Masculine Norms, Ethnic Identity, Social Dominance Orientation, And Alcohol Consumption Among Undergraduate Men

Author: Scott Radimer

Boston College

Lynch School of Education

Department of

Educational Leadership and Higher Education

Higher Education

MASCULINE NORMS, ETHNIC IDENTITY, SOCIAL DOMINANCE ORIENTATION, AND ALCOHOL CONSUMPTION AMONG UNDERGRADUATE MEN

Dissertation

By

SCOTT RADIMER

Submitted in partial fulfillment

Of the requirements for the degree of

Doctor of Philosophy

May 2016

Abstract

Masculine Norms, Ethnic Identity, Social Dominance Orientation, And Alcohol Consumption Among Undergraduate Men

Scott Radimer

Dr. Heather Rowan-Kenyon, Chair

According to the National Center for Health Statistics (2007), 18-24 year olds are most likely to report heavy drinking in the past year compared to other adults. Heavy alcohol use is problematic not only in itself, but also because it is associated with a host of other negative outcomes. Research has identified traditional-age college men (age 18-24), who are White, and members of a Greek organization or athletic team as the most likely to consume alcohol in excess (Ham & Hope, 2003; Hingson & White, 2012). White men, members of Greek organizations, and college athletes are also the populations least likely to change their behavior as a result of current alcohol interventions employed by colleges and universities (Fachini, Aliane, Martinez, & Furtado, 2012; LaBrie, Pedersen, Lamb, & Quinlan, 2007; Lundahl, Kunz, Brownell, Tollefson, & Burke, 2010; Mattern & Neighbors, 2004).

The primary shortcoming of previous research into this problem, is that it has failed to take an intersectional approach to the phenomenon of college men's alcohol use. To address this gap, this study surveyed 1,457 college men across five college in the Northeastern United States, using the Conformity to Masculine Norms Inventory (CMNI; Mahalik et al., 2003) the Revised Multigroup Ethnic Identity Measure (MEIM-R; Phinney & Ong, 2007) and the Social Dominance Orientation scale (SDO; Pratto,

Sidanius, Stallworth, & Malle, 1994). Alcohol consumption was predicted using zero-inflated negative binomial regressions and zero-inflated Poisson regressions, and alcohol problems were predicted using logistic regressions.

The study found that the college men's drinking was primarily predicted by the masculine norms of risk taking, having power over women, emotional control, and desiring multiple sexual partners. Although the sample size was smaller, for non-White respondents in the study, men's drinking was also predicted by a focus on heterosexual presentation, and the SDO factor of group based dominance. Alcohol problems were largely predicted by the same masculine norms.

Acknowledgements

I would like to first thank my dissertation chair, Dr. Heather Rowan-Kenyon. She helped me through every phase of earning this degree, with kindness, patience, and always pushed me to do the best possible work. This journey was at times more difficult than I thought I could handle, and she always helped me feel like I could do this. I would also like to thank my committee members: Dr. Ana M. Martínez Alemán, Dr. James Mahalik, and Dr. Laura O'Dwyer, each of whom helped me grow as a scholar, encouraged me in my career at Boston College, and showed me great generosity. I would like to thank Dr. Denise Spencer for teaching me statistics in way that I could not only understand, but also really enjoy, and who helped me be brave enough to take on a quantitative dissertation. Additionally, I need to thank Gracie Trotman, Dr. Diana Pullin, Dr. Karen Arnold, Dr. Lauri Johnson, and Dr. Rebecca Lowenhaupt for their encouragement, positivity, and always making me feel like an important part of the ELHE department. I will miss the summers working for the PSAP program.

I would next like to thank my colleagues and friends from the PhD program. Thank you to Jessica Pesce, Adam Gismondi, Adam Polluzi, Michele Brown Kerrigan, David Stanfield, and Kara Blackburn for welcoming me to Boston College, sharing your wisdom, and for being such generous friends. A special thank you to my cohort-mates, Danny Zepp and Derek Hottell. I cannot think of two better people to have shared this experience with, and will be eternally grateful for your friendship and support. You both made me a better student and scholar.

The journey to a PhD does not begin with the first day of class, and I would like to thank all the people who helped me get here. Thank you to: Mollie Monahan-

Kreishman, Amy Wilson, Sonja Ardoin, Jennifer Latino, Khadish Franklin, Luis Inoa, and Jessica Bennett for helping me apply to graduate school, for sharing your wisdom with me, and for your support and encouragement as I have made my way through. I would also like to give special thanks to Dr. Lynne Greeley, Dr. Patrick Neal, Dr. Robert Schwartz, and Dr. Joseph Beckham for being inspiring teachers who demanded excellence from me, and who encouraged me at each step in my journey to take the next step in my education.

Last, but not least, I need to thank my family. Thank you to my parents, John and Linda, for giving me the space to learn and advocate for myself, and for the encouragement and confidence to believe that I could achieve anything I set myself to. Thank you to my sisters, Kelly and Laurel, for your humor, patience, love and support. And of course, most importantly, thank you to my best-friend and the love of my life, Jason. Thank you for your patience and understanding as this process made my life, and me, crazy at times. Thank you for always being willing to listen whenever I needed it, and thank you for your unwavering love and support. I could not have done it without you.

This dissertation is dedicated to my grandparents, whose hard work, love, and encouragement made this possible. To my grandmothers Barbara and Kaye, who were incredible feminist role models, even though they never would have described themselves that way, who profoundly shaped my childhood, and whom I miss terribly. To my grandfather Milton, who was at almost every meaningful life event I had for the first 28 years of my life, and would be the only person more excited by this achievement than I am. I am incredibly honored to be carrying your last name.

Table of Contents

List of Tables and Figures

Chapter I

The segment of the population in which alcohol use is of the most concern is among young adults. According to the National Center for Health Statistics (2007), 18-24 year olds are most likely to report heavy drinking in the past year compared to other adults. While more education is generally associated with better health outcomes, when it comes to alcohol use, college students engage in more dangerous behavior than their peers who are not attending college full-time (Fleming, White, Haggerty, Abbott, & Catalano, 2012; O'Malley & Johnston, 2002; Substance Abuse and Mental Health Services Administration, 2006). Heavy alcohol use is problematic not only in itself, but also because it is associated with a host of other negative outcomes. Each year, over 1,800 college students unintentionally die from alcohol-related injuries (Hingson & White, 2010; Hingson, Zha, & Weitzman, 2009). Annually over 97,000 students are victims of alcohol-related sexual assault or date rape (Hingson et al., 2009). Yearly, over 600,000 students are accidentally injured or assaulted by another student who has been drinking (Hingson et al., 2009). Four-hundred thousand students reported they had unprotected sex while intoxicated and more than 100,000 reported being too intoxicated to know if they consented to having sex (Hingson, Heeren, Winter, & Wechsler, 2003; A. White & Hingson, 2013).

Men outpace women in all categories researchers measure related to alcohol use: prevalence, consumption, frequency of drinking and intoxication, incidence of heavy and problem drinking, alcohol abuse and dependence, and alcoholism (Capraro, 2000). Nationally, males report heavy drinking more often than females (62%-43.5%, National Center for Health Statistics, 2007). College students are no different in this regard;

college males drink more than their female peers (American College Health Association, 2014; O'Malley & Johnston, 2002). Research has identified traditional-age college men (age 18-24), who are White, and members of a Greek organization or athletic team as the most likely to consume alcohol in excess (Ham & Hope, 2003; Hingson & White, 2012). White men, members of Greek organizations, and college athletes are also the populations least likely to change their behavior as a result of current alcohol interventions employed by colleges and universities (Fachini et al., 2012; LaBrie et al., 2007; Lundahl et al., 2010; Mattern & Neighbors, 2004).

Purpose of the Study

Drinking on college campuses is neither a new problem, nor one that is under researched. The phenomenon of college drinking, and its consequences, has been well documented. The shortcoming of much of this research, however, is that it focuses on the behavior in a way that assumes the reasons for alcohol consumption are the same across gender and race/ethnicity, even if the behaviors vary by group, without exploring the underlying contributors to why that behavior varies. As there would be no alcohol problems without alcohol being first consumed, this study will primarily discuss college men's alcohol consumption, but implicit in this discussion is the understanding that alcohol problems are an extension of the same phenomenon.

Although the health fields have mostly ignored the phenomenon behind different rates of alcohol consumption, investigations from the fields of higher education, sociology, and psychology have been able to help explain why alcohol consumption varies widely by gender and race/ethnicity among college students. Differences in alcohol consumption by men are related to how those men construct their masculinity,

and that hegemonic constructions of masculinity, which will be discussed more in depth below, are related to increased alcohol consumption (Capraro, 2000; Iwamoto, Cheng, Lee, Takamatsu, & Gordon, 2011; Iwamoto, Corbin, Lejuez, & MacPherson, 2014; Peralta, 2007; Uy, Massoth, & Gottdiener, 2013).

There is good evidence that alcohol consumption is related to specific constructions of masculinity. Iwamoto et al, (2011) found a statistically significant positive relationship between drinking to the point of intoxication and specific masculine norms, such as an emphasis on winning, using the Conformity to Masculine Norms Inventory (CMNI; Mahalik et al., 2003). Iwamoto et al., also found a significant positive relationship between different masculine norms, such as risk-taking and having power over women, and increased alcohol-related problems. In a subsequent study, incorporating alcohol expectancies into the model, Iwamoto et al., (2014) again found specific masculine norms to be positively associated with alcohol use, such as risk-taking, and other masculine norms to be negatively associated with alcohol use, such as an emphasis on heterosexual presentation.

A strength of these quantitative studies is that they point to a clear connection between specific masculine norms and problematic alcohol consumption, as hypothesized by the literature on gender performance (e.g., Capraro, 2000). A limitation of these studies, however, is that they do not fully capture the role of hegemonic masculinity in alcohol consumption. The CMNI is made up of 11 distinct factors that are traditional masculine norms, and higher scores on those factors would imply greater subscription to more traditional forms of masculinity, but the CMNI does not account for the ways in which multiple masculinities might manifest the same norms in different ways. In

contrast to the quantitative studies, qualitative studies have been able to describe the relationship between hegemonic masculinity and alcohol consumption, but have remained more general on the specific norms that drive the behavior.

While men drink more than women across cultures (Wilsnack et al., 2000), men across racial and ethnic groups consume alcohol at meaningfully different rates. Differences in alcohol consumption among college students by racial or ethnic groups has been widely documented, consistently finding White students consuming more alcohol than their non-White peers (e.g., Clarke, Kim, White, Jiao, & Mun, 2013; Luczak, Shea, Carr, Li, & Wall, 2002; Luczak, Wall, Shea, Byun, & Carr, 2001; Peralta, 2005). A possible explanation for the differences between and within racial/ethnic groups is ethnic identity. Research has identified ethnic identity, as measured by the Multigroup Ethnic Identity Scale (MEIM), as an important variable related to alcohol consumption in college students (Iwamoto, Takamatsu, & Castellanos, 2012; Schwartz et al., 2011; Zamboanga, Raffaelli, & Horton, 2006) and in adolescents (Holley, Kulis, Marsiglia, & Keith, 2006; Love, Yin, Codina, & Zapata, 2006; Marsiglia, Kulis, & Hecht, 2001; Scheier, Botvin, Diaz, & Ifill-Williams, 1997).

The primary shortcoming of the above mentioned studies is that they have explored either masculinity or ethnic identity with alcohol consumption and alcohol related problems, but not both at the same time, missing the intersectional nature of college drinking. This one-at-a-time approach is insufficient, as individuals do not experience the world as only their gender or their ethnicity. Identities intersect with one another, and to ignore that intersection is to miss what is truly happening (Crenshaw, 1989). The other shortcoming of these studies is that they largely ignore the ways in

which masculinity and ethnic identity are shaped by privilege and oppression. There is a meaningful difference between having a strong sense of ethnic identity as a Somali refugee resettled in Minnesota where your peers will not let you forget your ethnic differences, and being of Irish decent living in Boston, where that identity is celebrated city-wide. Similarly, two men from different economic backgrounds might place an emphasis on being tough as part of their masculinity; for one man that might mean working a job doing manual labor to pay the bills, while for the other man it might mean having a high tolerance for alcohol consumed during leisure time.

A psychological theory that underlies these differences is social dominance orientation (SDO), an anti-egalitarian support for in-groups as superior to and dominant over out-groups, and acceptance of myths that legitimize the different statuses between groups (Sidanius, Pratto, & Bobo, 1994). Higher levels of SDO are associated with membership in privileged groups, with higher SDO levels in men than women (Sidanius, Levin, Liu, & Pratto, 2000; Sidanius et al., 1994), and in high-status compared to low-status ethnic groups in the United States and Israel (Levin & Sidanius, 1999). Although no studies have been conducted examining the relationship between SDO and alcohol consumption, research supports a connection between higher privilege and increased alcohol consumption among college men (Sweeney, 2014).

As will be explained more thoroughly in the literature review, masculinity, ethnic identity and social dominance orientation are all interrelated. Without including all three of the variables in the same model, it is impossible to rule out the possibility of confounding variables. New research is necessary to fill the gap in the research that exists between masculinity, ethnic identity, social dominance orientation, and alcohol

consumption. This study seeks to address this need by connecting undergraduate college men's alcohol consumption to masculinity, ethnic identity, and social dominance orientation.

Research Questions

The research questions this study will attempt to answer are:

1. How do masculine norms, ethnic identity, and social dominance orientation predict alcohol consumption?
2. How do masculine norms, ethnic identity, and social dominance orientation predict alcohol problems?

Literature Review

Hegemonic Masculinity

A common held belief is that men are predisposed to acting in specific ways (e.g., sexually aggressive, competitive, restricted emotional range) because of their biology. Being commonly held, however, does not make it correct. This view essentializes gender, when in fact, it is a social construction.

> Men are not born, growing from infants through boyhood to manhood, to follow a predetermined biological imperative encoded in their physical organization. To be a man is to participate in social life as a man, as a gendered being. Men are not born; they are made (Kimmel & Messner, 2010, p.xvii).

Instead of existing as a timeless individual attribute, gender is better understood as performative (Butler, 1990). Rather than existing as something static, gender exists in its *doing*. Gender expectations are maintained by controlling the way people act, which creates the illusion of an inherent gender. The scripts for these gendered behaviors are

understood by the members of the community, and are reinforced not only by parents and community members, but also by the culture at large.

While both men and women perform gender, the requirements are not the same for both groups. In reviewing and synthesizing the research on manhood, Vandello and Bosson (2013) note that men must actively prove their manhood as it is "a precarious social status that is hard won and easily lost" (p. 101). This means to earn and maintain manhood, others must publicly confirm it, which requires that they act in ways that publicly demonstrate their manhood. Kimmel (2004) points out that for men, masculinity is a homosocial performance, as the audience for that performance is other men. Manhood, as a precious status, is difficult to earn from other men, and can be taken away by other men, if a man significantly deviates from acceptable gender scripts.

Not only does the social construction of masculinity privilege men over women, it also privileges some men over other men (hooks, 1984). The social hierarchy of men is defined by a hegemonic masculinity, and was most clearly articulated in *Gender and Power* (Connell, 1987). Connell described a power structure where masculinity is defined in opposition to femininity, and exists in a hierarchy of privilege among other masculinities, with hegemonic masculinity existing as the dominant gender construction.

What constitutes hegemonic masculinity is socially created, reinforced, and changes over time and social settings (Connell & Messerschmidt, 2005). Although the behaviors vary, hallmarks include: the primacy of success, power, and competition, restrictive emotionality, as well as restrictive affectionate behavior between men (O'Neil, Helms, Gable, David, & Wrightsman, 1986). It is a hegemonic form of masculinity, following Antonio Gramsci's concept of cultural hegemony, because it is empowered by

social and cultural institutions, not just an implicit (or explicit) threat of force, although the real threat of force remains (Connell, 1987).

Rather than existing as a singular hegemonic masculinity, there are multiple hegemonic masculinities that designate "the set of masculinities that are dominant in a given society. It refers to masculinities that are chiefly, though not exclusively, associated with men located in the uppermost reaches of a society's ascriptive hierarchies" (Chen, 1999, p. 587). Rather than being a checklist that a man must meet to achieve hegemonic status, it is more accurate to think of hegemonic masculinities as a "…position in the social order – one that is seen as worthy, complete, and superior – rather than a fixed set of essential characteristics" (Chen, 1999, p. 587). Men are complicit not only because it can provide them with privilege and power, but also because if they fail to do so they will most likely be marginalized and oppressed, and perhaps even physically attacked by other men (Courtenay, 2000; Kimmel, 2008).

While the ways in which hegemonic masculinity disadvantages women and other less privileged identities are apparent, there are also many ways in which meeting these gender norms are harmful to men. In reviewing the literature on men's health, Courtenay (2000) explains men's inferior health outcomes relative to women can only be explained by the way that men are behaving *as men*. He argues "the resources available in the United States for constructing masculinities – and the signifiers of 'true' masculinity – are largely unhealthy" (p. 1397). Men are pressured to demonstrate masculinity through engaging in activities that can cause them harm, like drinking large amounts of alcohol, and avoiding getting help when they get hurt. Doing so reinforces the hegemonic ideals "that men's bodies are structurally more efficient than and superior to women's bodies;

that asking for help and caring for one's health are feminine; and that the most powerful men among men are those for whom health and safety are irrelevant" (p. 1389).

The most visible and consistent embodiment of behavior meant to demonstrate masculinity is through alcohol use and abuse. Lemle and Mishkind (1989) argue that the differences between male and female usage of alcohol is a result of the social significance placed upon alcohol. Drinking alcohol is seen as a rite of passage and an activity that men do to bond with each other in public ways. Lemle and Mishkind point out how alcohol usage is constructed and presented as masculine within the media, and that more potent forms of alcohol use were seen as more masculine (e.g., consuming hard liquor, consuming more than other men).

Harris (2008) in a qualitative study of undergraduate men found similar attitudes towards alcohol use. Alcohol was seen by these men as a socially acceptable way to bond with other men as well as a way to prove their manliness to each other. Similar findings were reported in a qualitative study utilizing grounded theory by Peralta (2007). Alcohol consumption among college men was found to be an expression of hegemonic masculinity, and was a tool that men used to construct their own masculine identity. This relationship is supported by multiple qualitative studies that have found an explicit connection between masculinity and alcohol consumption among college students (Iwamoto et al., 2011, 2014; Uy et al., 2013).

Ethnic Identity

Across the world, in every society where alcohol consumption has been examined by gender, men have been found to drink more than women, with men's drinking causing more social problems than women's drinking (Wilsnack et al., 2000). The extent,

however, to which different groups place an emphasis on alcohol consumption varies meaningfully by population and environment. Examination of alcohol consumption rates for college students by race and/or ethnicity (Clarke et al., 2013; Ham & Hope, 2003; O'Hare, 1995) suggests that for many men of color, alcohol consumption is not as an important part of their college experience as it is for White men.

Studies that have examined the intersection of race and/or ethnicity and alcohol consumption of college students have found connections between students' race/ethnicity and their alcohol consumption. In a qualitative study, Peralta (2005) found that for Black college students it was important not to drink excessively out of fear of being singled out and viewed negatively because of their race. In the same study, White college students were oblivious to the privilege that allowed them to more easily avoid negative consequences for themselves or other members of their race/ethnicity. In another qualitative study examining the intersection between race/ethnicity, class, masculinity and party culture in college fraternities, Sweeney (2014) found that while the privileged men (mostly White, from wealthier families) in his study put a premium on partying and consuming large amounts of alcohol, the less privileged men (mostly not White, from less affluent families) did not. While some of the men in the study looked to join the partying culture of the privileged White fraternities as a means of social mobility, the less privileged men, especially the members of the non-White fraternities, generally viewed excessive alcohol consumption as irresponsible, not masculine, and as potentially having negative impact on the collective members of their race/ethnicity if they engaged in it.

Rather than viewing variability in alcohol consumption among college students as only related to masculine norms and not race/ethnicity (e.g., Iwamoto et al., 2011, 2014),

the findings of Sweeney (2014) and Peralta (2005) highlight why these identity factors cannot truly be separated. "…Race, gender and class are not distinct realms of experience, existing in splendid isolation from each other…. Rather, they come into existence *in and through* relation to each other" [emphasis in original] (McClintock, 1995, p.5). Race, ethnicity, and gender are socially constructed (Weber, 2001) and the ways in which men construct their racial, ethnic, and gender identities are not fixed (Epstein, 1998). This means that it is not only ethnicity, but also how that ethnicity is constructed at a given time, that impacts behavior.

In studies exploring racial/ethnic identity, the terms race and ethnicity have been used to mean distinct concepts or used interchangeably (cf. Bracey, Bámaca, & Umaña-Taylor, 2004; Cokley, 2005; Helms, 1996; J. S. Phinney, 1990; J. Phinney, 1996; Priest et al., 2014). For the purposes of this dissertation, the terms are considered related but distinct. In distinguishing between racial and ethnic identity, Helms (1996) recommends that a model be considered racial if it examines societal dynamics of oppression, but ethnic if it examines acquisition or maintenance of cultural characteristics. From this perspective the most appropriate way to view alcohol consumption is through the lens of ethnicity, as alcohol consumption is about cultural values rather than direct manifestation of societal oppression based off of racial membership. Additionally, measures of ethnic identity are applicable across groups and focus on self-identification, whereas measurements of racial identity vary by racial group and have mostly been focused on Black individuals and their experiences with racism (Phinney & Ong, 2007; Smith & Silva, 2011).

Social Dominance Orientation

Across cultures and societies, a universal feature is the way in which they organize themselves by group-based hierarchies, with uneven distribution of resources and responsibilities that privilege some groups while oppressing others (Sidanius, Pratto, van Laar, & Levin, 2004). Rather than viewing these systems of oppression as distinct forms of discrimination (e.g., sexism, racism, homophobia etc.) or stemming from one root cause (like personality), social dominance theory "focuses on both individual and structural factors that contribute to various forms of group-based oppression" (Sidanius, Pratto, van Laar, & Levin, 2004, p. 846). Social dominance theory contains three main tenants: 1) societies minimize group conflicts by creating consensus that one group is superior to others, 2) the tools used to legitimize this discrimination are promoted or maintained by ideologies that 3) must be appear to be evident truths and widely accepted by society to function (Pratto et al., 1994).

It is the acceptance of myths that legitimize the unequal distribution of resources, privileges, and oppression as self-evident truths by members of high and low status groups that maintains the group-based hierarchy. Acceptance of these myths is measured by an individual's social dominance orientation (SDO). SDO is the extent to which an individual places value "…on nonegalitarian and hierarchically structured relationships among social groups. It expresses general support for the domination of certain socially constructed groups over other socially constructed groups, regardless of the manner in which these groups are defined" (Sidanius & Pratto, 1999, p.61). SDO measures both the degree to which an individual believes in hierarchy enhancing and hierarchy attenuating beliefs.

Although SDO has not been researched in conjunction with alcohol use among college students, it is strongly related to the hegemonic values associated with masculinity and privileged ethnic groups in the United States that have been found to be related to college alcohol consumption. Various studies have found that SDO is related to: right-wing authoritarianism (Asbrock, Sibley, & Duckitt, 2010; Sidanius & Pratto, 1999), prejudice against gay men and lesbians (Poteat & Anderson, 2012), sexism (Akrami, Ekehammar, & Yang-Wallentin, 2011), higher levels of US patriotism among White Americans (Peña & Sidanius, 2002), modern racism (Perry & Sibley, 2011), lower empathy, support for aggressive military action, decreased support for gay rights and women's rights, and less support for social programs that benefit disadvantaged groups (Pratto et al., 1994).

Theoretical Framework

The theoretical framework employed to examine the relevant existing literature and informed the design of this study was critical postmodern theory (CPT). Critical theory is skeptical of normative assumptions of experience and has the goal of proposing alternate explanations of knowledge and self-determination (Butler, 1990; Foucault, 1980; Williams, 1991). A critical perspective works from historical and contemporary understandings of racism and colonialism and rejects the idea that a researcher or subject can be viewed independent of these social systems. Critical theory challenges hegemonic power, which constructs individuals as objects who are acted upon - rather than subjects who act – who do not realize they are subjugated or complicit in perpetuating the subjugation of others (Freire, 2006). Critical theory, a modernist project embedded in the

Enlightenment, believes that as oppressed groups become aware of their "true" situation, and begin to take action to change it, they can transform their society (Crotty, 1998).

Postmodern theory, conversely, critiques the Enlightenment and rejects the concept of a static truth or knowledge (Seidman, 1994). Postmodern theory does not reject knowledge, but rather accepts multiple forms of knowledge that are made and remade through sociocultural, political, and historical discourses (Foucault, cited in Stinson & Bullock, 2012, p 1166). Discursive binaries - male/female, true/untrue, Black/White, etc. – are deconstructed as a way of surfacing their historical and political foundations, as a way to dislodge their dominance (Stinson & Bullock, 2012). Through embracing ambiguity and difference, postmodern theory rejects the idea of a single truth or grand meta-narrative (Lyotard, 1984).

Although there are tensions between different critical and postmodern theories, many see CPT as a synergistic. Agger argues that CPT refuses to contribute to hegemonic structures "by falsely separating topics and methodologies that are fundamentally complementary" (2014, p. 17). Critical postmodernism creates a space for multiple voices and perspectives to investigate power, oppression, and privilege and to consider those conflicting perspectives. It "…reminds people that they are multiple subjects who may be privileged in some ways and disenfranchised in others"(Grace, 1997, p. 56).

Research Design

Rationale for Quantitative Methods

This study utilized a critical quantitative approach to examine the relationship between masculine norms, ethnic identity, social dominance orientation, and alcohol.

Previous quantitative studies have found a relationship between masculine norms and alcohol use (Iwamoto et al., 2011, 2014; Uy et al., 2013), but have not fully captured hegemonic masculinity nor included ethnic identity as a variable in their models. Other studies have looked at alcohol consumption and its connection to ethnic identity (Iwamoto et al., 2012; Schwartz et al., 2011; Zamboanga et al., 2006), but have not included masculinity as a meaningful variable. As individuals do not experience the world as only their gender or their ethnicity independent of the other, it is necessary to include both at the same time. A quantitative research approach is appropriate for this study, as it is testing existing theories, that masculinity and ethnic identity are related to alcohol consumption, and the relationship between these variables (Creswell, 2014).

As a study informed by critical postmodern theory, one of the goals of this research is to influence the practice of others in a way that improves students' lived experience. Although critical studies in higher education have typically employed qualitative techniques (Stage, 2007), a qualitative approach is not always the most appropriate vehicle for improving students' lives, and its limitations are why this research is instead quantitative. Qualitative research is less likely to influence the practice of health and wellness professionals as health researchers are more likely to be skeptical of qualitative research, although it has been slowly gaining acceptance (Padgett, 2011). Qualitative research, by design, is less generalizable, and so the findings of a quantitative study have application to a wider array of colleges and universities and a chance to positively impact the lives of more college students as a result.

In addition to being tasked with improving practice, a critical quantitative study is meant to: reveal inequalities and identify how they are socially or institutionally

perpetuated, and question existing models, measures, or practices of quantitative research in order to offer models, measures, or practices that better describe the experiences of the underrepresented (Stage, 2007). In critically examining the intersection of ethnicity and gender as it relates to college alcohol use, the systematic bias towards making Whiteness and maleness invisible are challenged. It is White men who are far and away the most frequent consumers of alcohol in dangerous amounts, and therefore the most likely to be the ones experiencing and causing alcohol related problems on campus. That alcohol consumption is framed as an issue for generic 'college students' by most studies is a reflection of the continued perpetuation of inequalities and biases that downplay problems associated with privileged identities.

Sample and Analysis

The sample for this study was of undergraduate college men, at five predominantly White, residential institutions in the northeast. Institutions with these characteristics have the highest average rates of alcohol consumption in the United States (Hingson & White, 2012), and accordingly it is more likely that a significant relationship would be discovered at these institutions due to larger effect sizes related to alcohol consumption. The information was collected through a survey, distributed via email, utilizing Qualtrics. Data from the survey was be downloaded into SPSS via Qualtrics, and missing data was addressed through listwise deletion (removing any cases with missing information from the analysis) as missing variables were determined to be missing completely at random. The alcohol consumption data was then analyzed utilizing zero-inflated negative binomial regression and zero-inflated Poisson regression, a statistical method for analyzing count data where the variance of the data differs from

the mean, for significant relationships between the variables (Hilbe, 2011). The alcohol problem data was analyzed using binary logistic regressions, a method that makes it possible to analyze multiple independent variables with one binary (yes or no in this case) dependent variable, and estimates the probability of an event occurring (Polit, 2010). The survey asked brief demographic questions (e.g., gender, race/ethnicity, domestic or foreign student), and then will utilize questions from the Conformity to Masculine Norms Inventory (CMNI), Social Dominance Orientation (SDO) scale, the Revised Multigroup Ethnic Identity Measure (MEIM-R), and the Daily Drinking Questionnaire (DDQ).

Instruments

The Conformity to Masculine Norms Inventory, the Revised Multigroup Ethnic Identity Measure, and Social Dominance Orientation instruments measure social attitudes of the respondent by asking the degree to which he agrees or disagrees with a given statement in a series of Likert-type questions, asking the respondent to respond to a statement on a four point scale, from strongly disagree to strongly agree. The CMNI presents statements related to values and actions that typify masculine norms, while the MEIM-R presents statements about actions or values related to their internalized sense of an ethnic identity (Mahalik et al., 2003; Phinney & Ong, 2007). The SDO scale measures the extent to which an individual subscribes to ideologies that are hierarchy-enhancing or hierarchy-attenuating (Pratto et al., 1994). The Daily Drinking Questionnaire, gives respondents an open weeks, and asks them to describe their average drinking over the past three months, as well as asking whether the individual has ever experienced different problems after drinking (Collins, Parks, & Marlatt, 1985).

Significance

Not only does this study help to connect and expand the current literature on college men's alcohol consumption and related problems, it can serve as a first step towards more nuanced understanding of how specific social constructs of race/ethnicity, gender, and privilege interact and shape men's lives. As these variables are strongly interrelated, it is impossible to say what the relationship between any single one of them is with alcohol consumption without accounting for the others. Through this critical analysis of alcohol consumption, interactions between gender, ethnicity, and privilege may be uncovered that have been otherwise ignored.

White men as a population, in particular, that while widely studied, are often considered to not have a race/ethnicity or gender, and are simply the abstract "human norm", and researching them as individuals with a race/ethnicity and a gender works to serve critical research's goal of transforming society. White men are also the population of college students least effectively served by current alcohol interventions (Fachini et al., 2012; LaBrie et al., 2007; Lundahl et al., 2010; Mattern & Neighbors, 2004), and so a better understanding of the factors that have the greatest influence on alcohol consumption would help make possible new interventions to more effectively serve this population.

