

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

AN INVESTIGATION OF FRESHMEN DRINKING HABITS

17.871 POLITICAL SCIENCE LABORATORY

GROUP PROJECT

BY

[NAMES REMOVED TO PROTECT THE INNOCENT]

CAMBRIDGE, MASSACHUSETTS

[IN THE PAST]

## INTRODUCTION

College drinking is a major concern to many universities, federal authorities, and parents throughout the United States. Public and private institutions must cope with high insurance rates and numerous lawsuits as a result of problems with underage drinking, especially that done by college freshmen. An important question thus arises: when freshman live on campus, do they drink less than when they live off campus?

Schools such as MIT have made the assumption that freshmen who live on-campus will have limited exposure to alcohol relative to those who live off-campus, and many colleges and universities have committed to policies specifying that freshmen must live on campus. However, empirical work has yet to demonstrate that freshmen actually drink less when they are forced to live on campus. Therefore, research correlating the effects of on- or off-campus housing with the drinking habits of freshmen seems justified to shed light on whether a policy of mandatory on-campus housing for freshmen is likely to be efficacious.

Though the effects of freshmen residence on drinking habits have not been examined directly, there is a literature documenting various aspects of college drinking. Henry Wechsler, a researcher at the Harvard School of Public Health, has conducted a series of studies on college drinking. Wechsler's first College Alcohol Study (CAS) was published in 1993 and prompted a dramatic change in the way in which the public viewed college drinking. The study brought the issue of heavy episodic alcohol use, or binge drinking, to the forefront of the public consciousness. In fact, the CAS prompted the Centers for Disease Control and Prevention and the US Surgeon General to declare alcohol abuse the number one public health issue affecting students in the 1990s (U.S. Department of

Health and Human Services, 2004). The Surgeon General even set a national goal of reducing the rate of college binge drinking by 50% by the year 2010 (U.S. Department of Health and Human Services, 2000). Furthermore, the problem of binge drinking gathered international attention when the World Health Organization convened a special conference on Young People and Alcohol in Stockholm in 2001.

Finally, Wechsler's studies have caused many school administrations to initiate or increase problem drinking prevention efforts. However, the effect of these preventive initiatives seems to have been minimal. Wechsler found that the percentage of students consuming 5 drinks or more in a row in the last two weeks changed insignificantly from 40.2% in 1993, to 40.0% in 1999. Additionally, in the 1999 CAS, he noted that under the existing patterns 31.6% of college students' reported drinking behavior qualified them for a formal diagnosis of alcohol abuse (Wechsler et al., 1998).

With these statistics in mind, in this paper we investigate the effect place of residence has on freshmen drinking, and we compare the effect of place of residence with the effects of living in alcohol-free housing and membership in a Greek organization. We first explain our methodology. We subsequently present and discuss the results obtained from the application of our methodology to data from Wechsler's studies. Finally, we address the implications our findings have on university policies and conclude by defining their relevance in the larger picture of alcohol usage on college campuses.

## METHODS

To answer the posed question, we examined data from the Harvard School of Public Health College Alcohol studies from 1993, 1997, and 1999 (Inter-university

Consortium of Political Science (ICPSR) datasets 6577, 3163, and 3818, respectively). The data were drawn from simple-random sample studies of undergraduate students at 140 four-year United States colleges and universities.

From the codebooks for the ICPSR data we selected variables relevant to answering the question and evaluating rival explanations. Using our chosen variables, we created a STATA dataset aggregating the data from 1993, 1997, and 1999. We created a dummy variable to code for the year each observation came from.

We dropped the observations of seniors, juniors, and sophomores from our dataset. To generate dummy variables “on” and “off” for freshmen place of residence, we coded place of residence responses in the following manner: those in university halls, dorms or other university housing were coded “on.” Those in fraternity or sorority houses, co-ops or university affiliated housing, and off campus were coded “off.” This coding decision is potentially problematic, as we do not know how many fraternity and sorority houses are physically located on college campuses or considered by colleges to be on-campus housing.

