SOCIOLOGICAL INQUIRY

*Social Norms and Motivations Associated with College Binge Drinking**

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This study proposes that members of Greek social organizations have higher rates of binge drinking as compared to other college students because of their unique social organization, which supports binge drinking. Using data from the College Alcohol Study, logistic regression analysis results show that Greek members binge drink at higher levels than do other students, which supports previous literature (Cashin, Presley, and Meilman 1998). The results also indicate, however, that social norms and motives for drinking which were thought to be predictive of binge drinking practices for all students are actually better predictors of binge drinking for non-Greek members.

Introduction

On average, about 80 percent of college students report using alcohol each year (Wechsler 1996; Wechsler et al. 1998, 2000). Among those students who drink are groups of students who take the use of alcohol to a higher and more dangerous level. These students are referred to as binge drinkers, and close to half of all college students report binge drinking each year[1] (Wechsler 1996; Wechsler et al. 1998, 2000). Binge drinking is a pattern of alcohol consumption that places the user at risk for negative outcomes like missing class/work, forgetting events while drinking, getting into fights, and unplanned sexual activity (Wechsler 1996; Workman 2001). If continued, this style of drinking can also lead to more deleterious consequences in the future such as alcohol dependency, alcohol overdose, and even death (Wechsler 1996; Workman 2001).

The goal of the present research is to examine the alcohol consumption of college students while focusing on members of Greek organizations. Special attention is given to this group of students because of the fact that fraternity and sorority members represent those college students who are most likely to binge drink. It is hypothesized that Greek students possess social norms and motivations that help them to justify and accept drinking at elevated levels. While previous studies of binge drinking focus on the social norms associated with binge drinking, most do not focus on motives for binge drinking (see, for

Sociological Inquiry, Vol. 82, No. 2, May 2012, 257–281

DOI: 10.1111/j.1475-682X.2011.00400.x

exceptions, Cooper 1994; Cox and Klinger 1988). Therefore, using data gathered by the College Alcohol Study (CAS), I seek to determine the extent to which social norms and drinking motives together account for variable drinking patterns between members of Greek organizations and other students.

Literature Review

Alcohol Use of College Students

The CAS is a national survey that researchers have utilized since 1993 to study the alcohol norms and practices of college students in the United States.[2] Findings from the CAS indicate that binge drinking rates for college students between the years 1993 and 2001 have remained relatively steady at 44 percent (Wechsler et al. 2002). However, rates of frequent binge drinking, students who binge drink more than three times in a 2-week period, have steadily increased from 19.7 percent in 1993 to 22.8 percent in 2001 (Wechsler 1996; Wechsler et al. 2000, 2002). This finding is significant given that frequent binge drinkers are responsible for nearly two-thirds of all the alcohol consumed by college students (Wechsler and Nelson 2001).

Students who are most likely to binge drink while in college are men, whites, students under the age of 24, fraternity/sorority members, athletes, and high school binge drinkers (McCabe et al. 2004; Meilman, Leichliter, and Presley 1999; Wechsler 1996; Wechsler et al. 2000). Students who are members of fraternities and sororities tend to exhibit elevated rates of binge drinking compared with other college students (McCabe et al. 2004; Meilman, Leichliter, and Presley 1999; Wechsler et al. 1998). Nearly two-thirds of all Greek members are binge drinkers, and one-half are frequent binge drinkers (Wechsler et al. 1998).

Students who join fraternities or sororities have the highest rates of drinking, binge drinking, and frequent binge drinking compared with other college students (Wechsler et al. 2000). Greek members drink more drinks on average, drink heavier, and suffer more negative consequences than college students who are not in a fraternity or sorority (Cashin, Presley, and Meilman 1998). In addition, fraternity members have been found to drink at higher rates than sorority members (Harrington, Brigham, and Clayton 1997). Therefore, I hypothesize that Greeks will exhibit higher rates of binge drinking than non-Greek students. When taking into account the fact that 46 percent of post-secondary institutions have Greek systems on their campuses (Cashin, Presley, and Meilman 1998), it is evident that alcohol consumption is a concern and problem for most college campuses, especially those with Greek systems.

Drinking Norms of College Students

Social norms act as a general guideline for behavior and tell us what behavior is appropriate or unacceptable in a given context. An individual's norms are shaped by the actions of others and one's perception of others' behaviors (Prentice and Miller 1993). During the transitional period into college, students often adjust their behaviors to match those of other students in the college environment (Prentice and Miller 1993). If students fail to conform to group norms, they risk rejection and alienation by their peers (Prentice and Miller 1993).

Because norms are based on our perception of others' behaviors and beliefs (and not their actual behaviors and beliefs), students run the risk of misinterpreting group norms. With respect to drinking, normative misperception becomes a problem when students overestimate other students' alcohol consumption rates. If students believe that the majority of other students are drinking at binge drinking levels, they may conform to this elevated drinking behavior to be seen as equal to their peers (Borsari and Carey 2001; Larimer et al. 2004). This faulty reasoning may lead some students to drink at higher rates than the actual rates of other students. Various studies have documented that students' perceptions of their campus' drinking norm are a strong predictor of students' drinking rates, more so than the campuses' actual drinking norm (Perkins, Haines, and Rice 2005; Perkins and Wechsler 1996; Perkins et al. 1999). Therefore, correcting student misperceptions about campus drinking norms could result in students adjusting their drinking behaviors to conform to new, lower drinking norms (Borsari and Carey 2001; Perkins 2002; Prentice and Miller 1993; Rimal and Real 2003).