Chapter II

This chapter begins with a review of the problems associated with alcohol consumption at colleges and universities in the United States. It then discusses how higher education institutions have responded to these challenges and the reasons why this approach has been largely ineffective. The chapter continues with an analysis of how college alcohol consumption is related to social identities of gender and ethnicity. It concludes with a discussion of the limitations of the current literature, suggests the suggestion of social dominance orientation as a missing variable, and then discusses specific studies that have informed this dissertation.

Consequences of Drinking Alcohol in College

While alcohol consumption is an integral part of the social fabric of the United States for many, it is also deeply integrated into many of America's social ills. Martin (2001) summarizes the relationship in the United States noting: alcohol was consumed in more than half of homicides and assaults, 40% of offenders of violent crimes in state and local jails had been drinking at the time of their offense, and individuals treated in hospital emergency rooms (ER) for violence-related injuries are 2-5 times more likely to be intoxicated at the time of their ER visit than people at the ER for other reasons. According to the Center for Disease Control and Prevention (CDC, 2012), in cases where substances were tested for, one third of individuals who died by suicide test positive for alcohol in their system.

While heavy alcohol consumption is a problem across all demographics nationally, the segment of the population where alcohol use is of the most concern is in young adults. According to the National Center for Health Statistics (2007), 18-24 year

olds are the age group of adults most likely to report past-year heavy drinking. Within this at risk age group, 18-22 year old full-time college students have much higher rates of binge drinking, having five or more drinks within a 2-hour period, and heavy drinking than their non-college peers (Carter, Brandon, & Goldman, 2010; Simons-Morton et al., 2016; Substance Abuse and Mental Health Services Administration, 2006). Binge drinking is of particular concern, as five drinks are enough to raise most individual's blood alcohol concentration (BAC) to .08% or above, where driving abilities are impaired, impulse control is weakened, and memory beings to fail (Hingson & White, 2012). At .08% blood alcohol concentration the odds of a fatal car crash significantly increase, as well as the chances of alcohol blackouts, being sexually assaulted, physically injured, and experiencing other various harms (Hingson & White, 2010). Wechsler, Dowdall, Davenport, and Castillo (1995) argued that binge drinking was the number one public health hazard for college students in the United States, a problem that has only become more severe since the late 1990's (Hingson et al., 2009).

Interestingly, when comparing alcohol usage of students who attend college full time and those who do not, multiple researchers have found (Carter et al., 2010; O'Malley & Johnston, 2002; Simons-Morton et al., 2016) that students who do not go on to college tended to drink more in high school than their college bound peers, but once in college, the behavior flips. Despite the image of alcohol use as a normal part of the college experience, alcohol use has a large, negative effect on hundreds of thousands of college students every year. Each year, over 1,800 college students unintentionally die from alcohol-related injuries (Hingson & White, 2010; Hingson et al., 2009). Annually over 97,000 students are victims of alcohol-related sexual assault or date rape (Hingson,

Heeren, Winter, & Wechsler, 2005; Hingson et al., 2009). Over 600,000 students more are accidentally injured or assaulted by another student who has been drinking every year (Hingson et al., 2005, 2009). Four-hundred thousand students reported they had unprotected sex while intoxicated and more than 110,000 reported being too intoxicated to know if they consented to having sex (White & Hingson, 2013). More than 150,000 students each year develop an alcohol-related health problem (White & Hingson, 2013), and 2.7 million students drove under the influence of alcohol in the previous year (Hingson & White, 2012).

The percentage of students experiencing memory loss from blacking out at least once in the past year due to drinking ranged from 10% for non-binge drinkers, to 27% for occasional binge drinkers, and 54% of frequent binge drinkers (Wechsler, Lee, Kuo, & Lee, 2000; White, 2003). Eight-and-a-half percent of college students were arrested or reported other trouble with police because of drinking (Presley & Pimentel, 2006). Thirty-one percent of college students met criteria for a diagnosis of alcohol abuse, and 6% for a diagnosis of alcohol dependence in the past 12 months (Knight, Wechsler, & Kuo, 2002). Of specific concern to colleges, alcohol abuse is associated with negative academic performance, and is hypothesized by Perkins (2002) to negatively contribute to the dropout rates and perceived academic rigor of the institutions where it is occurring. What are colleges doing to combat this problem?

How Colleges Have Addressed Drinking

Despite being a long standing issues, colleges have historically been rather permissive regarding student alcohol use; it is only more recently that they began to work to address this problem (Capraro, 2000). A variety of different types of approaches have

been employed on college campuses. These approaches include increasing students' knowledge and education regarding the influences and impact of alcohol, targeting the availability of alcohol on campus and in the larger community, working to change how students perceive normal alcohol use by their peers, and face-to-face interventions, typically conducted through motivational interviews.

What the literature says regarding these alcohol reduction efforts is that while they have an impact, there is much room for improvement. In reviewing American colleges' responses to their students' problematic alcohol use the National Institute on Alcohol Abuse and Alcoholism (NIAAA) determined the approach institutions were taking, to increase students' awareness of alcohol and its problems, was ineffective (Dejong, Larimer, Wood, & Hartman, 2009). The movement to more meaningfully address college student's problematic use of alcohol began with the NIAAA's 2002 "Call to Action" report (NIAAA, 2002). This report, targeted at College and University Presidents, outlined the general problems associated with college students' alcohol use, what was known about the effectiveness of current approaches to the problem, made suggestions for how colleges should respond, and then outlined what areas need further research. Five years later a follow-up report was issued which reinforced the suggestions of the first report, and updated what was known from the literature on alcohol interventions for college students and indicated more research was still needed. Although more than 10 years have passed since the initial report, the approach outlined within it still very much informs the actions taken by the student affairs professionals.

In both reports, the NIAAA (2002, 2007) suggests an "environmental" approach across three levels: interventions that target individuals, efforts to change the general

alcohol culture at the college level, and efforts to work with the local community to decrease the availability of alcohol and increase the enforcement of alcohol control measures. The reports outline the research supporting the effectiveness of these measures, and discouraged colleges from approaches that have shown no success in changing student behavior. While the reports talk about the necessity of changing the college drinking culture, there is no theoretical grounding for what constitutes a college culture, how it is reinforced, and what it would take to actually change it.

This approach, however, has not been particularly successful. During the 1990's colleges saw an increase in their efforts to educate students about the risks and consequences of alcohol consumption, but rather than decreasing rates of binge drinking among students, they stayed approximately the same, while the most extreme drinking problems increased (Wechsler et al., 2002). From 1999 to 2005 the proportion of college students who had engaged in heavy episodic drinking (consuming five or more drinks on one occasion) in the past 30 days significantly increased by 7%, from 41.7% to 44.7% (Hingson et al., 2009). Over this same time period, there was a significant increase in the proportion of college students who reported driving under the influence of alcohol, though the largest increase was from 1999 to 2002, followed by a decline from 2002 to 2005. For both kinds of behavior, non-college students of the same age experienced similar changes in behavior, but proportionately engaged in dangerous behavior less often than their college peers (Hingson et al., 2009).

Similar to the overall behavior of college students, specific methods of discouraging alcohol abuse have shown small improvements at best. The connection between students' perceptions of their peers' alcohol use and their own use is well

established (Perkins & Wechsler, 1996) and so health practitioners have assumed that correcting students' assumptions about how much their peers drink would lower actual drinking rates. Studies looking at attempts to change the perceived norms of alcohol use among college students, however, have had mixed results (Mattern & Neighbors, 2004). In reviewing the literature regarding social norms campaigns, Mattern and Neighbors discuss how social norms campaigns generally seem to reduce alcohol usage for colleges, but there is no consensus of their effectiveness and even evidence that for the most at risk populations, such as fraternity men, the norms campaign might actually increase alcohol consumption. Another meta-review of social norm campaigns, found that while there was a significant decrease in behavior over the long term, the effect size was so small that they made no practical difference in student behavior (Foxcroft, Moreira, Almedia Santimano, & Smith, 2015).

In a meta-analysis of studies of motivational interviewing interventions for substance use, including alcohol, the authors found there was a statistically significant, but small, reduction credited to the intervention (Lundahl et al., 2010). Motivational interviewing is a process that seeks to highlight discrepancies between an individual's beliefs/values and their actions, so that they will be motivated on their own to change their behavior to be more in line with their beliefs/values. Lundahl et al. also found motivational interviewing seemed less effective with White and Black individuals than it did with other minority groups. In another meta-analysis, this time focusing on the motivational interviewing program Brief Alcohol Screening Interventions for College Students (BASICS), the authors found a similar small but statistically significant reduction in alcohol use (Fachini et al., 2012). Fachini et al. also found some evidence

BASICS had a larger effect among women than men. A third meta-analysis (Carey, Scott-Sheldon, Carey, & DeMartini, 2007), this time focusing on all individual level interventions to reduce college student drinking, found they had a modest effect size, but they were less effective with men and high risk groups like athletes and fraternity members. Although the intervention literature notes differences in outcomes for men and women, and by race/ethnicity, there is no mention of gender or race/ethnicity as important factors to consider, attend to, or incorporate. Why are alcohol interventions less effective with some groups than others, and why are the interventions not making a larger difference in the overall level of drinking by college students?

Assumptions Underlying Alcohol Interventions

A probable reason why alcohol interventions are not generally reducing the college drinking rate, and are less effective with the most problematic drinkers, is because of a mismatch between what the interventions are trying to address and the reasons why students consume alcohol. These interventions are based off an assumption that dangerous alcohol consumption occurs out of ignorance of the dangers of alcohol (NIAAA, 2007), or a feeling that everyone else is doing it (Mattern & Neighbors, 2004), and that if an intervention is provided that has students reflect on the potential drawbacks of drinking (Lundahl et al., 2010), along with decreased access to alcohol (Correia, Murphy, & Barnett, 2012), students would moderate their behavior. The foundation of these assumptions is that the specific identities of students are not important to whether they drink or not, which is why none of them differentiate between the kinds of students they might reach. If that foundation and the assumptions built on it were correct, one would expect to find similar rates of drinking across different groups. One would expect

to find generally equal drinking rates between men and women, as well as equivalent drinking rates across ethnic groups. Upon a simple examination of the drinking rates by gender and ethnicity, these assumptions are quickly shown to be unsupported.

Across all categories related to alcohol use, men outpace women. Men have higher rates of alcohol consumption, frequency of drinking and intoxication, incidence of heavy and problem drinking, alcohol abuse and dependence, and alcoholism (Capraro, 2000). Nationally, males reporting heavy drinking more often than females (62%-43.5%, National Center for Health Statistics, 2007). College students are no different in this regard; college males drink more than their female peers (O'Malley & Johnston, 2002). College men are less likely to engage in protective behaviors that would reduce their risks from drinking, and more likely to report experiencing negative consequences than college women in every category except for reporting someone had sex with them without their consent (ACHA, 2013).

Men are more likely to binge drink than women, consuming five or more drinks within a two-hour period, more likely to meet the criteria for an alcohol use disorder, and more likely to experience higher level negative consequences as a result of their drinking than women (Ham & Hope, 2003). Men's alcohol consumption tends to increase after the first year of college, while women tend to consume less alcohol at the end of their undergraduate careers compared to first year undergraduates (McCabe, 2002). Not only do college men drink more, but also the consequences of men's drinking are different than women's. When men and women have similar blood alcohol content levels, men are more likely to engage in negative behaviors that harm themselves and others, while the

consequences of women's drinking are most likely to be felt by the drinker herself, such as being victimized by a male peer (Perkins, 2002).

The fact that men drink more alcohol, and cause more social problems compared to women is not unique to college students. In every instance where alcohol consumption has been compared by gender, across countries and cultures, men have been found to consume alcohol, and experience alcohol-related problems, at a higher rate than women (Wilsnack et al., 2000). That does not mean, however, that gender is the only meaningful difference in alcohol consumption. Compared to other ethnicities, White European-American college students tend to consume the most alcohol (Ham & Hope, 2003; Peralta, 2007). Multiple studies have found differences in alcohol consumption by college students by ethnicity.

O'Hare (1995) investigated the differences between Asian and White college students at Rutgers, in a quantitative study utilizing survey data from over 800 undergraduate and graduate students. O'Hare found that the Asian students were five times more likely to abstain from alcohol consumption than White students, and that White students were five times more likely to be binge drinkers than Asians. Another quantitative study investigating the differences between Chinese, Korean and White college students and their alcohol consumption (Luczak et al., 2001) found both genetic and cultural differences in binge drinking. Luczak et al, with a sample of 328 college students of Korean, Chinese, or White European decent, examined their genetics and alcohol consumption over the previous 90 days. They found that possessing a variant of the gene that is related to the metabolism of alcohol, and being Chinese significantly

reduced the risk of being a binge drinker, while being White, or Korean without the variant, increased the risk.

Clarke, Kim, White, Jiao and Mun (2013) conducted a quantitative study of over 15,000 White and Black college students from multiple institutions across the United States, looking at alcohol consumption and alcohol-related consequences and how they differed for men and women between the two racial groups. Clarke et al., found that White students consumed more alcohol than Black students, but when they controlled for consumption level, there were no differences between White and Black students with the number or types of alcohol-related consequences they experienced.

Pulling from five different national surveys, O'Malley and Johnston (2002) noted that White students consistently consumed the most alcohol, Black students the least, and that Hispanic/Latino students were found consuming alcohol at rates between the two. While this difference between ethnicities was true for both male and female students, White women tended to consume more alcohol than Black men, in addition to Hispanic and Black women. In a single institution study of 567 college students, Lawrence, Abel, and Hall (2010) found a statistically significant difference in drinking to get drunk, with European American students over African American students. The same study found that Hispanic American students fell in the middle between the two groups in drinking to get drunk, and were not statistically significantly different than either group.

Clearly, alcohol consumption for college students is not a gender-neutral or ethnically neutral phenomenon. Along both axes of ethnicity and gender, the more socially privileged identities are associated with higher levels of alcohol consumption. While biological/genetic differences might be able to explain some differences in alcohol

consumption (e.g. different rates of alcohol metabolism by sex and ethnicity (Li, Beard, Orr, Kwo, & Ramchandani, 1998)) they do not adequately account for all the differences. How should we understand differences in college students' alcohol consumption and what drives those differences?

Theoretical Frameworks

A limitation of much of the research on alcohol consumption by college students is the positivist perspective embedded within it, which essentializes categories like sex, gender, and ethnicity. The problem with this perspective is that it precludes further research into what social forces might be driving the observed phenomenon, because it assumes any differences are an immutable part of that identity. By viewing these differences as essential, positivism can do little to remedy disparities that exist between different social groups. What constitutes a social group is not only groups voluntarily organized and self-selecting, like political party affiliation, but also includes groups that are commonly considered biological, such as racial groups.

For example, while race is discussed most commonly as something immutable, like height or eye-color, the definition of what separates one racial group from another has changed over the history of the United States. In the 1920s and 30s only those from northwestern European heritage were considered White, while individuals from southern or eastern European heritage were considered belonging to inferior European races. It was only after World War II, and the economic growth of the "ethnic" Europeans that the racial categorization changed and they became fully White (P. Rothenberg, 2001).

The reason for these changing definitions of who is White and who is not, and what it means to be White or not, are about maintaining power structures that allow the

group at the top of the hierarchy to prosper at the expense of others (Omi & Winant, 2001). For example, Irish immigrants to the West Coast in the late 19th century used vicious anti-Chinese race baiting as a way to advance their own economic position (p.16, 2001). So while positivism claims to situate the researcher as an objective observer, this perspective in truth reinforces inequalities, as lower status groups are categorized as deficient and responsible for their lower status. To avoid reinforcing hegemonic power systems, that is social structures that attempt to naturalize and hide the oppression of marginalized social groups (such as women, non-heterosexual individuals, Black people, etc.) to benefit the socially dominant group, this study employs Critical Postmodern Theory (CPT) as a lens to the existing body of literature. To best understand what CPT is and why it is the appropriate lens through which to examine college drinking, it is instructive to examine its components, Critical theory and Postmodern theory, first.

Critical theory challenges the objectivity of positivism and sites how it can reinforce existing social hierarchies, and instead requires that research be reflexive, for the researcher to be self-reflective of how methods and interpretation may reinforce existing power structures (Agger, 1991). One of the ways that Critical theory works to avoid reinforcing hegemonic power structures is through skepticism of normative assumptions and seeking to promote alternative explanations for phenomena. Rather than building off of prevailing narratives, critical theorists interrogate categories like gender, sexual orientation, and race to expose the ways in which discourse creates and reinforces existing social structures (Butler, 1990; Foucault, 1980; Williams, 1991).

Critical theorists argue that categories used to differentiate people (e.g. ethnicity, sexual orientation, gender, etc.) are presented in a way that reinforces systems of

oppression and privilege, and "…the logic that maintains those structures becomes a common-sense lens through which people view and interpret their everyday experiences" (Kilgore, 2001, p. 55). This 'common sense' framing works to maintain existing systems of privilege and is accepted by the marginalized, even though it oppresses them (Giroux, 2008). A critical analysis of text questions the assumptions embedded within it, and then creates emancipatory knowledge as it frees oppressed groups from the 'common sense' assumptions, creating opportunities for more constructive representations of marginalized groups (Kilgore, 2001).

Part of the 'common sense' framing of college alcohol use is that it is a general problem that faces 'young people.' This framing of college students as generalizable obscures the ways in which alcohol consumption among them is heaviest among White men, and is much less of a problem for students of color, especially female students of color. Generalizing in this way helps hide the extent to which privileged race and gender identities are responsible for some of the most problematic behavior, and implicates other college students from less privileged identities as well.

It is not enough, however, to simply recognize that alcohol consumption behavior varies significantly by gender and ethnicity. Critical analysis of collegiate alcohol consumption highlights another part of the 'common sense' framing, which occurs after it is pointed out that men consume more alcohol, and as a result cause more problems, than women. 'Common sense' says that this is to be expected, and that 'bad' behavior by men is to be expected and even tolerated (e.g. "boys will be boys"). 'Common sense' is an essentializing frame and thus ignores and hides all the ways in which men are conditioned to act in problematic ways, rather than being predisposed towards this

behavior. While using critical theory helps to locate the source of oppression in college alcohol consumption, it is not the most appropriate philosophical tool for explaining how and why college men, and specifically White college men, consume so much more than others. For that, postmodernism is a more effective tool.

While postmodernism defies definition by its very nature, Jean-François Lyotard, who introduced postmodernism to the philosophical lexicon, explained it "…as incredulity toward meta-narratives," (Lyotard, 1984, p. xxiv). Although both critical theory and postmodern theory focus on oppression and power, they approach this issue in different ways. Critical theory is criticized for its singular focus on the oppressed/oppressor binary, leaving no other space for the oppressed to occupy than becoming the oppressor after their emancipation (Stinson & Bullock, 2012). Effectively understanding college men's drinking necessitates stepping outside of critical theory's oppressor/oppressed binary, as the population driving the behavior is generally privileged, but also directly suffers from the excessive alcohol consumption.

Postmodernists focus on epistemology, and do not believe in universal values for judging knowledge. Instead they seek to constantly question what is presented as knowledge and work to include multiple 'truths' as knowledge is constructed (Kilgore, 2001; Tisdell, 1998). Rather than existing as "Truth," postmodernists see possibilities for multiple "truths" (Tisdell, 1998). Postmodern theorists believe that as knowledge is contextual; it can shift as quickly as the context shifts, the perspective of observers change, or events overtake a situation (Kilgore, 2001). By accepting the possibility of multiple "truths," postmodernism allows for the investigation of gender, ethnicity, and privilege in college alcohol consumption to discover multiple perspectives without

requiring that any or all of them map to a larger system of privilege and oppression, or be judged against some universal criteria. Postmodern theory cautions against the emancipatory focus of critical theory as "any emancipatory perspective presupposes values which cannot be agreed upon universally or permanently" (T. Brown & Jones, 2001, p. 4). Postmodern theory, however, is criticized in return as being an obstacle to addressing inequalities because of this caution (Rikowski & McLaren, 2002).

Rather than being forced to choose between critical and postmodern theory, and their respective strengths and limitations for this research, this study is best served by a combination of the two. The utilization of a critical postmodern theory (CPT) creates a space to understand the limits of critical theory while still taking action to dismantle hegemonic power structures. "By integrating critical theory and postmodern theory, CPT cautiously uses the activist praxis of critical theory to restore hope—and therefore, action—to the (too often) inaction of postmodern theory" (Stinson & Bullock, 2012, p. 1167). CPT avoids contributing to hegemonic structures "by falsely separating topics and methodologies that are fundamentally complementary" (Agger, 2014, p. 17). It "…reminds people that they are multiple subjects who may be privileged in some ways and disenfranchised in others"(Grace, 1997, p. 56).

Using CPT as a lens to revisit the literature on alcohol problems and interventions in college students, we can see different modernist assumptions at work. Whenever the research on alcohol and college students investigates behavior in the aggregate, it serves to make invisible how the most privileged identities (Whites, men, athletes, etc.) are more likely to engage problematic behavior by discussing 'college students' as if they posses no ethnicity or gender. Similarly, when the literature does include discussions of

differences by ethnicity or gender, it tends to do so in a way that presents these differences as biological inevitabilities, making invisible the ways in which these identities are socially created and replicated. In these ways, the literature serves maintain hegemonic structures by shifting responsibility for alcohol-related problems from privileged identities (e.g. high drinking rates among White men) to oppressed identities (e.g. low drinking rates among Black women). Even when these differences are discussed, the modernist 'common sense' framing presents differences as outcomes of biology, that everyone must accept, rather than socially constructed identities that can change. For example, when Alfonso and Deschenes (2013) found significant differences between men and women in college regarding the frequency and consequences of playing drinking games, they attributed the possible differences to men's biological ability to metabolize alcohol faster than women, even though drinking games are an inherently social activity. The implication is that men will always be more likely to play drinking games due to biology, rather than the result of the ways in which men are socialized and respond to the environment of college.

While the literature from the health fields are primarily embedded in the modernist perspective, there is research that explores how alcohol consumption is tied to privilege and social identity from the fields of higher education, sociology, and psychology (e.g. Harper, Harris, & Mmeje, 2005; Iwamoto, Cheng, Lee, Takamatsu, & Gordon, 2011; Peralta, Callanan, Steele, & Wiley, 2011). Literature from these fields has challenged the assumptions that alcohol consumption is driven solely by ignorance or biological predispositions. In fact, research into the neurology of addiction suggests that estrogen actually increases the chance of becoming addicted to drugs (Bobzean,

DeNobrega, & Perrotti, 2014), which suggests clearly that men's increased alcohol consumption is not a matter of only biology.

Despite the reality that individuals do not experience their genders independent of their ethnicities, or vice versa, the literature exploring the connection between alcohol and these identities does. Accordingly, to fully understand how gender and ethnicity are related to alcohol consumption among college students, it is necessary to explore each connection separately before discussing the interaction between them.

Relationship Between Alcohol and Gender

In reviewing the literature regarding masculinity and alcohol use, Lemle and Mishkind (1989) argue that the differences between male and female usages of alcohol is best understood as a result of the cultural significance placed upon alcohol. Drinking alcohol is seen as a rite of passage and an activity that men do to bond with each other in public ways. Lemle and Mishkind point out how alcohol usage is constructed and presented as masculine within the media, and that more potent forms of alcohol use were seen as more masculine (e.g. consuming hard liquor, consuming more than other men). The authors also argue that while drinking alcohol is inherently masculine, it is even more broadly associated with masculinity because its use also signifies risk taking, being unconventional, and aggressiveness.

Harris (2008) in conducting a qualitative study of 12 diverse undergraduate men found similar attitudes towards alcohol use. Alcohol was seen by these men as a socially acceptable way to bond with other men as well as a way to prove they were sufficiently masculine to each other. Men who could not drink sufficient amounts of alcohol were denigrated as "lightweights" or a "pussy," and men who abstained from drinking were

considered offensively feminine. One individual even reported he would drink juice from a red cup at parties to appear that he was drinking alcohol and avoid grief from other students.

Although not taking place inside the United States, similar connections between young men's alcohol consumption and how they are evaluated as masculine by their peers were found by De Visser and Smith (2007). De Visser and Smith conducted a qualitative study of 31 men aged 18-21 in London from different ethnic and class backgrounds with both individual interviews and 5 focus groups. From the interviews, three themes emerged 1) equating drinking with masculinity 2) trading masculine competence and 3) no link between masculinity and drinking. The first two themes agree that alcohol consumption and the ability to drink large amounts of alcohol are associated with masculine status. The second theme, however, argues that men who have high status in a different masculine area, like athletic ability, can trade on that status to legitimately avoid consuming alcohol. In the third theme, a subsection of men sought to reject the hegemonic connection between alcohol and masculinity, and instead subscribed to rationality, free thought, and integrity as masculine ideals, though they also acknowledged the general society's connection between masculinity and alcohol.

In a quantitative study, Iwamoto, Cheng, Lee, Takamatsu, and Gordon (2011) found that there was a statistically significant correlation between specific masculine norms and alcohol usage that predicted greater risk taking or protective behaviors. Iwamoto et al. conducted their study with a large convenience sample of men at a large public institution in Southern California and utilized an abbreviated form of the Conformity to Masculine Norms Inventory (CMNI). The specific norms that Iwamoto et

al. found predicted increased risk were being a “playboy,” risk-taking, focus on winning, and self-reliance. The norms that had protective powers regarding alcohol were primacy of work and heterosexual presentation, also known as disdain for homosexuals.

In a subsequent quantitative study, Iwamoto, Corbin, Lejuez, and MacPherson (2014) used structural equation modeling to examine the direct and indirect effects of masculine norms on alcohol use, using positive expectancies of alcohol as a mediator. Iwamoto et al. once again used the CMNI at a large public university in Southern California, using a large sample of predominantly Asian men. After incorporating the extent to which the men expected drinking to result in positive outcomes, the authors found the risk-taking and playboy norms to be significant predictors of alcohol use, while heterosexual presentation and emotional control norms were significantly inversely related to alcohol use.

The relationship between masculine norms and alcohol consumption extend beyond the boundaries of college and young men. Iwamoto and Smiler (2013), in a quantitative study of 262 high school seniors found that conformity to masculine norms predicted alcohol use significantly for both boys and girls. Although masculine norms predicted alcohol consumption for boys and girls, the relationship was stronger for boys in the sample, with the norms functioning differently for the two groups. The boys had significant relationships between heterosexual presentation, being a “playboy”, risk-taking, emotional control, and winning and alcohol consumption. The girls had significant relationships between “playboy” and risk-taking. So even though masculinity was related to alcohol consumption for both groups, the ways in which that relationship impacted behavior was different for boys than girls.

In a qualitative study of 78 undergraduates from a variety of backgrounds, Peralta (2007) found that college students assigned specific gendered and raced values to the usage of alcohol. The first value found was that the consumption of alcohol was seen as an inherently masculine activity, and the act of drinking and getting drunk provided important "trophies" that men could later share as proof of their masculinity. The second value assigned to alcohol was that it made men feel powerful and was seen as risk-taking activity. While the first two values assigned to alcohol were about feeling more masculine, the final theme that Peralta found was that men drank to avoid being labeled insufficiently masculine, such as being a "two-beer queer" or a "fruit." Not only was a man's masculinity suspect if he did not drink, it was also suspect if he could not drink a sufficient amount of alcohol without appearing too intoxicated. Peralta described this as a manifestation of hegemonic masculinity, and found the value of alcohol was more deeply ingrained in the White men's construction of masculinity than the Black men in his study.

Hegemonic Masculinity and Men's Health

The concept of a hegemonic masculinity came out of Australia in the 1980's and was most clearly articulated in *Gender and Power* (Connell, 1987). Hegemonic masculinity is a power structure where masculinity is defined in opposition to, and in dominance over, femininity. Under the umbrella of term "masculinity," there fall multiple masculinities that exist as privileged or inferior relative to each other, with the hegemonic masculinity at the apex. What constitutes hegemonic masculinity is socially created, reinforced, and changes over time and social settings (Connell & Messerschmidt, 2005). Although the behaviors vary, hegemonic norms include: the primacy of success,

power, and competition, restrictive emotionality, as well as restrictive affectionate behavior between men (O'Neil et al., 1986). Following Antonio Gramsci's concept of cultural hegemony, hegemonic masculinity is reinforced through social and cultural institutions, not only through implicit (or explicit) threats of force (Connell, 1987).

Rather than something that exists as a timeless individual attribute, gender is best understood as performative (Butler, 1990). The way in which hegemonic masculinity is perpetuated and reinforced is through the public actions of men. Being performative means that gender exists in its *doing*. For example, the act of throwing like *a man*, rather than like *a little girl*, is where gender exists. Hegemonic gender norms are maintained by controlling the way people act, which creates the illusion of an inherent gender, because everyone else is conforming.

In reviewing and synthesizing the research on manhood, Vandello and Bosson (2013) note that men must prove their manhood because it is "a precarious social status that is hard won and easily lost" (p. 101). Manhood does not follow automatically from biological maturing, is difficult to earn, and can be taken away or lost. Kimmel (2004) points out that for men, masculinity is a homosocial performance, as the audience for that performance is other men. Men's status as men is determined by their ranking relative to other men. "We test ourselves, perform heroic feats, take enormous risks, all because we want other men to grant us our manhood" (Kimmel, 2004, p. 214).

The price that men pay for earning their manhood is often at the expense of their own health. In reviewing the literature on men's health, Courtenay (2000) explains men's inferior health outcomes relative to women of the same background (e.g. similar ethnic, economic, or racial groups) are a result of the way that men are behaving *as men*.

He argues that "the resources available in the United States for constructing masculinities – and the signifiers of 'true' masculinity – are largely unhealthy" (Courtenay, 2000, p. 1397). For men there is pressure to demonstrate masculinity through engaging in two different forms of unhealthy behavior: activities that can cause them harm, like drinking large amounts of alcohol, and avoiding getting help when hurt. Doing so reinforces the hegemonic ideals "that men's bodies are structurally more efficient than and superior to women's bodies; that asking for help and caring for one's health are feminine; and that the most powerful men among men are those for whom health and safety are irrelevant" (Courtenay, 2000, p. 1389).

Although there are many different factors that contribute to an individual's health and life expectancy, gender is the best predictor of preventative and health-promoting behavior, and helps to explain the seven-year difference in life expectancy between men and women (Courtenay, 2000; Galdas, Cheater, & Marshall, 2005). Men are more likely to seek out help when they view this behavior as normal for men and not a deviation from expected roles. Mahalik, Burns, and Syzdek (2007) found that both masculinity and the perception of other men's health behavior significantly predicted male participant's own health behaviors. Courtenay (2000) explains that men engage in this behavior not because they want to be unhealthy, but because they expect to be rewarded financially, socially, and with diminished anxiety about their manhood. This is especially relevant for college men because in youth "bodily activity becomes a prime indicator of masculinity" (Connell & Messerschmidt, 2005, p. 851).