To estimate the total alcohol consumed, we multiplied respondents’ number of drinking occasions in the past 30 days with the number of drinks consumed at each occasion. Recoding of the variable for number of drinking occasions in the past 30 days was necessary because the possible responses to the question were ranges of 0, 1-2, 3-5, 6-9, 10-19, 20-39, and 40 or more occasions. We chose the midpoints of the ranges as the estimated number of occasions for each range; for example, 1-2 became 1.5, 3-5 became 4, and so on. The “40 or more occasions” response presented a challenge to our recoding efforts because it had no midpoint. We selected 50 occasions to represent this

range. Similarly, because the drinks per occasion responses were 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 or more, we recoded 9 or more as “13.” This may seem an indiscriminate technique, but we reasoned in choosing it that responses of 40 or more occasions and 9 or more drinks per occasion would be outliers in the dataset. Another way to have approached the problem would be to recode the occasion and drink responses into qualitative categorical variables of light, moderate, and heavy drinking. However, we desired a more quantitative and less qualitative estimation of drinking for our analysis purposes.

We defined drinking “more” to be drinking a percentage of the total alcohol consumed greater than the population percentage of the group doing the drinking. To illustrate this point, if the on-campus students represented 60% of those surveyed but drank 85% of the total alcohol consumed, the on-campus students would thus drink more than those on campus. A problem with our approach is that it disregards the differential effects of alcohol on the different sexes, body sizes, and tolerance levels of individual students. We neglected these indicators of drunkenness in favor of a more quantitative estimation of the total alcohol consumed by college students because the question specifically asked if freshmen drink less when they live on campus, not if they are less drunk.

We checked the potential rival explanations of Greek membership and alcohol-free housing using the same method we used to evaluate whether freshmen who live on campus drink less than when they live off. For example, we compared the percentage of Greek members to the percentage of total alcohol consumed by those Greek members. We also planned to correlate high school drinks per month with college drinking behavior,

but were unable to do so because of an overabundance of missing values in the high school drinking behavior variables from the ICPSR datasets.

## RESULTS

Overall results for all possible explanations tested are shown in Table 1. Note that we chose to exclude non-drinkers from the histograms shown in Figures 1-4 in order to better visually describe the trends among those actually doing the drinking.

Table 1. Freshman Drinking: Possible Explanations					
	Total students	Percent who drink	Percent of total respondents	Percent total drinks	Abs. Difference
On-Campus	6,950	44.00	71.52	80.83	9.31
Off-Campus	2,768	32.26	28.48	19.17	
No alcohol housing	6,730	0.41	69.25	69.37	0.12
Alcohol allowed	2,988	0.39	30.75	30.63	
Non-Greek	8,625	38.92	89.03	78.69	10.34
Greek	1,063	55.32	10.97	21.31	
TOTAL	9,718	40.66			

\*All percentages include students who responded “do not drink.” All students who did not answer one or both questions were coded as non-drinkers.

