a drink, positive associations are formed between that behavior and its outcome. This example is explained by the results of one study (Ary, Tildesley, Hops, & Andrews, 1993) that examined modeling effects of parents on adolescent drinking behaviors. It was found that this type of relaxation, or similar attitudes displayed as positivity towards alcohol consumption, could have an effect on children's alcohol consumption patterns later in life (Ary et al., 1993). These sets of expectancies would be particularly salient as it was an important person that modeled this behavior. This same concept applies to peer groups and norms as well (Petraitis et al., 1995).

These results on modeling, peer groups, and expectancies are consistent with a large field of research that suggests that Greek members have higher rates of norm misappraisal, which subsequently influences their alcohol consumption rates (Baer, 1994; Baer, Stacy, & Larimer, 1991; Borsari & Carey, 2001; 2003; 2006; Perkins, 2002; Sher, Bartholow, & Nanda, 2001). In a study conducted by Baer et al. (1991), several groups of students and their perceptions of the amounts of alcohol their friends consumed were measured via a drinking norms questionnaire. The researchers found that all groups of college students had significantly exaggerated perceptions of how much alcohol (in frequency and amount) peers within their friend groups consumed, known as biased descriptive norms. Furthermore, it was found that participants belonging to a Greek organization had the most biased results out of all participant groups tested (Baer et al., 1991).

The results found by Baer et al. (1992) are further bolstered by a study conducted by Larimer et al. (2004) that examined the attitudes towards alcohol consumption of 582 Greek affiliated participants. These attitudes were measured to see if they had an influence on participants' drinking behavior. What the researchers found was congruent with the results from the study described above: the Greek students had inflated and inaccurate perceptions of descriptive norms. They also found that the participants had a significantly inaccurate appraisal of injunctive norms, meaning the subjective level of belief in which the behavior is socially acceptable (Larimer et al., 2004). Another important finding in this study is that both of these misappraisals in norms were significant predictors of future drinking behavior(s). The misappraisal of descriptive norms significantly predicted the continuation of maladaptive drinking patterns, while the misappraisal of injunctive norms significantly predicted dependent symptoms and physical consequences of alcohol consumption that was beyond baseline alcohol use levels during the time of testing (Larimer et al., 2004).

It is clear that normative perceptions regarding alcohol consumption have an impact on the amount and frequency that one consumes alcohol. In fact, misappraisal of norms for peers may be the most influential aspect in determining younger individuals drinking habits (Perkins, 2002). The false appraisal that members of one's peer group are consuming alcohol more frequently and in higher quantities than they actually are allows for the appraising individual to minimize their own feelings of disapproval towards personal consumption. Normative misperceptions are important factors to consider when examining the literature on Greek involvement and substance use. Overall, research

shows that Greek students drink more than their non-Greek peers (Capone et al., 2007; Grekin, & Sher, 2006; Park, Sher, Wood, & Krull, 2009).

When considering why Greek members drink more than their non-Greek peers, it is clear that social influences play a role in shaping salient forces within the environment, effectively guiding and fueling drinking behaviors. Perhaps the culmination of these two influences can be more accurately portrayed in the largely understudied measure that is *level* of Greek involvement. Although Greek involvement *itself* does not directly influence college drinking, it is certainly indicative of greater exposure and saliency of influence of the above-mentioned factors. In a study of 388 freshman and sophomore participants, Capone et al. (2007) examined several different factors that may be influencing Greek members to drink, such as selection, socialization, reciprocal determinism, and Greek involvement. Selection (applied in this context) is the concept that students who already consume higher amounts of alcohol will seek out environments and peer groups with similar behavioral tendencies. Socialization describes how certain individuals will change their behavior in order to match that of the surrounding behavioral climate. For instance, if a student who did not regularly engage in alcohol consumption arrives at college and joins a fraternity, he/she will then be immersed in an environment and social climate conducive towards alcohol consumption. In an attempt to become a better match for that environment, as well as to assimilate with peer groups and perceived norms, they will increase their own drinking behaviors, and in so doing demonstrate the principle of socialization. The third aspect that this study examined was reciprocal determinism. This describes how the environment affects the behaviors and vice versa. In fact, it incorporates the two previously mentioned concepts. A student will

seek out similar peer groups in regards to drinking, and then from this point that environment they have chosen may directly affect their behaviors, such as increasing alcohol intake due to overt peer pressure, such as offers. In this way selection has influenced socialization, which has then influenced the original behavioral set that motivated selection in the first place.

Capone et al. (2007) categorized Greek involvement into 3 categories: Greek members, Non-Greek individuals who attended Greek events, and non-Greek individuals who did not attend events (Capone et al., 2007). What the study found was that those who entered into the Greek system, and thus became Greek members, experienced higher rates of alcohol consumption that was influenced by the social influences of peer norms, alcohol offers, and social modeling. They also found that over time, alcohol consumption behavior increased, suggesting reciprocal determinism-like influence on behavior (Capone et al., 2007). The study also found that being involved in the Greek system was met with a markedly higher number of passive and active social influences to consume alcohol, in comparison to the non-Greek participants. These "active influences" can simply be offering another alcohol, but can extend all the way to encouraging one strongly or demanding one to drink (Borsari & Carey, 2001).

Bartholow, Sher, and Krull (2003) examined Greek involvement and its long term effects on alcohol consumption and found that the more highly involved Greek members did not continue to consume more alcohol than less involved Greeks several years post-college. Despite this, it was found that these same highly involved Greek members did consume more alcohol than lesser involved Greeks and non-Greeks during their time *in* college. In this study (Bartholow et al., 2003) Greek involvement was determined by

status within a Greek community (e.g., active member, nonmember who frequently associated with members), which offered more variability than the scale used by Capone et al. (2007), albeit only slightly more. Although these studies provide a good theoretical framework and conceptualization of Greek consumption patterns related to Greek involvement, it does it in a way that misses out on vital information. Categorically lumping Greeks and non-Greeks into weighted titles misses out on the plethora of changing aspects that make up the entire subjective Greek involvement experience. Despite this, it is clear that there are a myriad of different factors that contribute to Greek college student drinking. Many different concepts of SLT surely contribute in differing fashions and degrees. Further elucidation of this topic could be achieved through the utilization of the theory of planned behavior (TPB), which is a theory with proven predictive qualities, which contains constructs that address the aforementioned SLT influences on Greek drinking behaviors.

The Theory of Planned Behavior

TPB is a commonly used method for predicting behaviors in health psychology and has been shown to demonstrate a high degree of accuracy in behaviors such as attending screening programs, participating in physical exercise programs, and using contraception (Cooke & French, 2008; Sheeran & Taylor, 1999; Song & Park, 2015;). Measuring intention to engage in these types of specific behaviors using the TPB have been shown to produce accurate and predictive results of behavioral outcomes. These claims are further bolstered by the results of a meta-analysis conducted by Sheppard, Hartwick, and Warshaw (1988) that sought to test TBP's predictive ability for situations in which it was not originally designed. Such situations included decision making about

certain goals and health related behaviors, such as attending doctor appointments. Researchers were surprised to find that use of this model led to high degrees of predictability in such scenarios, suggesting that this model is viable even for uses beyond its normal applications.

A meta-analysis that examined 40 studies that used the TPB and its ability to predict alcohol consumption found that there was a high amount of support evident for the link between intention and consumption behavior (Cooke, Dahdah, Norman, & French, 2014). Furthermore, it was found that the theory's 3 main predicting components, attitude, subjective norms, and self-efficacy had strong relationships with intention, the subjectively rated probability that one will complete a behavior (or not). Also, it was concluded that the attitude-intention relationship was the only relationship that was shown to be moderated by gender (Cooke, Dahdah, Norman, & French, 2014). This is important to consider because men and women typically have different patterns of alcohol consumption, often marked by differing quantities of consumption.

TPB's high level of accuracy in predicting behavior has been well documented. In one study (Marcoux & Shope, 1997), the TPB and theory of reasoned action were compared and tested for reliability in predicting adolescent alcohol consumption. For this study, over 3000 student participants between fifth and sixth grade were used. TPB and the theory of reasoned action (TPB's predecessor) are both robust and efficient means of understanding and predicting alcohol use behavior, with the TPB model accounting for more variance than the latter. Results were confirmed by a secondary analysis of data from a longitudinal study, thus bolstering the TPB's feasibility in predicting drinking behavior. In one early study conducted by Cook, Lounsbury, and Fontenelle (1980),

components of TPB were used to predict drug use in college students across four different drug types: marijuana, amphetamines, tranquilizers, and beer. They found that subjective norms and attitudes toward the behavior were significant predictors of behavioral outcomes. Specifically, subjective norms added significantly to the predictability of marijuana and beer consumption. Additionally, John and White (2003) conducted that specifically found that subjective norms predicted binge-drinking behaviors in populations that most closely identified with their peer group. However, TPB is more than merely a model for prediction as it incorporates several concepts that help to better understand *why* the intention for the behavior is being formed. By examining an individual's scores related to their attitudes about the behavior, their subjective norms, and their perceived behavioral control, researchers are able to develop a more complete picture of the most salient influences driving behavioral outcomes.

For the reasons listed above, TPB is a well-rounded model that is adequately suited for predicting a myriad of behaviors. TPB contains 3 main components that together explain certain motivational factors that leads to a behavioral outcome. This, in terms of the theory, is defined as "intention". Intention is influenced by 3 different factors (or beliefs): *behavioral beliefs*, *control beliefs*, and *subjective norms* (formed by normative beliefs). Intention is shown to predict behavior through these three factors (Ajzen, 1991).