This understanding of how hegemonic masculinity causes men to sacrifice their own health to prove themselves, reinforces Peralta's (2007) finding that alcohol

consumption is an expression of hegemonic masculinity among college students. Understanding the nexus between hegemonic masculinity, how men perform their gender, and their alcohol consumption allows for additional insights when applied to research that did not consider this perspective. Liu and Iwamoto (2007) found that the masculine norms they reported their peers holding were significantly associated with their own alcohol consumption. Since men perform their gender for the approval of other men, it follows that men would attempt to conform to the perceived masculinity of their peers. Senchak, Lenard, and Greene (1998) found that college men's average daily drinking was related to the context of the drinking; drinking around other men was associated with higher daily averages, and the larger the groups of men, the larger the increase in consumption. As alcohol is more important as a symbol of masculinity than as a substance, it follows that it would predominately take place in social settings, and that the more men gathered, the more pressure they would feel to consume alcohol as a way of performing their masculinity for each other.

One of the populations that best demonstrate the interplay between hegemonic masculinity and alcohol abuse are fraternity men. Fraternities often embody hegemonic masculine norms (Kiesling, 2001), and are set up to be organizations for an institution's elite men. Unsurprisingly, it is well supported by the literature that fraternity men are at a higher risk for alcohol abuse problems relative to the general college male population. Numerous studies have documented the higher rates of alcohol usage and problems for members of Greek letter organizations (Borsari & Carey, 1999; Ham & Hope, 2003; Meilman, Leichliter, & Presley, 1999). Martin and Hummer (1989) described alcohol consumption as a cornerstone of the fraternities' social lives. Consistent with the idea that

alcohol usage within fraternities is related to their organizational culture and not just a factor of the type of men joining was the finding that the elevated rates of drinking largely disappear once the members of Greek letter organizations leave college (Sher, Bartholow, & Nanda, 2001). That members of these organizations would be found to have higher rates of alcohol usage is congruent with the understanding that alcohol use and abuse are an expression of hegemonic masculinity.

A similar dynamic between hegemonic masculinity and alcohol consumption is visible in male athletes. Many of the same values within hegemonic masculinity are required for successful athletes: valuing competition, winning, physical toughness, hiding weakness, and strength etc. Like fraternity men, male athletes have been found to be at elevated risk related to alcohol abuse (Ham & Hope, 2003; Meilman et al., 1999; T. F. Nelson & Wechsler, 2001; G. Wilson, Pritchard, & Schaffer, 2004). While fraternity members tend to drink more than male athletes, the group with the highest alcohol usage was men who were members of both fraternities and athletic teams (Meilman et al., 1999). The other group within male athletes found to be at an elevated risk was the teams leaders, who drink more and experience more negative consequences than their teammates (Leichliter, Meilman, Presley, & Cashin, 1998). In both cases, as men move into groups associated with higher masculine status, drinking and the problems associated with it increase.

Men are complicit with this system not only because it can provide them with privilege and power, but also because if they fail to comply, they will likely be marginalized and oppressed, and perhaps even physically attacked by other men (Courtenay, 2000; Kimmel, 2008). Kimmel (2008) refers to the way men make sure

other men perform their gender *correctly* as "gender policing." Gender policing can be as benign as teasing, but can escalate to physical violence, including murder in the most extreme cases. This helps to explain why alcohol interventions tend to be less effective with the most problematic male drinkers. Even if an intervention were effective in making a man rethink how much alcohol he wanted to consume, it would do nothing to prevent that man from being gender policed by other men for not drinking in sufficient quantities.

The differences between White men and non-White men in alcohol consumption can also be explained, in part, by the relationship between hegemonic masculinity and privilege. Instead of being a checklist that a man must meet to achieve hegemonic status, it is more accurate to think of hegemonic masculinity as a "…position in the social order – one that is seen as worthy, complete, and superior – rather than a fixed set of essential characteristics" (Chen, 1999, p. 587). Alcohol consumption in college is strongly tied to a hegemonic masculinity that is positioned around Whiteness, so the push to consume alcohol does not have the same resonance for non-White undergraduate men. If a man of color did decide to achieve manhood through alcohol consumption that would be an example of him making a hegemonic bargain.

Chen asserts, in the hegemonic bargain, a man "exchanges or trades in the advantages conferred to him by his position in the social order for 'real,' 'unblushing' manhood" (Chen, 1999, p. 600). As part of a hegemonic bargain, a man tacitly accepts that his status as an ethnic minority makes him less of a man, but uses his status in some other area to compensate and thus claim the "real" manhood for himself, whether that is through athletic skill, financial success, business prowess etc. The logical conclusion for

undergraduate students then, is that the greater the extent to which a non-White man has identified with the (White) hegemonic masculinity, the more likely he would be to consume alcohol in college like his White peers, as part of his own hegemonic bargain.

Relationship Between Alcohol and Ethnic Identity

An examination of college students' alcohol consumption by race/ethnicity supports the idea that alcohol consumption is tied to social identity. Ham and Hope (2003) noted that multiple studies have found alcohol abuse to be a problem most acute in Anglo-American men. O'Hare (1995) investigated the differences between Asian and White college students at Rutgers, in a quantitative study utilizing survey data from over 800 undergraduate and graduate students. O'Hare found that the Asian students were five times more likely to abstain from alcohol consumption than White students, and that White students were five times more likely to be binge drinkers than Asians.

Not only do rates of alcohol consumption vary by race/ethnicity, but so do the reasons behind those differing rates of consumption. Rather than being the case that drinking behavior is under reported, research suggests that the actual rates of consumption differ due to social/cultural factors. In a qualitative study utilizing grounded theory, Peralta (2005) suggests that the difference in alcohol consumption between White and non-White college students can be explained by viewing alcohol consumption as a manifestation of White privilege. White students in the study were oblivious and largely ignorant of the experiences of Black students on campus, and did not see race as an issue related to alcohol consumption. Black students, conversely, saw campus as highly racialized, and predominately White, space where their peers and institutional authorities held them to different standards of behavior. Black students did

not feel they had the privilege of getting drunk, and if they did, they would be more likely to be singled out for negative consequences. The study, however, did not differentiate between the experiences of male and female students, but instead focused solely on race/ethnicity.

In another qualitative study, Sweeney (2014) examined the intersection between race/ethnicity, class, masculinity and party culture in college fraternities. Sweeny interviewed 24 fraternity men at a large state research university, with a reputation for being a "party school." Sweeny found that the high privilege men (mostly White, from wealthier families) in the study put a premium on partying and consuming large amounts of alcohol, the less privileged men (mostly non-White, from lower income families) did not. While some of the men in the study looked to join the partying culture of the privileged White fraternities as a means of social mobility, the less privileged men, especially the members of the non-White fraternities, generally viewed excessive alcohol consumption as irresponsible, not masculine, and as potentially having negative impact on the collective members of their race/ethnicity if they engaged in it.

Another way in which the racial and ethnic environment of a campus is related to alcohol consumption of non-White students can be seen looking at the impact of microaggressions. Blume, Lovato, Thyken, and Denny (2011) in a quantitative study examined the relationship between microaggressions, mental health, and alcohol consumption of racial and ethnic minorities at historically White universities. Microaggressions were defined as "brief and commonplace daily verbal, behavioral, or environmental indignities, whether intentional or unintentional, that communicate hostile, derogatory, or negative racial slights and insults toward people of color" (Sue et al., 2007,

p. 271). The researchers collected data from 684 volunteer, 18-20 year old students of color at a historically White institution. The researchers found that experiencing microaggressions was significantly related to anxiety and increased binge drinking for students of color. Suggesting that White students not only impact the drinking behaviors of non-White students, but are in return impacted in their behaviors by their non-White peers, Wechsler and Nelson (2008) noted that White students, at predominately White institutions, tended to consume less alcohol the greater the proportions of non-White students at the institution.

While racial and ethnic differences explain some of the differences in alcohol consumption between groups, it cannot explain the differences within those groups. A variable that does help explain the difference both between and within ethnic groups, however, is ethnic identity. Ethnic identity has been found to be related to alcohol and other substance use among adolescents (Holley et al., 2006; Scheier et al., 1997) and college students (Iwamoto et al., 2012; Schwartz et al., 2011; Zamboanga et al., 2006).

In a longitudinal study of Black and Hispanic students from Seventh through Eighth grade, Scheier et al. (1997) found that for students with the lowest cognitive-affective risk of consuming alcohol, the high ethnic identity status group had the lowest alcohol use, but for the highest cognitive-affective risk group, the high ethnic identity status group had the highest alcohol use. Conversely, when measuring ethnic identity against social skills risk, the high ethnic identity group had the highest rate of alcohol use among the low social skills risk group, but the lowest alcohol use among the high social skills risk group. Holley et al. (2008) studied the relationship between ethnic identity and substance use among a diverse group of seventh and eighth graders using three different

scales to see how and if findings differed by instrument. In their findings, when significant differences were found, higher levels of ethnic identity were associated with negative attitudes towards, and less use of alcohol, cigarettes, and marijuana.

Mixed findings between alcohol use and ethnic identity have continued to be found when moving from adolescents to college students. Investigating the relationship between acculturation, gender, and heavy alcohol use among Mexican American college students, Zamboanga, Raffaelli, and Horton (2006) found a significant relationship between ethnic identity, alcohol use, and gender. The analysis was done on results from 126 Mexican American students from four Midwestern institutions. The respondents were predominantly traditional aged students, and 43% were male. Students were surveyed about their heavy alcohol use and two aspects of acculturation, global acculturation and ethnic identity. Global acculturation was measured by the Acculturation Rating Scale for Mexican Americans-II (Cuellar, Arnold, & Maldonado, 1995) and ethnic identity was measured using the Multigroup Ethnic Identity Measure (MEIM: Phinney, 1992). The researchers found a higher levels of ethnic identity were positively associated with the frequency of heavy alcohol use for men, but not for women in their sample.

In a quantitative study, Schwartz et al. (2011) examined the connection between acculturation and health risk behaviors in college students from immigrant families. The researchers gathered information from over 3,200 undergraduate students from 30 colleges and universities across the United States. The respondents were 72% female, and from a variety of races and ethnicities. Questions asked of students included measures of cultural practices and values, cultural identification measured by the MEIM

and a modified version of the MEIM to measure US cultural orientation, as well as questions about health risk behaviors. The researchers found that the effects of ethnic identity depended on ethnic group. For Black students higher ethnic identity was related to less hazardous alcohol use, while for Hispanic students higher ethnic identity was associated with more sexual risk taking.

Similarly to Schwartz et al. (2011), in a quantitative study of over 1,500 US-born Asian college students, Iwamoto, Takamatsu, and Castellanos (2012) explored the relationship between acculturation, ethnic identity, and binge drinking. The sample was collected from a large public university in southern California, was over 70% female, and from a wide variety of different ethnicities. In addition to demographic questions, the instruments used in the study included the Revised Multigroup Ethnic Identity Measure (MEIM-R), an adapted version of the Daily Drinking Questionnaire (DDQ), and the Rutgers Alcohol Problems Index (RAPI: White & Labouvie, 1989). Using negative binomial regression, Iwamoto et al., found a statistically significant relationship between ethnic identity and alcohol-related problems, but not between ethnic identity and binge drinking. That is, students with lower ethnic identity scores (i.e. their ethnicity was a less salient identity) were more likely to report experiencing more alcohol-related problems, but ethnic identity was not significantly related to whether or not a student binge drank.

Although different studies have found different relationships between ethnic identity and alcohol consumption, theoretically higher levels of ethnic identity would be expected to be related to lower levels of alcohol consumption for non-White students. Studies have repeatedly found that White people tend to have a more ambivalent view of their own ethnic identity, as it is not a generally salient identity, whereas non-White

individuals tend to have higher levels of identification with their own ethnicity (Smith & Silva, 2011). This may be one reason why students of color tend not to drink as much as Whites in college, as greater identification with their own ethnicity would mean the messages promoting the importance of alcohol consumption coming from the White cultural institutions would be less salient. In the United States where constructions of the ideal are defined by Whiteness, it is unsurprising that higher levels of ethnic identification have been associated with higher self-esteem and wellness for people of color (Smith & Silva, 2011).

Limits of Current Literature

Just as CPT was used as a lens through which to interpret the existing literature, this theoretical framework also informed the understanding of the current literature's limitations. The primary limitation of the literature on college student's alcohol consumption has been its one-at-a-time approach to examining relationships. The research on gender and alcohol consumption has mostly ignored ethnicity as a factor, or when it has been included, considered it an additional variable that is independent of gender (e.g. Clarke et al., 2013; Iwamoto et al., 2014). Likewise, the research on ethnicity and alcohol consumption, has by in large ignored the impact of gender (e.g. Luczak et al., 2001; O'Hare, 1995; Peralta, 2005). All of the studies involving ethnic identity and alcohol consumption discussed had coeducational samples that were predominately female, and only Zamboagna et al, (2006) considered gender as a moderating variable. The decision to investigate gender and ethnicity as variables independent of each other, while understandable, misses the ways in which these variables are co-constructed. "…Race, gender and class are not distinct realms of

experience, existing in splendid isolation from each other…. Rather, they come into existence *in and through* relation to each other" [emphasis in original] (McClintock, 1995, p.5).

The other main limitation of much of the research on gender, ethnicity, and alcohol consumption is the decision to exclude measures of privilege and oppression. While instruments like the CMNI measure masculine norms that are clearly related hegemonic masculinity (like disdain for homosexuals, power over women, etc.) it does not account for the ways in which similar norms could manifest in different masculinities. Values such as putting work ahead of everything else, or winning competitions, might drive men in a privileged position to drink more alcohol (as partying is your job at school or drinking is a competition to show who is tougher) while driving men from less privileged positions to drink less (as being drunk will interfere with your job to pay for school and your ability to get the best grades).

Similar to measures of masculinity, measures of ethnic identity and the degree to which it is salient, fail to account for what that identity means. As research on ethnic identity has shown (e.g. Iwamoto et al., 2012; Schwartz et al., 2011; Zamboanga et al., 2006), ethnic identity means different things depending on the ethnic group that an individual belongs to. Having a strong sense of ethnic identity for a White man might mean that he is more likely to consume alcohol in large amounts, as alcohol consumption is part of hegemonic masculinity in the US. Conversely, a strong sense of ethnic identity for an Asian man might mean that he is less likely to consume alcohol, as this ethnic identity diminishes the resonance of the messages about masculinity that promote alcohol consumption, as that form of masculinity is constructed as White.

The failure of research to consider the intersectionality of college men's alcohol consumption means that the problem is not fully understood, and consequently, also cannot be fully addressed. While Sweeney (2014) and Peralta (2007) explicitly examined the relationship between race/ethnicity, gender, and alcohol consumption, they both did so qualitatively with relatively small samples at single institutions. While both studies noted the relationship between race/ethnicity and gender as it related to alcohol consumption, neither study was able to tease out the nature of the relationship in a way that would be helpful in creating interventions. Peralta's study was very detailed in explaining the gendered values that those men placed on alcohol consumption, but did not explore how their racial/ethnic identity modified or shaped those values. Sweeney's study, conversely, did explore how groups defined appropriate behavior as it related to partying, but grouped men in a way that averaged their privilege based on their multiple identities, and did not focus on only alcohol consumption.

While creating a quantitative survey that included both the CMNI and the MEIM-R would address the single-axis limitation of previous research, it would still not adequately address the hegemonic phenomenon that has been theorized by critical and postmodern perspectives, and observed as a part of alcohol consumption. The theoretical framework that addresses this void, for both gender and ethnicity, is social dominance theory. Social dominance theory adds a necessary conceptual dimension to the analysis that has been missing from other studies.

Social Dominance Theory

Social dominance theory is a psychological theory that "focuses on both individual and structural factors that contribute to various forms of group-based

oppression" (Sidanius et al., 2004, p. 846). Social dominance is built off of four basic assumptions: 1) Human social systems are predisposed to form group based social hierarchies, with a hegemonic group at the top and a negative reference group at the bottom. 2) Hegemonic groups tend to be disproportionately male. 3) Most forms of social oppression (e.g. racism, sexism, homophobia, etc.) are regarded as manifestations of the same predisposition toward group-based social hierarchy. 4) Social hierarchy is a survival strategy that is selected by most, if not all, species of primates, including humans (Sidanius & Pratto, 1993).

Social dominance theory explains that these social hierarchies maintain themselves and minimize inter-group conflicts by creating a consensus that one group is superior to other. This consensus, and the discrimination that follows from it, is promoted and maintained by ideologies that appear to be evident truths and widely accepted by the society (Pratto et al., 1994). Acceptance of these myths is measured by an individual's social dominance orientation (SDO). SDO is the extent to which an individual places value "…on nonegalitarian and hierarchically structured relationships among social groups. It expresses general support for the domination of certain socially constructed groups over other socially constructed groups, regardless of the manner in which these groups are defined" (Sidanius & Pratto, 1999, p.61).

Although there have been no studies examining the connection between SDO and alcohol use among college students, hegemonic power structures are built into the foundation of social dominance theory, and so theoretically there should be a strong connection between the two. Supporting this connection are the many empirical studies that have found SDO to be related to values and beliefs consistent with hegemonic

masculinity. As part of creating the SDO scale, Pratto, Sidanius, Stallworth, and Malle (1994) found SDO to be related to lower empathy, support for aggressive military action, decreased support for gay rights and women's rights, and less support for social programs that benefit disadvantaged groups. Other studies have found that SDO is also related to: right-wing authoritarianism (a trait associated with prejudice, discrimination, and hostility towards members of out-groups) (Asbrock, Sibley, & Duckitt, 2010; Sidanius & Pratto, 1999), prejudice against gay men and lesbians (Poteat & Anderson, 2012), sexism (Akrami et al., 2011), higher levels of US patriotism among White Americans (Peña & Sidanius, 2002), and modern racism (Perry & Sibley, 2011).

The SDO scale is a direct measure of attitudes related to privilege and oppression across group identities. Studies have found that SDO levels are significantly higher in higher-status groups than lower-status groups across social identities, including race, ethnicity, and sexual orientation (Sidanius & Pratto, 1999). This pattern holds up across identities where there are multiple stratified groups, in a linear manner; SDO is linked to the relative status of each group (Sidanius & Pratto, 1999). The relationship between SDO and group status is mirrored by the relationship between group status and alcohol consumption. Higher status groups (e.g. men and Whites) have both higher levels of SDO and consume more alcohol than lower status groups (e.g. women and Blacks) (Ham & Hope, 2003; Sidanius & Pratto, 1999). By serving as a measure of privilege for both gender and ethnicity, SDO captures an important dynamic at play for college student alcohol consumption that has not yet been measured.

This Study

This study, by taking a critical quantitative approach, seeks to contribute to the literature in a way that addresses the limitations of the existing literature. Quantitative studies by Iwamoto et al. (2011, 2014) and Uy et al., (2013) found a relationship between alcohol consumption, alcohol problems, and masculinity in college students, while Iwamoto et al., (2012), Schwartz et al., (2011), and Zamboanga et al., (2006) found significant quantitative relationship between alcohol consumption, alcohol problems, and ethnic identity in college students from a variety of ethnic backgrounds. Adding social dominance to the variables being measured addresses the lack of hegemonic values measured by the CMNI or MEIM-R, and is strongly conceptually linked by the literature. Qualitative studies by Sweeney (2014) and Peralta (2007) support combining all three groups of independent variables, as they found meaningful intersections between ethnicity, masculinity, privilege, and alcohol consumption in college students.

Chapter III

Although the scope of the problem of alcohol consumption by college students is well documented (Ham & Hope, 2003; Hingson, Heeren, Zakocs, Kopstein, & Wechsler, 2002; Hingson & White, 2010; Wechsler et al., 2000; A. White, Hingson, Pan, & Yi, 2011), higher education institutions' have not yet been able to effectively address the problem (DeJong & Langford, 2002; Hingson et al., 2009; Wechsler et al., 2002). One reason for this shortcoming may be explained by the failure of alcohol interventions to incorporate how social identities are related to college students' alcohol consumption. Alcohol consumption in college is not a problem that is distributed equally across all students. Important differences exist in alcohol consumption by the gender and ethnicity of college students (Clarke et al., 2013; Ham & Hope, 2003; O'Malley & Johnston, 2002; Peralta, 2005).

When studies of college students' alcohol consumption from the health fields examine differences by social identity, they have tended to do so through examining demographic differences without investigating how members of those groups construct those demographic identities (e.g., Clarke et al., 2013; Ham & Hope, 2003; Knight, Wechsler, & Kuo, 2002; O'Malley & Johnston, 2002; Pollock et al., 2012). Conversely, studies from psychology and higher education that have examined the relationship between alcohol consumption and how identities are socially constructed, have done so examining only one social construction at a time (e.g., Iwamoto, Cheng, Lee, Takamatsu, & Gordon, 2011; Peralta, 2005). As no one experiences his or her identities one-at-a-time, it is necessary to not only include social identities, but also how they intersect when attempting to understand a phenomenon.

Previous studies with undergraduate men have examined the connections between masculine norms and alcohol consumption (Iwamoto et al., 2011; 2014; Uy, Massoth, & Gottdiener, 2013; Davies et al., 2000; de Visser & Smith, 2007), or between ethnic identity and alcohol consumption (Holley et al., 2006; Iwamoto et al., 2012; Kulis, Marsiglia, Kopak, Olmsted, & Crossman, 2012; Love et al., 2006; Marsiglia et al., 2001; Scheier et al., 1997; Schwartz et al., 2011; Zamboanga, Tomaso, Kondo, & Schwartz, 2014), but no studies have yet examined alcohol consumption from the intersection of masculinity and ethnic identity. Additionally, quantitative studies examining alcohol and masculinity or ethnic identity have failed to include measures of the hegemonic forces that shape gender and ethnicity, that have been observed in qualitative studies of masculinity, ethnicity, and alcohol consumption (Peralta, 2007; Sweeney, 2014). Although it has not been studied in relationship to alcohol consumption, the anti-egalitarian values measured by the Social Dominance Orientation scale (SDO) are strongly related theoretically to the hegemonic values driving alcohol consumption for masculinity and ethnicity.

Sweeney (2014) and Peralta (2007) have included privilege in their studies of masculinity, ethnicity, and alcohol consumption, but they did not consider ethnic identity. This study seeks to bridge these gaps in the research by examining the quantitative relationship between masculinity, ethnic identity, social dominance orientation, and alcohol consumption in undergraduate men. The research questions guiding this study are:

1. How do masculine norms, ethnic identity, and social dominance orientation predict alcohol consumption?

2. How do masculine norms, ethnic identity, and social dominance orientation predict alcohol problems?

After reviewing the existing literature on this subject in Chapter II, these research questions have been refined into the following more specific hypotheses:

1. Masculine norm factors will be correlated with social dominance orientation factors
2. Masculine norm factors will be correlated with ethnic identity factors
3. Social dominance orientation factors will be correlated with ethnic identity factors
4. Masculine norms, ethnic identity, and social dominance will all significantly predict alcohol consumption.
5. Masculine norms, ethnic identity, and social dominance will significantly predict alcohol consumption differently by race and Hispanic ethnicity.
6. Masculine norms, ethnic identity, and social dominance will all significantly predict alcohol problems.
7. Masculine norms, ethnic identity, and social dominance will significantly predict alcohol problems differently by race and Hispanic ethnicity.

Research Design

The design of this study, while quantitative in its data collection and analysis, borrows from critical qualitative studies in its framing and goals. As a study grounded in critical postmodern theory, one of the goals of this research is to influence the practice of others in a way that improves students' lived experience. As a quantitative study, the findings of this research are more likely to be accepted by policy makers. Although growing in acceptance, qualitative research is less likely to influence the practice or to

change current research agendas, as both groups are more likely to be skeptical of qualitative research (Padgett, 2011). Furthermore, quantitative research is designed to be generalizable, while qualitative research is not, and so the findings of this study may be applicable to a wider population and have a greater chance to positively impact the lives of more college students as a result. A quantitative research approach is also appropriate for this study, as it is testing existing theories, that masculinity and ethnic identity are related to undergraduate men's alcohol consumption, and exploring relationship between variables in a novel way (Creswell, 2014).

Critical quantitative studies, in addition to being tasked with improving practice, are meant to: reveal inequalities and identify how they are socially or institutionally perpetuated, and question existing models, measures, or practices of quantitative research in order to better offer models, measures, or practices that describe the experiences of the underrepresented (Stage, 2007). In critically examining the intersection of hegemonic masculinity, ethnic identity, social dominance orientation, and college alcohol use, the systematic bias towards making Whiteness and maleness invisible are challenged. It is White men who are the most frequent consumers of alcohol in dangerous amounts, and therefore the most likely to be the ones experiencing and causing alcohol-related problems on campus. That alcohol consumption is framed as a problem for generic 'college students' by most studies is a reflection of the continued perpetuation of inequalities and biases that downplay problems associated with privileged identities.

This specific study implemented a quantitative, one-off, cross-sectional, internet-based survey of undergraduate men focusing on their masculine norms, social dominance orientation, ethnic identity, and alcohol consumption. A survey was the most appropriate

method for data collection for these research questions as there was no pre-existing data set collecting these variables from the same sample (Calder, 1998). When designed properly, a survey allows inferences to be drawn about a population from a smaller sample (Fowler, 2009), in this case, understanding better the behavior of undergraduate men nationally by drawing from a sample of college men.

While surveys have the additional benefits of the economy of the design and the ability to rapidly turnaround data collection (Creswell, 2014), these benefits are amplified for internet-based, cross-sectional surveys. Cross-sectional surveys are appropriate for capturing a "snapshot" that aims to represent the population being studied and any naturally occurring subgroups (Calder, 1998). Cross-sectional surveys also do not require multiple administrations, which reduces the time and cost of data collection, as well as minimizes non-responses from students suffering from survey-fatigue (Porter, Whitcomb, & Weitzer, 2004). Internet-based surveys also present additional savings in costs and time, relative to other methods of conducting surveys (Wright, 2005). Additionally, alcohol related measures have been found to produce results that are not significantly different between internet-based and paper-based distribution methods (Miller et al., 2002).

Target Sample

The sample for this study was traditional age (18-24), full-time, undergraduate college men from all class years, drawn from five predominately White, four-year, residential institutions in the Northeast United States. Undergraduate men at predominantly White, residential institutions in the Northeast are the population with the highest average rates of alcohol consumption in the United States (Hingson & White,

2012), and as a result is the population of greatest concern. Full-time undergraduate men at these institutions were chosen through simple random sampling at each institution, creating representative samples from each institution, and a combined sample that should be representative of the larger population of fulltime undergraduate men in the Northeast (Fraenkel, Wallen, & Hyun, 2012).

Institutions were identified as potential research locations if they matched the institutional profile of interest (four year, residential, predominately White, etc.). The list of potential institutions was then narrowed so that it included a mix of large and small, public and private institutions. Institutions with characteristics typical of higher than average drinking rates, such as large athletic programs, fraternities, traditionally masculine academic focus (e.g., business, technology, or engineering), and/or a greater proportion of male than female undergraduates were prioritized for contact as potential locations.

Access to each institution selected was gained through outreach to individuals in the Student Affairs divisions with whom I had previously communicated, or shared a mutual colleague, explaining my research and asking if there would be interest in conducting the survey at their institution. After initial interest was indicated at each institution, final approval was granted through the Vice President of Student Affairs (or equivalent) office. Three of the institutions are NCAA Division I athletic institutions, with undergraduate populations ranging from 9,000 – 12,500 students. The other two institutions are smaller, with 2,500 – 4,250 undergraduate students, one NCAA Division III, and one NCAA Division II, athletic institutions. Two of the institutions are public flagship universities, the other three are private institutions including: a religiously

affiliated university, a business university, and a liberal arts college. Three of the institutions have Fraternities and Sororities, while the other two do not. Three of the institutions are located in suburban areas, while one is situated in an urban location. The proportion of White students at the institutions range from 58% to 90%, and male students make up 44% to 60% of undergraduates, with men making up a majority at only one of the institutions, contrary to the national trend of more female than males attending college. See Table 3.1 for institutional profiles.

Table 3.1
Surveyed Institutions' Profiles

	Institution				
Characteristic	**1**	**2**	**3**	**4**	**5**
Public or Private	Public	Public	Private	Private	Private
Institution Mission	Research University	Research University	Religious University	Business University	Liberal Arts College
NCAA Division	1	1	1	2	3
Fraternities	Yes	Yes	No	Yes	No
Undergraduate Population	10,000	12,500	9,000	4,250	2,500
Percentage Male	45%	46%	46%	60%	44%
Percentage White	89%	90%	68%	58%	61%
Number of Men Invited to Survey	1,500	1,500	1,500	700	1,056
Percentage of Respondents	24%	30%	29%	20%	40%

Data Collection

Access to the undergraduate men was provided through Student Affairs divisions at each institution. The lists of students who were selected from the samples were provided through Institutional Research offices, and the survey was distributed via email from the Student Affairs division at institutions 1, 2, and 4, and from myself at institutions 3 and 5 at the request of those institutions. The text of the email contained the same message for every institution (see Appendix A) and included the URL for the survey. The data was collected through a web survey, utilizing the program Qualtrics, with the initial message going out in between October and November 2015, dependent upon the schedule of the institution. This time frame gave students a chance to have settled into their social and academic patterns at school, but was early enough that they were not yet be worried about traveling for the Thanksgiving break or preparing for final exams. Each institution received a separate Qualtrics survey, all with the exact same design, so that each institution was identified for respondents without having to answer an additional question.

Emails were personalized to address students by their first names (e.g., Dear John), as this has been found to significantly increase response rates for web surveys (Sánchez-Fernández, Muñoz-Leiva, & Montoro-Ríos, 2012). A follow up email was sent 2 days later from the same email address in the Student Affairs division, as this has been found to be more effective than sending the first reminder later (Crawford et al., 2001). A second and final reminder was sent 5 days after that, as additional reminders have been found to have diminishing returns for web surveys compared to mail surveys and might even be interpreted as intrusive or spam (C. Cook, Heath, & Thompson, 2000;

Manfreda, Bosnjak, Berzelak, Hass, & Vehovar, 2008). A raffle entry was used to incentivize students to respond to the survey, with an opportunity to win one of 10 $50 gift cards to Amazon.com, by sending an email to enter, independent of the survey, so that responses could not be tied to raffle entries, thus maintain the anonymity of respondents.

The primary drawback for internet surveys is a lower response rate than other methods, which is influenced by the internet access, subject matter, who is conducting the research, and the length and presentation of the survey (Fan & Yan, 2010). This challenge was in part, mitigated by its design and audience. The survey was for academic rather than commercial research, which increases the probable response rate, as does the sample, college students, who are highly likely to have internet access on a college campus, and the subject matter, alcohol consumption, which is a highly salient topic for college students (Fan & Yan, 2010). Qualtrics is a professional web-service used to conduct surveys, which dramatically reduces opportunities for technical flaws in the survey, and the three survey instruments being used are all relatively brief, which also increases participation (Fan & Yan).