Some students who tend to misperceive and overestimate social drinking norms include men, students who have drinking companions who also misperceive social drinking norms, and fraternity and sorority members (Borsari and Carey 2001; Nagoshi et al. 1994; Weitzman, Nelson, and Wechsler 2003). These students may be at an increased risk for binge drinking because their drinking behaviors tend to match their elevated perceptions. It is evident that peers have a significant impact on one's norms, shape one's decision to drink alcohol, and impact the amount of alcohol one consumes.

Greek Norms. Elevated assumptions about fraternity and sorority drinking are found to exist among students even prior to entering college and are then found to persist through students' first year of college (Baer 1994; McCabe et al. 2004). Even non-Greeks perceive Greeks to drink at higher levels relative to other students (Cashin, Presley, and Meilman 1998). These

beliefs help to condone Greeks' practices of drinking at higher levels than other college students (Cashin, Presley, and Meilman 1998).

Because Greek organizations view alcohol use as being more normative than other students, they may have an even greater influence on their members' drinking patterns (Borsari and Carey 1999). This occurs through lack of adult supervision (Bachman, O'Malley, and Johnston 1984) increased opportunities for members to drink (Baer 1994), having members who hold more tolerant attitudes toward drinking (Baer, Stacy, and Larimer, 1991; Haworth-Hoeppner et al. 1989; Kilgannon and Erwin 1992; Larimer et al. 2004), and having members who are more likely to conform to group norms (Borsari and Carey 1999).

There is a social drinking scene present in the Greek environment that results in new members observing older members drinking and therefore presents pressure for new members to conform to the group's previously established norms (Arnold and Kuh 1992). The fraternity house is a place that fosters alcohol use by establishing a climate where alcohol use is normative (Bachman, O'Malley, and Johnston 1984; Larimer et al. 2004). There is also the potential for self-selection of already heavy drinkers (high school drinkers) into environments like Greek organizations, which support continued heavy/-binge drinking (Bachman, O'Malley, and Johnston 1984; Goodwin 1992; Hughes and Dodder 1983; Leibsohn 1994; McCabe et al. 2004; Wechsler and McFadden 1979).

Members of Greek organizations are especially susceptible to the risk of alcohol use because of the socialization role of alcohol in the Greek environment (Borsari and Carey 1999). A study by Alva (1998) found that Greek members, compared with other college students, are more likely to believe that alcohol enhances social activities, makes women sexier, and facilitates bonding. Greek members are also more likely to have friends that approve of their heavy drinking (Alva 1998). This suggests that peer group norms affect subsequent drinking behaviors, especially for Greeks.

While much has already been established by previous literature on the social norms related to drinking, less has been said about motivations for drinking, specifically the motivations of Greek students.

Drinking Motives of College Students

Individuals' actions are always preceded by reasons, or motivations, for carrying out such actions (Mills 1940). "Men discern situations with particular vocabularies, and it is in terms of some delimited vocabulary that they anticipate consequences of conduct" (Mills 1940). Additionally, Mills (1940) notes that in stating motivations, people influence present and future behaviors for themselves and others alike, integrate actions, and line-up behaviors with

norms. In other words, motives for carrying out specific actions are linked to carrying out those actions given the "correct" situation and with norms to justify such actions (Mills 1940).

Previous studies in the social learning literature have focused on specific motivations for drinking alcohol like coping, conforming, enhancement, and/or social reasons (Carey and Correia 1997; Cooper 1994; Cooper et al. 1992, 1995; Cox and Klinger 1988; Williams and Clark 1998). Studies have found that these varying motivations for drinking yield distinguishable patterns of drinking, and each may therefore require unique education and programs to lower students' alcohol consumption (Carey and Correia 1997; Cooper 1994; Cooper et al. 1992, 1995; Cox and Klinger 1988; Williams and Clark 1998). Cox and Klinger (1988) proposed that drinking motives could be categorized by their anticipated outcome (positive or negative) and source (internal or external). This led Cooper (1994) to develop four classes of motives: (1) internally generated, positive reinforcement motives (enhancement); (2) externally generated, positive reinforcement motives (social); (3) internally generated, negative reinforcement motives (coping); and (4) externally generated, negative reinforcement motives (conformity).

Enhancement motives describe students who drink alcohol with the intent of promoting a positive mood or well-being (Cooper 1994). Some examples of enhancement motives include: because you like the feeling, because it is exciting, to get high, and because it gives you a pleasant feeling (Cooper 1994). Students who utilize enhancement reasons for drinking alcohol report higher quantities of alcohol consumption than other students, drink frequently, drink with others in social settings, are more likely to binge drink, and typically report the use of enhancers like marijuana or cocaine in combination with alcohol use (Cooper et al. 1995; Williams and Clark 1998). Additionally, Cooper (1994) found that these enhancement motives are indirectly related to drinking problems. Kuntsche et al. (2007) found that enhancement motives were indirectly linked to violent behaviors through the consumption of high levels of alcohol intake.

Students who drink alcohol for social reasons do so with the intention that drinking alcohol will lead to positive rewards (Cooper 1994). Some examples of social drinking motives include: because it helps you enjoy a party, to be sociable, because it improves parties and celebrations, and because it makes social gatherings more fun (Cooper 1994). Students who drink for social reasons are much like enhancement drinkers in that they drink frequently and heavily, drink in social settings, and are more likely to binge drink. Unlike enhancement drinkers, however, they do not associate their drinking with drug use (Cooper 1994; Cooper et al. 1992). In addition, Kuntsche et al. (2007) found an indirect link between social

motives and violent behaviors through heavy alcohol consumption for men only.