Figure 1. Total Drinks Consumed On and Off Campus

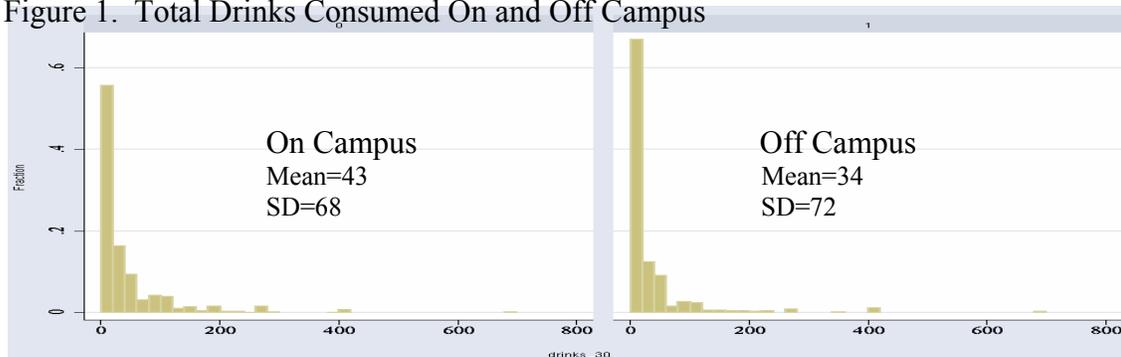


Figure 2. Number of Drinking Occasions and Drinks, On and Off Campus

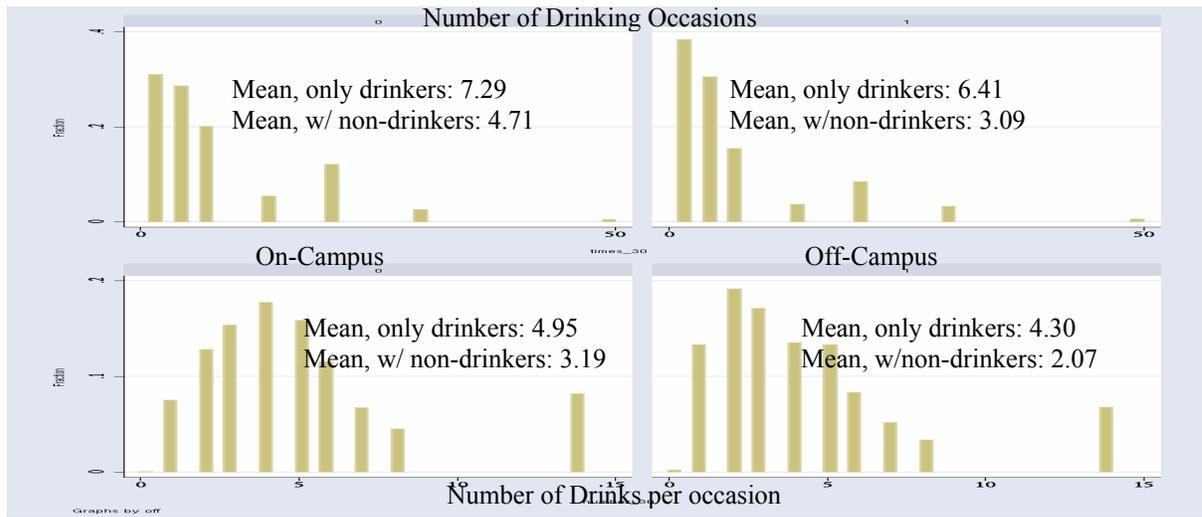


Figure 3. Drinking Occasions and Drinks, Alcohol-Free and Allowed

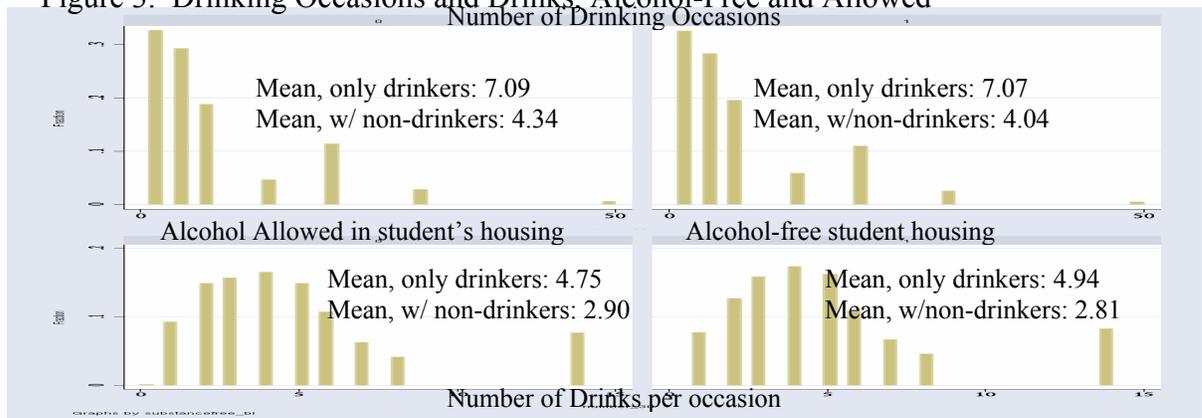
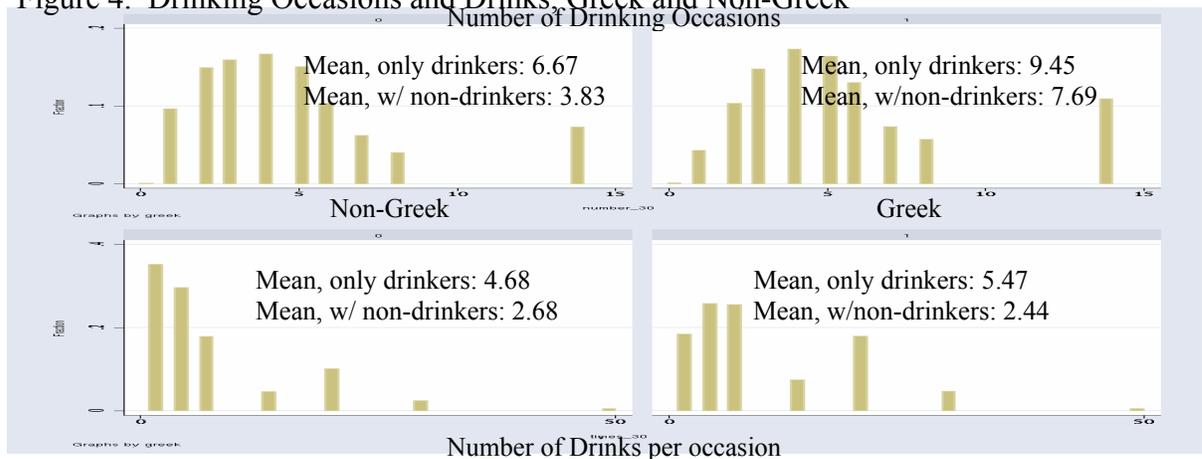