The survey was piloted with 5 undergraduate male students, who were recruited through the Student Activities Office and compensated with $5 gift certificates to Amazon.com for their time. All five students reported the survey was easy to understand and complete, and that there were no questions or designs factors that made them want to stop answering questions. The time it took to complete the survey ranged from 6.5 minutes to 12 minutes, with most students completing it in about 10 minutes. In the final administration of the survey, most respondents completed the survey in the 8-15 minute

range. Ideal completion time for a survey has been found to be in thirteen minutes or less to optimize response rates (Asiu, Antons, & Fultz, 1998; Handwerk, Carson, & Blackwell, 2000).

To have confidence that the data collected can show something meaningful about the larger population it was drawn from, it is important to have a sample with enough power. Statistical power is the probability of correctly detecting statistical significance when it exists in the larger population, and by convention is set at .80 (Cohen, 1992). Power is inversely related to the probability of making a Type II error (β), failing to find significance when it truly exists in the population, and Type I error (α), the chances of finding significance when none actually exists in the population (Privitera, 2012). Outside of increasing the amount of Type I error one is willing to make, power can be increased through decreasing the variability between participants, increasing the effect size being studied, and by increasing the size of the sample (Privitera, 2012). By focusing on full-time, traditional aged undergraduate men at residential institutions in the Northeast, variability between participants is minimized and the effect size studied is maximized. The variable that is most easily controlled, however, is the sample size.

The sample size required to achieve a power of at least .80 is dependent upon the method of analysis and the number of variables being examined at the same time (Faul, Erdfelder, Buchner, & Lang, 2009), with the more variables being examined the less power achieved for the same sample size. An a priori power estimation was made for multiple linear regression using the G*Power 3.1 software (Faul et al., 2009) as conducting a power estimation for count models of regression (e.g., Poisson or negative binomial) was not possible. Assuming the effect size for Cohen's f (how much overall

variance can be explained by the regression model) is small, .02 by convention (Faul et al., 2009), and 13 variables in the model, the number of factors included in the 3 scales included in the survey discussed more below, the necessary sample size to achieve power of .80 is 904 while maintaining α at .05.

Since most web surveys typically have a response rate in the 30-45% range (C. Cook et al., 2000; Fowler, 2009; Nulty, 2008), being very conservative and assuming only 20% of students complete the survey, a total of 4,520 undergraduate men were estimated necessary to be invited to the survey across all institutions. After working with the five institutions, a total of 6,256 individuals identified as male by their respective institutions were invited to complete the survey. Of those individuals, 1,821 responded to the survey in one way or another, giving an initial response rate of 29%, though response rate varied between institutions (see Table 3.1). If all 1,821 responses had been useable, a very small effect size of .01 would have been discoverable, maintaining power at .80 and α at .05, with the 13 main independent variables.

Survey Questions

The survey asked students for basic demographic information, and then proceeded to ask questions about masculine norms, ethnic identity, social dominance, and about their typical alcohol consumption patterns. The survey was composed of six sections: informed consent, demographic questions, questions about masculine norms, questions about ethnic identity, questions about social dominance orientation, and questions about drinking behavior. Each section of the survey will be discussed and the rationale for its inclusion provided. For the four existing inventories being used as a part of this survey, descriptions of the instruments, their validity and reliability, history, and any factors

included within the instruments will also be discussed in this section. A copy of the complete survey can also be found in Appendix B.

The first portion of the survey was designed to ensure that the men participating have been given all the relevant information about this survey, any potential risks and rewards, how their privacy will be maintained, and if they had any questions or concerns who they could speak to. This section also served to maintain the ethical treatment of human research participants. It was next followed by demographic questions designed to sort respondents so that the sample was drawn from the population of interest, and that analysis of the participants could be run by groups such as ethnicity, gender identity, international status, as well as if they were members of a fraternity, an athlete, and where they lived at college.

Gender identity was asked about, as men are the population of interest for this study. The question asks about gender identity, rather than about biological sex, because gender is performative (Butler, 1990), and previous studies have suggested the way that college men construct their gender is a primary driver of alcohol consumption (Iwamoto et al., 2011; Peralta, 2007). This question served to screen respondents and make sure that female students are not included in the analysis (whether transgender or cisgender) and to identify transmen or other gender identities for possible separate analysis. The language for this question was adapted from the Human Rights Campaign guidelines for transgender-inclusive survey design (Human Rights Campaign, 2015). Participants were asked where they lived as students' drinking behavior has been found to be related to where they live when they attend school. Students who live at home with their parents have been found to consume less alcohol than residential students, while students who

live in Fraternity or Sorority houses tend to consume more alcohol (Ham & Hope, 2003; Hingson & White, 2012).

Whether or not a student was an international student was the next question because it was probable that international students' alcohol consumption may be driven by different social factors than their domestic peers. Drinking by college students is related to hegemonic masculinity (Capraro, 2000; Peralta, 2007), and there are multiple hegemonic masculinities that differ by social environment (Chen, 1999; Connell & Messerschmidt, 2005). As a result, it would follow that international students may have different relationships with masculinity and alcohol consumption than American students will. Finally, questions about fraternity and athletic status were asked as control questions, as these factors are known to be positively correlated with increased alcohol consumption among college men (e.g., Ham & Hope, 2003; Meilman, Leichliter, & Presley, 1999; Sher, Bartholow, & Nanda, 2001).

The final questions were about Hispanic origin, race, and ancestry/ethnicity, and were adapted from the 2014 American Community Survey (U.S. Census Bureau, 2015). Both race and ethnicity have been found to be related to alcohol consumption (Clarke et al., 2013; Ham & Hope, 2003; O'Malley & Johnston, 2002; Peralta, 2005). Race and ethnicity are also directly tied to how men construct their gender identity (Chen, 1999; Kelly, 2008; McClintock, 1995) and so must be included from a critical postmodern perspective. The format of these questions allowed for identification of individual's race and ethnicity in a way that facilitated easy statistical grouping of individuals but also for more critical analysis of different group memberships.

The subsequent questions came from pre-existing inventories used to measure social constructs of the variables of interest for this study. The Conformity to Masculine Norms Inventory (CMNI; Mahalik et al., 2003) and the Revised Multi-group Ethnic Identity Measure (MEIM-R; Phinney & Ong, 2007) measure social attitudes of the respondent by asking the degree to which he agrees or disagrees with a given statement in a series of Likert-type questions, asking the respondent to respond to a statement on a four point scale, from strongly disagree to strongly agree. The Social Dominance Orientation (SDO; Pratto, Sidanius, Stallworth, & Malle, 1994) scale similarly presents a series of statements and asks respondents to rate how they feel about that statement on a seven-point scale from very negative to very positive.

The Daily Drinking Questionnaire (DDQ; Collins, Parks, & Marlatt, 1985), is an abbreviated version of the Drinking Practices Questionnaire (Cahalan, Cisin, & Crossley, 1969). The questions elicit responses about an individual's usual drinking pattern, and then gives respondents an open week to input their regular drinking behavior. Each instrument is discussed more in depth below, including the purpose, history, findings from relevant studies using it, reliability and validity evidence, and the statistical factors that are created from each instrument. Permission to use these instruments was granted by their authors, and the correspondence for such can be found in Appendix C.

Conformity to Masculine Norms Inventory

The Conformity to Masculine Norms Inventory was developed by Mahalik, Locke, Ludlow, Diemer, Scott, Gottfried, and Freitas (2003) and is a multidimensional measure of conformity or nonconformity to multiple masculine norms. Unlike other measures of masculinity, the CMNI does not focus only on measuring conflict or

pathology, such as O'Neil's Gender Role Conflict Scale or Eisler's Gender Role Stress Scale (Mahalik et al., 2003). The CMNI contains 94 questions that compose 11 factors that represent distinct masculine norms. These factors are identified as: winning, emotional control, risk-taking, violence, power over women, dominance, sexual prowess or being a "playboy," self-reliance, primacy of work, disdain for homosexuals also known as heterosexual presentation, and pursuit of status. Higher scores on the CMNI indicate a greater conformity to the masculine norms associated with hegemonic masculinity in the United States.

For each masculine norm, statements were given to represent extreme conformity, moderate conformity, moderate nonconformity, and extreme nonconformity to the specific norm. Individuals taking the inventory then rank how strongly they agree with the statement, from strongly disagree to strongly agree, on a four-point scale. In its development, each of the 94 questions in the CMNI had a factor loading of |.40| or greater for one factor and did not cross-load higher than |.30| on any other factor. The CMNI also demonstrated strong internal consistency, with an overall coefficient alpha of .94 for the total score, and alphas for the factors ranging from .72 to .91. The 2-3 week test-retest reliability demonstrated a similar range, with a coefficient of .95 for the total score, and factors ranging from .51 to .96 (See Table 3.2 for all alpha scores) (Mahalik et al., 2003).

As measurements of the CMNI's validity, it was found that men scored significantly higher on the overall inventory, and on 9 of the 11 norms than women also taking it, with no statistical difference between the two on the primacy of work and pursuit of status factors. Also supporting the validity of the CMNI was the difference in

scores depending upon how men in the sample answered different health related questions. Men who indicated they had been involved in a violent situation in the past 12 months scored significantly higher on the winning, risk-taking, violence, power over women, dominance, playboy, heterosexual presentation factors and total score than men who had not been. Similarly, men who indicated that they had been in trouble with the law had significantly higher scores on risk-taking, violence, and total CMNI scores than men who indicated they had not (Mahalik et al., 2003). Concurrent validity for the CMNI and its factors was tested by comparing results on the CMNI to multiple related tests, including the Brannon Masculinity Scale – short form (Brannon & Juni, 1984) the Gender Role Conflict Scale (O'Neil et al., 1986), the Masculine Gender Role Stress Scale (Eisler & Skidmore, 1987), the SDO, and The Aggression Questionnaire (Buss & Perry, 1992). Total CMNI scores were significantly correlated to the total scores for all of the other measures, as well as related factors within the different measures (Mahalik et al., 2003).

Table 3.2
Conformity to Masculine Norms Inventory Internal Consistency

Factor	CMNI-94[1]	CMNI-94[1a]	CMNI-46[2]	CMNI-29[2]
Winning	.88	.87	.86	.77
Emotional Control	.91	.90	.89	.86
Risk-Taking	.82	.88	.85	.72
Violence	.84	.76	.86	.79
Power Over Women	.87	.74	.83	.82
Dominance	.73	.75	.63*	-
Playboy	.88	.91	.85	.82
Self-Reliance	.85	.80	.85	.71

Table 3.2
Conformity to Masculine Norms Inventory Internal Consistency (Continued)

Factor	CMNI-94[1]	CMNI-94[1a]	CMNI-46[2]	CMNI-29[2]
Primacy of Work	.76	.67	.76	.66*
Disdain for Homosexuals	.90	.96	.91	.87
Pursuit of Status	.72	.51	*.69	-
Total CMNI	.94	.95	.92	-

Note. CMNI = Conformity to Masculine Norms Inventory
* - Not included in final model,
a – Test-Retest
1 – Mahalik, J., Locke, B., Ludlow, L., Diemer, M., Scott, R., Gottfried, M., & Freitas, G. (2003). Development of the conformity to masculine norms inventory. *Psychology of Men & Masculinity*, *4*(1), 3–25. **2 -** Hsu, K., & Iwamoto, D. K. (2014). Testing for measurement invariance in the conformity to masculine norms-46 across White and Asian American college men : Development and validity of the CMNI-29. *Psychology of Men & Masculinity*, *15*(4), 397–406.

Since the introduction of the CMNI, abbreviated versions have been created that allow for the same constructs to be measured in less time. Owen (2011) created the CMNI-55, which maintained the same 11 factors, but asked only 5 questions for each norm. Parent and Moradi (2009) created the CMNI-46, which dropped the dominance and pursuit of status factors due to low alphas (see Table 3.2), loadings and cross-loadings. Finally, Hsu and Iwamoto (2014) created the CMNI-29 after testing differences in responses between White and Asian American college men in the CMNI-46. The CMNI-29 has 8 factors from the original CMNI, and in addition to the two factors dropped for the CMNI-46, it dropped the primacy of work factor, as it had a lower alpha level (.66 compared to .77 in the CMNI-46; see Table 3.2), as well as 4 other items that were part of factors that were retained (Hsu & Iwamoto, 2014).

Versions of the CMNI have been used in multiple studies relevant to the proposed study. Liu and Iwamoto (2007) used the unabridged CMNI as part of an examination of Asian Men's substance use. They found that masculine norms of power over women predicted binge drinking, while emotional control and risk taking were negatively

associated with alcohol consumption generally. Iwamoto et al., (2011, 2014) used the CMNI-46 to examine the relationship between masculine norms, alcohol consumption, and alcohol problems in two different studies. In the first study Iwamoto et al., (2011) found problematic alcohol consumption was predicted by the playboy, risk-taking, focus on winning, and self-reliance norms. Decreased alcohol consumption was associated with the primacy of work and heterosexual presentation, also known as disdain for homosexuals, masculine norms. In a subsequent study, Iwamoto et al., (2014) found that after incorporating the extent to which the men expected drinking to result in positive outcomes, the risk-taking and playboy norms were significant predictors of alcohol use, while heterosexual presentation and emotional control norms were significantly inversely related to alcohol use.

Fox and Tang (2013) used the CMNI-46 and the SDO along with other measures to examine sexism towards women in online video games with a coed sample of college students. Scores on the norms of winning, risk taking, power over women, and heterosexual presentation (aka disdain for homosexuals) were all significantly positively correlated with SDO scores as well as sexism against women in video games. This is consistent with the findings from Mahalik et al., (2003) of correlation between SDO and the CMNI. Interestingly, Mahalik et al., did not find correlations between winning, heterosexual presentation, or risk-taking and SDO scores, but did find significant correlations between the sub factors of emotional control, being a playboy, as well as power over women.

While the CMNI-29 is an attractive option for survey design due to its shorter length, this study will utilize the CMNI-46, as the CMNI-29 does not include the primacy

of work factor, which has been found to be a significant variable (Iwamoto et al., 2011). The idea of masculine achievement being an acceptable reason to not consume alcohol is supported by De Visser and Smith (2007) who found that men who have high status in a different masculine area, like athletic ability, can trade on that status to legitimately avoid consuming alcohol in a qualitative study of 31 men aged 18-21 in London. To address possible ambiguity among the primacy of work questions in the CMNI for college students, questions have been reworded to address "school work" so there is a consistent understanding across the sample, and it is not confused with future careers or jobs needed to pay for school.

Revised Multi-Group Ethnic Identity Measure

The Multi-Group Ethnic Measure (MEIM) was developed by Jean Phinney (1992) as a way to measure the part of an individual's social identity that is shaped by their knowledge of belonging to a social group (or groups) and the emotional significance associated with that membership. The MEIM differs from other measures of ethnic identity in that rather than focusing on identity within just one group, it was designed to be applicable across diverse ethnic groups. In this way the MEIM allows for comparisons across ethnic groups, whereas ethnically focused identity measures cannot as different issues are salient for different groups, such as language spoken at home may be salient for Mexican Americans but not for African Americans.

The MEIM is a measure of ethnic identity that was developed with diverse groups of high school and college students. It contains 14 items that assess three aspects of ethnic identity: positive ethnic attitudes and sense of belonging, ethnic identity achievement, and ethnic behaviors or practices, as well as 6 items that measure other-

group orientation. Questions are rated on a 4-point scale from strongly agree to strongly disagree, and are scored accordingly. The questionnaire also includes additional questions asking individuals about their self-identification, their parents' ethnicity. These questions will not be included in the survey as they are already asked about their ethnic identity in the demographic portion, and adding parents' ethnicity to the analysis is outside the scope of this research. The MEIM contains two factors, ethnic identity and other-group orientation. The Cronbach's alpha for the ethnic identity factor with the high school sample was .81 and it was .90 for the college sample. For the other-group factor, the Cronbach's alpha for high school students was .71 for high school students and .74 for college students.

As part of establishing validity, the MEIM was also administered with a self-esteem test (using the Rosenberg, 1986 scale). White students and non-White students were analyzed separately, and while self-esteem was significantly related to ethnic identity for the students of color in both samples, it was not significantly related for the White students. The only exception was for a group of 12 White high school students who were a minority in their high school, and for them ethnic identity was significantly correlated to self-esteem, as it is for ethnic minorities in predominantly White environments. These findings are consistent with other studies of self-esteem and ethnic identity (Bracey et al., 2004; Phinney & Alipuria, 1990; Smith & Silva, 2011).

A revised version of the MEIM was later developed by Phinney and Ong (MEIM-R; 2007). The MEIM-R contains six items, covering two correlated factors for commitment to ethnic identity and exploration of ethnic identity. Items on the MEIM-R make statements to which an individual indicates how strongly they agree or disagree on

a 5-point scale. Whereas measures of racial identity vary depending on the racial group being measured and include structural influences like racism, just like the MEIM before it, the MEIM-R approaches ethnic identity as a part of social identity, can be applied to any ethnic group, and measures the extent to which an individual has internalized their ethnic identity. Phinney and Ong (2007) found the MEIM-R to have good internal consistency for the two factors and the overall model, with Cronbach's alphas of .76 for exploration, .78 for commitment, and .81 for the overall 6-item measure (see Table 3.3).

Since the development of the MEIM-R, other researchers have provided support for its psychometric properties (Brown et al., 2014; Chakawa, Butler, & Shapiro, 2015; Yoon, 2011). Yoon (2011) tested the MEIM-R using a diverse group of undergraduate and graduate students at a large public university in California, while Chakawa et al. (2015) and Brown et al. (2014) used diverse samples of adults outside of college. Brown et al. used a diverse sample of mothers who were part of a larger gestational diabetes study, and examined differences across ethnic identities using the MEIM-R. Chakawa et al. (2015) used a sample of Black and White adults in the Southeast, who were pulled from a larger study about racial/ethnic differences in parenting. Research by all three groups found support for the two correlated factors model created by Phinney and Ong (2007) for use across ethnic groups (see Table 3.3).

Yoon (2011) tested the theoretical validity of the MEIM-R, comparing scores on the measure to scores on the SWLS (Diener et al., 1985), a measure of cognitive self evaluation of global life satisfaction, and the PANAS (Watson et al., 1988), a measure of aroused or active states of affect. Yoon found support for grouping responses on the MEIM-R into identity development status's consistent with Marcia's (1966) typology of

diffused, foreclosure, moratorium, and achieved. Exploring the relationship between ethnic identity and well-being (measured through the SWLS and PANAS), Yoon found that for minority students, higher ethnic identity status was significantly associated with well-being, while this pattern was less evident for the European American students, consistent with other findings (Bracey et al., 2004; Phinney & Alipuria, 1990; Smith & Silva, 2011). Theoretically this is the expected relationship, as hegemonic forces in America make Whiteness ubiquitous with success and power. Non-White individuals would need a stronger sense of their ethnic identity to actively counter the master narrative that says that only Whiteness is associated with positive values.

Table 3.3
MEIM-R Factor Internal Consistency α

	Study				
Factors	**1**	**2[a]**	**2[b]**	**3**	**4**
Exploration	.76	.91	.87	.82	.81
Commitment	.78	.84	.88	.90	.81
MEIM-R Total	.81	.89	.88	.88	-

Note. MEIM-R = Revised Multigroup Ethnic Identity Measure.
[a] for European Americans only, [b] for ethnic minorities only
1 - Phinney, J. S., & Ong, A. D. (2007). Conceptualization and measurement of ethnic identity: Current status and future directions. *Journal of Counseling Psychology*, *54*(3), 271. 2 - Yoon, E. (2011). Measuring ethnic identity in the Ethnic Identity Scale and the Multigroup Ethnic Identity Measure-Revised. *Cultural Diversity and Ethnic Minority Psychology*, *17*(2), 144. 3 - Brown, S. D., Unger Hu, K. A., Mevi, A. A., Hedderson, M. M., Shan, J., Quesenberry, C. P., & Ferrara, A. (2014). The Multigroup Ethnic Identity Measure—Revised: Measurement invariance across racial and ethnic groups. *Journal of counseling psychology*, *61*(1), 154. 4 - Chakawa, A., Butler, R. C., & Shapiro, S. K. (2015). Examining the psychometric validity of the Multigroup Ethnic Identity Measure-Revised (MEIM-R) in a community sample of African American and European American adults. *Cultural Diversity and Ethnic Minority Psychology*, *21*(4), 643.

The majority of studies done on alcohol consumption across ethnic groups have used the MEIM, rather than the revised version, due to the relative newness of the instrument. In a longitudinal study of Black and Hispanic adolescents, Scheier et al. (1997) found that students in the highest ethnic identity groups, measured by the MEIM, overall had the lowest risk for consuming alcohol, but that the effect of alcohol was moderated by social skill levels. In another study of ethnic identity among diverse

adolescents, Holley et al. (2006) found that ethnic identity measured by the MEIM was associated with less use of alcohol and other substances.

Looking at alcohol consumption among college students, researchers have found results that vary by ethnic group. Among Mexican American college students Zamboanga, Raffaelli, and Horton (2006) found a significant relationship between ethnic identity, measured by the MEIM, alcohol use, and gender, with a positive relationship between ethnic identity score and the frequency of heavy alcohol use for men, but not for women. In another study, Schwartz et al. (2011) examined the connection between acculturation and health risk behaviors in college students from immigrant families. In their study, Black students' ethnic identity level, measured by the MEIM, was negatively related to hazardous alcohol use, while for Hispanic students ethnic identity was positively associated with sexual risk taking. Finally, Iwamoto, Takamatsu, and Castellanos (2012) explored the relationship between acculturation, ethnic identity, and binge drinking in a quantitative study of over 1,500 US-born Asian college students. Instruments used in the study included the MEIM-R and an adapted version of the Daily Drinking Questionnaire (DDQ). Using negative binomial regression, Iwamoto et al., found a statistically significant relationship between ethnic identity and alcohol-related problems, with lower levels of ethnic identity being associated with more alcohol-related problems.

Although fewer studies have been conducted on ethnic identity and alcohol consumption using the MEIM-R than the MEIM, this study will utilize the revised measure. The revised measure has demonstrated better construct validity than the original measure (Phinney & Ong, 2007), and has been found to be a valid instrument

across multiple ethnic groups, genders, and age groups by multiple studies (S. Brown et al., 2014; Chakawa et al., 2015; Yoon, 2011). In addition, the MEIM-R has the benefit of being only 6 items, while the MEIM has 20 items, making the final survey shorter and thus more likely to be completed by students.

Social Dominance Orientation Scale

The Social Dominance Orientation (SDO) scale was developed by Pratto, Sidanius, Stallworth, and Malle (1994). SDO is the extent to which an individual places value "…on nonegalitarian and hierarchically structured relationships among social groups. It expresses general support for the domination of certain socially constructed groups over other socially constructed groups, regardless of the manner in which these groups are defined" (Sidanius & Pratto, 1999, p.61). The SDO has 14-items that make statements about inequality, half of which express approval and half disapproval, and the respondent is asked to indicate the degree to which they feel positively or negatively towards that statement on a 7 point scale from very positive to very negative. Pratto et al. (1994) also created a 16-item version of the SDO, included in the appendix of the article introducing the SDO.

The SDO was developed using 13 different samples of undergraduate students at Stanford University and San Jose State University in California. The multiple independent samples were used to test the SDO scale for predictive and discriminant validity. The researchers described the 14-item scale as possessing a single factor, and a good internal reliability of $\alpha = .88$, and $\alpha = .91$ for the 16-item scale. Demonstrating the discriminant validity of SDO, the researchers found that SDO was able to significantly predict policy attitudes even after controlling for political-economic conservatism or

authoritarianism. SDO was also found to be independent and unrelated to interpersonal dominance and self-esteem.

As measures of convergent validity, Pratto et al. (1994) found SDO was related to lower empathy, support for aggressive military action, decreased support for gay rights and women's rights, and less support for social programs that benefit disadvantaged groups. This is supported by other studies that have found that SDO is related to: right-wing authoritarianism (a trait associated with prejudice, discrimination, and hostility towards members of out-groups) (Asbrock, Sibley, & Duckitt, 2010; Sidanius & Pratto, 1999), prejudice against gay men and lesbians (Poteat & Anderson, 2012), sexism (Akrami et al., 2011), higher levels of US patriotism among White Americans (Peña & Sidanius, 2002), and modern racism (Perry & Sibley, 2011).

Jost and Thompson (2000) examined the one factor assumption of the 16-item SDO with four studies involving African American and European American undergraduate students at the University of Maryland. In the first study Jost and Thompson found that a two factor model better fit the data than the original one factor model, and suggested the factors being measured were group based dominance (GBD) and opposition to equality (OEQ). Both factors demonstrated good internal reliability with Cronbach's alphas of .84 and .85 for the GBD and OEQ factors. Supporting the theoretical validity of the two-factor model, correlation between the two factors was stronger in the high status (European American) group than it was in the lower status group (African Americans). Jost and Thompson also found that as predicted, self-esteem was negatively related to OEQ scores for African American students, but was significantly positively related for European American students.

In the third study, the researchers "balanced" the SDO so that each factor had an equal number of positively and negatively phrased items, to account for a possible response bias being responsible for the two factors, rather than distinct psychological phenomena. Using the "balanced" SDO, Jost and Thompson (2000) found the same two-factor model as the best fit. In the fourth and final study, the "balanced" SDO was again used, along with measures for self-esteem and neuroticism. Similar to the first study, self-esteem was negatively related to OEQ for African Americans, and positively related for European Americans. As hypothesized, neuroticism found a similar pattern, where OEQ associated with increased neuroticism for African Americans, but was associated with decreased neuroticism for European Americans. Conversely, GBD was associated with increased neuroticism in European Americans and had no significant relationship to neuroticism for African Americans. The finding of a two factor model, independent of negative or positive phrasing of questions, was replicated by Ho et al. (2012) in a study utilizing Americans and Israelis from the dominant ethnic groups.

Relevant to this study's critical postmodern focus, social dominance orientation has been clearly associated with hegemonic forces in gender and ethnicity. Higher levels of SDO have been found associated with membership in privileged groups, with higher SDO levels in men than women (Sidanius et al., 2000, 1994), and in high-status compared to low-status ethnic groups in the United States and Israel (Levin & Sidanius, 1999). To most accurately capture the social dominance construct, this study will utilize the 16-item version of the SDO.

Daily Drinking Questionnaire

The Daily Drinking Questionnaire, developed by Collins, Parks, and Marlatt (1985) is an abbreviated version of the Drinking Practices Questionnaire (DPQ; Cahalan, Cisin, & Crossley, 1969), and asks individuals to describe their typical weekly drinking patterns over the previous 3 months. The DDQ is generally administered as part of a general information questionnaire (GIP), that asks questions demographic questions (race, sexual orientation, type of institution attending, etc.) as well as questions about any alcohol related problems that have been experienced after drinking. These problems include: blacking out, arrested for driving while intoxicated, had problems with police or campus authorities, injured self or others, a non-driving accident, and broken things or damaged property.

Multiple studies have established convergent validity for the DDQ with other self-report measures of alcohol use and problems. Self-reports from the DDQ have been significantly correlated with self-reports from the DPQ at r (52) = .50, p = .001 (Collins et al., 1985, p. 191). The DDQ has also found significant positive correlation (r (428) = .86, p <.01) between average drinks per day on the *Time Line Followback* calendar and typical weekly drinking on the DDQ (Collins, Koutsky, Morsheimer, & MacLean, 2001). The weekly alcohol consumption measured by the DDQ has also been significantly correlated with scores on the *SMAST* (a measure of alcohol problems) at r (321) = .61, p < .001 (Collins & Lapp, 1992). The test-retest rates for the DDQ have not been calculated as drinking tends to vary across days of the week, and tends to be very skewed (R. Collins, personal communication, April 27, 2015).

The DDQ has been used in multiple studies examining masculine norms, as well as ethnic identity. Iwamoto et al. (2011, 2014) found a significant relationship between masculine norms and alcohol consumption using the DDQ and CMNI-46 in two different studies discussed earlier. Iwamoto et al. (2012) also found a significant relationship between alcohol problems and ethnic identity in a study that included both the DDQ and the MEIM-R. Finally, Uy, Massoth, and Gottdiener (2013) utilized the Male Role Norms Inventory-Revised (MRNI-R; Levant et al., 2007), the GRCS, the Drinking Motives Questionnaire-Revised (DMQ-R; Cooper, 1994), and the DDQ. Uy et al. found that drinking motives mediated the relationship between gender role conflict and drinking-related problems.

For this study a modified version of the DDQ was utilized. In addition to asking about average weekly alcohol consumption and if they ever experienced six common alcohol related problems, the undergraduate men were also asked to fill out a second empty calendar that asks them to put in their highest weekly alcohol consumption from the past 3 months. As college students drinking behavior tends to be influenced by the academic calendar (Correia, Murphy, & Barnett, 2012), average drinking behavior is not the best representation of peak alcohol related problems, if a student were to typically not drink, but then goes overboard for Halloween or some other major social event. Additionally, both weekly calendars ask over how much time the drinking typically takes place, so that it may be determined how often the student is binge drinking.

Analysis

Data from the survey was downloaded into SPSS via Qualtrics, and then cleaned, with extraneous variables, such as random identification values assigned to responses by

Qualtrics were deleted. As part of cleaning the data set, non-numerical answers that were given for the DDQ had to be converted into numbers. A few students accidentally typed in the letter o instead of the number 0, or also enter periods or commas, which were corrected. In 49 cases, rather than giving a specific number for a day, participants gave a range (such as 8-12), in which case the midpoint was entered instead (e.g., 10). Finally, in approximately a quarter of cases, students entered information only for the days in which they drank, but left the days they did not drink empty. If it was clear from the pattern that respondents had only entered information for when they drank, zeroes were added to the rest of the days of the week when they did not fill completely. If it was not possible to determine if a student had left the number of drinks empty to signal they did not ever drink or just that they had skipped the question, the data was left missing.

Next, responses for the CMNI-46 were recoded for negatively worded items, so that higher scores indicated higher conformity to the specific masculine norm in every case. The same recoding was done for the SDO, so that higher scores indicated higher levels of social dominance orientation for all items. This was then followed by creating the dependent variables for drinking behavior. Typical drinks per week was created by summing the number of drinks for each day in a typical week. Number of times binge drinking in a typical week was calculated by adding up the number of nights each week a student reported drinking 5 or more drinks in a typical week. Finally, heaviest week's drinks was created by summing the number of drinks reported in the heaviest drinking week for each respondent.

Excluded Cases and Missing Data

Next the data were examined for any cases to exclude from analysis. Fifteen cases were excluded immediately because the participants did not consent to participate in the study. Another 48 cases were excluded because respondents identified as women. Another 15 cases were excluded because nothing was filled out after consenting to the study. Another 79 respondents who stopped filling out the survey after the demographic questions were excluded, as well as 55 individuals who completed the survey, but skipped every question after the demographic questions. Six responses were excluded because of their responses, 1 for entering systematically answering every drinking question with 9s, and the other 5 for giving demographic information that appears to indicate they were not seriously answering the survey, such as "idiot" for Gender Identity, or "earth" for ancestry/ethnicity. Finally, following best practices from What Works Clearinghouse (2014) another 146 cases were excluded as they did not answer the dependent variable questions and should not be imputed, bringing the total number of cases to 1,457, leaving an effective response rate of 23% from the individuals who were sent the survey.