Coping motivations describe students who drink alcohol with the intention that it will reduce or regulate negative emotions (Cooper 1994). Some examples of coping motivations include: to forget your worries, because it helps when you feel depressed or nervous, to cheer you up when you are in a bad mood, and because you feel more self-confident and sure of yourself (Cooper 1994). Similar to enhancement and social motives, these students tend to drink heavily and frequently. These students, however, also tend to be depressed, report increased drinking problems, drink alone, associate their alcohol use with the use of downers, and present symptoms predictive of abusive drinking (Cooper 1994; Cooper et al. 1992, 1995; Williams and Clark 1998). Persons who use alcohol as a coping mechanism are the most likely to experience negative outcomes related to their alcohol intake (Cooper 1994). Again, Kuntsche et al. (2007) found an indirect link between coping motives and high alcohol intake, but also found a direct link between drinking for coping reasons and problem-coping deficits in general. Coping motives, therefore, could be related to problems that may or may not be related to heavy alcohol consumption.

A final motive for drinking is conformity (Cooper 1994). Students who drink alcohol as a way of conforming do so to avoid social censure or rejection (Cooper 1994). Some examples of conformity motives include: because your friends pressure you to drink, so that others will not kid you about not drinking, to fit in with a group you like, and so you will not be left out (Cooper 1994). Unlike students who drink using other motives, those who cite conformity motives typically drink lightly and infrequently. Their alcohol consumption, however, is found to be related to alcohol-related problems (Cooper 1994).

A review of these four motives for drinking reveals that each motive is associated with a unique set of drinking behaviors and contexts. Alcohol consumption, frequency of consumption, alcohol-related problems, and drinking context vary from motive to motive. Binge drinkers are distinguished by their heavy drinking, frequent drinking, and problems related to drinking. Based on these criteria, it is likely that those students who use enhancement, social, and coping motives could be at risk for becoming a binge drinker. Therefore, only conformity motives seem not to be related to patterns of binge drinking. It is important, however, to differentiate between drinking motivations because different motivations lead to different patterns and contexts of drinking and would therefore require different educational programs to combat drinking problems.

Greek Motives. It is not only important to acknowledge that different motivations for drinking alcohol will yield different drinking styles, but it is also important to determine whether certain groups of students, like fraternity/sorority members, are more likely to endorse one or multiple motives for drinking alcohol.

It is expected that Greeks and non-Greeks will implore different motives for drinking because of the differential social organization within which each group is located (formal versus informal). A review of the literature related to drinking motives yields only one article that specifically addresses drinking motivations and focuses specifically on members of fraternities (see Workman 2001). This ethnographic study focuses on five recurring "motives" for fraternity drinking through the analysis of drinking stories: adventure, entertainment, physical exploration, sexual trap, and contextual behavior (Workman 2001). In his analysis of these drinking stories, Workman (2001) found that high-risk drinking behavior is constructed as a positive, functional, and necessary activity for fraternity men. This finding, therefore, asserts that the positive reinforcement motives (enhancement and social) are related to binge drinking practices (Workman 2001). Because Greek organizations in general function with the purpose of formal sociability, it is hypothesized that Greeks will drink utilizing mainly social motives. Non-Greeks, on the other hand, are not part of formal social organizations and are therefore more likely to use a diverse range of motives for binge drinking.

The present study looks to determine whether the drinking motives of Greeks are in fact different from other college students to provide a baseline for which alcohol education and prevention programs can be developed to target specific groups of students.

Methodology

Study Design and Sample

The present study uses data from the 2001 Harvard School of Public Health CAS, the most current wave of data available to the public (Wechsler 2005).[3] This survey was first administered in 1993 to over 14,000 college students at 120 4-year colleges in 40 states. Follow-up surveys using the same sample of schools were completed in 1997, 1999, and 2001. The CAS represents a random sample of college and university students in the United States including students from public and private schools, all female schools, historically African American schools, large/medium/small schools, and schools located in urban/suburban/rural locations. The total sample size for the 2001 CAS is 10,904.

The list of colleges and universities who participated in the original wave of the survey was obtained from the American Council on Education, to ensure that the participating colleges and universities were representative of 4-year accredited colleges and universities in the United States. The original survey was administered at 140 schools. Administrators at each school were asked to provide a random list of 215 full-time students and then researchers mailed surveys to this group of students. The attrition rate from 1993 to 2001 consisted of 20 schools. The 2001 CAS consisted of 119 schools across the United States representing 38 states and the District of Columbia (Wechsler et al. 2002). For the 2001 wave, 113 schools that had been surveyed in the previous waves of the study were included, and six schools that had been dropped from previous analysis were reintroduced.

The CAS examines the substance use, primarily alcohol use, of college students while also surveying students' involvement in organizations such as athletics or fraternities and sororities, students' drinking behaviors during high school and college, students' motives for drinking alcohol, and students' perceived norms about alcohol use. This makes the CAS a suitable data set for the present study.

Measures

In this study, alcohol use is operationalized as binge drinking and is measured as a dichotomous variable (no = 0, yes = 1 for all dichotomous variables). The survey instructs students to define one drink as a 12-oz bottle or can of beer, a 12-oz bottle or can of wine cooler, a 4-oz glass of wine, or a 1.25-oz shot of liquor either straight or in a mixed drink (Wechsler et al. 2002). Binge drinking is defined differently for men and women in the CAS. The gender-specific model of the CAS defines binge drinking as the consumption of at least five drinks at a sitting for men or four drinks at a sitting for women.[4] To create the binge drinking variable, students are asked about their drinking behaviors (number of drinks at each sitting/occasion and number of drinking occasions) for the 2 weeks prior to the completion of the survey (Wechsler et al. 2002).[5]