One of the main components controlling intention is an individual's behavioral beliefs (Ajzen, 1985). The belief about a certain behavior leads to the formation of an attitude towards performance of that behavior or not. This attitude is achieved by the evaluation of the outcomes of the specific behavior in question. If someone holds

negative beliefs about the outcome of a behavior, an individual will hold an unfavorable attitude towards performing that behavior. The opposite is true if the individual evaluates the outcomes a behavior positively. This is important to the overall concept of behavior planning because if someone has positive behavioral beliefs about a certain behavior, than this can increase their intentions to perform it. As was discussed earlier, intention is generally a good indicator of probability when it comes to predicting behavioral outcomes, such as performing breast self-examinations (Norman & Hoyle, 2004).

Another important aspect of TPB is the concept of control beliefs. Control beliefs directly measure the amount of perceived control an individual has over performing, or not performing, a certain behavior. This is known as an individual's *perceived behavioral control*. This can be influenced by how easy or difficult the performance of a behavior is perceived by an individual, and can vary widely depending on a multitude of factors (Ajzen, 1985). This was an important addition to the theory because sometimes people are not always (or perceive themselves as being) in complete control of their own behaviors, especially when the behavior involves an addictive substance.

Perhaps the most relevant component of TPB to the discussed body of literature is the concept of normative beliefs. These normative beliefs comprise subjective norms. Subjective norms are described as the perceived pressure to perform or not perform a behavior, developed from the appraisal of normative perceptions from important referents (Ajzen, 1985). These subjective norms are aptly named because of the personal nature of the perception of other's ideas without explicit knowledge of those ideas. If it is perceived that a group holds beliefs that an individual should perform a certain behavior, then they will experience pressure to perform said behavior (Ajzen, 1985). The same is

true in reverse order: if an individual has subjective norms to abstain from certain behaviors, then they will feel pressure *not* to perform the behavior (Ajzen, 1985).

Peer pressure is a powerful force for creating and maintaining problem behaviors, and can be particularly powerful as it relates to alcohol use and consumption (Robin & Johnson, 1996). Peer pressure is often conceptualized as involving direct urges by peer group members to perform certain behaviors (Santor, Messervev, & Kusumakar, 2000). Robin and Johnson put forth a very simplistic view of peer pressure, describing it as simply being the amount of correlation that exists between individual and peer group (Santor et al., 2000). Finally, the subjective experience of feeling pressured to engage in activities that are congruent with peer group activities has been defined by some as peer conformity: a highly related but operationally different concept than peer pressure (Santor et al., 2000). Brown, Clasen, and Eicher (1986) conducted a pilot study in order to define the most salient aspects of peer pressure. From this study, one of the reported hallmarks of peer pressure was the *perceived* amount of pressure one experiences to conform to peer group norms, dictated by the explicit or implicit urging of the group (Brown et al., 1986). This lends credence to Ajzen and Fishbein's model that suggests the power of normative perceptions to influence subjective norms is the perceived pressure to perform or not perform a behavior.

From this point of view, subjective norms are congruent with the underpinning function of peer pressure. As an individual is exposed to salient instances, such as witnessing close friends binge drinking, their perceptions of what they consider to be appropriate/accepted behavior within that peer group can shift. In addition to this, their own perception of the acceptability of behavior may change. As a logical progression of

development, these seem to be underlying functions of peer pressure (or at least *perceived* peer pressure). In order to fit in and comply with the norms of one's peers, they may alter or initiate already existent behavioral patterns. These behavioral shifts are due to the pressure that the individual experiences, whether that be to meet demands of their peers or comply to some degree with perceived behavioral norms. Here in lies the subjectivity in norm perception. Each situation is unique, and imagined pressure comes from a point of view that is biased by misinterpretation of peer norms (Brown et al., 1986). Subjective norms function as a way to quantify this subjective sensation and applies it in a way that construes meaning to the behavior in question.

The Theory of Planned Behavior and Social Learning Theory

TPB has potential to add to the current alcohol consumption literature by incorporating SLT concepts to develop a richer and deeper understanding of the social forces at work. Drawing heavily from social learning theory, TPB builds upon specific concepts to create a more immersive and in depth explanation that seeks to accurately explain and predict behavior. For instance, the concept of expectancies seem to be similar to behavioral beliefs in that they both hold qualitative assessments of a particular behavioral outcome. In fact, the two seem almost synonymous with one another (Ajzen, 1985; Young, Connor, Ricciardelli, & Saunders, 2000). Expectancies explain how prior-learning instances can later influence the performance of a behavior.

Positive or negative experiences can influence the outcome expectancy of engaging in a behavior (Young et al., 2000). Particularly salient experiences can more heavily influence the if-then process that comprises expectancy (Smith & Goldman, 1994; Young et al., 2000). This too is the rationale behind the concept Fishbein and

Ajzen's beliefs about a behavior (Ajzen, 1985). One's attitude toward a behavior is comprised through the same process: the amalgamation of salient beliefs about a particular behavior's outcome. The theory further breaks this concept down by positing that each belief has a particular inherent value of being positive or negative. Overall, an individual who holds more positive beliefs about performing a behavior will have a positive attitude towards this behavior, and vice versa (Ajzen, 1985). For example, someone who views the positive benefits and outcomes of a going on a run (i.e., expression of self-satisfaction, weight loss over time, etc.) may begin to develop positive attitudes toward said behavior. This will impact their likely hood, or intention, to complete it. Conversely, if they see someone go for a run and then talk about how miserable it was and how painful their shin splints are, the individual may form negative attitudes towards running, and subsequently will have less intention towards performing the behavior. A particular attitude about a behavior then feeds into the formation of the "intention" towards performing the behavior. Since intention has been shown to be a reliable factor in predicting certain behaviors, an individual's beliefs about a behavior and their attitude towards it are mediating factors in action prediction. The concept of expectancies and beliefs/attitudes are indeed very similar. The starkest difference between the two is how they ultimately are utilized. The beliefs and attitudes are pieces to the theory that function as intention forming components, which are a quantifiable means of observing forces that influence behavior(s).

The novelty of TPB within addictions research can also be seen through an in-depth comparison of the social learning concepts of referencing and norms. Subjective norms are created by normative beliefs and a motivation to comply with said beliefs

(Ajzen, 1985). However, they differ most significantly in the fact that it accounts for and measures the perceived social *pressure* to perform a behavior, which places a direct value on these perceptions as predictive outcomes of behavior (Ajzen, 1985). Additionally, it seems that subjective norms could be influenced by injunctive norms in the sense that if an individual does not think a group will positively perceive their behavior, then they likely are not going to feel pressure to perform said behavior. However, subjective norms measure a different social perception: the pressure to perform a behavior or not (Ajzen, 1985). Subjective norms seek to qualitatively conceptualize the amount of pressure that an individual feels towards performing a behavior. This seems particularly useful in matters of substance use, and likely very important in instances involving adolescents who have important reference groups that may help influence particular behaviors (Brown et al., 1986).

It is clear that social norms have a large impact on behavior. These social norms are quantified within the concept of subjective norms. Subjective norms, within the context of the TPB model, have been shown to be a significant predictor of frequency of substance use and alcohol binge drinking (Cook et al., 1980; Johnston & White, 2003). The misperception of the actual norm is a common thing among consumers of alcohol, and is particularly common among Greek members (Baer, 1994; Baer, Stacy, & Larimer, 1991). As earlier stated, it is clear that Greek affiliated individuals drink more than their non-Greek affiliated peers. However, what is more interesting is that Greek members in a leadership position not only drink more than their non-Greek peers, but their Greek peers as well (Cashin, Presley, & Meilman, 1998). These results were shown in a study conducted by Cashin et al. (1998), in which the researchers administered a drug and

alcohol questionnaire to over 25,000 undergraduate students from across a multitude of institutions. The study looked at several things, such as consequences of behavior, drinking patterns, and also position within Greek organizations. It was shown that Greek members who hold a position of leadership were "engaging in heavy drinking episodes and experiencing negative drinking consequences at high levels at least as high and in some cases higher" than their fellow non-leadership position Greek peers (p. 69). These results are congruent with the findings of Capone et al. (2007) that found not only was level of involvement a predictor of drinking behaviors but it was also a significant predictor of norm misappraisal.

The influence of subjective norms seems as though it may be especially important among Greek leaders, as they are *more* immersed in a social atmosphere that places a heavy emphasis on alcohol use. Believing that one should do something because of perceived pressure from one's peer group is a strong and salient factor in that it influences behavior. Greek organizations are tightly knit communities that place a large emphasis on bonding and are characterized by being highly cohesive in structure. This may help explain why Greek leaders have a tendency to drink more than their non-leader Greek peers. However, is the increased level of alcohol consumption that comes from an authority position a product of being exposed to more episodes of drinking?

It seems apparent that Greek leaders would be more immersed within the Greek community, as they are required to attend meetings and functions, and often live inside the Greek house itself. This could lead to more instances, some perhaps highly salient depending on intensity, of encounters with alcohol. Because of this, some Greek members may begin to develop inaccurate subjective norms regarding their own alcohol

use as well as that of their peers. The implication(s) this has regarding Greek members is quite interesting. As Greek members become more immersed within the Greek environment, perhaps they become more involved than other members. As they are more involved, they may identify with their fellow Greek peers more closely, and additional exposure to Greek leaders may produce modeling effects, as they have are in positions of power and have been shown to consume more alcohol (Cashin et al., 1998). This has been identified as an important factor that contributes to the saliency of subjective norms (Johnston & White, 2002). Do the influences of these underlying mechanisms hold true for all members within the Greek community? Given TPB's predictive qualities and components that can specifically address salient factors in Greek drinking, it should be utilized to better understand drinking patterns as a whole, especially when coupled with Greek involvement.