After excluding the appropriate cases, the issue of missing data was addressed. In determining how to address the issue of missing data, it was necessary to first determine whether the responses that were missing were missing completely at random (MCAR) or not. If data are MCAR, meaning that the missing-ness is not related to any other variables, whether included or not the data set, then there is no biasing of the results if cases with missing data are excluded from the analysis through listwise deletion (Horton & Kleinman, 2007; R Little & Rubin, 2002; Schafer, 1999). If the data is not MCAR,

then responding to missing data through only examining complete data can result in biased outcomes, as can methods of single imputation (Graham, 2009). Multiple imputation, conversely, can be used to impute a wide scope of types of missing data, uses multiple variables to predict missing values, includes random variability to prevent biased results, and is the accepted best-practice for handling missing data when it is not MCAR (Azur, Stuart, Frangakis, & Leaf, 2011; White, Royston, & Wood, 2011). Using Little's (1988) MCAR statistical test it, the null hypothesis was not rejected ($\chi^2(51470) = 5164.127, p = .430$), meaning that the data were plausibly missing completely at random. As the data were MCAR, the main reason to use multiple imputation would be to increase statistical power, as listwise deletion would not bias the estimate. With 1,457 cases, and only 2% of values were missing (and less than 10% of total cases missing at least one variable) the loss of statistical power was not of concern, and so the decision was made to exclude cases with missing values rather than try and impute new values.

Factor Analysis

Having addressed the missing data, factors were created from the data on masculine norms, ethnic identity, and social dominance orientation through principal-axis factoring; two for the SDO, nine for the CMNI-46, and two for the MEIM-R. Once the factors were created from each instrument, they were tested for sampling adequacy through the Kaiser-Meyer-Olkin (KMO) test to see if the resulting factors are appropriate to use in further analysis. Scores for the KMO test range from 0 to 1, and scores above .50 are considered acceptable to use, while values of .80 and higher are considered good. Next internal consistency for the factors was determined for each factor by computing their Cronbach's alpha. While values for Cronbach's alpha can range from 0 to 1, ranges

from .70 to .75 are considered adequate for subscales, but preferably values will be .80 or higher (Polit, 2010). Consistent with previous studies, all of the factors demonstrated acceptable to good sampling adequacy and internal consistency, and so were able to be used as variables in the study (see Table 3.4, see Appendix D for factor loadings).

Table 3.4
Measure of Factor Reliability

Factor	KMO	Cronbach's α
SDO		
Group Based Dominance	.908	.861
Opposition to Equality	.927	.861
MEIM-R		
Exploration	.667	.772
Commitment	.659	.800
CMNI-46		
Winning	.873	.872
Emotional Control	.890	.892
Risk Taking	.833	.837
Violence	.880	.856
Power Over Women	.807	.821
Playboy	.780	.804
Self-Reliance	.835	.847
Primacy of (School) Work	.732	.718
Heterosexual Presentation	.904	.896

Note. SDO = Social Dominance Orientation Scale; MEIM-R = Revised Multigroup Ethnic Identity Measure; CMNI-46 = Conformity to Masculine Norms Inventory - 46.

Descriptive Statistics.

Before moving on to the analysis of the data, it is necessary to first know what the data are, as who is in the data shapes the ways in which it should be analyzed. First I will provide an overview of the sample demographics, discussing gender, race, ethnicity, before moving onto the control variables (athletic/fraternity status, housing location, etc.) and then discuss how these impact the analysis. Finally, I will provide a brief overview of the drinking behavior captured by the survey. Closely investigating the demographic variables is a prerequisite for a critical quantitative study, as ignoring who is a part of the

study makes it probable that conventional approaches to analysis that can mask important power differences would be maintained rather than disrupted.

After having already excluding the self-identified women from the sample, only 9 individuals out of the total sample identified themselves as non-gender conforming. Three individuals identified themselves as agender, one as bigender, one as gender fluid, and four as gender queer. Interestingly, no individuals identified themselves as trans men or trans women. Statistically it would be assumed that at least one person out of a sample of 1457 would identify as transgender, and so the most likely explanations are either trans individuals seeing the survey was focused on college men decided not to opt into the survey, or they took the survey but decided to not explicitly identify as trans.

For racial identity, like the institutions the students were drawn from, the respondents mostly identified as White (see Table 3.5). Eighty percent of respondents identified as White, followed by almost 11% as Asian/Pacific Islander, about 4% as multiracial, a little over 3% as Black/African American, about 1.5% as "Other Race," and the remaining 0.5% did not identify a race. Individuals who identified as "Other Race" predominately identified as racially Hispanic or Latino (16 out of 20). One individual identified as Trinidadian and Tobagonian, one as an Aboriginal Canadian, one as "Brown," and one as Egyptian.

Table 3.5
Respondent Characteristics

Racial Identity[1]	Number	Percentage
White	1,166	80.0%
Asian/Pacific Islander	156	10.7%
Multiracial	62	4.3%
Black/African American	46	3.2%
Other Race	20	1.4%
Missing	7	0.4%

Table 3.5
Respondent Characteristics (Continued)

Multiracial Respondents' Racial Identities[2]	Number	Percentage
White & Asian	31	50.0%
White & Native American	14	22.6%
White & Black	11	17.7%
Other Multiracial	6	9.7%
Ethnic Identity[1]		
European-American	1,040	71.4%
Chinese	61	4.2%
Another Hispanic/Latino Origin	54	3.7%
Korean	37	2.5%
Mexican/ Mexican American/Chicano	30	2.1%
African-American	29	2.0%
Indian	24	1.6%
Puerto Rican	22	1.5%
Ethnically Jewish	20	1.4%
Middle Eastern White	19	1.3%
Cuban	12	0.8%
Vietnamese	9	0.6%
Other Asian	7	0.5%
Afro-Caribbean	7	0.5%
Mixed Asian Ancestry	6	0.4%
Filipino	5	0.3%
Japanese	5	0.3%
Native Hawaiian	2	0.1%
Missing	68	4.7%
Other Alcohol Related Factors[1]		
Varsity Athletes	123	8.4%
Club Sport Athletes	195	13.4%
Intramural Sport Athletes	486	33.4%
Fraternity Member	88	6.0%
International Student	80	5.5%
Lives at Home	37	2.5%
Lives in Fraternity House	16	1.1%
Hispanic/Latino Racial Identity[3]		
White Hispanic/Latino	84	70.6%
Black Hispanic/Latino	7	5.9%
Multiracial Hispanic/Latino	6	5%
Identified as Racially Hispanic/Latino	21	17.7%
Native American Hispanic/Latino	1	0.8%

1 – N=1,457; 2 – N=62; 3 – N=119

Among the individuals who identified as multiracial, 11 identified as being both White and Black, 31 identified as being both Asian and White, 14 identified as being of White and Native American/Alaskan background, and 6 individuals identified as being from other multiracial backgrounds. Of the individuals in the "other multiracial" category, 3 identified as White, Black, and Native American, 1 as White, Black, and Asian, 1 individual identified as "multiracial" racially and ethnically Dominican, and 1 individual identified as Egyptian and Italian.

Drilling down to how students identified ethnically, the largest group of respondents were non-Hispanic Whites from European/American ancestry, making up over 71% of the total sample. The next largest groups were Chinese (4.2%), "Another Hispanic/Latino Origin" (3.7%), Korean (2.5%), Mexican (2.1%), and African-American (2.0%). Even when breaking down ethnicity to this level of detail, in an ideal study, many of these groups would drill down in further detail, as many of these groups contain many different ethnicities within them, with obvious categories such as the umbrella "other Hispanic/Latino" group, but also categories like Mexican, Indian, or Chinese. Even if that level of detail were known, however, it would not practically be useful as the majority of categories would then only have one or two individuals in them, making it impossible to assign any meaning to group membership versus individual differences.

Having explored the different demographic and involvement characteristics of the students in the sample, how to include them, or even if some of them should be included, comes down to balancing the quantitative needs for statistical power with the critical need to disrupt, rather than perpetuate, hegemonic narratives. Critical quantitative studies are designed to reveal inequalities, identify how these inequalities are perpetuated, and

offer models that better explain the experiences of the under represented (Stage, 2007). In this study, that means being aware that the overwhelmingly White European-American members of the sample may mask different relationships between the independent and dependent variables, while still conducting a study that has a reasonable probability of finding differences if they truly exist.

Given that differences in college drinking behaviors by various ethnic groups (e.g., Iwamoto et al., 2012; Luczak, Shea, Carr, Li, & Wall, 2002; Luczak, Wall, Shea, Byun, & Carr, 2001), an ideal analysis of drinking behaviors would take ethnic differences into account as an important variable. A challenge to the ideal analysis, however, is that it requires a large enough sample size to allow for an adequately powered analysis. A sample has to be large enough so that the probability of differences between what is observed and the null hypothesized difference of zero happening simply by chance are less than .05. The smaller a sample, the more likely that differences could be the result of random variation rather than an actual difference or relationship existing between variables. This also means that with every variable added to a model, a larger sample would be required to maintain the same statistical power. The lower the statistical power is, the larger a difference or relationship must be to be able to detect it statistically.

In regards to this sample, the requirement of having an adequately powered analysis presents a double challenge. The first part of the challenge is the size of the non-European-American White ethnic groups. Ranging in size from 2 for Native Hawaiians to 61 for Chinese, these sub-samples are too small to notice any but the largest differences/strongest relationships. The other challenge to an adequately powered study

is the large number of ethnic groups. Even if you could accept categories such as "other Asian" or "other Hispanic/Latino group" as coherent groups, you would still have 18 different ethnic groups. Not only would this mean adding 18 new variables to the model, it would also necessitate looking for significant interactions between ethnicity and the 13 different main independent variables (which will be discussed in detail in the Analysis section), which would mean adding up to 234 different interactions to the model.

As an example of how 265 predictor variables would impact the power of this analysis, it is helpful to look at how the number of predictors would impact an Ordinary Least Squares linear regression model. Using the G*Power 3.1 software (Faul et al., 2009) the probability of detecting a small effect size for Cohen's *f* (.02 by convention), with a sample size of 1400 and 13 predictors is approximately .96, well above the .80 standard goal for statistical power. However, if the number of predictors is increased to 265 (13 independent variables, 18 ethnic groups, plus the 234 interactions) then the probability of detecting a significant difference decreases to approximately .28, meaning you would have just slightly better than a ¼ chance of finding a relationship that really exists.

If we were to be less conservative, and expand the effect size to a medium effect size of .15 with just the 13 independent variables as predictors, we would still need a sample size of 131 to maintain power at .80. Even with a large effect size of .35, you would need a sample size of 64 for the 13 independent variables, to maintain power of .80. This means that the smallest size you could reasonably expect each ethnic group to be, and still be statistically meaningful, would be at least 64, and better at 131. What this means, unfortunately, is that the critical requirements of the analysis are in conflict with

the quantitative requirements of the analysis. Although less than ideal, the only way to resolve this conflict is to side with the quantitative needs of larger samples and fewer variables.

To that end, racial rather than ethnic groups are used to look for differences among participants, with an added variable of whether or not a student identifies as Hispanic/Latino or not (without differentiating between different Hispanic/Latino ethnic groups). This one ethnic identity is included as it crosses racial groups (see Table 3.5), as it is often treated like a separate, and uniform racial group by hegemonic powers in the United States. This then serves as a compromise between the competing analysis demands, by reducing the number of variables and interactions included, but still differentiating between groups that would be expected to have meaningfully different experiences, leaving samples that could be expected to have reasonable statistical power for Asian, Multiracial, White, and Hispanic students, though much lower than desired power for the Black and "Other" racial groups. For this same reason, whether or not someone is international was dropped from the model, because the impact being international would have on drinking culture would depend on ethnicity/country of origin, and 80 students are too few to split into further groups.

To account for the effects of race and ethnicity in the model, dummy codes were created for race, and for ethnicity. Dummy coding means creating one or more dichotomous variables, that are assigned a value of 1 or 0, where 1 means membership in a group, and 0 means not a member of that group. For however many options there are in a category, there has to be one fewer dummy codes ($c - 1$), with the one group that is omitted from the dummy variables is the reference that all the other groups are compared

to (Polit, 2010). For this study, as there were five different racial groups, four dummy codes were created for Black, Asian, multiracial, and "other" racial groups, with White respondents being the reference group. This means that results from these variables in regressions compare how respondents from these groups are different from White respondents. For ethnicity, there were only two possible groups for the study, Hispanic or not, so one dummy code was created for Hispanic respondents, and the reference group was non-Hispanics.

Moving from ethnicity to the other known alcohol-related variables; approximately 8.4% of participants identified themselves as varsity athletes, 13.4% identified as involved in club sports, and 33.4% identified as being involved with intramural sports. Approximately 6% of the participants indicated that they were members of a Fraternity, and 5.5% said they were international students. Only a little more than 1% of respondents reported that they lived in a Fraternity house, and about 2.5% reported that they lived at home with their parents/guardians.

In addition to examining race rather than ethnicity, to main statistical power, gender identity will not be a variable in the model. Even if all gender non-conforming individuals were combined into one group, nine individuals are not enough to make into one group, although they will remain in the larger sample. For the other control variables, such as where a student lives or if they are a member of a fraternity or an international student, they were added to final models, but any variables that did not reach statistical significance were dropped to maintain adequate statistical significance.

Finally, the alcohol related behavior captured by the survey displayed a wide range of behavior from the individuals in the sample. The mean number of drinks

students reported in a typical week was 11, while the median number of drinks per week was 8, and the mode was 0 drinks per week, with 23% of men reporting they did not drink typically. The bottom quartile reported having 1 or fewer drinks per week typically, while the top quartile reported having 16 or more drinks per week, with the maximum number of drinks reported in a typical week was 104 (see Table 3.6). For their heaviest week over the last 3 months, the mean number of drinks per week increased to 18, the median to 13, but the mode remained at 0. The bottom quartile reported having 4 or fewer drinks per week in their heaviest week, while the top quartile reported consuming 26 or more drinks (up to a maximum of 140). For the last measure of alcohol consumption, the mean number of times binge drinking in a typical week was only 1, with median and modes of 0 times binge drinking in a typical week. The bottom 50% of respondents reported never binge drinking in a typical week, and the top 25% reported binging 2 or more times per week, with the highest number of binge drinking per week reaching 6 out 7 possible days.

Table 3.6
Descriptive Statistics for Alcohol Consumption Variables

		Typical Week Drinks	Heaviest Week Drinks	Binging Per Week
Mean		11	18	1
Median		8	13	0
Mode		0	0	0
Minimum		0	0	0
Maximum		104	140	6
Percentiles	25	1	4	0
	50	8	13	0
	75	16	26	2
Total Responded		1,434	1,445	1,434
Missing		23	12	23

Moving to alcohol problems, the most common problem experienced after drinking was having blacked out at 45%. This was followed by having broken things or damaged property at 18%, injuring yourself or others at 16%, problems with authorities (not driving related) at 13%, a non-driving related accident at 6%, and only 1% of individuals reported ever having been arrested for driving while intoxicated (see Table 3.7).

Table 3.7
Alcohol Related Problems Frequencies

After Drinking Have You Ever…	Yes	No	Missing
Blacked out?	657 (45%)	790 (54%)	10 (1%)
Been arrested for driving while intoxicated (DWI)?	13 (1%)	1436 (98%)	8 (1%)
Had problems with police or campus authorities not related to DWI?	196 (13%)	1252 (86%)	9 (1%)
Injured self or someone else?	228 (16%)	1221 (83%)	8 (1%)
Had an accident other than driving related?	81 (6%)	1368 (93%)	8 (1%)
Broken things or damaged property?	259 (18%)	1190 (81%)	8 (1%)

These numbers are roughly in line with the behavior of college men nationally. According to the American College Health Association 2015 Spring report (2015), 23% of men had never consumed alcohol, which was the same percentage of men who reported they had no drinks in a typical week as this study. In the same study, 61% of men reported they had never had five or more drinks in one sitting in the last two weeks, compared to this study where 50% percent reported they typically never had 5 or more drinks over the last 30 days. An 11% difference between the two results does not seem as large when you consider the difference time periods being measured, and that the numbers could be closer if this survey had only asked about the last two weeks, depending on which timer period the survey was distributed.

Moving to alcohol related problems, in the ACHA report (2015) 11% of men reported having injured themselves after drinking over the past 12 months, and 2% reported injuring someone else after drinking. This compares to 16% of individuals reporting they had ever injured themselves or someone else after ever drinking from this survey. Finally, in the ACHA report 23% of men reported that they had forgotten where they were or what they had done after drinking during the past 12 months, compared to the 45% of men in this survey who reported they had ever blacked out after drinking. The different time frames make exact comparisons impossible and partially explain the differences between the results. However, the institutions sampled for this study were selected because they were predicted to have higher than average drinking rates, so the areas where rates of problems or consumption were higher for this study were expected.

Hypothesis Testing

While knowing the descriptive statistics is interesting, to learn anything about what is motivating the drinking behavior, further analysis is necessary, and is the purpose of this study. To test the first three hypotheses, Spearman's rank order correlation test was used. This non-parametric method was used as the factors from the CMNI-46, SDO, and MEIM-R were determined not to be normally distributed (see Table 3.8 for descriptive statistics regarding factors), which violates the assumptions of the more commonly used Pearson's product-moment correlation. In Spearman's rank order correlation (ρ), the raw scores for two variables, X_i, Y_i are converted to ranks, x_i, y_i, and then the Pearson correlation coefficient is computed for those ranked variables, where ρ is computed by:

Equation 1.

$$\rho = 1 - \frac{6\Sigma d_i^2}{n(n^2-1)} \quad where\ d_i = x_i - y_i$$

To test hypotheses four and five, regression models for count data were run for each set of factors and the three dependent variables: typical drinks per week, drinks per heaviest week, and number of times binge drinking per typical week. For typical drinks per week and drinks per heaviest week, zero-inflated negative binomial regressions (ZINB) were run, and for number of times binge drinking per typical week a zero-inflated Poisson regressions (ZIP) were run. Zero-inflated models were the most appropriate models to use as there were large numbers of men who reported not drinking for each of the three dependent variables, which would not adequately be modeled by negative binomial or Poisson regressions. The typical drinks per week and drinks per heaviest week were modeled with ZINB because of the overdispersion of the drinks, while ZIP was used for the number of times binge drinking per week, as the data was not overdispersed after accounting for the excess zeroes (see Appendix E for illustration of this).

Table 3.8
Descriptive Statistics for Independent Variables

Factors	N	Min	Max	Mean	Median	Mode	Std. Dev
CMNI-46							
Winning	1,409	-2.616	2.105	-0.001	0.011	0.130	0.937
Emotional Control	1,411	-2.229	2.314	0.000	-0.014	-0.715	0.950
Risk Taking	1,409	-2.416	2.583	-0.001	0.024	0.376	0.921
Violence	1,409	-2.585	2.048	0.001	0.110	0.504	0.927
Power Over Women	1,406	-1.013	3.855	-0.003	-0.121	-1.013	0.912
Playboy	1,409	-1.609	2.379	0.000	-0.106	-0.106	0.918
Self-Reliance	1,412	-1.979	2.989	0.001	-0.288	-0.323	0.928
Work	1,411	-2.480	1.882	0.000	0.041	-0.071	0.883
Hetero. Presentation	1,402	-1.551	2.550	-0.002	0.003	-1.551	0.950

Table 3.8
Descriptive Statistics for Independent Variables (Continued)

MEIM-R	N	Min	Max	Mean	Median	Mode	Std. Dev
Exploration	1,423	-2.006	1.899	0.003	-0.016	0.597	0.902
Commitment	1,425	-1.916	1.860	0.004	0.162	0.601	0.934
SDO							
Opposition to Equality	1,414	-1.109	4.307	-0.001	-0.181	-1.109	0.939
GBD	1,414	-1.128	3.648	0.000	-0.193	-1.128	0.940

Note. CMNI-46 = Conformity to Masculine Norms Inventory – 46; Work = Primacy of (School) Work; Hetero. Presentation = Heterosexual Presentation; MEIM-R = Revised Multigroup Ethnic Identity Measure; SDO = Social Dominance Orientation Scale; GBD = Group Based Dominance.

Zero-inflated models, unlike other regressions, create two equations, one logistic regression for the zero values, and then another negative binomial or Poisson regression equation for the non-zero values. This conceptually makes sense when applied to men's drinking in college, as men are faced with two inter-related questions. First they must decide if they want to drink at all, and then if they decide they do, how much they want to consume. For zero-inflated models, for any given observation, *i*, there are two possible methods of data generation, determined by the results of a Bernoulli trial, an independent trial where there are only two possible results (Mathematics, 2016). The first process generates only zero counts, and is represented by φ_i, while the second process generates the remaining values (which could include zeroes) and is represented by 1-φ_i.

$$y_i \sim \begin{cases} 0 & with\ probability\ \ \varphi_i \\ g(y_i|x_i) & with\ probability\ 1-\varphi_i \end{cases}$$

The probability of an outcome $\{Y_i = y_i|x_i\}$ can be generally represented for either ZIP or ZINB by:

Equation 2.

$$P = (Y_i = y_i|X_i, z_i) = \begin{cases} \varphi(\gamma' Z_i) + \{1-\varphi(\gamma' Z_i)\}g(0|X_i)\ if\ y_i = 0 \\ \{1-\varphi(\gamma' Z_i)\}g(y_i|X_i)\ if\ y_i > 0 \end{cases}$$

Finally, to test hypotheses six and seven, multiple logistic regressions were run for each hypothesis. Logistic regressions were run for each question about experiencing

a different alcohol-related problem after drinking, except for the second question about being arrested for driving while intoxicated, as only 13 out of the 1449 men who answered the question indicated that they had ever been arrested, creating too small of a sample to determine meaningful results from. Binary logistic regression was chosen because the answers to the alcohol questions are all binary, yes or no, and so ordinary least squares (OLS) or count model forms of regression would not be appropriate. Binary logistic regression makes it possible to analyze multiple independent variables with one dependent variable, and estimates the probability of an event occurring (Polit, 2010). The logistic regressions can be represented by the equation:

Equation 3.

$$\log it(P) = \alpha + \beta_1 X_1 + ... + \beta_k X_k$$

Interaction Terms

As part of testing hypotheses eight and thirteen, and to keep with the critical quantitative approach of this study, interaction terms between racial/Hispanic identity and the main independent variables from the SDO, MEIM-R, and CMNI-46 were created and tested for significance. Interaction terms are the product between two independent variables, and are "…used to model how the coefficient for one variable differs according to values in another variable" (Long & Freese, 2014, p. 89). In this study, interaction terms are used to test to see if the main independent variables behave the same way for all racial/ethnic groups, or do they differ significantly in either magnitude or direction between groups. Interaction terms only created for the non-White racial groups, because with a majority White sample the independent variables were already de facto White variables. The interaction terms then serve to explore whether there were statistically

significant differences between specific groups and the White majority in how the independent variables were related to alcohol consumption or problems.

Although moving from ethnic groups to racial groups (and Hispanic ethnicity) dramatically reduced the number of interactions needed to be examine, there were still 65 possible interactions to test (5 non-White racial groups times the 13 main independent variables). This was too many variables to add without dramatically reducing statistical power and causing the models to fail to converge. As a result, interaction terms were instead tested in groups with the main corresponding independent variables (e.g., the SDO interactions with the SDO variables, MEIM-R interactions with the MEIM-R variables, etc.). Since there are nine CMNI-46 variables, the interactions had to be broken into smaller groups, of 3 masculine norms and their corresponding interaction terms at a time. Finally, after testing the interaction terms separately, the interaction terms that were significant were added to the larger model to see if they retained significance when all the other variables were present. Interaction terms that did not reach the level of statistical significance were dropped to not compromise the statistical power of the larger study.

Table 3.9
List of Variables for Regression Models

Independent Variables	Dependent Variables	Control Variables
CMNI-46	**Alcohol Consumption**	Race/Hispanic Ethnicity
Winning	Drinks per typical week	Live at Home*
Emotional Control	Drinks per heaviest week	Live in Fraternity House*
Risk-Taking	Binge drinking per typical week	Intramural Athlete*
Violence	**Alcohol problems**	Club Sport Athlete*
Power Over Women	Blacked out?	Varsity Athlete*
Playboy	Been arrested for DWI?	Fraternity Member*
Self-Reliance	Had problems with Authorities?	
Primacy of Work	Injured self or someone else?	
Heterosexual Presentation	Had an accident other than DWI?	
CMNI by Race/Ethnicity Interactions*	Broken things or damaged property?	

Table 3.9
List of Variables for Regression Models (Continued)

Independent Variables	Dependent Variables	Control Variables
MEIM-R		
Exploration		
Commitment		
MEIM-R by Race/Ethnicity Interactions*		
SDO		
Opposition to Equality		
Group Based Dominance		
SDO by Race/Ethnicity Interactions*		

* Kept in model if significant
Note. CMNI-46 = Conformity to Masculine Norms Inventory – 46; MEIM-R = Revised Multigroup Ethnic Identity Measure; SDO= Social Dominance Orientation Scale.

With this, the list of variables in the model was finalized into three main groups: the main independent variables and their significant interactions from the CMNI-46, MEIM-R, and SDO; the dependent variables, including the three alcohol consumption variables, and the five alcohol related problem variables; and finally the control variables, including race and ethnicity, athletic status, where a student lives, and fraternity membership (see Table 3.9).

Model Specification

To confirm that ZINB and ZIP regression methods were the most appropriate models, they were confirmed using the 'countfit' command in Stata by Long and Freese (2014). The command takes a model and runs Poisson, Negative binomial, ZIP, and ZINB regressions for it and then compares them to see which best fits the data. Using the MEIM-R variables as a test case, the ZINB model provided the best fit, as measured by the Baysean information criterion (BIC) and Akaike information criterion (AIC) values, for the number of drinks in a typical week and number of drinks per heaviest week, and ZIP was the best fit for the number of times binge drinking per typical week (see Table 3.10). The ZINB model failed to converge for the Binges Per Typical Week variable, and

so BIC and AIC scores were not derived. The models' residuals were also examined by comparing the observed values of the dependent variables to the predicted values, for any evidence of over or under predicting specific values. For each model the zero-inflated models indicated good fits between predicted and observed values.

Table 3.10
Measures of Model Fit for Count Regressions

	Regression Method			
Typical Week Drinks	**PRM**	**NBRM**	**ZIP**	**ZINB**
BIC	21,413.832	9,539.650	14,871.311	9,319.973
AIC	21,398.089	9,518.659	14,839.824	9,283.239
Heaviest Week Drinks				
BIC	30,489.906	10,989.575	21,514.618	10,686.657
AIC	30,474.150	10,968.567	21,483.106	10,649.893
Binges Per Typical Week				
BIC	4,075.386	3,968.855	3,789.379	N/A
AIC	4,059.643	3,947.864	3,757.893	N/A

Note. PRM = Poisson Regression; NBRM = Negative Binomial Regression; ZIP = Zero-Inflated Poisson Regression; ZINB = Zero-Inflated Negative Binomial Regression; BIC = Bayesian information criterion; AIC = Akaike information criterion.

The logistic regressions were tested for misspecification with the Hosmer-Lemeshow goodness-of-fit test, the link test, and comparing robust standard errors. The Hosmer-Lemeshow goodness-of-fit test (Lemeshow & Hosmer, 1982) is another method of testing if a model is appropriately specified, that compares the predicted probabilities for a logistic regression to the observed data. The predicted probabilities are divided into G groups, 10 by convention, by their predictive probability and compared to the observed data for each subgroup. Significant test statistics for the test indicate that the model may be misspecified. The test has been criticized by some (e.g., Long & Freese, 2014) as arbitrary and dependent upon the number of groups used to break the predicted probabilities into (e.g., a significant result might not occur for 10 groups, but might for 9 or 11 groups), and accordingly this test was not the only method used to confirm the models used.

Another method used to test the logistic models was the link test. The link test is based off of the works of Tukey (1949) and Pregibon (1980), and regresses the dependent variable upon the predicted value (hat) and predicted value squared (hat^2) for the equation in question. If hat^2 is a significant predictor of the dependent variable than the model is potentially misspecified. Finally, the logistic regressions were run with both standard errors and robust standard errors. Robust standard errors are meant to correct for logistic regressions that are misspecified, when some underlying assumption of the logistic regression has been violated that would the standard errors would otherwise be incorrect. In cases where the robust standard errors differed greatly from the non-robust standard errors, the robust standard errors were reported, as that indicates a probable model misspecification which the robust standard errors correct for (Long & Freese, 2014).

Additionally, for all methods of regression, multicollinearity was tested for by running an OLS linear regression. While the regression coefficients are incorrect, the collinearity between variables is still accurate, and so variance inflation factor (VIF)/tolerance (the inverse of VIF, 1/VIF) scores can be used to judge the appropriateness of retaining variables in the model, as multicollinearity can create misleading results (Polit, 2010). In practice, multicollinearity is considered problematic when VIF scores are greater than 10 and tolerance scores less than .9 (Gebotys, 2010). Multicollinearity was not an issue for any of the regressions (see Appendix F).

Ethical Considerations

As this proposed research is a survey, rather than an experiment, opportunities to inadvertently cause harm to the participants of the research were limited. While it is always possible that an individual may have a poor emotional response to items being

discussed, that outcome is unlikely, and the possible harm that could arise from such a situation is minimal. The most common reaction to the survey was to express frustration with the length of it and the repetitive nature of the questions. A small handful of men were curious as to why the sexual orientation of the respondent was not asked, when questions about being perceived as gay were asked. While most of these responses were positive suggestions or asking for clarity, three men expressed frustration with this question not being asked, as it seemed to imply ignoring the reality that some gay men would take the survey. After acknowledging their inquiries and explaining why sexual orientation was outside the scope of this study, and had been left out intentionally but could make for excellent follow up studies, they appeared satisfied, with one of the students even apologizing.

The primary concern for this study was that it asked students about behavior that is likely illegal for most respondents (consuming alcohol under age), as well as about views that might be unpopular if they were shared public (such as views towards inequality or that could be considered misogynistic or homophobic). These concerns were addressed by the design of the survey. Information collected by the survey was done so anonymously. As the survey was distributed through a link in an email, there was no way to directly tie an answer to a specific person. The survey did not ask for a student's name, or other information that would identify them, unless there are so few members of their racial/ethnic group, that their identity could be reverse engineered.