Social Norms. Social norm measures are important because they help to determine students' perceptions about alcohol use and help to determine why certain norms may lead to binge drinking. The following questions and responses are used to measure the social norms of the student responders. To measure approval of binge drinking behavior, students are asked, "To what extent do students at your school approve of having six drinks at a party?" (0 = do not approve, 1 = approve). The norms of peers have been shown to impact students' own norms and to help determine the extent of this integration,

the questions related to this are: "How many close friends do you have?" (0 = none to 5 = five or more) and "How many hours per day on average have you spent socializing with friends in the past thirty days?" (0 = zero hours to 5 = five or more hours). Next, the college lifestyle of the respondent is measured through the question, "How important is it for you to participate in parties at college?" (1 = not at all important to 4 = very important). Previous studies have found that parental drinking patterns and opinions about what the legal drinking age should be are predictors of students' alcohol use (Arata, Stafford, and Tims 2003; Weitzman, Nelson, and Wechsler 2003). Therefore, the following questions are included: "Describe your father/mother's use of alcohol during most of the time that you were growing up[6] (0 = abstainer, 1 = drinker) and "What should be the legal minimum drinking age?" (1 = 21 years old and over, 2 = 20 years old, 3 = 19 years old, 4 = 18 years old, and 5 = under 18 years old).

Motives. The following survey question is used to determine students' motives for drinking alcohol: "How important is each of the following reasons for you to drink alcohol...". To keep my model parsimonious and in line with previous research on drinking motives, the responses to this question are broken up into the four motive categories previously mentioned: enhancement (to help get work done); social (to get drunk, to have a good time with friends, to celebrate, because it is cheap); coping (to get away from problems and troubles, to relax or relieve tension); and conformity (to fit in with friends, to feel more comfortable when with the opposite sex, everyone else is drinking). The response set for these variables is (1) not at all important, (2) somewhat important, (3) important, and (4) very important.

Controls. For the purposes of this study, standard demographic variables that have previously been used to predict alcohol use are used as control variables (Wechsler et al. 1995a). The controls consist of the following dichotomous variables: Greek membership (no = 0, yes = 1); gender (female = 0, male = 1); race (all other races = 0, white = 1); Hispanic ethnicity (no = 0, yes = 1); age (24 or older = 0, <24 = 1,); marital status (all other statuses = 0, never married = 1); living arrangement (all other living arrangements = 0, off campus = 1); athlete (no = 0, yes = 1); Grade Point Average (GPA) (lower than B+ = 0, B+ or better = 1); and high school binge drinking (no = 0, yes = 1).[7]

Analytic Strategy

Analysis of the data began with obtaining the descriptive statistics of all variables included in the data analysis. Next, chi-square was used to examine

the relationship between Greek membership and binge drinking. Finally, a series of logistic regression models were used to examine the relationship between binge drinking, Greek affiliation, social norms, motives for drinking, and control variables. The entire file was split by Greek members and non-Greek members, and all regression models were run again using the split file. This allowed for the comparison of Greeks and non-Greeks at every level of the regression process. I hypothesized that the motive and social norm variables together would mediate the relationship between Greek affiliation and binge drinking and would also show which norms and motives are better predictors of binge drinking.[8]

Findings

The range, mean, and standard deviation for each of the variables are provided in Table 1. The descriptive statistics for the total sample (n = 10,904) indicate that 43 percent of the sample reported binge drinking in the previous 2 weeks, 12 percent of the sample reported affiliation with a Greek organization (n = 1339), 36 percent were male, 74 percent were white, 87 percent were younger than 24, 57 percent lived off campus, 57 percent had a GPA of a B+ or better, and 25 percent reported binge drinking in high school.

A chi-square analysis was used to examine the relationship between the variables, Greek affiliation, and binge drinking.[9] In the total sample, 43.3 percent of respondents reported binge drinking in the 2 weeks prior to completing the survey. Specifically, results showed that 40.5 percent of non-Greeks self-reported binge drinking and 62.9 percent of Greeks self-reported binge drinking. This finding highlights and confirms my hypothesis that Greeks binge drink at higher rates than other college students.

Analysis for the full logistic regression model is presented in Table 2 (total sample) and Table 3 (Greeks and non-Greeks separately). In the full model for the total sample (Table 2), the variable Greek affiliation was significant. Therefore, the hypothesis that Greek members binge drink more than non-Greek members is again supported. The variables "Greek affiliation", "white", "Hispanic", "student younger than 24", "student living off campus", "athlete", "student with a GPA below a B+", and "high school binge drinker" were significant predictors of binge drinking behaviors. This finding is in line with previous research that found that Greek members, whites, students younger than 24, athletes, and high school binge drinkers are most likely to binge drink (Meilman, Leichliter, and Presley 1999; Wechsler 1996; Wechsler et al. 2000). The only two control variables not found to be predictive of binge drinking in this model were "male" and "never married".

Additionally, all of the social norm variables were found to be significant predictors of binge drinking with the exception of the variable "parents drink".