The Present Study

This study seeks to gain additional knowledge into the most salient underlying influences on alcohol consumption. The previously mentioned research indicates that a strong link between Greek involvement and alcohol consumption behavior exists. This link may be better explained by utilizing the TPB. Its core components, subjective norms, behavioral beliefs, and control beliefs, are fundamental concepts that offer a concise and straightforward conceptualization of salient influences, and provides a framework for measuring each one's saliency and magnitude of influence.

As such, the present study seeks to explore the aforementioned link between Greek involvement and alcohol consumption by examining such questions as: do Greek members experience increased alcohol consumption because they are closely identified

with their peer group? Would this be reflected in higher subjective ratings of one's own level of Greek involvement? Does Greek involvement variability reflect differing levels of perceived pressure to engage in alcohol consumption? It has been well documented that Greek members consume more alcohol than their non-Greek peers, but it has also been shown that level of Greek involvement is correlated with alcohol consumption (Capone et al., 2007). Additionally, Greek members possess higher rates of norm misappraisal than non-Greek peers (Baer et al., 1991; Brown et al., 1986). With this in mind, peer norm misappraisal has been shown to be a significant predictor of increased alcohol consumption (Capone et al., 2007). Given this information, the following hypotheses will be tested in the present study:

Main hypotheses. When examining Greek life and alcohol consumption:

1) Degree of Greek involvement will be positively related to amount of alcohol consumption.

2) The attitude, subjective norms, and perceived behavioral control components of Ajzen's TPB will uniquely account for alcohol consumption behavior.

3) Attitude, subjective norms, and perceived behavioral control will moderate the degree to which Greek involvement predicts alcohol consumption.

4) For people high in Greek involvement, subjective norms will be the strongest predictor of drinking behavior relative to attitude and perceived behavioral control.

Method

Participants

A total of 359 participants were recruited for the study, of which 110 were excluded for not having been enrolled in a college or university at the time of completing

the survey (overall and specific demographics by site summarized in Tables 1, 1.2, 1.3 & 1.4). This resulted in a total of 42% (n = 109) of the total sample from Mturk, 33% (n = 88) of participants were from The University of the South: Sewanee (Sewanee), and 23% (n = 62) of participants were from the University of South Carolina (USC). All participants over the age of 18 were included in the study, despite some being under the legal drinking age. This was done to get a more accurate representation of a typical student body, as limiting the data due to age constraints would likely have only included the oldest 25% of a typical college population. An *a-priori* test using G-power software suggested a total sample size of N = 88.

Measures and Instruments

Flier (Appendix A). A flier that included details of the study, contact information, and a link to the study was posted in various locations around the Sewanee campus and the USC campus. The flier was slightly altered for the differing locations, in accordance with IRB recommendations, to include contact information relevant to that particular site.

Informed Consent (Appendix B). An informed consent document was provided to make participants aware of any possibilities of harm or benefit that might have come from participating in this study. It made explicit the volunteer nature of the study, as well as provided the participants with the contact information of the present researcher. It also alerted them to their rights to confidentiality and approximate time for completion of the study.

Demographic Questionnaire (Appendix C). A basic demographic questionnaire designed by the present investigator was utilized in order to gain information about participant's age, gender, race/ethnicity, and year in college.

Theory of Planned Behavior Questionnaire (Appendix D). In order to assess different salient influences on drinking behavior, the present study utilized a questionnaire that addressed attitudes, subjective norms, and behavioral control beliefs. The format was designed by recommendations by Ajzen (2006; 2010) and the questions were modified from a prior study (Collins, Witkiewitz, & Larimer, 2011). The stems of the questions were modified in order to fit the target participant group, as recommended by Collins, Witkiewitz and Larimer (2011).

The attitudes portion consisted of four questions on a nine-point scale that had two opposing words situated at each end related to participant's "overall opinions of drinking alcohol": "desirable-undesirable," "dislike-like," "valuable-worthless," and "harmful-beneficial."

The subjective norms measure considered participants' perceptions of how much others would approve or disapprove of their current drinking behavior. In order to specifically target injunctive perceptions, two questions referred to general members of the participants' peer group and close friends. These two questions were on a five-point scale, with differing word pairs of "highly approve-highly disapprove." To address descriptive norms, two questions on a five-point scale used differing word pairs of "strongly agree-strongly disagree," and elicited perceptions regarding "average American college students."

The perceived behavioral control portion contained three questions meant to elicit perceived behavioral "control" over certain actions (PBC). These questions were on a five-point scale, with differing word pairs of "possible – impossible." As recommended by Ajzen (2002), a fourth question eliciting one's "self-efficacy" was included, again on a five-point scale with the same opposing word pairs. In this text, "control index" is used when referring to the statistical variable, and PBC is used to denote the theoretical construct (and what the variable denotes).

Alcohol Consumption (Appendix E). The Alcohol Consumption Inventory (ACI) was used to determine participants' drinking behavior and patterns of consumption (Knee & Neighbors, 2002). The scale contained measures of average weekly and monthly alcohol consumption, as well as typical consumption amounts at one time. These items, according to Neighbors, Larimer, Geisner, and Knee (2004), "loaded on a single factor (Eigenvalue = 6.06) with factor loadings ranging from .79 to .93. Items were averaged to form a drinking index. Internal consistency reliability (Cronbach alpha) in this study was .95" (p. 213).

Greek Involvement (Appendix F). Greek involvement was measured using a scale used by Bartholow, Sher, and Krull (2003) that examined Greek involvement over five different categories. Additionally, three questions created by the present investigator were utilized to measure Greek involvement on a subjectively rated continuum. To the author's knowledge, there exists no Greek involvement scale that measures perceived involvement in Greek life as a continuous measure, so only using a categorical method may potentially lose valuable insight into how involved certain members may actually be (or at least *perceive* themselves to be). The questions were on a nine-point scale, and

asked about perceived overall involvement, perceived association with Greek life elements, and overall perceived time spent engaging in or socializing with Greek affairs/members.

Alcohol Expectancies (Appendix G). The Alcohol Expectancies Questionnaire – III (Goldman, Greenbaum, & Darkes, 1997) was used to evaluate important beliefs that participants have about consuming alcohol, and it was found that the AEQ accounted for 49.2% of variance associated with drinking. The AEQ was also shown to possess high levels of criterion, cross-cultural, and discriminant validity (Brown, Christiansen, & Goldman, 1987). Participants respond to each question as either "true" or "false." Items answered as "true" by the participant were given one point, and items marked "false" received no points. The total score was achieved by summing the value of responses for each subscale.

Alcohol Problems (Appendix H). The Rutgers Alcohol Index was used to measure the occurrence of alcohol related problems. The 18 question version, developed by White and Labouvie (2000) and used in the current study, has been shown to correlate .99 with the original and has a reliability coefficient of .93. The RAPI has been shown to have good convergent validity with other alcohol-related tests, such as the Adolescent Alcohol Involvement Scale (AAIS) and Alcohol Dependence Scale (ADS; $r > .7$; Miller et al., 2002).

Design and Procedure

Participants from Sewanee were recruited via informational fliers (*Appendix A*) that were placed in various locations throughout campus. Also, an email was sent out to all students that informed them of the study, compensation, and provided a link to

questionnaire. Participants from USC were also recruited via campus wide email, which included the same information as that from the Sewanee study. Mturk participants were simply recruited through the internal Amazon Mturk recruiting system after the study was posted on the website. Participants, prior to fulfilling measures, completed the informed consent document (*Appendix B)*. Participants acknowledged consent by clicking a button signifying they agreed and understood the informed consent. This button, and subsequent acknowledged understanding of informed consent information, had to be pressed in order to continue to the rest of the questionnaire. All participants were kept completely anonymous. The current study consisted of five different measures and instruments, and was administered via the online survey tool SurveyGizmo for each site. The first questionnaire of the survey was the TPB questionnaire, the questions of which were counterbalanced. This was followed by the ACI, AEQ, Greek involvement questionnaire, RAPI, and demographics questionnaire (in that order). If a participant answered the question "what year are you in college?" with the response "I'm not in college", then they were excluded from the study. All participants from the Sewanee site and USC site were entered into a raffle to win one of five $20 Amazon gift cards (five per site). The participants who were enrolled in the study via Mturk were paid five cents upon completion of the survey. After completion of the informed consent, participants spent approximately 15-20 minutes completing the different measures listed above. As this study did not include differing conditions or experimental manipulation, debriefing post-completion was not necessary.

Results

Descriptive Statistics

A total of 259 participants that completed the survey were included in the analyses. Overall demographics are summarized in Table 1, with specific site demographics summarized in Table 1.2, Table 1.3, and Table 1.4. Of these participants, 177 were female (68.3%), 81 were male (31.3%), and 1 participant endorsed "other" as their sex. There were 202 (77.9%) participants that reported their ethnicity as white, 24 (9.3%) participants reported being Asian/Pacific islander, 17 (6.6%) participants reported being black/African American, 10 (3.86%) participants reported being Hispanic or Latino, one (0.4%) participant reported being Native American, and five (1.9%) participants reported their ethnicity as "other". Sixteen (6.2%) were freshman, 49 (18.9%) were sophomores, 69 (26.6%) were junior, and 125 (48.3%) were seniors in college.

Preliminary Analyses

Gender differences. A series of independent samples *t*-tests were conducted to see if there were gender differences in key variables (means and standard deviations summarized in Table 2). Specifically, it was observed that male ($n = 81$) participants demonstrated different scores than female ($n = 177$) participants across ACI score and the TPB construct of perceived behavioral control (PBC). PBC was shown to be significantly different between male participants ($M = 4.23$, $SD = .80$, $p = 0.000$) and female participants ($M = 4.57$, $SD = .56$) such that females endorsed higher ratings of PBC. Additionally, it was shown that there existed a significant difference between ACI score between male participants ($M = 1.66$, $SD = 1.56$, $p = 0.000$) and female participants ($M = 0.90$, $SD = 0.92$), indicating that males consumed significantly more alcohol than females. All other variables did not differ significantly across genders.