For the emails that were distributed by the institutions, I have no way to connect responses to specific individuals, even in cases where they are the only member of their demographic group, as I do not have a list of names and demographic variables for every

man at an institution. Each response also had recorded an IP address for the respondent, but without access to each institutions records it would be very difficult to impossible to trace those numbers to a specific individual. Regardless of difficulty, the IP address information was deleted as soon as the survey responses were downloaded. For the institutions were I distributed the survey through Qualtrics, the only additional information I had was a respondent's first name, which was deleted after the surveys were completed and the information downloaded. Similarly, the institutions surveyed, even if they wanted to, will not be able to determine student answers, despite having demographic information, because they will never have access to the responses. In any reporting of the data, any cases where there are so few individuals in a group that there is reasonable suspicion that someone could be identified, those cases will be removed from the report or collapsed in with another group so that identification is impossible.

Limitations

Limitations of this study are many. Although this study proposes a more complete understanding of the phenomenon of undergraduate men's alcohol consumption, it is by no means exhaustive. It is possible that plausible confounding variables have not been identified by this study, and that the relationship modeled by this research will not accurately reflect the underlying phenomenon in the population. Another limitation of this survey is the possibility that there was a systematic response bias in who decided to respond to the survey. If a group of men, such as heavy drinkers or abstainers, consistently decided not to complete the survey at a higher rate than other groups, the results of the survey would be biased and not representative of the larger population of undergraduate men. While it would be possible for any response rate lower

than 100%, the fact that there were useable responses from only 23% of respondents does increase the concern that the respondents might not be representative of the larger population they were drawn from.

Although drinking in college is generally considered part of the 'college experience,' especially for men, it is possible that respondents could have felt compelled to over or under report their behavior due to social desirability/response bias. Finally, as a quantitative study, there is always the possibility that constructs you are trying to measure are not being interpreted by the participants of the study in the same way as the researcher, or even from one individual to another. An individual's reality is subjective, and so the ability to make statements about what is true about other people's experiences is always limited and conditional.

Additionally, for the variables created through factor analysis (see Table 3.8) some of the cases were excluded after the factors had been created, resulting in the variables being not exactly standardized. The means were not all exactly zero, nor the standard deviations exactly one, making the interpretation of the coefficients slightly different than if the factors had been created after all the cases had been excluded.

Even with these limitations, however, the proposed study was worth conducting. This study presents a more comprehensive picture of undergraduate men's alcohol consumption than currently exists. As gender, ethnicity, and privilege are so closely related theoretically, it is not possible to truly understand any individual variable's relationship to alcohol consumption without including the all the others. This study's most important contribution is the inclusion of social dominance orientation, which has not previously been studied in connection with college students' alcohol consumption.

Additionally, as will be discussed in Chapter V, the results of this study suggest alternative alcohol interventions, which may prove to be more effective with the heaviest of drinkers, who have thus far been the most resistant to changing their behavior.

Chapter IV

This study uses zero-inflated negative binomial regression (ZINB), zero-inflated Poisson regression (ZIP), and logistic regression to examine alcohol consumption and alcohol related problems in college men. Chapter IV will outline the critical quantitative analysis of the survey data gathered and address the hypotheses and research questions outlined in the previous chapter. This chapter will present the data in three major sections. The first section will present the analysis of the correlation between the Conformity to Masculine Norms Inventory-46 (CMNI-46), the Social Dominance Orientation scale (SDO), and the revised Multigroup Ethnic Identity Measure (MEIM-R). This will test the first three hypotheses as outlined in Chapter III:

1. CMNI-46 factors will be correlated with SDO factors
2. CMNI-46 factors will be correlated with MEIM-R factors
3. SDO factors will be correlated with MEIM-R factors

The second section will present the analysis that tests the relationship between the CMNI-46, SDO, MEIM-R, and alcohol consumption. This will test hypotheses four and five:

4. Masculine norms, ethnic identity, and social dominance will all significantly predict alcohol consumption.
5. Masculine norms, ethnic identity, and social dominance will significantly predict alcohol consumption differently by race and Hispanic ethnicity.

The third, and final, major section will present the analysis that tests the relationship between the CMNI-46, SDO, MEIM-R, and alcohol related problems. This will test hypotheses six and seven:

6. Masculine norms, ethnic identity, and social dominance will all significantly predict alcohol problems.
7. Masculine norms, ethnic identity, and social dominance will significantly predict alcohol problems differently by race and Hispanic ethnicity.

Correlational Findings

After testing the first hypothesis, eight of the nine CMNI-46 factors were found to be significantly positively correlated with both SDO factors. The one CMNI factor that was not correlated was Primacy of (School) Work, which was not significantly correlated with either the Opposition to Equality (OEQ) or Group Based Dominance (GBD) factors. All the other CMNI-46 factors were significant with p<.001 except for the Playboy factor, which was significant at p=.014 with the OEQ factor (see Table 4.1). These results largely confirm hypothesis 1, and are consistent with previous findings of a significant correlation between masculine norms and social dominance orientation (Mahalik et al., 2003). That Primacy of (School) Work was not significantly correlated is not surprising, as this norm is the least obviously related to hegemonic masculinity compared the other eight norms.

Table 4.1
Correlation Between CMNI-46 and SDO

	SDO Factors			
	Opposition to Equality		Group Based Dominance	
CMNI-46 Factors	Coefficient	P	Coefficient	P
Winning	0.200	<0.001**	0.202	<.001**
Emotional Control	0.144	<0.000**	0.107	<.001**
Risk Taking	0.108	<0.001**	0.166	<.001**
Violence	0.264	<0.001**	0.312	<.001**
Power Over Women	0.493	<0.001**	0.550	<.001**
Playboy	0.066	0.014*	0.124	<.001**
Self-Reliance	0.109	0.000**	0.098	<.001**
Primacy of (School) Work	0.022	0.406	0.042	.114
Heterosexual Presentation	0.387	0.000**	0.377	<.001**

Note. CMNI – Conformity to Masculine Norms Inventory-46, SDO – Social Dominance Orientation scale. N = 1375
** - Denotes significant at α=.001, * - Denotes significant at α=.05

After testing the second hypothesis, it was found that most of the CMNI-46 factors were significantly correlated with one of the MEIM-R factors. The only masculine norms not correlated with ethnic identity were the Primacy of (School) Work and Playboy factors. The Exploration factor from the MEIM-R, which focuses on learning about an individual's own ethnic identity, was negatively correlated with the Emotional Control and Self-Reliance factors, and positively correlated with Risk Taking. The Commitment factor from the MEIM-R, which focuses on how important a person's ethnic identity is to them, was positively correlated with the Winning, Violence, Power Over Women, and Heterosexual Presentation factors (see Table 4.2).

These findings partially confirm hypothesis 2, which was built on the assumption that because masculinity is tied directly to race (McClintock, 1995), and ethnic identity is related to race (Phinney & Alipuria, 1990), that the mostly White sample would have similar patterns between the two sets of factors. Conceptually it makes sense that the variables correlated with exploring what your ethnic identity means are about risk taking, and that Emotional Control and Self-Reliance are negatively correlated with Exploration. Exploring something new, by definition, means you are unsure what you will find and how you will feel about it. Even if one assumes what they find will be positive, this is a type of risk taking, and the opposite of always being in control or always depending on yourself. Conversely, the factors that are correlated with Commitment, are the masculine norms associated with standing your ground and asserting dominance (Winning, Violence, Power Over Women, Heterosexual Presentation), which makes sense if Commitment is interpreted to mean a subscription to more "traditional" values.

Table 4.2
Correlation Between CMNI-46 and MEIM-R

	MEIM-R Factors			
	Exploration		Commitment	
CMNI-46 Factors	Coefficient	P	Coefficient	P
Winning	-0.009	0.725	0.071	0.008**
Emotional Control	-0.110	0.000**	-0.040	0.129
Risk Taking	0.057	0.034*	0.049	0.064
Violence	-0.005	0.866	0.056	0.035*
Power Over Women	0.017	0.516	0.178	<0.001**
Playboy	0.018	0.509	-0.001	0.971
Self-Reliance	-0.088	0.001**	-0.032	0.238
Primacy of (School) Work	-0.017	0.519	0.037	0.171
Heterosexual Presentation	0.014	0.602	0.174	<0.001**

Note. CMNI = Conformity to Masculine Norms Inventory-46, MEIM-R = Revised Multigroup Ethnic Identity Measure
N=1375
** - significant at α=.001, * - significant at α=.05

After testing the final correlation hypothesis, hypothesis 3, it was found that the MEIM-R factor Commitment was significantly positively correlated with both the OEQ and GBD factors that make up the SDO, but that the Exploration factor was not significantly correlated with either (see Table 4.3). This partially confirms the hypothesis, and makes sense when considering the outcome of hypothesis 2. Commitment was the MEIM-R factor most associated with the most aggressive masculine norms, and so it follows that it would be correlated with both SDO factors. On the other hand, it would not have been surprising if Exploration had also been correlated with the SDO, as Exploration was correlated with the CMNI-46 factors Emotional Control, Risk Taking, and Self-Reliance, which were all also correlated with both SDO factors.

Table 4.3
Correlation Between MEIM-R and SDO

	SDO Factors			
	Opposition to Equality		Group Based Dominance	
MEIM-R Factors	**Coefficient**	**P**	**Coefficient**	**P**
Exploration	-0.040	0.132	0.048	0.069
Commitment	0.098	0.000**	0.183	<0.001**

Note. SDO= Social Dominance Orientation scale, MEIM-R = Revised Multigroup Ethnic Identity Measure. N=1375
** - significant at α=.001

Zero-inflated Poisson Regression Findings

To test hypotheses 4 and 5, regression models for count data were run for each set of factors and the three dependent variables: typical drinks per week, drinks per heaviest week, and number of times binge drinking per typical week. Regressions were run first for each set of factors individually (masculine norms, ethnic identity, and social dominance orientation), then combined together. For typical drinks per week and drinks per heaviest week, zero-inflated negative binomial regressions (ZINB) were run, and for number of times binge drinking per typical week zero-inflated Poisson regressions (ZIP) were run.

Masculine Norms and Alcohol Consumption

As predicted in hypothesis 4, some of the masculine norms significantly predicted the three alcohol consumption variables (see Tables 4.4-4.6), and using the pseudo R^2 values, accounted for approximately 20-25% of the alcohol consumption variance. The overall regression for number of drinks in a typical week was statistically significant ($p<.001$) with Cragg-Uhler/Nagelkerke's R^2 of .254. Typical week drinks were positively significantly predicted by the norms of Winning ($p=.024$), Risk Taking ($p<.001$), Power Over Women ($p<.001$), and Playboy ($p<.001$) by the negative binomial regression. The chance of reporting no drinks for a typical week of drinking was positively significantly predicted by the norms of Emotional Control ($p=.019$), and negatively significantly predicted by the norms of Winning ($p=.020$), Risk Taking ($p<.001$), and Playboy ($p<.001$) by the logistic regression (see Table 4.4).

Table 4.4
Typical Week Drinks Regressed On Masculine Norms

Negative Binomial Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Winning	0.062	0.028	1.064	2.25	0.024*
Emotional Control	0.036	0.029	1.037	1.23	0.219
Risk Taking	0.183	0.031	1.201	5.97	<0.001**
Violence	0.026	0.029	1.027	0.91	0.362
Power Over Women	0.132	0.032	1.141	4.12	<0.001**
Playboy	0.139	0.029	1.149	4.74	<0.001**
Self-Reliance	0.002	0.029	1.002	0.08	0.934
Work	-0.012	0.029	0.988	-0.44	0.663
Hetero. Presentation	0.041	0.030	1.042	1.36	0.173
Logistic Regression					
Winning	-0.224	0.096	0.799	-2.33	0.020*
Emotional Control	0.219	0.093	1.245	2.35	0.019*
Risk Taking	-0.431	0.095	0.650	-4.52	<0.001**
Violence	-0.091	0.090	0.913	-1.01	0.313
Power Over Women	-0.170	0.115	0.844	-1.47	0.141
Playboy	-0.868	0.106	0.420	-8.20	<0.001**
Self-Reliance	-0.077	0.092	0.926	-0.84	0.402
Work	0.118	0.092	1.125	1.27	0.203
Hetero. Presentation	0.158	0.099	1.171	1.59	0.111

N=1373, Cragg-Uhler/Nagelkerke's R^2 = .254, Log likelihood = -4348.559, LR $\chi^2(9) = 180.43$, p > $\chi^2 = 0.0000$
** - significant at α=.001, * - significant at α=.05

The overall regression for the number of drinks reported for the heaviest week of drinking was statistically significant (p<.001) with Cragg-Uhler/Nagelkerke's R^2 of .249. Heaviest week's drinks were positively significantly predicted by the norms of Winning (p=.001), Risk Taking (p<.001), Power Over Women (p=.005), and Playboy (p<.001) by the negative binomial regression. The chance of reporting no drinks consumed during the heaviest week of drinking, or completely abstaining, was positively significantly predicted by the norm of Emotional Control (p=.023), and negatively significantly predicted by the norms of Risk Taking (p<.001), and Playboy (p<.001) by the logistic regression (see Table 4.5).

Table 4.5
Heaviest Week Drinks Regressed On Masculine Norms

Negative Binomial Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Winning	0.085	0.026	1.088	3.25	0.001**
Emotional Control	0.018	0.027	1.018	0.65	0.517
Risk Taking	0.195	0.029	1.215	6.82	<0.001**
Violence	0.038	0.027	1.038	1.38	0.166
Power Over Women	0.086	0.031	1.090	2.81	0.005*
Playboy	0.140	0.027	1.151	5.11	<0.001**
Self-Reliance	0.015	0.027	1.015	0.57	0.572
Work	-0.016	0.027	0.984	-0.59	0.557
Hetero. Presentation	0.027	0.029	1.027	0.94	0.348
Logistic Regression					
Winning	-0.165	0.098	0.848	-1.68	0.093
Emotional Control	0.219	0.097	1.245	2.27	0.023*
Risk Taking	-0.388	0.097	0.678	-4.00	<0.001**
Violence	-0.137	0.092	0.872	-1.49	0.136
Power Over Women	-0.128	0.121	0.880	-1.06	0.287
Playboy	-0.973	0.112	0.378	-8.72	<0.001**
Self-Reliance	-0.011	0.094	0.989	-0.12	0.907
Work	0.084	0.096	1.087	0.87	0.382
Hetero. Presentation	0.128	0.102	1.137	1.26	0.208

N=1380, Cragg-Uhler/Nagelkerke's $R^2 = .249$, Log likelihood = -5015.267, LR $\chi^2(9) = 184.75$, p > $\chi^2 = 0.0000$
** - significant at α=.001, * - significant at α=.05

The regression for the number of times a week students reported binge drinking (consuming 5 or more drinks) in a typical week was statistically significant (p<.001) with a Cragg-Uhler/Nagelkerke's R^2 of .196. Binging per week was positively significantly predicted only by the norm of Power Over Women (p=.006) by the Poisson regression. The chances of reporting never binge drinking in a typical week was significantly negatively predicted by Winning (p=.011), Risk Taking (p<.001), Playboy (p<.001), and Heterosexual Presentation (p=.043) by the logistic regression. Unlike the other alcohol consumption variables, Emotional Control did not significantly increase the chance of completely abstaining (see Table 4.6).

Table 4.6
Binging Per Week Regressed On Masculine Norms

Poisson Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Winning	0.033	0.038	1.033	0.86	0.389
Emotional Control	0.018	0.040	1.018	0.46	0.646
Risk Taking	0.056	0.050	1.058	1.13	0.261
Violence	0.012	0.043	1.012	0.27	0.789
Power Over Women	0.112	0.041	1.118	2.73	0.006*
Playboy	0.032	0.044	1.033	0.73	0.463
Self-Reliance	0.042	0.040	1.043	1.06	0.287
Work	-0.042	0.039	0.958	1.08	0.281
Hetero. Presentation	-0.006	0.042	0.994	0.14	0.890
Logistic Regression					
Winning	-0.296	0.117	0.744	2.53	0.011*
Emotional Control	0.045	0.120	1.046	0.38	0.707
Risk Taking	-0.647	0.149	0.524	4.34	<0.001**
Violence	-0.154	0.118	0.857	1.30	0.192
Power Over Women	-0.058	0.142	0.943	0.41	0.683
Playboy	-0.821	0.151	0.440	5.46	<0.001**
Self-Reliance	0.151	0.120	1.164	1.26	0.208
Work	0.012	0.115	1.012	0.10	0.918
Hetero. Presentation	-0.263	0.130	0.769	2.02	0.043*

N=1373, Cragg-Uhler/Nagelkerke's $R^2 = .196$, Log likelihood = -1702.573, LR $\chi^2(9) = 28.95$, p > $\chi^2 = 0.0007$
** - significant at α=.001, * - significant at α=.05

These results partially confirm previous studies by Iwamoto et al. (2011, 2014) looking at alcohol consumption and masculine norms using the CMNI. In the first study, Iwamoto et al. (2011) found Risk Taking, Winning, and Playboy norms were positive significant predictors of drinking to intoxication, and Emotional Control and Heterosexual Presentation were negative significant predictors. In the second study, Iwamoto et al. (2014) found that Risk Taking and the Playboy norm again positively predicted alcohol use, while heterosexual presentation and emotional control negatively predicted alcohol use after controlling for alcohol expectancies.

Like previous studies, Risk Taking, Playboy, and Winning were significant predictors of alcohol consumption; that is, individuals who reported higher conformity to these norms drank significantly more than individuals who reported lower conformity to these norms. Similarly, Emotional Control was also a protective factor, with higher

conformity to this norm associated with a greater likelihood of reporting abstaining completely from drinking. Different from previous studies, Heterosexual Presentation was largely a non-significant predictor of alcohol consumption, with the exception of binge drinking, where higher conformity to the norm increased the risk of binge drinking rather than diminished it. Also different from previous results, the norm Power Over Women was a significant predictor of alcohol consumption. It makes sense that both the Playboy and Power Over Women norms would be significant predictors, as they both measure different facets of sexism and misogyny.

Ethnic Identity and Alcohol Consumption

Contrary to the prediction of hypothesis 4, in most cases ethnic identity was not a significant predictor of alcohol consumption (see Tables 4.7 & 4.8). None of the regression models reached the level of statistical significance (p >.05). Interestingly, despite the model being insignificant, Commitment (p=.022) did significantly positively predicted the number of drinks consumed in a typical week by the negative binomial regression (see Table 7). For both the heaviest weeks of reported drinking, and the number of times binge drinking in a typical week, the ethnic identity factors of Exploration and Commitment did not significantly predict alcohol consumption or abstaining from alcohol consumption (see Tables 4.8 & 4.9).

Table 4.7
Typical Week Drinks Regressed on Ethnic Identity

Negative Binomial Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Exploration	-0.038	0.037	0.963	-1.01	0.312
Commitment	0.083	0.036	1.086	2.29	0.022*
Logistic Regression					
Exploration	-0.122	0.105	0.886	-1.16	0.246
Commitment	0.104	0.101	1.110	1.03	0.303

N=1405, Cragg-Uhler/Nagelkerke's $R^2 = 0.005$, Log likelihood = -4634.619, LR $\chi^2(2) = 5.42$, p > $\chi^2 = 0.0664$
* - significant at α=.05

Table 4.8
Heaviest Week Drinks Regressed on Ethnic Identity

Negative Binomial Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Exploration	-0.027	0.035	0.973	-0.78	0.437
Commitment	0.048	0.034	1.049	1.42	0.155
Logistic Regression					
Exploration	-0.007	0.110	0.993	-0.07	0.946
Commitment	0.082	0.106	1.085	0.77	0.441

N=1411, Cragg-Uhler/Nagelkerke's R^2 = .002, Log likelihood = -5317.946, LR $\chi^2(2)$ = 2.03, p > χ^2 = 0.3617

Table 4.9
Binging Per Week Regressed on Ethnic Identity

Poisson Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Exploration	-0.037	0.051	0.963	-0.74	0.461
Commitment	0.066	0.048	1.068	1.36	0.172
Logistic Regression					
Exploration	-0.010	0.114	0.990	-0.09	0.928
Commitment	-0.062	0.109	0.940	-0.57	0.571

N=1405, Cragg-Uhler/Nagelkerke's R^2 = .003, Log likelihood = -1872.946, LR $\chi^2(2)$ = 1.87, p > χ^2 = 0.3920

These results follow a pattern of mixed outcomes for the relationship between ethnic identity and alcohol consumption, where results vary depending on which ethnicities are being examined and which measures are being used. Working with a sample of Mexican American college students, Zamboagna et al. (2006) found ethnic identity (as measured by the MEIM) was significantly associated with binge drinking among men, but not women. Conversely, Schwartz et al. (2011) found that for Black college students, higher ethnic identity (as measured by the MEIM again) was associated with less hazard alcohol use (a composite measure of both alcohol consumption and problems). Splitting the difference between the previous two studies, Iwamoto et al. (2012) found no significant relationship between binge drinking and ethnic identity (as measured by the MEIM-R) for Asian college students.

Social Dominance Orientation and Alcohol Consumption

Partially confirming the assumption of hypothesis 4, GBD significantly predicted two of the three alcohol consumption variables, although all three models were

statistically significant ($p < .05$). The first model, for typical week drinks had a Cragg-Uhler/Nagelkerke's R^2 of .026. The second model, for heaviest week drinks had a Cragg-Uhler/Nagelkerke's R^2 of .022, while the third model, for binge drinking per week, had a Cragg-Uhler/Nagelkerke's R^2 of .021. These very low values indicate that approximately 2% of the alcohol behavior was accounted for by social dominance orientation, and thus despite being significant, was not a meaningful predictor.

In the first regression, GBD positively significantly predicted the number of typical week drinks ($p<.001$) for the negative binomial regression. Group Based Dominance also negatively significantly predicted reporting no drinks in a typical week ($p=.022$) for the logistic regression (see Table 4.10). The same relationship was apparently looking at the number of drinks reported for students' heaviest week. Group Based Dominance positively significantly predicted heaviest week drinks ($p=.002$) for the negative binomial regression, and negatively significantly predicted reporting no drinks for the heaviest week ($p=.043$) for the logistic regression (see Table 4.11). When looking at the number of times reported binge drinking in a typical week, neither GBD nor OEQ were statistically significant predictors (see Table 4.12).

Table 4.10
Typical Week Drinks Regressed on Social Dominance Orientation

Negative Binomial Regression	**Coefficient**	**Standard Error**	**Odds Ratio**	**Z**	**P>|z|**
OEQ	-0.012	0.035	0.988	-0.34	0.731
GBD	0.141	0.036	1.151	3.90	<0.001**
Logistic Regression					
OEQ	0.017	0.104	1.017	0.17	0.868
GBD	-0.247	0.108	0.781	-2.28	0.022*

Note: OEQ = Opposition to Equality; GBD = Group Based Dominance
N=1391, Cragg-Uhler/Nagelkerke's R^2 = .026, Log likelihood = -4577.042, LR $\chi^2(2) = 25.23$, $p > \chi^2 < 0.0001$
** - significant at α=.001, * - significant at α=.05

Table 4.11
Heaviest Week Drinks Regressed on Social Dominance Orientation

Negative Binomial Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
OEQ	0.027	0.034	1.028	0.81	0.416
GBD	0.106	0.035	1.112	3.07	0.002*
Logistic Regression					
OEQ	0.082	0.106	1.086	0.78	0.437
GBD	-0.225	0.111	0.798	-2.03	0.043*

Note: OEQ = Opposition to Equality; GBD = Group Based Dominance
N=1391, Cragg-Uhler/Nagelkerke's R^2 = .022, Log likelihood = -5257.038, LR $\chi^2(2) = 25.49$, p > $\chi^2 < 0.0001$
* - significant at α=.05

Table 4.12
Binging Per Week Regressed on Social Dominance Orientation

Poisson Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
OEQ	0.009	0.049	1.009	0.18	0.858
GBD	0.079	0.049	1.083	1.61	0.107
Logistic Regression					
OEQ	-0.099	0.124	0.906	-0.79	0.427
GBD	-0.183	0.123	0.833	-1.49	0.137

Note: OEQ = Opposition to Equality; GBD = Group Based Dominance
N=1391, Cragg-Uhler/Nagelkerke's R^2 = .021, Log likelihood = -1846.175, LR $\chi^2(2) = 6.16$, p > $\chi^2 = 0.0459$

Since there have been no previous studies examining the relationship between social dominance orientation and alcohol consumption, it is only possible to compare the results to what was theoretically expected. The significant positive correlation between both social dominance orientation factors and 8 of the 9 masculine norms would suggest that because masculinity is related to alcohol consumption, both factors would be also (see Table 4.1). Similarly, both social dominance orientation factors were significantly positively correlated to the ethnic identity factor Commitment (see Table 4.2), which was the norm that significantly predicted typical week drinks.

Without further qualitative investigation, it is hard to say definitively why this is the case. A possible explanation could be in how GBD is conceptually different from OEQ. Group Based Dominance, as the name suggests, is about support of dominant groups oppressing subordinate groups, while Opposition to Equality is about opposing efforts to reduce the level of hierarchy between social groups (Ho et al., 2012). Within

this framing, GBD is more about taking action to oppress subordinate groups, while OEQ is more about resisting actions to challenge the oppression of subordinate groups. While the two concepts are obviously related to each other, consuming alcohol is an affirmative step men take to help construct their masculinity and so it makes sense that it would be more strongly related to the active rather than passive social dominance factor.

Masculine Norms, Ethnic Identity, Social Dominance, and Alcohol Consumption

To complete the testing of hypothesis 4, all the factors from the CMNI-46, MEIM-R, and SDO were added into one regression model for each of the dependent variables, along with the control variables for athletics participation, fraternity membership, and where they lived. For typical week drinks, Intramural sports participation was significant for both parts of the first model, while Fraternity membership and living at home were significant for the negative binomial regression, and varsity athletic status was significant for the logistic regression (see Table 4.13). The overall model was statistically significant ($p<.001$) and had a Cragg-Uhler/Nagelkerke's R^2 of .305.

Table 4.13
Typical Week Drinks Regressed on Masculine Norms, Ethnic Identity, and Social Dominance Orientation

Negative Binomial Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Winning	0.035	0.027	1.036	1.30	0.193
Emotional Control	0.023	0.028	1.023	0.82	0.415
Risk Taking	0.170	0.030	1.185	5.63	<0.001**
Violence	0.032	0.029	1.033	1.13	0.260
Power Over Women	0.118	0.035	1.125	3.37	0.001**
Playboy	0.143	0.029	1.153	4.94	<0.001**
Self-Reliance	0.025	0.028	1.025	0.88	0.378
Work	-0.020	0.028	0.980	-0.72	0.473
Hetero. Presentation	0.033	0.030	1.034	1.11	0.269
Exploration	-0.004	0.035	0.996	-0.12	0.905
Commitment	-0.001	0.034	0.999	-0.01	0.988
Opposition to Equality	-0.006	0.033	0.994	-0.19	0.851

Table 4.13
Typical Week Drinks Regressed on Masculine Norms, Ethnic Identity, and Social Dominance Orientation (continued)

Negative Binomial Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Group Based Dominance	-0.027	0.036	0.973	-0.75	0.454
Intramural	0.239	0.049	1.270	4.85	<0.001**
Fraternity	0.354	0.091	1.424	3.87	<0.001**
Home	-0.695	0.190	0.499	-3.65	<0.001**
Logistic Regression					
Winning	-0.114	0.100	0.898	-1.14	0.253
Emotional Control	0.225	0.095	1.239	2.38	0.017*
Risk Taking	-0.421	0.098	0.677	-4.32	<0.001**
Violence	-0.092	0.094	0.919	-0.98	0.328
Power Over Women	-0.147	0.129	0.874	-1.13	0.257
Playboy	-0.885	0.107	0.443	-8.24	<0.001**
Self-Reliance	-0.110	0.094	0.903	-1.17	0.244
Work	0.097	0.094	1.089	1.03	0.302
Hetero. Presentation	0.183	0.102	1.190	1.79	0.073
Exploration	-0.094	0.126	0.919	-0.74	0.457
Commitment	0.163	0.121	1.165	1.34	0.179
Opposition to Equality	-0.012	0.120	0.989	-0.10	0.923
Group Based Dominance	-0.027	0.131	0.975	-0.20	0.839
Varsity	-1.212	0.399	0.713	-3.04	0.002*
Intramural	-1.022	0.197	0.618	-5.19	<0.001**

N=1359, Cragg-Uhler/Nagelkerke's R^2 = .305, Log likelihood = -4254.738, LR $\chi^2(16)$ = 230.70, p > χ^2 < 0.0001
** - significant at α=.001, * - significant at α=.05

For heaviest week drinks, Intramural participation, fraternity membership, and living at home were significant for the negative binomial regression, and varsity and intramural athletic participation along with fraternity membership were significant for the logistic regression (see Table 4.14). The overall model was significantly significant (p<.001) and had a Cragg-Uhler/Nagelkerke's R^2 of .301. The third and final regression, for binge drinking per typical week, had significant control variables for intramural athletics for the Poisson regression, and intramural and varsity athletic participation for the logistic regression (see Table 4.15). The model overall was significant (p<.001) with Cragg-Uhler/Nagelkerke's R^2 of .250.

Mostly contradicting the assumption of hypothesis 4, for typical drinks per week and heaviest week drinks, both the MEIM-R and SDO factors became non-significant

predictors (see Tables 4.13 & 4.14). Only for binging per week did GBD become a positive significant predictor (p=.010) for the logistic regression (see Table 4.15), otherwise the same masculine norms that were significant in the CMNI-46-variables-only models were significant in the combined model. The one exception is that for typical week drinks, Winning became insignificant when all the variables were combined, with the variance possibly being accounted for by the addition of some of the athletic control variables.

The significance of the masculine norms in predicting drinking behavior suggests that, for this sample at least, ethnic identity does not predict alcohol consumption when masculine norms are controlled for. It similarly suggests that, for this sample, in most cases the addition of social dominance orientation factors does not meaningfully predict alcohol consumption. The notable exception of the number of times binge drinking in a typical week, as well as the relatively poor ability of the masculine norms to predict the number of times a student will binge drink in a typical week (for the Poisson regressions) suggests different factors than the ones identified are driving that behavior. Comparing the pseudo R^2 values to the masculine norms only models, adding both ethnic identity and social dominance orientation increased the predictive ability of the model by approximately 5% for each consumption variable.