Table 1
Descriptive Statistics—Range, Mean, and Standard Deviation

	Total sample	Non-Greeks	Greeks
Controls			
Binge drinking (0, 1)[a]	.43 (.50)	.41 (.49)[b]	.63 (.48)[b]
Greek affiliation (0, 1)	.12 (.33)		
Male (0, 1)	.36 (.48)	.36 (.48)	.36 (.48)
White (0, 1)	.74 (.44)	.73 (.44)	.83 (.38)
Hispanic (0, 1)	.08 (.27)	.08 (.27)	.06 (.23)
Age (0, 1)	.87 (.34)	.86 (.35)	.92 (.26)
Never married (0, 1)	.91 (.28)	.91 (.29)	.95 (.21)
Live off campus (0, 1)	.58 (.49)	.59 (.49)	.48 (.50)
Athlete (0, 1)	.14 (.35)	.14 (.34)	.17 (.38)
GPA (0, 1)	.57 (.49)	.57 (.50)	.58 (.49)
High school binge (0, 1)	.25 (.44)	.24 (.43)	.33 (.47)
Social norms			
Students approve of six drinks (0, 1)	.73 (.44)	.72 (.45)	.83 (.38)
Number of close friends (0, 5)	3.66 (1.55)	3.59 (1.56)	4.22 (1.26)
Time socializing with friends (0–5)	2.67 (1.51)	2.62 (1.51)	3.03 (1.45)
Parties importance (1–4)	2.07 (.90)	2.02 (.88)	2.45 (.92)
Parents drink (0, 1)	.60 (.49)	.60 (.49)	.67 (.47)
Legal drinking age (1–5)	2.43 (1.43)	2.41 (1.43)	2.64 (1.38)
Motives			
Enhancement			
Help get work done (1–4)	1.07 (.32)	1.07 (.32)	1.06 (.32)
Social			
To get drunk (1–4)	1.72 (.91)	1.69 (.90)	1.92 (.97)

(*Continued*)

Table 1
(*Continued*)

	Total sample	Non-Greeks	Greeks
Good time with friends (1–4)	2.56 (1.01)	2.54 (1.02)	2.75 (.98)
To celebrate (1–4)	2.49 (.89)	2.46 (.90)	2.67 (.85)
Because it is cheap (1–4)	1.24 (.59)	1.23 (.58)	1.31 (.67)
Coping			
Get away from troubles (1–4)	1.42 (.71)	1.41 (.72)	1.43 (.70)
Relax/relieve tension (1–4)	2.14 (.88)	2.13 (.89)	2.20 (.84)
Conformity			
Fit in with friends (1–4)	1.27 (.58)	1.26 (.57)	1.32 (.63)
Comfortable with opposite sex (1–4)	1.41 (.73)	1.39 (.71)	1.54 (.82)
Everyone else is drinking (1–4)	1.43 (.68)	1.41 (.67)	1.54 (.75)

[a]Range
[b]Standard deviation

This is not a surprising finding for college students because of the fact that their peer-related norms are more influential at this point in their lives than the norms of their parents. The strongest social norm predictor of binge drinking was the variable "party importance". Based on the odds ratio, findings suggest that the odds of binge drinking for those students who think parties are important are 72 percent higher than the odds for those who do not think parties are important. This finding is congruent with previous research that suggests that those students who have many close friends, spend time socializing, and think parties are important are more likely to be binge drinkers, as these students are at the greatest risk of misperceiving and overestimating drinking norms.

The following motive variables were found to be significant predictors of binge drinking: "to relax/relieve tension" (coping); "to get drunk", "to have a good time", "to celebrate"; "because it's cheap" (social); and "to feel comfortable with the opposite sex" (conformity). The strongest predictor of binge drinking for the motive variables was the social motive "to get drunk". Only the variables "to help get work done" (enhancement), "get away from troubles" (coping), and "everyone else is" (conformity) were not significant predictors of binge drinking in this model. The odds of binge drinking for those students who drink to get drunk are 56 percent higher than the odds for those who do not employ the drinking motive "to get drunk".

Table 2
Full Logistic Regression Model for Total Sample[a] (Greeks and non-Greeks)

	β	SE	Odds ratio
Greek affiliation	.47***	(.09)	[1.59]
Controls			
Male	−.08	(.06)	[.92]
White	.74***	(.09)	[2.10]
Hispanic	.28*	(.13)	[1.32]
Age	−.40***	(.10)	[.67]
Never married	.26	(.13)	[1.30]
Live off campus	.18**	(.06)	[1.20]
Athlete	.18*	(.08)	[1.20]
GPA	−.14*	(.06)	[.87]
High school binge drinker	.94***	(.07)	[2.55]
Social norms			
Approve of six drinks	.27***	(.07)	[1.31]
Number of close friends	.11***	(.02)	[1.11]
Time socializing	.10***	(.02)	[1.11]
Parties important	.54***	(.04)	[1.72]
Parents drink	.01	(.06)	[1.01]
Legal drinking age	.08***	(.02)	[1.08]
Motives			
Enhancement			
Help get work done	.14	(.11)	[1.15]
Social			
To get drunk	.45***	(.04)	[1.56]
Have good time	.26***	(.04)	[1.30]
To celebrate	.32***	(.04)	[1.37]
Because it is cheap	.44***	(.06)	[1.55]
Coping			
Get away from troubles	.03	(.05)	[1.03]
Relax/relieve tension	.11*	(.04)	[1.12]
Conformity			
Fit in with friends	−.31***	(.07)	[.74]

(*Continued*)

Table 2
(*Continued*)

	β	SE	Odds ratio
Greek affiliation	.47***	(.09)	[1.59]
Comfort with opposite sex	.15**	(.05)	[1.16]
Everyone else is	.02	(.06)	[1.02]
Chi-square	3046.958		
−2 log likelihood	7623.164		
Nagelkerke *R* square	.436		

[a]Sample size is 10,904.
*$p < .05$; **$p < .01$; ***$p < .001$.

With regard to the motive variables, findings are mixed when comparing results to previous literature. The social motives for drinking were all significant predictors of binge drinking, as expected. The enhancement motive "to help get work done" and the coping variable "get away from troubles" were not significant predictors of binge drinking while the conformity motives "fit in with friends" and "comfortable with the opposite sex" *were* significant predictors of binge drinking, which runs counter to previous literature (Cooper 1994; Cooper et al. 1992). It is possible that college students may represent a unique subset of the population that utilizes different motives for binge drinking than the population at large. Enhancement and coping motives may be better predictors of binge drinking for older, non-college persons, while social and conformity motives may be better predictors for younger persons who attend college. Students have less to "cope" with, like financial obligations, family problems, kids, sick older parents, etc. while adults are less likely to need to "conform" to feel good about themselves and are basically less likely to fall prey to peer pressure. It would be advantageous to include additional enhancement and coping motives in future waves of this study to determine whether this finding can be further substantiated. Future research should spend more time looking into the social and conformity motives for young people and the coping and enhancement motives for older people.