Site differences. Multiple one-way ANOVAs were conducted to see how participants differed across sites on key variables (means and standard deviations summarized in Table 3; an overall breakdown of how participants varied by gender and site on each variable can be found in Table 3.2). Specifically, attitude index, control index (denoting PBC), norm index, alcohol consumption (ACI score), and Greek involvement (Greek index) were explored across sites. The omnibus effect for control index between groups was significant $F(2, 256) = 3.189, R^2 = 0.024, p = 0.043$. The LSD post hoc tests revealed that Mturk participants ($M = 4.34$) reported significantly less PBC than USC participants ($M = 4.58, p = 0.024$). The omnibus effect for Greek involvement was significant between groups $F(2, 256) = 46.94, R^2 = .268, p < 0.001$. Post hoc analysis showed that Sewanee participants ($M = 19.83$) rated themselves to be significantly more Greek than Mturk students ($M = 10.94, p < 0.001$) and USC students ($M = 9.19, p < 0.001$). Finally, the overall model for ACI score between groups was significant $F(2, 256) = 3.959, R^2 = 0.030, p = 0.020$, and the post hoc analysis revealed that USC participants ($M = .77$) consumed less alcohol than Mturk ($M = 1.21, p = 0.023$) and Sewanee participants ($M = 1.31, p = 0.008$).

A chi-square test of independence was conducted to see how the frequencies of gender differed across sites. A significant result was found ($\chi^2(2) = 14.922, p < 0.001$) indicating that differences in gender did exist across sites. Summary of the gender distributions across sites can be found in Table 4.

A second chi-square test of independence was conducted to understand if frequencies of Greek involvement differed across sites. A significant result was found (χ^2

(2) = 56.092, $p < 0.001$) indicating that differences in Greek involvement did exist across sites. Summary of the Greek distributions across sites can be found in Table 5.

Hypothesis Testing

Correlations. All data were entered into a correlation matrix and examined individually (see Table 6). Of note, ACI scores, which quantifies individuals' reported drinking behaviors, were demonstrated to have a positive significant relationship with all other variables except for PBC, which was shown to have a negative significant relationship with ACI score. Significant associations were also found for the TPB constructs. More specifically, the subjective norm index was significantly related to PBC ($r = .140$, $p = 0.025$) and attitude ($r = .449$, $p < 0.001$). Also, the subjective norm index was significantly related to the Greek involvement index ($r = .168$, $p = .007$). This suggests that as Greek involvement increases, subjective pressure felt to perform or not perform behavior increases. Also, attitude was significantly related to AEQ score ($r = .428$, $p < 0.001$), such that those with a higher attitude towards drinking endorsed higher alcohol expectancies.

In terms of alcohol-related problems, RAPI scores and level of Greek involvement were not significantly correlated ($r = -0.048$, $p = 0.446$), which was surprising since it has been observed that Greeks consume more alcohol, and typically experience more alcohol related problems as a result. Finally, the relationship between RAPI score and AEQ score was significant ($r = 0.245$, $p < 0.001$).

Hypotheses 1 & 2. A hierarchical multiple regression analysis was conducted to determine if Greek involvement, control index, attitude index, and norm index independently predicted ACI score (alcohol consumption). As summarized in Model 1 of

Table 7, the overall regression model was significant, $F(4, 254) = 44.849$, $R^2 = .414$, $p < 0.001$, indicating that all four predictor variables accounted for over 41% of the variance in alcohol consumption. A main effect emerged for Greek involvement ($\beta = 0.203$, $p < 0.001$), such that higher levels of Greek involvement were associated with higher levels of reported alcohol consumption. Another main effect emerged for control index ($\beta = -0.431$, $p < 0.001$), such that feelings of less PBC over alcohol consumption behavior(s) were associated with higher levels of reported alcohol consumption. A main effect was observed for attitude index, ($\beta = 0.369$, $p < 0.001$), such that more positive attitudes towards drinking were associated with higher levels of reported alcohol consumption. The main effect for norm index did not reach significance ($p = 0.174$).

Hypotheses 3 & 4. Next, interaction terms were computed to examine control index, attitude index, and norm index's effect on Greek involvement as it related to alcohol consumption (ACI), as illustrated in Model 2 of Table 7. This was included in the second step of the model, which failed to significantly add to the predictive power, F change $(7, 251) = 1.795$, change in $R^2 = 0.012$, $p = 0.149$. Despite this, there was a significant interaction between Greek involvement and control index ($\beta = -0.795$ $p = 0.022$), indicating that the relationship of Greek life on reported alcohol consumption depends on one's level of perceived control. There was no significant interaction between Greek involvement and attitude index ($p = 0.893$), and Greek involvement and norm index ($p = 0.909$).

Following the significant interaction between Greek involvement and control index, these two variables were centered and a simple slope analyses of plus 1 and minus 1 standard deviations was conducted (Table 8). It was shown that when control index is

low, there is a significant relationship between Greek involvement and reported alcohol consumption ($b = 0.04$, p < .0001. For individuals higher in PBC ($b = 0.01$, $p = 0.07$), the effect of Greek life on PBC diminished to non-significance. This shows the moderation effect of PBC: the lower in PBC one is, the more Greek involvement predicts reported alcohol consumption.

An additional regression, which is summarized in Table 9, examined RAPI as the outcome variable as opposed to ACI, but otherwise mirrored the regression reported in the previous section. This regression was also significant $F(4, 254) = 7.541$, $R^2 = .106$, $p < 0.001$. Within this model, PBC predicted RAPI score ($\beta = -0.308$, $p < 0.001$), such that individuals with lower levels of PBC experience more alcohol related problems. All other variables failed to significantly predict RAPI score. The second step of the model, F change $(3, 251) = 3.588$, change in $R^2 = 0.037$, $p = 0.014$, was also significant. Within this second model of the regression control index diminished to non-significance, however the interaction term Greek index by control index was significant ($p = .002$), as was Greek involvement ($p = .014$).

Exploratory Analyses

Moderation by location analyses. Due to the differences observed in the gender, PBC, Greek status, and alcohol consumption variables by location (as explained in "site differences"), moderation analyses and contrast coding processes were conducted (see Table 10). Orthogonal contrasts were created as Mturk vs. Other sites (C1), and Sewanee vs. USC (C2). These new variables, along with the aforementioned variables, were entered into the first step of a regression, with ACI score as the outcome variable. Interaction terms were then created with the contrast variables and original variables,

which were included into Step 2 of the model. This allowed the investigator to examine whether the main effects reported above were different according to recruitment site. Similar to the previous analyses, the first step of the model was significant $F(6, 252) = 31.140$, $R^2 = 0.426$, $p < 0.001$, though neither contrast reached significance ($p > .09$).

The second step of the model (i.e., including the interaction terms) was also significant, F change $(14, 244) = 14.929$, change in $R^2 = 0.036$, $p = 0.045$. Within the second step of the model, the only interaction term that was significant was Sewanee vs. USC by control index ($\beta = 1.112$, $p = 0.005$). This indicates that the relationship between PBC and reported alcohol consumption is different between Sewanee and USC students. No other main effects were qualified by location.

Next, two simple slopes analyses were conducted to further understand the effect of PBC's interaction with location. The first only included Sewanee participants, and the second only included USC participants. Both included ACI scores as the outcome variable. Mturk participants were excluded in these regressions since this site was shown not to contribute to the interaction. For Sewanee, the overall model was significant, $F(4, 83) = 19.766$, $R^2 = 0.463$, $p < 0.001$ (Table 11) and control index significantly predicted ACI score ($\beta = -0.397$, $p < 0.001$). For USC, the overall model was also significant, $F(4, 57) = 7.780$, $R^2 = 0.308$, $p < 0.001$ (Table 12). Within this model, PBC emerged as a significant predictor of ACI score ($\beta = -0.235$, $p = 0.032$). These results indicate that the negative relationship between PBC and reported alcohol consumption is stronger for Sewanee participants, relative to USC participants.

Predicting alcohol expectancies. Additional regressions were conducted to examine possible relationships between the predictor variables attitude index, control

index, norm index, Greek involvement, and alcohol consumption, and the outcome variables alcohol expectancies (AEQ) and alcohol related problems (RAPI).

This regression, summarized in Table 13, examined AEQ as the outcome variable and was significant $F(5, 253) = 23.115$, $R^2 = .314$, $p < 0.001$. Within this model, attitude towards reported alcohol consumption was significantly correlated with a participant's AEQ score ($\beta = .218$, $p = 0.001$), such that higher levels of positive attitude towards alcohol resulted in more alcohol expectancies. Additionally, ACI score was significantly correlated with AEQ score ($\beta = .396$, $p < 0.001$), indicating that the more alcohol an individual consumed, the more expectancies they possessed towards alcohol. All other variables failed to significantly predict AEQ score.