Table 4.14

Heaviest Week Drinks Regressed on Masculine Norms, Ethnic Identity, and Social Dominance Orientation

Negative Binomial Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Winning	0.064	0.026	1.066	2.50	0.012*
Emotional Control	0.008	0.027	1.008	0.30	0.767
Risk Taking	0.183	0.028	1.201	6.50	<0.001**
Violence	0.042	0.027	1.043	1.54	0.123
Power Over Women	0.064	0.033	1.066	1.90	0.057
Playboy	0.147	0.027	1.159	5.43	<0.001**
Self-Reliance	0.031	0.026	1.031	1.17	0.242
Work	-0.020	0.027	0.980	-0.75	0.455
Heterosexual Presentation	0.012	0.029	1.013	0.43	0.664
Exploration	0.017	0.033	1.017	0.51	0.609
Commitment	-0.033	0.032	0.967	-1.03	0.301
Opposition to Equality	0.024	0.032	1.024	0.73	0.465
Group Based Dominance	-0.022	0.034	0.978	-0.64	0.525
Intramural	0.235	0.047	1.265	5.01	<0.001**
Fraternity	0.307	0.088	1.360	3.50	<0.001**
Home	-0.555	0.156	0.574	-3.57	<0.001**
Logistic Regression					
Winning	-0.041	0.102	0.959	-0.41	0.685
Emotional Control	0.248	0.100	1.282	2.49	0.013*
Risk Taking	-0.359	0.100	0.698	-3.58	<0.001**
Violence	-0.168	0.097	0.846	-1.73	0.084
Power Over Women	-0.139	0.135	0.870	-1.03	0.302
Playboy	-0.987	0.114	0.373	-8.69	<0.001**
Self-Reliance	-0.064	0.099	0.938	-0.65	0.518
Work	0.082	0.098	1.086	0.84	0.400
Heterosexual Presentation	0.124	0.106	1.132	1.17	0.241
Exploration	0.077	0.133	1.080	0.58	0.564
Commitment	0.128	0.128	1.137	1.00	0.316
Opposition to Equality	0.063	0.125	1.065	0.50	0.616
Group Based Dominance	0.013	0.134	1.013	0.10	0.923
Varsity	-1.418	0.449	0.242	-3.16	0.002*
Intramural	-0.948	0.209	0.387	-4.54	<0.001**
Fraternity	-1.599	0.686	0.202	-2.33	0.020**

N=1365, Cragg-Uhler/Nagelkerke's R^2 = .301, Log likelihood = -4911.021, LR $\chi^2(16) = 234.23$, p > $\chi^2 < 0.0001$

** - significant at α=.001, * - significant at α=.05

Table 4.15
Binging Per Week Regressed on Masculine Norms, Ethnic Identity, and Social Dominance Orientation

Poisson Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Winning	0.028	0.037	1.028	0.75	0.451
Emotional Control	0.019	0.040	1.019	0.48	0.629
Risk Taking	0.056	0.047	1.058	1.20	0.232
Violence	0.015	0.044	1.015	0.35	0.729
Power Over Women	0.098	0.045	1.103	2.15	0.031*
Playboy	0.019	0.041	1.019	0.45	0.651
Self-Reliance	0.041	0.039	1.042	1.05	0.293
Work	-0.066	0.039	0.936	-1.70	0.088
Heterosexual Presentation	-0.001	0.042	0.999	-0.03	0.977
Exploration	0.000	0.050	1.000	0.01	0.995
Commitment	0.008	0.048	1.008	0.16	0.870
Opposition to Equality	-0.051	0.048	0.950	-1.08	0.282
GBD	0.058	0.049	1.059	1.17	0.241
Intramural	0.148	0.067	1.160	2.22	0.026*
<u>Logistic Regression</u>					
Winning	-0.096	0.123	0.909	-0.77	0.438
Emotional Control	0.066	0.127	1.068	0.52	0.603
Risk Taking	-0.684	0.155	0.504	-4.40	<0.001**
Violence	-0.174	0.130	0.840	-1.35	0.179
Power Over Women	-0.073	0.173	0.930	-0.42	0.675
Playboy	-1.013	0.167	0.363	-6.06	<0.001**
Self-Reliance	0.086	0.126	1.090	0.68	0.497
Work	-0.079	0.125	0.924	-0.63	0.528
Heterosexual Presentation	-0.175	0.138	0.840	-1.26	0.207
Exploration	0.031	0.165	1.032	0.19	0.849
Commitment	0.018	0.157	1.019	0.12	0.906
Opposition to Equality	-0.397	0.180	0.672	-2.20	0.027*
GBD	0.447	0.174	1.564	2.57	0.010*
Varsity	-1.587	0.480	0.205	-3.31	0.001**
Intramural	-1.519	0.270	0.219	-5.64	<0.001**

Note. GBD = Group Based Dominance.
N=1359, Cragg-Uhler/Nagelkerke's R^2 = .250, Log likelihood = -1642.833, LR $\chi^2(14)$ = 38.17 p > χ^2= 0.0005
** - significant at α=.001, * - significant at α=.05

Masculine Norms, Ethnic Identity, Social Dominance, And Alcohol Consumption By Race/Ethnicity

To test hypothesis 5, the race and ethnicity variables, the interaction-terms for racial/ethnic groups, and the other control variables were added to the CMNI-46, MEIM-R, and SDO factors to create the most complete model. Potentially significant

interactions that were identified were added to the larger model, and ones that were not significant were dropped to maintain statistical power. Similarly, the control variables that were added after the interactions, with non-significant terms again dropped, arriving at a final model for each dependent variable.

Typical Week Drinks

After testing the interaction terms for typical week drinks potentially significant interactions for the negative binomial regression were identified between: Asian racial identity and Group Based Dominance, Commitment, and Heterosexual Presentation; Black racial identity and Exploration and Commitment; Hispanic ethnicity and Commitment and Power Over Women. For the logistic regression, potentially significant interactions were identified between: Asian racial identity and Group Based Dominance, Playboy, and Heterosexual Presentation; Hispanic ethnicity and Playboy.

After identifying the relevant interaction terms, all the SDO, CMNI-46, MEIM-R factors and interactions were entered into a ZINB regression with the racial dummy codes. Once all the variables were added, Black racial identity with Commitment, Hispanic ethnic identity with Commitment, and Black racial identity with Exploration were dropped from the negative binomial regression, and Asian racial identity with Heterosexual Presentation was dropped from the logistic regression.

Next, the control variables were added to the model; whether or not respondents live at home, live in a fraternity house, was a member of a varsity sports team, a club sports team, participated in intramural sports, or a member of a fraternity. After the final variables were entered into the model, living in a fraternity house and being a member of a varsity or club sport, were dropped from the negative binomial regression as these

variables were not significant predictors. These same variables were also non-significant for the logistic regression and so were also dropped, except for whether they were a varsity athlete, which was a significant predictor and was thus retained. The overall model significantly predicted typical week drinks ($p<.001$) and had a Cragg-Uhler/Nagelkerke's R^2 of .367, making it the best predictive model for typical week drinks (see Table 4.16).

Table 4.16
Typical Week Drinks Regressed on Masculine Norms, Ethnic Identity, and Social Dominance Orientation by Race/Ethnicity

Negative Binomial Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Winning	0.042	0.027	1.043	1.58	0.115
Emotional Control	0.019	0.028	1.019	0.68	0.499
Risk Taking	0.176	0.029	1.192	5.96	<0.001*
Violence	0.023	0.028	1.023	0.81	0.416
Power Over Women	0.115	0.035	1.121	3.29	0.001*
Playboy	0.146	0.028	1.157	5.13	<0.001*
Self-Reliance	0.032	0.028	1.033	1.17	0.243
Work	-0.022	0.028	0.978	-0.79	0.428
Heterosexual Presentation	0.054	0.030	1.056	1.80	0.072
Exploration	0.010	0.034	1.010	0.30	0.762
Commitment	0.012	0.034	1.012	0.36	0.716
Opposition to Equality	-0.009	0.033	0.991	-0.28	0.782
Group Based Dominance	-0.004	0.036	0.996	-0.12	0.902
Home	-0.694	0.185	0.500	-3.76	<0.001*
Intramural	0.211	0.048	1.235	4.40	<0.001*
Fraternity	0.313	0.089	1.368	3.54	<0.001*
Black	-0.045	0.138	0.956	-0.33	0.744
Asian	-0.417	0.102	0.659	-4.10	<0.001*
Multiracial	-0.266	0.110	0.766	-2.41	0.016*
Hispanic	-0.099	0.089	0.906	-1.11	0.266
Other Race	-0.216	0.208	0.806	-1.04	0.299
Asian * GBD	-0.266	0.109	0.766	-2.45	0.014*
Asian * Commitment	-0.220	0.111	0.803	-1.98	0.048*
Hispanic * Over Women	-0.243	0.081	0.785	-3.00	0.003*
Asian * Hetero Presentation	-0.318	0.107	0.728	-2.96	0.003*

Table 4.16
Typical Week Drinks Regressed on Masculine Norms, Ethnic Identity, and Social Dominance Orientation by Race/Ethnicity (Continued)

Logistic Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Winning	-0.131	0.108	0.877	-1.22	0.224
Emotional Control	0.236	0.099	1.266	2.39	0.017*
Risk Taking	-0.444	0.103	0.641	-4.30	<0.001**
Violence	-0.067	0.099	0.935	-0.68	0.497
Power Over Women	-0.089	0.136	0.914	-0.66	0.510
Playboy	-1.178	0.144	0.308	-8.17	<0.001**
Self-Reliance	-0.101	0.098	0.904	-1.04	0.298
Work	0.138	0.096	1.147	1.43	0.154
Heterosexual Presentation	0.061	0.107	1.063	0.57	0.570
Exploration	-0.209	0.132	0.811	-1.58	0.113
Commitment	0.119	0.125	1.127	0.96	0.339
Opposition to Equality	0.072	0.125	1.075	0.58	0.564
Group Based Dominance	-0.231	0.151	0.794	-1.52	0.128
Home	1.004	0.475	2.730	2.11	0.034*
Varsity	-1.080	0.402	0.340	-2.69	0.007*
Intramural	-0.909	0.205	0.403	-4.43	<0.001**
Black	1.078	0.461	2.938	2.34	0.019*
Asian	1.501	0.264	4.488	5.69	<0.001**
Multiracial	0.137	0.436	1.147	0.31	0.754
Hispanic	0.364	0.349	1.438	1.04	0.297
Other Race	0.020	0.737	1.020	0.03	0.979
Asian * GBD	0.539	0.248	1.715	2.17	0.030*
Asian * Playboy	0.644	0.270	1.905	2.39	0.017*
Hispanic * Playboy	0.988	0.355	2.686	2.78	0.005*

Note. GBD = Group Based Dominance; Over Women = Power Over Women; Hetero Presentation = Heterosexual Presentation. N=1345, Cragg-Uhler/Nagelkerke's R^2 = .367, Log likelihood = -4163.841, LR $\chi^2(25)$ = 290.11 p > χ^2< 0.0001
** - significant at α=.001, * - significant at α=.05

In this final model for typical week drinks, the masculine norms that were significant before, Risk Taking (p<.001), Power Over Women (p=.001), Playboy (p<.001) for the negative binomial regression and Emotional Control (p=.017), Risk Taking (p<.001), Playboy (p<.001) for the logistic regression, remained significant. The main MEIM-R and SDO factors also remained non-significant. Interestingly, through the interaction terms we see that previously non-significant variables have become significant for specific groups. For individuals who identified as Asian, typical week drinks were significantly negatively associated with both Group Based Dominance (p=.014), Commitment (p=.048), and Heterosexual Presentation (p=.003). For individuals who identified as Hispanic, Power Over Women (p=.003) was significantly

negatively associated with typical week drinks, while it was significantly positively associated with typical week drinks for non-Hispanic individuals.

Heaviest Week Drinks

Moving to examining heaviest week drinks, potentially significant interactions were identified for the negative binomial regression between: Asian racial identity and Group Based and Heterosexual Presentation; Black racial identity and Commitment, and Hispanic ethnicity and Playboy. For the logistic regression, multiracial identity and Playboy were identified. Next the control variables were added. With these variables included, the interaction between Black racial identity and Commitment became non-significant, and was dropped along with living in a fraternity house, playing club sports, being a varsity athlete, from the negative binomial regression. Living at home, living in a fraternity house, or playing club sports were also not significant and were dropped from the logistic regression. The overall regression was statistically significant ($p<.001$) and had a Cragg-Uhler/Nagelkerke's R^2 of .352, making it the best predictive model for heaviest week drinks (see Table 4.17).

In the final model for heaviest week drinks, adding the interaction terms and control variables caused the Power Over Women norm to become non-significant for negative binomial regression. The other factors that were significant before: Winning ($p=.006$), Risk Taking ($p<.001$), and Playboy ($p<.001$) in the negative binomial regression, and Emotional Control ($p=.010$), Risk Taking ($p<.001$), and Playboy ($p<.001$) for the logistic regression, remained significant. Similarly, none of the MEIM-R or SDO factors that were not significant before became significant after adding the new variables, in either equation.

As with the typical week drinks model, however, the presence of significant interactions indicate that the variables did not have the same relationship for every group. For individuals who identified as Asian, both Group Based Dominance (p<.001) and Heterosexual Presentation (p=.021) were significantly negatively correlated with heaviest week drinks for the negative binomial regression. For individuals who identified as Hispanic, the Playboy norm (p=.011) was significantly negatively correlated with heaviest week drinks rather than positively correlated as for non-Hispanic individuals, for the negative binomial regression. For the logistic regression, the only significant interaction was between individuals who identified as multiracial and the Playboy norm (p=.041), which was also significantly negatively correlated with reporting no drinks for the heaviest week, but the coefficient was larger (-1.02 for the non-interaction, -2.33 for the interaction term), indicating that the Playboy norm had a larger impact for multiracial individuals than for the White respondents (see Table 4.17).

Table 4.17
Heaviest Week Drinks Regressed On Masculine Norms, Ethnic Identity, and Social Dominance by Race/Ethnicity

Negative Binomial Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Winning	0.069	0.025	1.071	2.72	0.006*
Emotional Control	0.002	0.026	1.002	0.07	0.943
Risk Taking	0.181	0.028	1.199	6.53	<0.001**
Violence	0.036	0.027	1.036	1.33	0.184
Power Over Women	0.051	0.033	1.052	1.56	0.119
Playboy	0.172	0.028	1.187	6.17	<0.001**
Self-Reliance	0.040	0.026	1.041	1.54	0.124
Work	-0.026	0.026	0.974	-0.99	0.321
Heterosexual Presentation	0.036	0.029	1.037	1.23	0.217
Exploration	0.030	0.032	1.031	0.94	0.348
Commitment	-0.027	0.032	0.973	-0.85	0.394
Opposition to Equality	0.014	0.032	1.014	0.45	0.651
Group Based Dominance	0.007	0.035	1.007	0.20	0.841

Table 4.17
Heaviest Week Drinks Regressed On Masculine Norms, Ethnic Identity, and Social Dominance by Race/Ethnicity (Continued)

Negative Binomial Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Home	-0.564	0.153	0.569	-3.69	<0.001**
Intramural	0.217	0.046	1.242	4.73	<0.001**
Fraternity	0.259	0.086	1.295	3.01	0.003*
Black	-0.186	0.134	0.831	-1.39	0.165
Asian	-0.495	0.084	0.610	-5.91	<0.001**
Multiracial	-0.143	0.103	0.867	-1.39	0.166
Hispanic	0.087	0.089	1.090	0.97	0.330
Other Race	-0.103	0.205	0.902	-0.50	0.615
Asian * GBD	-0.352	0.100	0.704	-3.52	<0.001**
Hispanic * Playboy	-0.234	0.092	0.791	-2.55	0.011*
Asian * Hetero Presentation	-0.217	0.094	0.805	-2.30	0.021*
Logistic Regression					
Winning	-0.063	0.107	0.939	-0.58	0.560
Emotional Control	0.266	0.103	1.305	2.57	0.010*
Risk Taking	-0.388	0.105	0.678	-3.71	<0.001**
Violence	-0.114	0.102	0.892	-1.11	0.266
Power Over Women	-0.127	0.141	0.881	-0.90	0.368
Playboy	-1.020	0.121	0.361	-8.43	<0.001**
Self-Reliance	-0.087	0.103	0.917	-0.84	0.402
Work	0.115	0.101	1.122	1.14	0.254
Heterosexual Presentation	0.028	0.112	1.029	0.25	0.802
Exploration	-0.061	0.139	0.941	-0.44	0.662
Commitment	0.103	0.133	1.109	0.77	0.440
Opposition to Equality	0.105	0.129	1.110	0.81	0.418
Group Based Dominance	-0.056	0.143	0.945	-0.39	0.694
Varsity	-1.348	0.462	0.260	-2.92	0.003*
Intramural	-0.835	0.216	0.434	-3.88	<0.001**
Fraternity	-1.581	0.760	0.206	-2.08	0.037*
Black	0.981	0.478	2.668	2.05	0.040*
Asian	1.274	0.257	3.576	4.96	<0.001**
Multiracial	-1.262	1.030	0.283	-1.23	0.220
Hispanic	-0.016	0.400	0.984	-0.04	0.969
Other Race	1.114	0.686	3.048	1.63	0.104
Multiracial * Playboy	-2.326	1.140	0.098	-2.04	0.041*

Note. GBD = Group Based Dominance
N=1350, Cragg-Uhler/Nagelkerke's R^2 = .352, Log likelihood = -4822.018, LR $\chi^2(24) = 295.69$ p > $\chi^2 < 0.0001$
** - significant at α=.001, * - significant at α=.05

Binge Drinking on a Typical Week

For the final alcohol consumption variable, number of times binge drinking in a typical week, potential interaction terms were examined before adding the control variables. Potential significant interactions for the Poisson regression were identified

between: Black racial identity and Exploration; and Asian racial identity and Commitment and Risk Taking. Potential interactions for the logistic regression were found between: Asian racial identity and Group Based Dominance, Risk Taking, and Heterosexual Presentation; and Black racial identity and Commitment. After combining these interaction terms with the original independent variables, the interactions between Asian identity and Commitment, and Black identity and Exploration were dropped from the Poisson regression, while the interactions between Asian identity and Group Based Dominance, and Black identity and Commitment were dropped from the logistic regression. The last step was to add the control variables. All of them except Intramural sports participation became non-significant and were dropped from the Poisson regression. For the logistic regression, Intramural sports participation, Varsity sports participation, and living at home were retained as significant. The overall model was statistically significant ($p<.001$), with a Cragg-Uhler/Nagelkerke's R^2 of .306, making it the best predictive model of typical binge drinking per week (see Table 4.18).

Following a pattern similar to the other dependent variables, adding the interaction terms and control variables resulted in Power Over Women ($p=.116$) becoming a non-significant predictor of binging per week for the Poisson regression. For the logistic regression, Winning ($p=.534$) became non-significant, while Risk Taking ($p<.001$), Playboy ($p<.001$), Heterosexual Presentation ($p=.004$), and Group Based Dominance ($p=.017$) remained significant predictors. Surprisingly, with the new variables added, Opposition to Equality became significantly negatively associated with binging per week for the logistic regression where it had previously been not significant. This is particularly surprising because this variable had not previously been significant

with any of the other alcohol consumption models, and it is in the opposite direction from Group Based Dominance, which remained significantly positively associated reporting no binge drinking on for a typical week.

Not surprising, was the fact that there were significant interaction terms, indicating different relationships between the variables depending on race/ethnicity. For the Poisson regression, only the interaction between Asian racial identity and Risk Taking (p=.005) was positively associated with binge drinking, meaning that higher rates of Risk Taking for Asian individuals were significantly more likely to report more binge drinking on a typical week. For the logistic regression, there were significant positive interactions between Asian racial identity and Risk Taking (p=.008) and Heterosexual Presentation (p<.001). This means that higher conformity to the Heterosexual Presentation and Risk Taking norms were associated with greater risk of not binge drinking on a typical week, while for all the other individuals in this study, those variables were associated with a greater risk of reporting binge drinking in a typical week.

Table 4.18
Binging Per Week Regressed on Masculine Norms, Ethnic Identity, and Social Dominance Orientation by Race/Ethnicity

Poisson Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Winning	0.034	0.036	1.035	0.94	0.346
Emotional Control	0.027	0.038	1.027	0.70	0.482
Risk Taking	0.051	0.044	1.052	1.16	0.247
Violence	0.026	0.042	1.026	0.62	0.537
Power Over Women	0.071	0.045	1.073	1.57	0.116
Playboy	0.031	0.040	1.031	0.78	0.436
Self-Reliance	0.050	0.038	1.051	1.31	0.191
Work	-0.056	0.038	0.945	-1.48	0.138
Hetero. Presentation	0.004	0.042	1.004	0.10	0.921
Exploration	-0.009	0.049	0.992	-0.18	0.861
Commitment	0.033	0.048	1.034	0.69	0.490
Opposition to Equality	-0.052	0.046	0.949	-1.15	0.252

Table 4.18
Binging Per Week Regressed on Masculine Norms, Ethnic Identity, and Social Dominance Orientation by Race/Ethnicity (Continued)

Poisson Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Group Based Dominance	0.062	0.048	1.064	1.30	0.193
Intramural	0.151	0.066	1.163	2.30	0.021*
Black	0.177	0.180	1.193	0.98	0.328
Asian	-0.449	0.196	0.638	-2.29	0.022*
Multiracial	-0.187	0.174	0.830	-1.07	0.283
Hispanic	-0.242	0.121	0.785	-2.00	0.045*
Other Race	-0.228	0.315	0.796	-0.72	0.469
Asian * Risk Taking	0.568	0.202	1.764	2.82	0.005*
Logistic Regression					
Winning	-0.087	0.140	0.916	-0.62	0.534
Emotional Control	0.145	0.137	1.156	1.06	0.288
Risk Taking	-0.861	0.174	0.423	-4.94	<0.001**
Violence	-0.137	0.143	0.872	-0.96	0.338
Power Over Women	-0.046	0.182	0.955	-0.25	0.800
Playboy	-1.128	0.184	0.324	-6.13	<0.001**
Self-Reliance	0.086	0.134	1.090	0.64	0.520
Work	-0.021	0.132	0.979	-0.16	0.873
Hetero. Presentation	-0.464	0.160	0.629	-2.90	0.004*
Exploration	-0.074	0.179	0.929	-0.41	0.680
Commitment	0.019	0.173	1.019	0.11	0.914
Opposition to Equality	-0.423	0.191	0.655	-2.21	0.027*
Group Based Dominance	0.458	0.193	1.582	2.38	0.017*
Varsity	-1.705	0.569	0.182	-3.00	0.003*
Intramural	-1.444	0.285	0.236	-5.07	<0.001**
Home	2.767	0.709	15.907	3.90	<0.001**
Black	1.707	0.589	5.512	2.90	0.004*
Asian	1.212	0.495	3.359	2.45	0.014*
Multiracial	0.513	0.574	1.670	0.89	0.371
Hispanic	-0.665	0.613	0.514	-1.09	0.278
Other Race	-0.689	1.458	0.502	-0.47	0.637
Asian * Risk Taking	1.223	0.461	3.398	2.66	0.008*
Asian * Hetero. Presentation	1.715	0.458	5.559	3.74	<0.001**

Note. Hetero. Presentation = Heterosexual Presentation.
N=1345, Cragg-Uhler/Nagelkerke's R^2 = .306, Log likelihood = -1585.581, LR $\chi^2(20) = 59.27$ p > $\chi^2 < 0.0001$
** - significant at α=.001, * - significant at α=.05

The results for the three different alcohol consumption variables largely support the prediction of hypothesis 5. Whereas without the interaction terms, alcohol consumption was almost exclusively predicted by the masculine norms, when the interaction terms and control variables were added, factors from both the MEIM-R and SDO had significant predictive power. Additionally, the significant interaction terms

support the hypothesis that masculine norms, ethnic identity, and social dominance predict alcohol consumption differently by race and ethnicity.

Logistic Regression Findings

Masculine Norms and Alcohol-Related Problems

The logistic regressions examining the relationship between alcohol problems and masculine norms, largely support the prediction of hypothesis 6. For the first alcohol problem, blacking out after drinking, the overall model was statistically significant ($p<.001$), with a Cragg-Uhler/Nagelkerke's R^2 of .149 (see Table 4.19). In the regression, the norms of Winning ($p<.001$), Risk Taking ($p<.001$), and Playboy ($p<.001$) were statistically significant predictors of an increased risk of reporting having blacked out after drinking. As mentioned in Chapter III, the second alcohol problem was not analyzed further due to too few men reporting they had ever been arrested for driving while intoxicated, so the next logistic regression run was for the third alcohol problem. The second logistic regression model overall was statistically significant ($p<.001$), with a Cragg-Uhler/Nagelkerke's R^2 of .083 (see Table 4.20). The norms of Risk Taking ($p<.001$) and Playboy ($p<.001$) were statistically significant predictors of an increased risk of reporting having problems with police officers or campus authorities after drinking.

Table 4.19
Blacked Out After Drinking Regressed on Masculine Norms

Logistic Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Winning	0.251	0.069	1.286	3.64	<0.001**
Emotional Control	-0.072	0.070	0.931	-1.02	0.308
Risk Taking	0.406	0.071	1.501	5.71	<0.001**
Violence	0.038	0.070	1.039	0.55	0.582
Power Over Women	0.101	0.080	1.106	1.27	0.206
Playboy	0.453	0.068	1.573	6.61	<0.001**

Table 4.19
Blacked Out After Drinking Regressed on Masculine Norms (Continued)

Logistic Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Self-Reliance	-0.039	0.070	0.961	-0.56	0.575
Work	-0.019	0.069	0.981	-0.28	0.782
Hetero. Presentation	0.027	0.074	1.028	0.37	0.714

Note. Hetero. Presentation = Heterosexual Presentation.
N=1383, Cragg-Uhler/Nagelkerke's R^2 = .149, Log likelihood = -871.655, LR $\chi^2(9)$ = 163.34 p > χ^2< 0.0001
** - significant at α=.001, * - significant at α=.05

Table 4.20
Problems with Authorities After Drinking Regressed on Masculine Norms

Logistic Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Winning	0.089	0.094	1.093	0.94	0.347
Emotional Control	-0.121	0.097	0.886	-1.24	0.216
Risk Taking	0.423	0.098	1.526	4.31	<0.001**
Violence	0.030	0.099	1.030	0.30	0.764
Power Over Women	0.021	0.104	1.021	0.20	0.841
Playboy	0.413	0.093	1.512	4.44	<0.001**
Self-Reliance	0.001	0.098	1.001	0.01	0.996
Work	0.018	0.094	1.018	0.19	0.851
Hetero. Presentation	0.101	0.100	1.106	1.01	0.313

Note. Hetero. Presentation = Heterosexual Presentation.
N=1383, Cragg-Uhler/Nagelkerke's R^2 = .083, Log likelihood = -871.655, LR $\chi^2(9)$ = 163.34 p > χ^2< 0.0001
** - significant at α=.001, * - significant at α=.05

The Risk Taking and Playboy norms were also statistically significant predictors (all at p<.001) of an increased risk for the final three alcohol problems; injuring yourself or others, non-driving accident, and braking things or damaging property after drinking (see Tables 4.21-4.23). All three models were statistically significant (p<.001) and had Cragg-Uhler/Nagelkerke R^2's of .132, .114, and .184. Unsurprisingly, for the fourth alcohol problem, the norm of Violence (p=.011) was also a statistically significant predictor of increased risk of reporting having injured yourself or someone else after drinking (see Table 4.21). Interestingly, for the sixth alcohol problem question Winning (p=.047) reappeared as a statistically significant predictor of risk of reporting having broken things or damaging property after drinking, along with Violence (p=.003) again (see Table 4.23).

Table 4.21
Injured Yourself or Others After Drinking Regressed on Masculine Norms

Logistic Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Winning	0.052	0.090	1.054	0.58	0.563
Emotional Control	-0.144	0.093	0.866	-1.54	0.123
Risk Taking	0.552	0.095	1.737	5.84	<0.001**
Violence	0.247	0.097	1.280	2.54	0.011*
Power Over Women	0.165	0.100	1.179	1.65	0.099
Playboy	0.364	0.089	1.439	4.09	<0.001**
Self-Reliance	-0.014	0.094	0.986	-0.15	0.881
Work	0.127	0.090	1.135	1.41	0.160
Hetero. Presentation	-0.153	0.099	0.858	-1.55	0.121

Note. Hetero. Presentation = Heterosexual Presentation.
N=1383, Cragg-Uhler/Nagelkerke's R^2 = .132, Log likelihood = -551.909, LR $\chi^2(9)$ = 111.38 p > χ^2< 0.0001
** - significant at α=.001, * - significant at α=.05

Table 4.22
Non-Driving Accident After Drinking Regressed on Masculine Norms

Logistic Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Winning	0.194	0.136	1.214	1.43	0.154
Emotional Control	-0.136	0.144	0.873	-0.95	0.344
Risk Taking	0.576	0.143	1.780	4.04	<0.001**
Violence	-0.001	0.143	1.000	0.00	0.999
Power Over Women	0.050	0.152	1.051	0.33	0.741
Playboy	0.528	0.135	1.695	3.91	<0.001**
Self-Reliance	0.122	0.143	1.130	0.85	0.394
Work	-0.115	0.135	0.892	-0.85	0.397
Hetero. Presentation	-0.192	0.151	0.826	-1.27	0.204

Note. Hetero. Presentation = Heterosexual Presentation.
N=1383, Cragg-Uhler/Nagelkerke's R^2 = .114, Log likelihood = -279.40891, LR $\chi^2(9)$ = 58.03 p > χ^2< 0.0001
** - significant at α=.001, * - significant at α=.05

Table 4.23
Broken Things or Damaged Property After Drinking Regressed on Masculine Norms

Logistic Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Winning	0.176	0.088	1.192	1.99	0.047*
Emotional Control	-0.111	0.091	0.895	-1.22	0.223
Risk Taking	0.607	0.093	1.834	6.51	<0.001**
Violence	0.281	0.096	1.325	2.94	0.003*
Power Over Women	-0.053	0.098	0.949	-0.54	0.590
Playboy	0.558	0.088	1.747	6.33	<0.001**
Self-Reliance	0.030	0.092	1.031	0.33	0.740
Work	-0.107	0.088	0.898	-1.21	0.224
Hetero. Presentation	0.125	0.095	1.133	1.32	0.188

Note. Hetero. Presentation = Heterosexual Presentation.
N=1383, Cragg-Uhler/Nagelkerke's R^2 = .184, Log likelihood = -572.557, LR $\chi^2(9)$ = 164.99 p > χ^2< 0.0001
** - significant at α=.001, * - significant at α=.05

These results largely make sense, as Winning, Risk Taking, and Playboy were three of the masculine norms most often associated with alcohol consumption, so it

follows that they would also be related to alcohol problems. What was less expected was that the norms of Power Over Women and Emotional Control did not reach the level of significance for any of the predictors, as they were also often significantly related to alcohol consumption. That Violence was a significant predictor for injuring yourself or someone else and for breaking things or damaging property, makes complete sense given the nature of these problems. In previous research conducted with college men, Iwamoto et al. (2011) found Risk Taking and Playboy to be significant predictors of alcohol problems like this study, but they also found Power Over Women, Self-Reliance, and Primacy of Work to be related to alcohol problems, and so further research would appear necessary to explain the differences in findings.