Table 3 includes the regression analysis for Greeks and non-Greeks separately. Looking at the Greek model first, only the control variables white, GPA, and high school binge drinker were significantly related to binge

Table 3
Full Logistic Regression Model for Greeks and non-Greeks[a] Separately

	Greek members			Non-Greek			
	β	SE	OR	β	SE	OR	*z*
Controls							
Male	.31	(.19)	[1.36]	−.14**	(.07)	[.87]	−2.22***
White	.55**	(.27)	[1.73]	.77†	(.09)	[2.15]	.77
Hispanic	.34	(.43)	[1.40]	.27**	(.14)	[1.31]	−.15
Age	−.11	(.35)	[.90]	−.43†	(.11)	[.65]	−.87
Never married	−.10	(.45)	[.91]	.29**	(.14)	[1.34]	.83
Live off campus	−.14	(.17)	[.87]	.24†	(.07)	[1.27]	2.07**
Athlete	.33	(.23)	[1.40]	.15	(.09)	[1.17]	
GPA	−.34**	(.17)	[.71]	−.10	(.06)	[.90]	1.33*
High school binge drinker	.99†	(.19)	[2.69]	.92†	(.07)	[2.52]	−.35
Social norms							
Approve of six drinks	−.06	(.22)	[.94]	.31†	(.08)	[1.37]	1.58*
Number of close friends	.10	(.07)	[1.11]	.10†	(.02)	[1.11]	.00
Time socializing	.07	(.06)	[1.07]	.11†	(.02)	[1.12]	.63
Parties important	.60†	(.12)	[1.81]	.54†	(.04)	[1.72]	−.47
Parents drink	.01	(.18)	[1.01]	.01	(.06)	[1.01]	
Legal drinking age	−.01	(.06)	[.99]	.09†	(.02)	[1.09]	1.58*
Motives							
Enhancement							
Help get work done	−.10	(.28)	[.91]	.17	(.12)	[1.19]	
Social							
To get drunk	.42***	(.13)	[1.52]	.46†	(.05)	[1.58]	.29
Have good time	.26**	(.11)	[1.29]	.26†	(.04)	[1.30]	.00
To celebrate	.38***	(.13)	[1.46]	.31†	(.05)	[1.36]	−.50
Because it is cheap	.18	(.16)	[1.19]	.49†	(.07)	[1.62]	1.78**
Coping							
Get away from troubles	−.22	(.15)	[.80]	.05	(.05)	[1.05]	
Relax/relieve tension	.21	(.13)	[1.24]	.10**	(.05)	[1.10]	−.79
Conformity							
Fit in with friends	−.60***	(.18)	[.55]	−.27†	(.07)	[.77]	1.71

(*Continued*)

Table 3
(*Continued*)

	Greek members			Non-Greek			
	β	SE	OR	β	SE	OR	*z*
Comfort with opposite sex	.16	(.13)	[1.17]	.15***	(.06)	[1.17]	−.07
Everyone else is	.01	(.17)	[1.01]	.01	(.06)	[1.01]	
Chi-square		340.666			2597.932		
−2 log likelihood		970.234			6620.189		
Nagelkerke *R* square		.388			.431		

[a]Greek sample size is 1,339; non-Greek sample size is 9,450.
*$p < .10$; **$p < .05$; ***$p < .01$; †$p < .001$.

drinking. The control variable "high school binge drinker" was the best predictor of binge drinking in this Greek-only model. The odds of binge drinking for those Greek students who were also high school binge drinkers are 169 percent higher than the odds for those Greek students who were not high school binge drinkers. Although men are more likely to binge drink, in the Greek model the fact that "male" is not significant tells us that Greek women are just as likely to binge drink as Greek men, a finding supported by previous literature. The fact that "age" and "athlete" are not significant in this model is counter to my hypothesis and previous research findings. It is possible that age is not significant in this model because Greeks may continue their binge drinking practices throughout their time in college, regardless of their age. Those who remain in college past 24 years old may also be those most likely to practice binge drinking and that may be one reason they are still in college. With regard to the variable "athlete", previous research states that athletes who are also Greek members engage in the highest rate of binge drinking of either group alone (Meilman, Leichliter, and Presley 1999). In this model, the variable athlete may not be significant because of the low number of athletes who are also Greek members.

In the Greek model, the only significant social norm variable was the variable "parties important". Based on the odds ratio, the odds of binge drinking for those Greek students who think parties are important is 81 percent higher than the odds for those who do not think parties are important.

The fact that the remaining social norm variables were not significant in this model is counter to my hypothesis and previous literature. This may suggest that additional normative variables are necessary such as number of friends over the age of 21 (legal drinking age) or number of parties you attend in a 2-week period to capture the effects of other social norms on Greek binge drinking.

The social motive variables "to get drunk", "to have a good time", and "to celebrate" were significant and in the expected direction. This finding is in line with my hypothesis that social motives are positively related to binge drinking practices of Greeks. The variable "to get drunk" was found to be the best predictor of binge drinking. Based on the odds ratio, the odds of binge drinking for those students who cite "to get drunk" as their motive for binge drinking is 52 percent higher than the odds for those students who do not drink "to get drunk". Table 3 also includes the regression analysis for all non-Greek college students. The significance of control variables in this model is quite different than the Greek model. In this model, the variables male,[10] white, Hispanic, age, never married, live off campus, and high school binge drinker were significant predictors of binge drinking. The variable "high school binge drinker" was the best predictor of binge drinking. The odds of binge drinking for those non-Greek students who were also high school binge drinkers are 152 percent higher than the odds for those non-Greek students who were not high school binge drinkers. This is somewhat lower than the odds for Greeks who were also high school binge drinkers (169%).