Discussion

Greek Involvement and Alcohol Consumption

Alcohol misuse upon college campuses is a longstanding and well-documented issue, and is shown to exist most heavily with students that are affiliated with a Greek society (Baer, 1994; Capone et al., 2007). Prior research has sought to examine possible causes of this increased rate, with some researchers pointing to the environment and culture of rituals that exists within many Greek societies (Baer, 1994; Caudill et al., 2006; Wechsler et al., 2000). While this does propose a compelling point of initial reference, it seems that these possible factors may exist because of deeper, more fundamental influences. For instance, Baer et al. (1992) explain that Greek students display higher levels of norm misappraisal, which promotes their inflated rate of drinking behaviors. As such, peer influences can heavily influence one's decision to engage in a behavior, especially when that individual believes that others in their peer group are drinking just as

much as they are themselves (Petraitis, Flay, & Miller, 1995). The present study sought to better understand these underlying influences by utilizing TPB, which posits that all behaviors are determined by one's attitude, subjective norm appraisal, and perceived behavioral control beliefs (Ajzen, 1985). Additionally, while prior studies have sought to quantify Greek involvement based on categorical rating systems, to the author's knowledge, this study is the first to quantify Greek involvement on a continuum. This was done to gain a more accurate representation of participant's Greek involvement, since not everyone who is an active Greek member may associate and attend Greek events. This would mean that they would be exposed to less of the salient influences characteristic of Greek involvement, and as such should not be simply lumped into a category that would suggest otherwise. Not surprisingly, in preliminary analyses Greek involvement was a better predictor of reported alcohol consumption when rated on a continuum as opposed to when it was rated categorically.

As was predicted, Greek involvement did significantly predict reported alcohol consumption. This suggests that those who rated themselves as being more involved in Greek life engaged in higher amounts of reported drinking behaviors. This is consistent with, and reinforces, prior findings that suggest that those who are more involved in Greek life consume more alcohol than their less Greek peers (Baer, 1994; Capone et al., 2007; Sher et al., 2001). Finally, when Greek involvement was entered into a regression with control index, norm index, attitude index, AEQ, and ACI, a significant relationship emerged between Greek involvement and RAPI score. This shows that when other variables are accounted for, increased level of Greek involvement predicts a higher amount of alcohol-related problems. This is consistent with prior research that saw that

Greeks were among the most likely to experience problems related to alcohol (Turrisi, Mallett, Mastroleo, & Larimer, 2006).

Hypotheses and TPB Components

Overall, the TPB components accounted well for the data, accounting for over 37% of the variance of reported alcohol consumption. It was shown that the attitude and perceived control portions were particularly well suited for predicting reported alcohol consumption. TPB posits that all behaviors can be accounted for through the three components (attitude/beliefs, perceived control, and subjective norms), so seeing that two of the three components did accurately predict alcohol-related behaviors was not surprising (Ajzen, 1985). With this in mind, social norms were expected to be more salient an influence on reported alcohol consumption than the other components of TPB when examining collegiate alcohol consumption. This was due in part to research indicating how inherently social factors are a part of Greek involved students' reported drinking behaviors (Baer, 1994; Caudill et al., 2006). Consistent with prior research, it was shown that Greek members did possess higher rates of subjective norm endorsement, but in contrast to that same research, it did not show to be a significant variable influencing their drinking behaviors (Baer, 1994; Baer et al., 1991; Borsari & Carey, 2001; Sher et al., 2001). This may be due in part to the way the questionnaire was comprised. It may have been more beneficial to use normative questions that explicitly addressed feelings of peer pressure (e.g., "I feel pressured by my peers to drink alcohol"). Also, due to subjective norm's significant correlation with attitude index and control index, these other two variables may have measured similar constructs as norms. This may have caused the other variables to simply be better predictors of reported alcohol

consumption, and their inclusion in the regression reduced any significant relationship that may have existed between norms and reported alcohol consumption. Additionally, attitude and PBC were shown to be more strongly correlated with ACI score than subjective norms.

As predicted, the relationship between individuals' attitudes towards drinking and their overall level of reported alcohol consumption was significant, so that those who endorsed more positive attitudes towards drinking consumed more alcohol. Intuitively, these results suggest that one's attitude towards a certain behavior have a meaningful impact on their actualization of that behavior. Additionally, it conversely shows that those who endorsed less favorable views of drinking drank less overall. This makes sense, as it is expected that individuals would not willingly engage in behaviors they find unfavorable. These results are consistent with studies that have shown that an individual's attitude and beliefs about a behavior influence their likelihood to engage in that behavior (Cook et al., 1980; Smith & Goldman, 1994). Finally, a significant relationship existed between one's attitude towards drinking and their overall AEQ score. This is consistent with research that proposes that positive or negative experiences influence the expectancies associated with engaging in a certain behavior (Young et al. 2000). As these results show, the more positive an attitude about drinking, the more expectancies that individual possesses about it. Furthermore, higher AEQ score was correlated with higher amount of reported alcohol consumption, which is consistent with prior research (Stacy, Widaman, & Marlatt, 1990).

As predicted, a significant relationship existed between one's PBC over drinking and their actual reported drinking behaviors. This relationship was shown that those who

endorsed lower levels of PBC over their drinking engaged in higher levels of reported alcohol consumption. PBC is an integral part of TPB because, in some instances, an individual may not score highly in attitude or subjective norms regarding a behavior, but engage in it anyway. This would seem to be especially true for individuals who are addicted to a particular substance(s), since the PBC -diminishing physical dependence may outweigh their negative feelings towards continued substance use, resulting in subsequent behavioral engagement. For this reason, TPB makes used of *perceived* control over actual control. Additionally, PBC was shown to be a significant predictor in alcohol related problems (RAPI). This information, coupled with the significant relationship between PBC and alcohol consumption, intuitively suggests that those with lower levels of PBC consume more alcohol and experience more alcohol related problems.

The subjective norm portion of the questionnaire aimed to tap into both injunctive and descriptive norms, and asked questions regarding participants' perceptions of acceptance from friends, and average college students. Contrary to predictions, the subjective norm component of TPB did not have a significant relationship with participants' reported alcohol consumption. This could be the case for several reasons. The format of the questions may have been contradictory in nature when applied to this population. Some questions asked the participants about their perceptions of members of their own immediate friend group; more specifically, what they thought a close friend would think of their drinking behavior. Other questions asked about this same perception, but in regards to what an average American college student would think, and thus not a member of their immediate friend group. Participants may have had differing conceptualizations of what constitutes an "average college student," and as such may

have given responses that did not follow a typical pattern. Additionally, participants may have had differing ideas of norms surrounding their friend group versus their family and peer group at large. It is not inconceivable to propose that participants' normative appraisals for their friend groups differ from that of their families', and that they may include both in their conceptualization of "peers" since this is not a strictly defined term. Specifically, participants may believe their friend groups are more approving of their drinking levels than their family members would be, or vice versa. This format was modeled after the recommendations of Collins, Witkiewitz and Larimer (2011). This may have caused contradictory response sets that resulted in inconsistent normative data, as important referents have been shown to be important influences on drinking behavior (Ary et al., 1993; Bandura, 1963). When sampling this population, it may have been more beneficial to include only one type of normative groups, or to evaluate the differing groups separately.

Moderating Variables

PBC was shown to be a significant moderator for the degree to which Greek involvement predicted reported alcohol consumption. Specifically, for those who rated themselves as having a low amount of PBC, the relationship between Greek involvement and reported alcohol consumption was significant. However, when individuals endorsed high levels of PBC, the relationship between Greek involvement and reported alcohol consumption was no longer significant. In regards to alcohol consumption, this shows that it does not matter how involved an individual is in Greek life if they have high perceived levels of PBC. This makes sense when you consider someone who exhibits a high amount of PBC over their behaviors and actions; they are less likely to be swayed by

outside influences to engage in certain behaviors. High levels of PBC, in this sense, are shown to possibly act as a protective factor against engaging in alcohol consumption. Additionally, Greek members were shown to experience more alcohol related problems through an interaction with PBC, which is interesting since PBC and Greek involvement were individually shown to be significant predictors of RAPI score.

Level of perceived norms was not shown to be a significant moderator between Greek involvement and reported alcohol consumption. While this stands contrary to prediction, it stands to reason that the relationship would not be significant given the non-significant relationship between perceived norms and reported alcohol consumption. Also contrary to prediction, attitude was not shown to be a significant moderator in the relationship between Greek involvement and reported alcohol consumption. This shows that while it is significantly related to alcohol consumption, it does not specifically influence Greek involvement's effect on alcohol consumption. This could be due to the fact that attitude is truly not a moderator between these two variables. For instance, if a participant endorses very positive attitudes towards drinking, then they may be more likely to drink regardless of Greek involvement level.

Correlation of Variables

An interesting finding was the lack of a significant correlation between the RAPI score and Greek involvement. This is interesting given the fact that Greek involvement was significantly correlated with reported alcohol consumption, such that more involved Greeks consumed more alcohol. This stands in contrast to previous research that has shown that Greek members experience high amounts of alcohol related problems (Harrington, Brigham, & Clayton, 1997). One may assume that if you consume more

alcohol you may encounter more alcohol related problems. This may be due in part to the sampling of participants from Sewanee and USC. The students were recruited during the summer months, so it is possible that many of these participants were taking classes over the summer to get ahead, showing a set of responsible behaviors that could be attributable to the lack of RAPI correlation with Greek involvement. However, this may differ on a case by case basis as some students take summer school to catch up on missed work or failed course work, which would be indicative of behavior sets contrary to those just mentioned.

Another finding of note was the significant relationship between subjective norms and Greek involvement. Consistent with prior research, it showed that the more involved a participant was within Greek life, the more subjective pressure they experienced from members of their peer group, families, and close friends (Baer, 1994; Baer et al., 1991; Borsari & Carey, 2001). This is especially interesting considering the lack of relationship between subjective norms and reported alcohol consumption. Based on the correlational results, participants who were involved in Greek life did experience subjective pressure regarding their reported drinking behaviors, as the questions in the subjective norms portion specifically asked about alcohol consumption. Despite this, it may be that fundamental experiences surrounding subjective norms were better explained by other aspects of the scale, such as attitude. This would explain why subjective norms did not significantly predict reported alcohol consumption when entered into a model with other variables. In fact, one's rating of subjective norms may help to shape their attitude about said behavior, which may increase the saliency of the attitude's effect, and subsequently the power of the attitude scale itself. If a participant feels that he/she should not engage in

a behavior because of what they perceive their friends to think, they may begin to form negative attitudes about it. Conversely, if they are pressured into performing a behavior, they may also begin to form negative attitudes about that behavior.