Figure 4. Drinking Occasions and Drinks, Greek and Non-Greek



## DISCUSSION

The primary question to be considered was whether freshmen who live on campus drink less than freshmen who live off campus, and the preliminary results indicate that the answer is no. Although the composite measure for amount of alcohol drunk resulted in the loss of many observations due to a large number of respondents who did not fully complete the survey, each individual measure supported this result. On average, freshmen on campus drank more often than those off campus, and drank more each time as well. However, our methodology does not afford us the ability to make causal judgments, and thus the observed differences are not enough to warrant an unequivocal declaration that living on campus causes freshmen to drink more.

Though our preliminary results indicate that place of residence seems to influence drinking behavior, policymakers and researchers must evaluate many alternative explanations for the problem of college alcoholism if they wish to mitigate its harms. Unfortunately, many alternative explanations could not be adequately tested in this investigation. While researchers might speculate that those who drank in high school will drink more in college out of habit, some others might speculate that those who did not drink in high school might engage in dangerous binge drinking upon reaching a more lax and experimental college environment. It would have been interesting to investigate which causal relationship is best supported by the data, but, unfortunately, a negligible number of students adequately described their high school behavior, and we could not examine high school drinking habits in our investigation of freshmen drinking behavior.

Our research into alternative explanations did yield some interesting conclusions. It might be logical to suppose that those students who chose to live in alcohol-free dorms

would drink less than those living where the policies were less rigid. However, there appears to be no real difference between those who live in alcohol-free housing and those who do not. While alcohol-free dorms have been lauded in the past for having fewer binge drinkers, this is probably due to self-selective effects. Those who are forced to live in alcohol-free housing by school policy may often simply break the rules, despite having signed pledges of abstinence. Thus, providing the option of alcohol-free housing may provide some with a cleaner and quieter living environment, but it appears that students who are inclined to drink will drink nonetheless.

The stereotype set forth by *Animal House* seems, unfortunately, to be justified, at least superficially. The relationship between Greek affiliation and drinking seems rather robust. While 14.9% of respondents reported being in a fraternity or sorority, they drank about 21% of the total alcohol. From the data we observed that a larger proportion of Greek members than non-Greeks members drank about 12 times in the last month before the survey. If the last month is taken to be fairly indicative of regular behavior, that number corresponds to a self-reported frequency of three times per week, which, with a few assumptions, reduces to Thursday, Friday, and Saturday nights each week. This indicates that fraternity and sorority members seem more likely to binge drink on a systematic, fairly frequent basis. Whether this is the behavior that colleges should attempt to limit is a matter for further discussion.

Colleges may view alcohol use as a problem for a variety of reasons. They may be concerned with alcohol-fueled violence, sexual misconduct, poor academic performance, hospitalization, or death. All certainly have negative consequences not only for individual students but for the school as well. A weak academic reputation and

bad press stemming from unfortunate incidents may cost the school money in future tuition and alumni donations, not to mention multimillion-dollar lawsuits. It seems natural for colleges to try to defend their standings and bottom line and therefore to fight alcohol abuse. However, immediately jumping to the conclusion that Greek organizations or freshmen place of residence are to blame for problem drinking would be unwarranted due to the lack of empirical support.

Many explanations for freshmen drinking behavior remain unexplored. Thus, studies investigating college alcohol use should be conducted and the data analyzed to identify the best causal explanations for freshmen drinking behavior. To further these goals our work could be supplemented by creating a housing policy variable and subsequently analyzing whether on-campus freshmen at schools that require freshmen to live on campus drink less. In conclusion, the problem of alcoholism among college students and its associated harms cannot be solved by simply pointing to obvious and politically expedient solutions that are unsupported by rigorous, thorough data analysis.

#### WORKS CONSULTED

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