The social norm variables "students approve of six drinks", "number of close friends", "time socializing with friends", "parties important", and "legal drinking age" were significantly related to binge drinking. As in the previous models, the social norm variable "parties important" was the best predictor of binge drinking. Based on the odds ratio, the odds of binge drinking for those Greek students who think parties are important is 72 percent higher than the odds for those who do not think parties are important. Again, this is somewhat lower than the odds for Greeks who think parties are important (81%). In opposition to the Greek model, most of the social norm variables seem to be adequate predictors of binge drinking for the non-Greek students.

The following motive variables were found to be significant predictors of binge drinking for non-Greeks: "to relax/relieve tension" (coping); "to get drunk", "to have a good time", "to celebrate", "because it's cheap" (social); and "to feel comfortable with the opposite sex" (conformity). While the social motive variable "to get drunk" was the best predictor of binge drinking in the Greek model, the motive variable "because it is cheap" was the best predictor

of binge drinking in this model. Again, in opposition to the Greek model, the motive variables seem to be adequate predictors of binge drinking for the non-Greek students. Based on the qualitative research conducted by Workman (2001) that focuses specifically on Greek motives for binge drinking, additional motive variables should be included in the analysis, such as motives that pertain to adventure, entertainment, and sexual traps, to more accurately capture the full spectrum of motives utilized by all college students, but specifically Greek students.

To compare the Greek and non-Greek samples, a hypothesis test for the difference between two regression coefficients with differing sample sizes is used (Paternoster et al. 1998). Paternoster et al. (1998) stipulate that the correct formula for this type of statistical test is as follows:

$$Z = \frac{b_1 - b_2}{\sqrt{\mathrm{SE}b_1^2 + \mathrm{SE}b_2^2}} \ .$$

With regard to the reporting of z-scores, for those variables whose coefficients were not significant in the Greek and non-Greek models, the z-scores are not reported because it has been determined that those coefficients are not significantly different from "0" and have equally insignificant effects on the binge drinking practices of Greeks and non-Greeks alike. For those variables whose coefficients were significant in either or both of the models, a z-test is used to determine whether the effect of the variable on binge drinking is similar for Greeks and non-Greeks (z-score is significant) or not (z-score is not significant).

Significant differences between the two samples were found for the social norm variables "approve of six drinks" and "legal drinking age", and for the social motive variable "because it's cheap". These variables are found to be significant predictors of binge drinking for non-Greeks only. It can be inferred that Greeks and non-Greeks have some differing normative and motivational predictors related to binge drinking. Most of the independent variables, however, are measuring similar effects for Greeks and non-Greeks. Because of the fact that a majority of the significant independent variables are found in the non-Greek model, future analysis is needed to ascertain additional social norm and motive variables that will adequately predict the binge drinking practices of Greek students.

Discussion and Conclusion

The present research clearly demonstrates that Greek members are at a greater risk for binge drinking than non-Greek students. A closer look at Table 3, however, reveals that Greeks and non-Greeks have varying social

norm and motive variables related to their binge drinking practices, which demonstrates that these two groups of students have different norms and motivations for binge drinking. The CAS measures used in this study are better predictors of the binge drinking norms and motives for non-Greek students than they are for Greek students. While the majority of social norm and motive variables are significant predictors for the total sample (Table 2), once the sample is separated into non-Greek and Greek students the distinction between the two groups becomes apparent. With the social norm variables, for example, the variables "approve of six drinks", "number of close friends", "time socializing", "parties important", and "legal drinking age" are all highly significant predictors of binge drinking practices for non-Greek students while only the variable "parties important" is a significant predictor of binge drinking practices for Greek students. The differences between the non-Greek and Greek groups suggest that there are additional binge drinking norms and motives for Greek students which the CAS may not measure. The current study, therefore, cannot fully or certainly explain the difference in findings for Greek and non-Greek students but rather simply report that there are varying findings and hypothesize as to the reasons for such differentiation.

One explanation for the difference in norms associated with binge drinking practices could be due to the fact that fraternity and sorority members tend to accurately compare their level of alcohol consumption with normative levels and correctly identify themselves as binge drinkers 70 percent of the time (Carter and Kahnweiler 2000). If Greeks are aware of campus drinking norms and of their own binge drinking practices compared with non-Greek students, it stands to reason that their norms and motives for binge drinking would also differ from non-Greek students. Additional data and measures, possibly with a different data set, would be necessary to better definitively explain the difference in findings for Greek and non-Greek students.

Although the present study's findings are preliminary in explaining the binge drinking norms and motives of college students, the findings can be used as a basis to create unique education and prevention programs for college students. Some past research has found that education aimed at correcting norm misperceptions could help to reduce overall drinking rates on college campuses (Barnett et al. 1996). As previously stated, however, this type of program may only be beneficial to non-Greek students because of the fact that Greeks tend to correctly perceive normative drinking levels. Harrington, Brigham, and Clayton (1999) suggest that programs for Greek students should demonstrate how their elevated drinking levels and drinking norms jeopardize the goals of their organization, and they must therefore adopt new conservative, low-risk drinking norms.