Strengths

This study exhibits several strengths. The use of a continuous Greek scale adds a deeper level of insight when examining Greek involvement. Some individuals who are "active" Greek members may not choose to participant in many Greek events, and as such may not be exposed to many of the salient cultural and environmental influences associated with Greek life. Conversely, someone who may not be an active Greek member may attend many Greek functions and associate with Greek members. As such, they may be more exposed to the previously mentioned influences than an active member. Valuable information could be lost by simply asking participants to state their Greek membership status, and subsequently deriving a value from the categorical rating. Another strength of this study was the large sample size. A sample size for sufficient power, as recommended by the G-power software, was 88. This study used 259 participants; well beyond the recommended number for sufficient power. Another strength of this study was that it drew from different locations, which could serve to make the data more generalizable. The use of a small liberal arts school and a large public university cover two types of higher learning institutions that are common in the United States. Also, the inclusion of Mturk data expanded the participant pool outside of just the Southeast.

Limitations

This study possessed some limitations. Some of the participants used in this study were under the age of 21. This may have influenced them to answer questions regarding their alcohol consumption amount (ACI) or problems encountered due to alcohol consumption (RAPI) differently, perhaps out of a sense of what is socially desirable. Also, not all of the measures were counterbalanced, meaning some of the questions or questionnaires may have primed individuals to answer subsequent questions in a different manner. Additionally, alcohol consumption is not a discrete behavior. One's intention to drink one drink may be different from subsequent drinks or engaging in drinking bouts. For this reason, it may be inherently difficult to measure someone's overall intent to drink or not drink, since this may change after an initial alcoholic beverage, and may fluctuate over time.

In this study there existed a significantly larger number of females than males, the distribution of which differed significantly across sites. This may have had an influence on some of the results of the study. Future studies could investigate potential gender differences in PBC and alcohol consumption, since these were the two variables that exhibited significant differences between genders.

There were significant differences in Greek involvement by site. Of the participants from Sewanee, over 80% were in some way associated with Greek life. Almost 30% of all participants who rated themselves to be Greek were recruited from the Sewanee location. This could mean that some of the inferences made regarding Greek involvement may be more generalizable to Sewanee than other sites. It was also shown that the majority of participants who responded from Sewanee were female, which means

that further analyses and consideration of this study's results should be viewed with this in mind.

Finally, it is important to note that there existed a larger number of upperclassmen, which may have limited the generalizability of the data. Perhaps upperclassmen have had more time to encounter salient influences in promoting alcohol consumption. Also, they may have had simply more time and exposure to alcohol to experience any alcohol related problems. In future studies, it would be beneficial to ensure a more even split of gender, year in college, and Greek demographics, such that the participant sample is more comparable to real world population distributions.

Clinical Implications

The results of this study may inform universities to tailor alcohol intervention programs to bolster their students' perceived level of control over drinking. As PBC was shown to be a moderator between Greek involvement and alcohol consumption, this would pertain to students who are involved in Greek life. Students who are involved in Greek life have been shown by prior research to exhibit more alcohol related problems (Caudill et al., 2006; Wechsler et al., 2000). It is interesting to note that the control index is derived from one's level of *perceived* control, and as such differs from their actual level of control. This suggests that reinforcing an individual's own subjective sense of control over their actions/specific behaviors may have a real impact on preventative behavioral outcomes. In one study (Wong & Rowland, 2013) it was proposed this could be accomplished by having participants engage in behaviors different from drinking, and to have them meaningfully reflect upon their decision and action to engage in alternate behaviors.

These results also showed that one's attitude towards drinking was a significant predictor of reported drinking behaviors. This is valuable information to consider when formulating intervention programs. Perhaps the dissemination of knowledge regarding the negative impact of drinking on one's health and scholastic achievement could curtail inflated positive attitudes towards alcohol. This would make sense given the results of this study that showed that one's attitude towards drinking was significantly correlated with their level of alcohol expectancies. These recommendations bolster the findings of one study (Williams, Thomas, Buboltz, & McKinney, 2002) that proposes effective alcohol intervention programs should focus on changing participants' attitudes towards drinking. Furthermore, these recommendations are also backed by programs that have focused on changing a participant's expectancies about alcohol, a construct related (in theory and as seen in the correlation results) to attitude (Marlatt et al., 1998).

Finally, the results of this study may inform certain programs of what *not* to expend resources on in order to curtail drinking behaviors. Contrary to predictions, subjective norms was not shown to a significant predictor of reported alcohol consumption. This indicates that above mentioned factors accounted better for drinking, and as such should be the focus of interventions. While the results do not indicate that normative perceptions should be ruled out completely, they do suggest that an effective starting point in alcohol consumption reduction may lie within the other components.

Conclusion

The purpose of this was to examine the most fundamental influences on Greek and non-Greek collegiate drinking behaviors. To the present investigator's knowledge, this study is the first to utilize a scale that quantifies Greek involvement on a continuum

rather than categorically. This allowed for a greater understanding of the specific degree of participants' Greek involvement. Furthermore, this study demonstrated that TPB was able to account for drinking behaviors in a collegiate population, despite not exactly how predicted. Attitude and PBC, but not subjective norms, significantly predicted reported alcohol consumption. Additionally, PBC was shown to be a significant moderator between Greek involvement and reported alcohol consumption. It was also interesting that the interaction effect between Greek and control index were stronger when predicting for RAPI score than for ACI score. Future studies could investigate this further to better understand how Greek life and PBC are associated with alcohol related problems. Results from this study may help to inform college drinking intervention programs by reinforcing prior research that suggests level of PBC and expectancies are salient influences on drinking behaviors, and as such should be considered when designing or implementing interventions.

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Appendix A

Attention All Undergraduate Students!

Seeking all undergraduate students to participate in a quick survey examining drinking patterns. This is for a study conducted by Alex Knoll, Clinical Psychology Graduate Student, of the University of South Carolina-Aiken and Dr. Noffsinger-Frazier, director of the Wellness Center in Sewanee.

This study is examining salient social influences on college drinking behavior.

Approximately 15-20 minutes. Online. Confidential.
You will be entered into a raffle for a chance to win 1 of 4 $25 Stirling's gift cards!

Contact Information:
For more information please contact:

- Alex Knoll: knollm@usca.edu
- Dr. Noffsinger-Frazier: nanoffsi@sewanee.edu
- IRB SBS # ????

Principal Investigators: *Dr. Noffsinger-Frazier*
Alex Knoll

URL **Contact: Dr. Noffsinger-Frazier nanoffsi@sewanee.edu**	***URL*** **Contact: Dr. Noffsinger-Frazier nanoffsi@sewanee.edu**	***URL*** **Contact: Dr. Noffsinger-Frazier nanoffsi@sewanee.edu**	***URL*** **Contact: Dr. Noffsinger-Frazier nanoffsi@sewanee.edu**	***URL*** **Contact: Dr. Noffsinger-Frazier nanoffsi@sewanee.edu**	***URL*** **Contact: Dr. Noffsinger-Frazier nanoffsi@sewanee.edu**	***URL*** **Contact: Dr. Noffsinger-Frazier nanoffsi@sewanee.edu**	***URL*** **Contact: Dr. Noffsinger-Frazier nanoffsi@sewanee.edu**

Appendix B

Consent Form

The Link Between Greek Involvement and Alcohol Consumption: A Utilization of the Theory of Planned Behavior to Examine Fundamental Influences.

Alex Knoll

******You must be 18 years of age or older to participate in this study******

You are being asked to participate in a study that examines Greek life and drinking habits of college students. The primary investigator of this project is Alex Knoll under the supervision of Dr. Nicole Noffsinger-Frazier and Dr. Maureen Carrigan.

Participation should require approximately 15-20 minutes of your time.

Risks, discomfort, and benefits to the participants: No risks or discomfort are predicted for participants in this study. A potential benefit for participants could be that they are lent deeper insight into their own drinking habits, as well as into how psychological research is performed.

Because of your participation in this study, you will be entered into a raffle to win 1 of 4 $25 gift cards.

YOUR NAME WILL NOT BE ASSOCIATED WITH YOUR RESPONSES. Only Dr. Nicole Noffsinger-Frazier, Dr. Maureen Carrigan, and the principal student investigator, Alex Knoll, will have access to any data collected for this study. Any and all data associated with and collected for this study will remain strictly confidential and anonymous.

Participation in this research is purely voluntary. You may withdraw from the experiment at any time and will face no penalty.

Contact persons:

Alex Knoll
Department of Psychology, USCA
Phone number (cell): 803-553-0057
Email: knollm@usca.edu

Dr. Nicole Noffsinger-Frazier
Wellness Center Director, Sewanee
Email: nanoffsi@sewanee.edu

Dr. Maureen Carrigan
Department of Psychology, USCA
Email: Maureec@usca.edu

This is to certify that I consent to or give permission for my participation as a volunteer in this research study. I have read this form and understand the content.

_____ _____

Participant's signature Date

Printed Name: _____

Appendix C

1. What is your age? _____

2. What is your gender? **Male** **Female**

3. What is your race/ethnicity? (e.g., Caucasian/White, Hispanic) _____

4. What year are you in college? (e.g., Freshman, Sophomore) _____

Appendix D

For the next 4 questions, please rate your overall opinions of drinking alcohol:

desirable :__1__:__2__:__3__:__4__:__5__:__6__:__7__: __8__:__9__: undesirable

dislike :__1__:__2__:__3__:__4__:__5__:__6__:__7__: __8__:__9__: like

valuable :__1__:__2__:__3__:__4__:__5__:__6__:__7__: __8__:__9__: worthless

harmful :__1__:__2__:__3__:__4__:__5__:__6__:__7__: __8__:__9__: beneficial

An average member of my peer group would:

highly approve :__1__:__2__:__3__:__4__:__5__: highly disapprove
of my drinking behavior.