Research has also been conducted with regard to changing motives for drinking. Because of the varying motivations for drinking found in this study for Greek and non-Greek students, a process similar to Cox and Klinger's motivational counseling program could be beneficial to both groups of students. It first identifies the respondent's drinking motivation(s) and then diverts the person's alcohol motivation to a non-chemical coping item, which produces positive effects for the subject (Cox and Klinger 1988).

What has not been a focus up to this point, however, are programs that target students' social norms *and* motives for drinking alcohol. In light of the findings reported in the previous sections, it stands to reason that a combination of motivation counseling and non-traditional social norm education (see Moscato et al. 2001) may yield better results at lowering alcohol consumption levels than either approach could alone for both Greek and non-Greek students.

Unfortunately, one limitation of the present study is the limited information provided about the Greek organizations students belong to like the size of their fraternity/sorority, the number of new members accepted each year, the average age of new members, the actual Greek organization that the respondent is a part of, and who Greeks spend the majority of their time with. For future research on this topic, it would be important to know the structural characteristics of the Greek environment to determine whether a different friendship network exists for Greeks and non-Greeks. If Greek members spend the majority of their time with each other in a dense friendship network, then it could be that the actual friendship network is a variable that is predictive of binge drinking as well. It is also possible that the size of the organization and the number of new members accepted each year could affect binge drinking behaviors as well. In addition, it could be the case that only certain Greek organizations on university campuses are responsible for excessive drinking.

A second limitation of this study is the inability to accurately measure respondents' perceptions about close friends' drinking norms and the inability to directly measure peer alcohol use and binge drinking. It is likely that if friends, especially close friends, view binge drinking as a normative behavior, then the respondent will as well.

Finally, the dependent variable, binge drinking, is operationalized in a manner that labels the respondent as a binge drinker or not a binge drinker based on their drinking within an un-established time period. The CAS does not clearly define what constitutes a sitting and therefore some students may consider a sitting a few hours and others may consider a sitting an entire day, such as when tailgating or attending other all-day activities. In reality, there are varying degrees of alcohol use and binge drinking which are unable to be accounted for in this study. Because the CAS has not been

administered since 2001, a new survey using similar techniques and sampling strategies that would include some or all of the additional information mentioned above would be a beneficial addition to the drinking and binge drinking literature.

Future research comparing Greek and non-Greek drinking practices should focus on the friendship networks and social structures of Greek organizations to determine the extent to which Greeks have unique peer and friendship networks that foster different norms and motivations for drinking relative to other, non-Greek students. This could help to identify additional social norm and motive variables associated with Greek students' binge drinking practices. Haynie (2001) conducted research similar to this to determine whether the structure of peer networks facilitated delinquent behavior among members. What is unique about her research is that she is able to evaluate the respondents' as well as the respondent's peers with regard to their delinquent behaviors. She found that respondents engaged in delinquent behaviors not only because of their friends' influences but also because of the respondent's location (centrality and population) within the friendship network and the density of the network. It follows that Greek members could be part of a friendship network that has different structural characteristics than non-Greek friendship networks, which may relate to some of the differences in social norm and motive predictors of binge drinking between these two groups of students. Some students, such as Greeks, associate with others who can facilitate and offer opportunities for binge drinking behaviors.

Future research into the structural characteristics of college students', especially Greek members', friendship networks may help to better explain differences in binge drinking practices as well as help to develop more suitable educational programs to combat binge drinking on college campuses. This can be carried out by moving past the CAS data and acquiring measures that look at the structure of the respondent's peer network as well as the specific characteristics of the Greek organizations that are being studied.

ENDNOTES

*The author thanks Jason A. Ford, Matthew R. Lee, Troy C. Blanchard, Julia D'Antonio-Del Rio, and Jessica M. Doucet for helpful comments on prior drafts of this manuscript. Please direct correspondence to: Chantel D. Chauvin, Department of Sociology, Louisiana State University, 126 Stubbs Hall, Baton Rouge, LA 70803, USA; tel.: 225-578-5037; fax: 225-578-5102; e-mail: cdufre3@tigers.lsu.edu.

[1]The definition of binge drinking has been set at five or more drinks for men and four or more drinks for women in one sitting (Wechsler and Nelson 2001; Wechsler et al. 2000).

[2]Researchers tend to focus on college students because previous research has found that college students, compared with other persons the same age who do not attend college, have an increased chance of experiencing alcohol-related problems (Johnson et al. 2005).

[3]The 2001 wave of the CAS resulted in a 52 percent response rate; correlation analysis was conducted to determine whether non-responders had introduced a bias in the responses. Findings indicated that response rates of individual colleges were not associated with binge drinking rates and no significant difference in the binge drinking rates of students who responded after the first mailing and those who responded after the second or third mailing were found (Wechsler et al. 2002).

[4]The term "sitting" is not defined in the CAS survey.

[5]The definition of binge drinking has been set at five drinks for men because of studies that found that men who drank at or above this level were significantly more likely to experience alcohol-related problems and experience more negative outcomes than male students who drank at lower levels (Wechsler and Nelson 2001; Wechsler et al. 2000). A study by Wechsler et al. (1995b) found that women who drink four alcoholic drinks at a sitting experienced similar alcohol-related problems as the men who consumed five drinks at a sitting.

[6]The question that asked about mother's and father's drinking practices is asked separately in the CAS, but has been recoded into one variable to represent both parent's drinking practices.

[7]The variable high school binge drinker is created from questions within the survey that ask students to self-report their drinking practices in high school.

[8]The models containing only the norm variables and only the motive variables are not depicted in the tables. Only the full models containing all variables are reported in Tables 2 and 3.

[9]Chi-square results are not presented in tabular format but are available upon request.

[10]It should be noted that the coefficient for this variable is negative in the model. Therefore, it should be interpreted that being female is a significant predictor of binge drinking in this model.

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