My close friends would:

highly approve :__1__:__2__:__3__:__4__:__5__: highly disapprove
of my drinking behavior.

An average American college student would exhibit similar drinking behaviors as me.

strongly disagree :__1__:__2__:__3__:__4__:__5__: strongly agree

An average American college student <u>at my school</u> would exhibit similar drinking behaviors as me.

strongly agree :__1__:__2__:__3__:__4__:__5__: strongly disagree

Currently, how well do you believe you can control the amount that you drink?

impossible :__1__:__2__:__3__:__4__:__5__: possible

How much do you believe you are able to resist engaging in your current alcohol consumption amount?

possible :__1__:__2__:__3__:__4__:__5__: impossible

How much do you believe you are able to control your current alcohol consumption amount?

impossible :__1__:__2__:__3__:__4__:__5__: possible

For me to cut down on the amount I drink would be:

possible :__1__:__2__:__3__:__4__:__5__: impossible

Appendix E

For the following questions, one standard drink =

- 12 oz. beer (can or bottle), 10 oz. microbrew beer
- 8 oz. High gravity, Ice beer, or malt liquor
- 5 oz. glass of wine, 12 oz. wine cooler
- 1.5 oz. (one single shot) of liquor

One bottle of wine

- 25 oz. (0.7 liters) = 5 standard drinks
- 40 oz. (1.2 liters) = 8 standard drinks

One bottle of liquor

- 12 oz. (.35 liters) = 8 standard drinks
- 25 oz. (0.7 liters) = 17 standard drinks
- 40 oz. (1.2 liters) = 27 standard drinks

During the past week, how many times did you have five or more drinks at one sitting?

0 1 2 3 4 5 more

On average, how many times per week do you have five or more drinks at one sitting?

0 1 2 3 4 5 more

During the past month, how many times did you have five or more drinks at one sitting?

0 1-2 3-4 5-6 7-8 9-10 more

On average, how many times per month do you have five or more drinks at one sitting?

0 1-2 3-4 5-6 7-8 9-10 more

During the past week, how many drinks did you consume?

0 1-3 4-6 7-9 10-12 13-15 more

On average, how many drinks per week do you consume?

0 1-3 4-6 7-9 10-12 13-15 more

On average, how many drinks do you consume on weekends (Friday-Sunday)?

0 1-3 4-6 7-9 10-12 13-15 more

On average, how many drinks do you consume during the week (Monday-Thursday)?

0 1-3 4-6 7-9 10-12 13-15 more

Appendix F

Please indicate your degree of fraternity/sorority affiliation:

I am:

____ not at all associated with Greek life.

____ a nonmember who occasionally associates with members.

____ a nonmember who frequently associates with members (e.g., regular attendance at fraternity parties).

____ an "affiliate" or "early alum" (someone who is very involved but not an active member).

____ an active member.

From: Bartholow, B. D., Sher, K. J., & Krull, J. L. (2003)

Please rate how involved with Greek life you would consider yourself to be, regardless of membership status:

not at all involved :__1__:__2__:__3__:__4__:__5__:__6__:__7__: __8__:__9__: very involved

Please rate how much you believe, overall, that you associate with Greek life elements (e.g., members, parties, charity events, etc.), regardless of membership status:

very much :__1__:__2__:__3__:__4__:__5__:__6__:__7__: __8__:__9__: not at all

How much of your free time would you consider you spend engaging in Greek-related activities or socializing with Greek members?

None of my time :__1__:__2__:__3__:__4__:__5__:__6__:__7__: __8__:__9__: most of my time

Appendix G

*The remainder of the questionnaire can be found at its source, Goldman et al., 1997

ALCOHOL EXPECTANCY QUESTIONNAIRE-III (ADULT)

Instructions: The following pages contain statements about the effects of alcohol. Read each statement carefully and respond according to your own personal thoughts, feelings and beliefs about alcohol now. We are interested in what you think about alcohol, regardless of what other people might think.

If you think that the statement is true, or mostly true, or true some of the time, then mark (X) "Agree" on the answer sheet. If you think the statement is false, or mostly false, then mark (X) "Disagree" on the answer sheet. When the statements refer to drinking alcohol, you may think in terms of drinking any alcoholic beverage, such as beer, wine, whiskey, liquor, rum, scotch, vodka, gin, or various alcoholic mixed drinks. Whether or not you have had actual drinking experiences yourself, you are to answer in terms of your beliefs about alcohol. It is important that you respond to every question.

Begin answering on Question 1. Please answer every item on the answer sheet.

PLEASE BE HONEST. REMEMBER, YOUR ANSWERS ARE CONFIDENTIAL.

ANY QUESTIONS?/Please ask the examiner.

GO ON TO THE NEXT PAGE……

RESPOND TO THESE ITEMS ACCORDING TO WHAT YOU PERSONALLY BELIEVE TO BE TRUE ABOUT ALCOHOL (Mark "X" according to your beliefs).

Agree	Disagree	
_____	_____	1. Alcohol can transform my personality.
_____	_____	2. Drinking helps me feel whatever way I want to feel.
_____	_____	3. Some alcohol has a pleasant, cleansing, tingly taste.
_____	_____	4. Alcohol makes me feel happy.
_____	_____	5. Drinking adds a certain warmth to social occasions.

_____ _____ 6. Sweet, mixed drinks taste good.

_____ _____ 7. When I am drinking, it is easier to open up and express my feelings.

_____ _____ 8. Time passes quickly when I am drinking.

_____ _____ 9. When they drink, women become more sexually relaxed.

_____ _____ 10. Drinking makes me feel flushed.

_____ _____ 11. I feel powerful when I drink, as if I can really influence others to do as I want.

_____ _____ 12. Drinking increases male aggressiveness.

ANSWER ACCORDING TO YOUR CURRENT PERSONAL BELIEFS

_____ _____ 13. Alcohol lets my fantasies flow more easily.

_____ _____ 14. Drinking gives me more confidence in myself.

_____ _____ 15. Drinking makes me feel good.

_____ _____ 16. I feel more creative after I have been drinking.

_____ _____ 17. Having a few drinks is a nice way to celebrate special occasions.

_____ _____ 18. I can discuss or argue a point more forcefully after I have had a few drinks.

_____ _____ 19. When I am drinking I feel free to be myself and to do whatever I want.

GO ON TO NEXT PAGE……

_____ _____ 20. Drinking makes it easier to concentrate on the good feelings I have at the time.

_____ _____ 21. Alcohol allows me to be more assertive.

_____ _____ 22. When I feel “high” from drinking, everything seems to feel better.

_____ _____ 23. A drink or two makes the humorous side of me come out.

Cont.

Appendix H

RUTGERS ALCOHOL PROBLEM INDEX RAPI (18-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 home work 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 Friends or 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 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 Kept drinking when you promised yourself not to

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

Table 1

Demographics (Overall)

Characteristic	*N* = 259
Age (years)	
Mean	21.85
Sex	
Male	81 (31.3%)
Female	177 (68.3%)
Other	1 (0.4%)
Race	
White	202 (78%)
Asian/Pacific Islander	24 (9.3%)
Black/African American	17 (6.6%)
Hispanic/Latino	10 (3.9%)
Native American	1 (0.4%)
Other	5 (1.9%)
Class year	
Freshman	16 (6.2%)
Sophomore	49 (18.9%)
Junior	69 (26.6%)
Senior	125 (48.3%)
Greek Status	
Yes	151 (58.1%)
No	108 (41.9%)

Table 1.2

Demographics (MTurk)

Characteristic	*n* = 109
Age (years)	
Mean	24.11
Sex	
Male	48 (44.4%)
Female	60 (55.6%)
Other	1 (0.9%)
Race	
White	71 (65.1%)
Asian/Pacific Islander	15 (13.8%)
Black/African American	12 (11%)
Hispanic/Latino	6 (5.5%)
Native American	1 (0.9%)
Other	4 (3.7%)
Class year	
Freshman	12 (11%)
Sophomore	22 (20.2%)
Junior	24 (22%)
Senior	51 (46.8%)
Greek Status	
Yes	43 (39.4%)
No	66 (60.6%)

Table 1.3

Demographics (Sewanee)

Characteristic	*n* = 88
Age (years)	
Mean	20.11
Sex	
Male	18 (20.5%)
Female	70 (79.5%)
Other	0 (0%)
Race	
White	75 (85.2%)
Asian/Pacific Islander	4 (4.5%)
Black/African American	4 (4.5%)
Hispanic/Latino	4 (4.5%)
Native American	0 (0%)
Other	1 (1.1%)
Class year	
Freshman	3 (3.4%)
Sophomore	18 (20.5%)
Junior	30 (34.1%)
Senior	37 (42%)
Greek Status	
Yes	79 (89.8%)
No	9 (10.2%)

Table 1.4

Demographics (USC)

Characteristic	*n* = 62
Age (years)	
Mean	21.09
Sex	
Male	15 (24.2%)
Female	47 (75.8%)
Other	0 (0%)
Race	
White	56 (90.3%)
Asian/Pacific Islander	5 (8.1%)
Black/African American	1 (1.6%)
Hispanic/Latino	0 (0%)
Native American	0 (0%)
Other	0 (0%)
Class year	
Freshman	1 (1.6%)
Sophomore	9 (14.5%)
Junior	15 (24.2%)
Senior	37 59.72%)
Greek Status	
Yes	28 (45.2%)
No	34 (54.8%)

Table 2

Gender Differences: Means and Standard Deviations

	Male		Female	
Variable	*M*	*SD*	*M*	*SD*
Attitude	5.24	1.67	5.24	1.82
Control	4.23	0.80	4.57	0.56
Norm	3.25	22.05	3.25	0.78
AEQ	49.95	22.05	44.55	20.00
Greek	12.85	9.09	13.92	9.57
RAPI	12.85	11.36	10.41	9.57
ACI	1.66	1.21	0.90	1.56

Note: Greek = Greek involvement index, Control = Control index (PBC), Norm = Norm index, AEQ = Alcohol Expectancy Questionnaire III,
RAPI = Rutgers Alcohol Problem Index- 18, ACI = Alcohol Consumption Index.

Table 3

Site Differences: Means and Standard Deviations

	Mturk		Sewanee		USC	
Variable	*M*	*SD*	*M*	*SD*	*M*	*SD*
Attitude	5.07	1.99	5.34	1.56	5.48	1.62
Control	4.34	0.78	4.53	0.49	4.58	0.62
Norm	3.15	0.85	3.30	0.69	3.34	0.81
AEQ	50.84	22.35	43.88	21.42	41.52	14.54
Greek	10.94	9.05	19.83	7.36	9.19	7.02
RAPI	9.53	9.53	6.10	6.10	21.10	21.10
ACI	1.21	1.25	1.31	1.35	1.14	1.21

Note: Greek = Greek involvement index, Control = Control index, Norm = Norm index, AEQ = Alcohol Expectancy Questionnaire III,
RAPI = Rutgers Alcohol Problem Index- 18, ACI = Alcohol Consumption Index.

Table 3.2

Variable Breakdown by Site and Gender

	Mturk				Sewanee				USC			
	Male		Female		Male		Female		Male		Female	
Variable	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Control	4.08	.86	4.55	.65	4.43	.54	4.55	.48	4.46	.83	4.62	.53
Norm	3.06	.83	3.23	.86	3.33	.69	3.29	.70	3.73	.70	3.21	.81
Attitude	5.15	1.86	5.03	2.11	5.21	1.59	5.38	1.56	5.60	.99	5.45	1.78
Greek	11.90	8.75	10.30	7.43	19.44	8.91	19.93	6.97	8.00	5.90	9.57	7.35
AEQ	53.92	23.06	48.48	21.83	43.72	21.67	43.91	21.51	44.73	16.99	40.49	13.71
RAPI	12.71	12.84	7.15	9.32	5.89	5.40	6.16	21.51	21.67	1.88	20.91	1.94
ACI	1.74	1.49	.79	.80	1.97	1.98	1.13	1.08	1.02	.98	.69	.71

Note: Greek = Greek involvement index, Control = Control index (PBC), Norm = Norm index, Attitude = Attitude index, AEQ = Alcohol Expectancy Questionnaire III, RAPI = Rutgers Alcohol Problem Index- 18, ACI = Alcohol Consumption Index.

Table 4

Gender Distribution by Site

Variable	Mturk		Sewanee		USC	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*
N	48	60	18	70	15	47
% Within Sex	59.3	33.9	22.2	39.5	18.5	26.6
% Within location	44.4	55.6	20.5	79.5	24.2	75.8
% of total	18.6	23.3	7	27.1	5.8	18.2

Table 5

Greek Distribution by Site

	Mturk		Sewanee		USC	
Variable	*Non*	*Greek*	*Non*	*Greek*	*Non*	*Greek*
N	66	43	9	79	34	28
% Within sex	60.6	28.7	8.3	89.8	31.2	45.2
% Within location	60.6	39.4	10.2	89.8	54.8	45.2
% of total	25.5	16.6	3.5	30.5	13.1	10.8

Table 6

Summary of Intercorrelations of Variables

	1	2	3	4	5	6	7
1. Greek	---	---	---	---	---	---	---
2. Control	-.033	---	---	---	---	---	---
3. Norm	.17**	.14*	---	---	---	---	---
4. Attitude	.17**	.021	.45**	---	---	---	---
5. AEQ	.17**	-.13*	.27**	.43**	---	---	---
6. RAPI	-.048	-.29**	.02	.09	.25**	---	---
7. ACI	.29**	-.42**	.21**	.43**	.5**	.32**	---

Note: Greek = Greek involvement index, Control = Control index (PBC), Norm = Norm index, AEQ = Alcohol Expectancy Questionnaire III, RAPI = Rutgers Alcohol Problem Index- 18, ACI = Alcohol Consumption Index.
*$p < .05$,**$p < .01$.

Table 7

Summary of Hierarchical Multiple Regressions: Predicting for ACI

	Model 1			Model 2		
Variable	*B*	*SE (B)*	*β*	*B*	*SE B*	*β*
Control	-.79	.09	-.43**	-.47	.16	-.26**
Norm	.11	.08	.07	.12	.14	.07
Attitude	.25	.04	.37	.25	.06	.37
Greek	.03	.007	.20	.13	.05	.97*
GxA				-.001	.005	-.04
GxC				-.02	.01	-.79*
GxN				.002	.01	.04
R^2		.41			.43	
F-value		44.85**			26.64**	

Note: Model 1 pertains to Hypothesis 1 and 2, Model 2 pertains to Hypothesis 3, Control = Control index (PBC), Norm = Norm index, Greek = Greek involvement index, Greek and Attitude interaction (GxA), Greek and Control interaction (GxC), Greek and Norm interaction (GxN).
*$p < .05$, **$p < .01$.

Table 8

Summary of Hypothesis 4: Greek and Control Moderation Analysis

Condition	*B*	*SE (B)*	*t*	*p*	*Lower Bound*	*Upper Bound*
Low	.04	.0094	4.59	.00**	.02	.06
Medium	.03	.0067	4.16	.00**	.14	.04
High	.01	.0086	1.76	.07	-.00	.03

Note: 95% confidence intervals.
*$p < .05$, **$p < .01$.

Table 9

Summary of Hierarchical Multiple Regressions: Predicting for RAPI

	Model 1			Model 2		
Variable	*B*	*SE (B)*	*β*	*B*	*SE (B)*	*β*
Control	-4.76	.93	-.31**	-.23	1.67	-.02
Norm	.46	.87	.04	.78	1.46	.06
Attitude	.58	.39	.10	.30	.64	.05
Greek	-.09	.07	.07	1.35	.55	1.17**
GxA				.01	.05	.07
GxC				-.34	.11	-1.35**
GxN				.00	.10	-.00
R^2		.12			.143	
F-value		7.54**			5.98**	

Note: Model 1 pertains to Hypothesis 1 and 2, Model 2 pertains to Hypothesis 3, Control index (Control/PBC), Norm index (Norm), Attitude index (Attitude), Greek involvement (Greek), Greek and Attitude interaction (GxA), Greek and Control interaction (GxC), Greek and Norm interaction (GxN). *$p < .05$, **$p < .01$.

Table 10

Summary of Exploratory Hierarchal Regression: Interactions and Moderation of Control

	Model 1			Model 2		
Variable	B	SE (B)	β	B	SE (B)	β
Greek	.03	.00	.18**	.02	.00	.15**
Attitude	.26	.03	.38**	.26	.04	.38**
Norm	.124	.08	.08	.14	.08	.09
Control	-.76	.09	-.42**	-.75	.09	-.41**
MturkvSeawnee	-.10	.06	-.08	-.62	.47	-.50
USCvSewanee	-.13	.09	-.08	-1.25	.75	-.79
C1xAttitude				.025	.03	.12
C2xAttitude				-.06	.06	-.22
C1xControl				.06	.09	.23
C2xControl				.39	.14	1.11**
C1xNorm				.03	.08	.09
C2xNorm				-.05	.11	-.09
C1xGreek				-.00	.00	-.03
C2xGreek				-.01	.01	-.14
R^2		.43			31.14	
F-value		.46**			14.93**	

Note: Greek = Greek involvement index, Attitude = Attitude index, Control = Control index (PBC), Norm = Norm index, C1: Mturk compared to Sewanee and USC, C2: USC compared to Sewanee, C1 and Attitude interaction (C1xAttitude), C2 and Attitude interaction (C2xAttitude), C1 and Norm interaction (C1xNorm), C2 and Norm interaction (C1xNorm), C1 and Greek interaction (C1xGreek), C2 and Greek interaction (C2xGreek).
*$p < .05$, **$p < .01$.

Table 11

Summary of Exploratory Regression Analysis: Sewanee and Control

Variable	B	SE (B)	β
Greek	.03	.02	.18*
Attitude	.34	.08	.39**
Norm	.217	.17	.11
Control	-1.07	.21	-.39**
R^2		.46	
F-value		19.77**	

Note: Greek = Greek involvement index, Attitude = Attitude index, Norm = Norm index, Control = Control index (PBC).
*$p < .05$, **$p < .01$.

Table 12

Summary of Exploratory Regression Analysis: USC and Control

Variable	B	SE (B)	β
Greek	.01	.01	.05*
Attitude	.22	.06	.45**
Norm	.13	.12	.13
Control	-.30	.14	-.24**
R^2		.31	
F-value		7.78**	

Note: Greek = Greek involvement index, Attitude = Attitude index, Norm = Norm index, Control = Control index (PBC).
*$p < .05$, **$p < .01$.

Table 13

Summary of Exploratory Regression Analysis: Predicting for Alcohol Expectancies

Variable	B	SE (B)	β
Greek	.01	.13	.01
Attitude	2.55	.75	.22**
Norm	2.31	1.56	.09
Control	.59	.02	.02
ACI	6.80	1.17	.39**
R^2		.31	
F-value		23.12**	

Note: Greek = Greek involvement index, Attitude = Attitude index, Norm = Norm index, Control = Control index (PBC), ACI = Alcohol Consumption Index.
*$p < .05$, **$p < .01$.