Ethnic Identity and Alcohol-Related Problems

The results from the logistic regressions of the alcohol problems with the ethnic identity factors, did not support the prediction of hypothesis 6. For every alcohol related problem, neither Exploration nor Commitment significantly predicted the risk of reporting having experienced any of the 5 problems, and none of the models were significant overall ($p > .05$) (see Table 4.24). These results are surprising when considering some of the previous research, which had found a relationship between binge drinking and ethnic identity for Mexican American male college students (Zamboanga et al., 2006) and alcohol related problems and lower ethnic identity for Asian American college students (Iwamoto et al., 2012). The results are not surprising, however, when considering that the only significant predictor of alcohol consumption, when only considering ethnic identity, was Commitment for typical week drinks, and neither

Commitment nor Exploration were significant predictors for the heaviest week drinks or number of times binge drinking.

Table 4.24
Problems After Drinking Regressed on Ethnic Identity

Logistic Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Blacked Out[1]					
Exploration	-0.052	0.080	0.949	-0.66	0.511
Commitment	0.037	0.077	1.037	0.48	0.633
Problems with Authority[2]					
Exploration	-0.205	0.116	0.815	-1.76	0.078
Commitment	0.078	0.113	1.081	0.70	0.486
Injured Self or Others[3]					
Exploration	0.034	0.109	1.035	0.32	0.751
Commitment	0.016	0.105	1.016	0.15	0.878
Non-Driving Accident[4]					
Exploration	-0.226	0.173	0.797	-1.31	0.191
Commitment	0.193	0.168	1.213	1.15	0.250
Broken Things/Damaged Property[5]					
Exploration	-0.027	0.103	0.974	-0.26	0.797
Commitment	-0.028	0.100	0.972	-0.28	0.777

N=1415, 1 - Cragg-Uhler/Nagelkerke's R^2 = .000, Log likelihood = -974.326, LR $\chi^2(2)$ = .43 p > χ^2= 0.8049, 2 - Cragg-Uhler/Nagelkerke's R^2 = .005, Log likelihood = -563.746, LR $\chi^2(2)$ = 3.57 p > χ^2= 0.1679, 3 - Cragg-Uhler/Nagelkerke's R^2 = .000, Log likelihood = -617.967, LR $\chi^2(2)$ = .34 p > χ^2= 0.8425, 4 - Cragg-Uhler/Nagelkerke's R^2 = .004, Log likelihood = -309.403, LR $\chi^2(2)$ = 1.86 p > χ^2= 0.3952, 5 - Cragg-Uhler/Nagelkerke's R^2 = .001, Log likelihood = -668.766, LR $\chi^2(2)$ = .45 p > χ^2= 0.8005
** - significant at α=.001, * - significant at α=.05

Social Dominance Orientation And Alcohol-Related Problems

The results from the logistic regressions examining the relationship between alcohol problems and social dominance orientation partially supported the prediction of hypothesis 6. Similar to the alcohol consumption regressions for social dominance orientation, Opposition to Equality was not a significant predictor of risk for any of the alcohol problems. Group Based Dominance, however, did significantly predict increased risk for blacking out, injuring yourself or others, and having a non-driving accident (see Table 4.25). Why Group Based Dominance would predict risk for some of the alcohol problems and not others, especially when some of the same masculine norms predicted risk for all of the alcohol problems, is not immediately obvious but may become more so

after additional variables are added to the model. Overall, only the first and third logistic regressions for the SDO factors were statistically significant ($p<.05$), with Cragg-Uhler/Nagelkerke's R^2 values of .012 and .010.

Table 4.25
Problems After Drinking Regressed on Social Dominance Orientation

Logistic Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Blacked Out[1]					
Opposition to Equality	-0.099	0.078	0.906	-1.27	0.205
Group Based Dominance	0.255	0.078	1.290	3.28	0.001**
Problems with Authority[2]					
Opposition to Equality	-0.002	0.110	0.998	-0.02	0.982
Group Based Dominance	0.117	0.108	1.124	1.09	0.278
Injured Self or Others[3]					
Opposition to Equality	-0.147	0.106	0.863	-1.38	0.166
Group Based Dominance	0.287	0.101	1.332	2.85	0.004*
Non-Driving Accident[4]					
Opposition to Equality	-0.216	0.166	0.806	-1.30	0.194
Group Based Dominance	0.386	0.150	1.471	2.57	0.010*
Broken Things/Damaged Property[5]					
Opposition to Equality	-0.046	0.099	0.955	-0.46	0.645
Group Based Dominance	0.176	0.097	1.192	1.81	0.070

N=1403, 1 - Cragg-Uhler/Nagelkerke's R^2 = .012, Log likelihood = -959.703, LR $\chi^2(2) = 12.55$ p > χ^2= 0.0019, 2 - Cragg-Uhler/Nagelkerke's R^2 = .003, Log likelihood = -559.061, LR $\chi^2(2) = 2.04$ p > χ^2= 0.3602, 3 - Cragg-Uhler/Nagelkerke's R^2 = .010, Log likelihood = -606.856, LR $\chi^2(2) = 8.40$ p > χ^2= 0.015, 4 - Cragg-Uhler/Nagelkerke's R^2 = .013, Log likelihood = -306.376, LR $\chi^2(2) = 6.49$ p > χ^2= 0.390, 5 - Cragg-Uhler/Nagelkerke's R^2 = .005, Log likelihood = -655.374, LR $\chi^2(2) = 4.25$ p > χ^2= 0.1195
** - significant at α=.001, * - significant at α=.05

Masculine Norms, Ethnic Identity, Social Dominance Orientation, And Alcohol Problems

Finally, to finish testing hypothesis 6, the CMNI-46, MEIM-R, and SDO factors were all combined into single logistic regressions, along with the control variables for athletic participation, fraternity membership, and where students lived. All five logistic regressions were significant overall ($p<.001$), and had Cragg-Uhler/Nagelkerke's R^2 values ranging from .102 to .195. Intramural athletics was a significant control variable for the first, second, and fifth logistic regressions, fraternity membership was significant

for the first logistic regression, being a varsity athlete for the third logistic regression, and living in a fraternity house for the fourth logistic regression (see Tables 4.26-4.30).

Contrary to what was predicted, the logistic regressions combining the CMNI-46, MEIM-R, and SDO for alcohol problems did not support hypothesis 6. For every alcohol-related problem, the masculine norms that were significant when only masculine norms were considered remained significant. Similarly, all the ethnic identity factors remained non-significant predictors of risk, as they had been when analyzed alone. Interestingly, Group Based Dominance, which had been significant for blacking out, injuring yourself or others, and non-driving related accident, remained significant for non-driving related accident (p=.042) (see Table 4.29), but became non-significant for the other two problems (see Tables 4.26 & 4.28).

Table 4.26
Blacked Out After Drinking Regressed on Masculine Norms, Ethnic Identity, Social Dominance Orientation

Logistic Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Winning	0.226	0.071	1.254	3.20	0.001**
Emotional Control	-0.078	0.071	0.925	-1.10	0.273
Risk Taking	0.375	0.072	1.456	5.21	<0.001**
Violence	0.049	0.072	1.050	0.67	0.500
Power Over Women	0.082	0.090	1.086	0.92	0.359
Playboy	0.452	0.070	1.572	6.48	<0.001**
Self-Reliance	-0.034	0.072	0.967	-0.47	0.638
Work	-0.031	0.070	0.969	-0.45	0.655
Heterosexual Presentation	0.011	0.077	1.012	0.15	0.882
Exploration	-0.060	0.090	0.942	-0.67	0.505
Commitment	-0.056	0.088	0.946	-0.63	0.526
Opposition to Equality	-0.131	0.088	0.877	-1.49	0.136
Group Based Dominance	0.077	0.092	1.080	0.84	0.402
Intramural	0.415	0.127	1.515	3.26	0.001**
Fraternity	0.682	0.269	1.977	2.53	0.011*

N=1368, Cragg-Uhler/Nagelkerke's R^2 = .168, Log likelihood = -850.924, LR $\chi^2(15)$ = 183.35 p > χ^2< 0.001
** - significant at α=.001, * - significant at α=.05

Table 4.27

Problems with Authority After Drinking Regressed on on Masculine Norms, Ethnic Identity, Social Dominance Orientation

Logistic Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Winning	0.045	0.097	1.046	0.47	0.639
Emotional Control	-0.135	0.099	0.873	-1.36	0.173
Risk Taking	0.413	0.099	1.512	4.17	<0.001**
Violence	0.034	0.103	1.034	0.33	0.743
Power Over Women	0.016	0.117	1.016	0.14	0.891
Playboy	0.425	0.095	1.529	4.45	<0.001**
Self-Reliance	0.002	0.100	1.002	0.02	0.981
Work	0.014	0.096	1.014	0.15	0.883
Heterosexual Presentation	0.084	0.104	1.088	0.81	0.419
Exploration	-0.192	0.123	0.825	-1.56	0.119
Commitment	-0.021	0.122	0.979	-0.18	0.861
Opposition to Equality	0.013	0.120	1.013	0.11	0.914
Group Based Dominance	-0.038	0.125	0.963	-0.30	0.761
Intramural	0.524	0.170	1.689	3.08	0.002*

N=1368, Cragg-Uhler/Nagelkerke's R^2 = .102, Log likelihood = -509.644, LR $\chi^2(14)$ = 79.50 p > χ^2< 0.001

** - significant at α=.001, * - significant at α=.05

Table 4.28

Injured Yourself or Others After Drinking Regressed on on Masculine Norms, Ethnic Identity, Social Dominance Orientation

Logistic Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Winning	0.097	0.092	1.102	1.06	0.291
Emotional Control	-0.156	0.094	0.855	-1.66	0.097
Risk Taking	0.543	0.095	1.722	5.74	<0.001**
Violence	0.235	0.100	1.265	2.36	0.018*
Power Over Women	0.143	0.112	1.154	1.27	0.202
Playboy	0.361	0.090	1.435	4.01	0.000**
Self-Reliance	-0.034	0.095	0.966	-0.36	0.719
Work	0.123	0.091	1.131	1.36	0.174
Heterosexual Presentation	-0.145	0.101	0.865	-1.43	0.152
Exploration	0.021	0.117	1.021	0.18	0.857
Commitment	-0.040	0.115	0.961	-0.35	0.728
Opposition to Equality	-0.121	0.119	0.886	-1.02	0.307
Group Based Dominance	0.093	0.118	1.098	0.79	0.430
Varsity	-0.748	0.337	0.473	-2.22	0.027*

N=1368, Cragg-Uhler/Nagelkerke's R^2 = .140, Log likelihood = -543.011, LR $\chi^2(14)$ = 117.31 p > χ^2< 0.001

** - significant at α=.001, * - significant at α=.05

Table 4.29
Non-Driving Accident After Drinking Regressed on on Masculine Norms, Ethnic Identity, Social Dominance Orientation

Logistic Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Winning	0.188	0.136	1.207	1.38	0.167
Emotional Control	-0.124	0.145	0.884	-0.85	0.394
Risk Taking	0.569	0.144	1.767	3.96	<0.001**
Violence	-0.045	0.147	0.956	-0.31	0.758
Power Over Women	-0.093	0.171	0.911	-0.55	0.586
Playboy	0.559	0.137	1.750	4.09	<0.001**
Self-Reliance	0.120	0.144	1.128	0.84	0.403
Work	-0.145	0.137	0.865	-1.05	0.292
Heterosexual Presentation	-0.243	0.155	0.784	-1.57	0.117
Exploration	-0.310	0.176	0.733	-1.76	0.078
Commitment	0.247	0.175	1.280	1.41	0.158
Opposition to Equality	-0.172	0.177	0.842	-0.97	0.330
Group Based Dominance	0.348	0.171	1.416	2.03	0.042*
Fraternity House	1.408	0.688	4.089	2.05	0.041*

N=1368, Cragg-Uhler/Nagelkerke's R^2 = .134, Log likelihood = -273.472, LR $\chi^2(14)$ = 68.08 p > χ^2< 0.001
** - significant at α=.001, * - significant at α=.05

Table 4.30
Broken Things or Damaged Property After Drinking Regressed on on Masculine Norms, Ethnic Identity, Social Dominance Orientation

Logistic Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Winning	0.156	0.091	1.169	1.71	0.087
Emotional Control	-0.127	0.093	0.881	-1.37	0.171
Risk Taking	0.607	0.094	1.835	6.43	<0.001**
Violence	0.308	0.100	1.360	3.07	0.002*
Power Over Women	-0.022	0.110	0.978	-0.20	0.843
Playboy	0.548	0.090	1.729	6.09	<0.001**
Self-Reliance	0.031	0.093	1.032	0.34	0.737
Work	-0.112	0.090	0.894	-1.24	0.215
Heterosexual Presentation	0.137	0.099	1.146	1.38	0.167
Exploration	-0.051	0.115	0.951	-0.44	0.659
Commitment	-0.095	0.114	0.910	-0.83	0.404
Opposition to Equality	-0.042	0.113	0.959	-0.37	0.710
Group Based Dominance	-0.071	0.118	0.931	-0.61	0.544
Intramural	0.393	0.160	1.481	2.45	0.014*

N=1368, Cragg-Uhler/Nagelkerke's R^2 = .195, Log likelihood = -558.013, LR $\chi^2(14)$ = 172.98 p > χ^2< 0.001
** - significant at α=.001, * - significant at α=.05

Considered independently, these results are surprising as social dominance orientation predicted 3/5ths of the alcohol problems when examined alone, and that ethnic identity had no predictive value for any of the alcohol problems. However, when considering these results with the other alcohol consumption results in this study, the

finding is less surprising. Alcohol consumption followed the same pattern, where the masculine norms wiped out the significance of the ethnic identity and social dominance orientation factors when the three sets of variables were combined. It was only when the racial/ethnic interactions and control variables were added that significance was found for all three groups of variables. This suggests that perhaps social dominance is perhaps already 'baked in' to White masculinity, and therefore does not show as significant when examining a mostly White sample without accounting for race or ethnicity.

Masculine Norms, Ethnic Identity, Social Dominance Orientation, And Alcohol Problems by Race/Ethnicity

To test hypothesis 7, the race and ethnicity variables, the interaction-terms for racial/ethnic groups, along with the other control variables were added to the CMNI-46, MEIM-R, and SDO factors to create the most complete model. Potentially significant interactions that were identified were added to the larger model, and ones that were not significant were dropped to maintain statistical power. Similarly, the control variables that were added after the interactions, with non-significant terms again dropped, arriving at a final model for each dependent variable.

Blacked out after drinking.

For the first question, potentially significant interaction terms were identified between: Hispanic ethnicity and Power Over Women, Asian racial identity and Risk Taking and Heterosexual Presentation, and Black racial identity and Commitment. After including the main independent variables with the potentially significant interaction terms, Asian identity and Heterosexual Presentation along with Black identity and Commitment were dropped as they became not significant. After the control variables

were added, only being an intramural athlete was significant beyond race or ethnicity. The overall model was statistically significant (p<.001), with a Cragg-Uhler/Nagelkerke's R^2 of .191 (see Table 4.31).

The results of the logistic regression for the first alcohol problem, reporting ever having blacked out after drinking, partially support hypothesis 7. The same masculine norms remained significant compared to the regression without the interaction terms and control variables, Winning (p<.001), Risk Taking (p<.001), and Playboy (p<.001), all statistically significant positive predictors of increased risk, with no ethnic identity or social dominance orientation variables rising to the level of significant. However, there were significant negative interactions between Hispanic ethnic identity and Power Over Women (p=.007) and Asian racial identity and Risk Taking (p=.028). This means that while Power Over Women had no significant effect on the risk of reporting having blacked out after drinking for non-Hispanic individuals, for Hispanics in this sample, higher conformity to this norm was associated with decreased risk of having blacked out. For Asians in this sample, higher conformity to the norm of Risk Taking was associated with a lower risk of having blacked out, while for White individuals in the sample higher levels of conformity to Risk Taking meant a greater risk of having blacked out.

Table 4.31
Blacked Out After Drinking Regressed on Masculine Norms, Ethnic Identity, Social Dominance Orientation by Race/Ethnicity

Logistic Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Winning	0.261	0.075	1.298	3.50	<0.001**
Emotional Control	-0.087	0.074	0.917	-1.17	0.243
Risk Taking	0.448	0.082	1.565	5.48	<0.001**
Violence	0.044	0.074	1.045	0.60	0.551
Power Over Women	0.122	0.095	1.130	1.29	0.197
Playboy	0.476	0.071	1.609	6.69	<0.001**
Self-Reliance	-0.032	0.074	0.969	-0.43	0.669
Work	-0.040	0.071	0.960	-0.57	0.571
Hetero. Presentation	0.049	0.079	1.051	0.62	0.534

Table 4.31
Blacked Out After Drinking Regressed on Masculine Norms, Ethnic Identity, Social Dominance Orientation by Race/Ethnicity (Continued)

Logistic Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Exploration	0.001	0.093	1.001	0.01	0.988
Commitment	-0.043	0.090	0.958	-0.48	0.632
Opposition to Equality	-0.159	0.087	0.853	-1.82	0.069
Group Based Dominance	0.093	0.094	1.097	0.99	0.322
Intramural	0.362	0.129	1.436	2.81	0.005*
Black	-0.974	0.361	0.378	-2.70	0.007*
Asian	-0.831	0.206	0.436	-4.03	<0.001**
Multiracial	-0.566	0.283	0.568	-2.00	0.046*
Hispanic	-0.073	0.245	0.930	-0.30	0.766
Other Race	-0.573	0.593	0.564	-0.97	0.333
Hispanic * Over Women	-0.610	0.226	0.543	-2.69	0.007*
Asian * Risk Taking	-0.484	0.220	0.616	-2.20	0.028*

Note. Over Women = Power Over Women.
N=1354, Cragg-Uhler/Nagelkerke's $R^2 = .191$, Log likelihood = -828.701, LR $\chi^2(21) = 208.47$ p > $\chi^2 < 0.001$
** - significant at α=.001, * - significant at α=.05

Problems with authorities.

For the third alcohol problem, if an individual had ever had problems with police or campus authorities after drinking, the following potentially significant interactions were observed between: Black racial identity and Commitment, Playboy, and Power Over Women; Hispanic ethnic identity and Emotional Control; Asian racial identity and Opposition To Equality, and Playboy. After combing the interaction terms with the rest of the independent variables from the CMNI-46, MEIM-R, and SDO, only the interactions between Hispanic ethnicity and Emotional Control and Black racial identity and Power Over Women remained significant and were retained. Next the control variables were added, but only intramural athletic status was significant and kept in the model with the race/ethnicity variables. The overall model was statistically significant ($p<.001$), with a Cragg-Uhler/Nagelkerke's R^2 of .135 (see Table 4.32).

Like the results of the first alcohol problem, the results here partially supported the prediction of hypothesis 7. The same masculine norms remained significant as before

without the interactions, with Risk Taking (p<.001) and Playboy (p<.001) being statistically significant predictors of increased risk of having reported problems with authority figures after drinking. Interestingly, two new masculine norms were significant for different populations. Emotional Control significantly predicted increase risk for Hispanic individuals (p=.045) and Power Over Women predicted increased risk for Black individuals (p=.022). That increased conformity to the Power Over Women norm would be related to increase risk was not surprising, however, that higher conformity to Emotional Control was associated with increased risk of troubles with authorities for Hispanic individuals, rather than decreased, was surprising, and was perhaps a result of the relatively small sample size of Hispanic individuals.

Table 4.32
Problems with Authority After Drinking Regressed on on Masculine Norms, Ethnic Identity, Social Dominance Orientation by Race/Ethnicity

Logistic Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Winning	0.072	0.099	1.075	0.73	0.466
Emotional Control	-0.186	0.104	0.831	-1.78	0.075
Risk Taking	0.413	0.096	1.512	4.29	<0.001**
Violence	0.032	0.106	1.032	0.30	0.764
Power Over Women	-0.031	0.114	0.970	-0.27	0.789
Playboy	0.442	0.097	1.555	4.53	<0.001**
Self-Reliance	0.013	0.096	1.013	0.13	0.895
Work	-0.011	0.101	0.989	-0.11	0.910
Hetero. Presentation	0.143	0.107	1.154	1.33	0.183
Exploration	-0.108	0.130	0.897	-0.84	0.403
Commitment	0.015	0.125	1.016	0.12	0.902
Opposition to Equality	-0.013	0.121	0.987	-0.11	0.914
Group Based Dominance	-0.041	0.125	0.960	-0.33	0.744
Intramural	0.479	0.171	1.615	2.81	0.005*
Black	-2.349	0.848	0.096	-2.77	0.006*
Asian	-1.439	0.443	0.237	-3.25	0.001**
Multiracial	0.074	0.382	1.077	0.19	0.845
Hispanic	-0.480	0.390	0.619	-1.23	0.218
Other Race	-0.012	0.787	0.989	-0.01	0.988
Hispanic * Emo. Control	0.623	0.311	1.864	2.00	0.045*
Black * Over Women	1.560	0.683	4.760	2.28	0.022*

Note. Over Women = Power Over Women; Hetero. Presentation = Heterosexual Presentation. Emo. Control = Emotional Control.
N=1353, Cragg-Uhler/Nagelkerke's R^2 = .135, Log likelihood = -494.702, LR $\chi^2(21) = 104.90$ p > $\chi^2 < 0.001$
** - significant at α=.001, * - significant at α=.05

Injured yourself or others.

The potential significant interactions for question four, whether they had ever injured themselves or someone else after drinking, were identified between: multiracial identity and Risk Taking, Violence, and Playboy; Asian racial identity and Power Over Women and Self-Reliance; Hispanic ethnic identity and Winning and Commitment; and Black racial identity and Primacy of (School) Work. After combining the interaction terms with the main independent variables, interactions between Asian identity and Self-Reliance, and Hispanic ethnic identity and Commitment became non-significant and were dropped. Next, after adding the control variables, none of the non-race/ethnicity variables were significant and so were not retained. The overall model was statistically significant ($p<.001$), with a Cragg-Uhler/Nagelkerke's R^2 of .172 (see Table 4.33).

As with the results from the previous two alcohol-related problems, no ethnic identity or social dominance variables were statistically significant predictors of risk, partially supporting hypothesis 7. Unlike the previous two alcohol-related problems, however, additional masculine norms were significant after adding the interaction terms and control variables to the model. In addition to Risk Taking ($p<.001$), Violence ($p=.011$), and Playboy ($p<.001$) significantly predicting increased risk, the norm of Power Over Women ($p=.048$) also was a significant predictor of increased risk. From the interaction terms, Winning was a significant predictor of decreased risk for Hispanic individuals, while Primacy of (School) Work ($p=.005$) for Black individuals significantly predicted increased risk. For multiracial individuals, three variables predicted different risks than for non-multiracial individuals. For Risk Taking (for interaction, $p=.028$) and Playboy (for interaction, $p=.021$) the magnitude of the variable was greater for multiracial

individuals (1.873 for Risk Taking, 1.051 for Playboy) compared to White individuals (0.552 for Risk Taking, .322 for Playboy). For the Violence norm (p=.010), for multiracial individuals significantly predicted a decreased risk of reporting having injured yourself or others, whereas for non-multiracial individuals it significantly predicted an increased risk. Similarly, for Asian individuals, Power Over Women (p=.002) significantly predicted a decreased risk, while it significantly predicted increased risk for White respondents.

Table 4.33
Injured Yourself or Others After Drinking Regressed on on Masculine Norms, Ethnic Identity, Social Dominance Orientation by Race/Ethnicity

Logistic Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Winning	0.127	0.101	1.136	1.27	0.205
Emotional Control	-0.146	0.095	0.864	-1.53	0.126
Risk Taking	0.552	0.092	1.736	5.96	<0.001**
Violence	0.281	0.110	1.324	2.56	0.011*
Power Over Women	0.235	0.119	1.265	1.98	0.048*
Playboy	0.322	0.088	1.380	3.66	<0.001**
Self-Reliance	-0.056	0.104	0.945	-0.54	0.587
Work	0.084	0.095	1.087	0.88	0.381
Hetero. Presentation	-0.107	0.104	0.899	-1.03	0.303
Exploration	0.019	0.119	1.019	0.16	0.876
Commitment	-0.082	0.113	0.921	-0.73	0.467
Opposition to Equality	-0.163	0.119	0.850	-1.36	0.173
Group Based Dominance	0.101	0.118	1.106	0.85	0.395
Black	-0.682	0.531	0.505	-1.28	0.199
Asian	-0.445	0.312	0.641	-1.43	0.153
Multiracial	-2.312	1.130	0.099	-2.05	0.041*
Hispanic	0.250	0.300	1.284	0.83	0.405
Other Race	0.317	0.609	1.373	0.52	0.603
Multiracial * Risk Taking	1.873	0.853	6.509	2.20	0.028*
Multiracial * Violence	-1.906	0.744	0.149	-2.56	0.010*
Multiracial * Playboy	1.051	0.455	2.861	2.31	0.021*
Asian * Over Women	-0.949	0.308	0.387	-3.08	0.002*
Hispanic * Winning	-0.622	0.292	0.537	-2.13	0.033*
Black * Work	1.042	0.367	2.834	2.84	0.005*

Note. Over Women = Power Over Women
N=1353, Cragg-Uhler/Nagelkerke's R^2 = .172, Log likelihood = -525.526, LR $\chi^2(24) = 143.72$ p > $\chi^2 < 0.001$
** - significant at α=.001, * - significant at α=.05

Non-driving accidents.

For question five, whether or not an individual ever had a non-driving related accident after drinking, many possible interactions were suggested. Possible interactions were found between: Black racial identity and Winning, Emotional Control, Risk Taking, Power Over Women, Playboy, Self-Reliance, Primacy of (School) Work, Heterosexual Presentation, Exploration, Commitment, and Group Based Dominance; Asian identity and Winning, Emotional Control, and Playboy; multiracial identity and Winning and Self-Reliance; and Hispanic identity and Violence. After adding these interaction terms to the other CMNI-46, MEIM-R, and SDO variables, the following interactions became non-significant and were dropped from the model: Black identity and Power Over Women, Playboy, and Self-Reliance; Asian identity and Emotional Control, Playboy, and Winning; multiracial identity and Winning; and Hispanic identity and Violence. Next the control variables were added, and living in a Fraternity House was significant and added along with the race/ethnicity variables.

With all the variables added to the model, two unexpected things happen. The first is that the Other Race variable was dropped by the model as it predicted failures perfectly and could not be included in the logistic regression. The second unexpected thing that happened was that there were very extreme results for the coefficients and odds ratios for all the Black identity interaction terms except for with Primacy of (School) Work. For example, the odds ratio for the interaction between Black and Emotional Control was 175,456, meaning that Black respondents with one standard deviation higher conformity to Emotional Control had over 175,000% greater odds of reporting a non-driving accident after drinking. As this is a highly implausible reality, the difference in

responses for Black individuals was investigated. The reason for these extreme results was due to the way Black respondents answered the question.

Of the 46 Black respondents, 45 of them indicated they had never experienced this problem, and one of them had. This one individual who had experienced the problem had much lower scores for Winning, Exploration, and Commitment than the other Black students, and had much higher scores for Emotional Control, Risk Taking, Heterosexual Presentation, and Group Based Dominance. With a sample of only one, it is impossible to tell if the differences between those who had experienced this alcohol problem and those who did not were actually related to the differences in social norms (e.g., Emotional Control, Group Based Dominance, Commitment, etc.) observed or if it was just an outlier. If this case was not an outlier, it would likely be an example of a hegemonic bargain (Chen, 1999). The low scores for ethnic identity and high scores for Group Based Dominance would be consistent with someone who has adopted the norms of White masculinity as a way to gain acceptance. The fact that all five institutions in this study have majority White student populations also lends credence to the idea of a student making a hegemonic bargain, as it would be more difficult to avoid White masculinity at these types of institutions.

As a result of the unusual values for Black respondents and the dropping of the Other Race category, for this specific alcohol analysis, the racial categories were consolidated into Non-White, leaving White respondents as the racial reference group. Hispanic ethnic identity was retained. With this new model, there were no significant interaction terms, although living in Fraternity House was still the significant control variable. The results from this regression were not meaningfully different than the

analysis without race/ethnicity. The norms of Risk Taking (p<.001) and Playboy (p<.001) were still significant predictors of increased risk, as were Group Based Dominance (p=.041) and living in a fraternity house (p=.041). In this model, being non-White did not significantly impact risk, nor did being Hispanic compared to White and non-Hispanic respondents.

The overall regression was significant (p<.001), and had a Cragg-Uhler/Nagelkerke's R^2 of 0.133, meaning approximately 13.3% of the variance in reporting a non-driving accident after drinking was explained by this model (see Table 4.34). The findings from this regression overall provide mixed support for hypothesis seven. The initial findings with significant interaction terms support the hypothesis that the independent variables predict alcohol problems differently by race/ethnicity. However, as it is impossible to know if these findings were due to a small sample size with an outlier, or were pointing to a larger relationship in the population, that model should not be given much weight. The revised model that consolidated racial groups supports the hypothesis that both masculine norms and social dominance orientation predict alcohol problems, but ethnic identity did not predict alcohol problems, nor were there any significant differences by race or ethnicity.

Table 4.34
Non-Driving Accident After Drinking Regressed on on Masculine Norms, Ethnic Identity, Social Dominance Orientation by Race/Ethnicity

Logistic Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Winning	0.184	0.137	1.203	1.35	0.177
Emotional Control	-0.123	0.145	0.885	-0.84	0.399
Risk Taking	0.566	0.144	1.761	3.92	<0.001**
Violence	-0.045	0.148	0.956	-0.31	0.758
Power Over Women	-0.090	0.173	0.914	-0.52	0.604
Playboy	0.555	0.137	1.742	4.05	<0.001**
Self-Reliance	0.120	0.144	1.127	0.83	0.407
Work	-0.144	0.137	0.866	-1.05	0.295
Heterosexual Presentation	-0.248	0.155	0.780	-1.60	0.110

Table 4.34
Non-Driving Accident After Drinking Regressed on on Masculine Norms, Ethnic Identity, Social Dominance Orientation by Race/Ethnicity (Continued)

Logistic Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Exploration	-0.315	0.178	0.730	-1.77	0.077
Commitment	0.241	0.175	1.273	1.38	0.169
Opposition to Equality	-0.164	0.177	0.849	-0.92	0.356
Group Based Dominance	0.348	0.171	1.416	2.04	0.041*
Fraternity House	1.412	0.690	4.104	2.05	0.041*
Non-White	0.075	0.314	1.078	0.24	0.810
Hispanic	-0.027	0.407	0.973	-0.07	0.947

N=1356, Cragg-Uhler/Nagelkerke's R^2 = .133, Log likelihood = -272.912, LR $\chi^2(16)$ = 67.36 p > χ^2< 0.001
** - significant at α=.001, * - significant at α=.05

Broken things or damaged property. Finally, for the sixth and final question, whether the student had every broken things or damaged property after drinking, potential interactions were identified between: Black racial identity and Winning and Playboy; and multiracial identity and Violence and Self-Reliance. After adding these variables to the other CMNI-46, MEIM-R, and SDO variables, all the interactions became non-significant and were dropped from the model. Adding the control and racial/ethnic variables, saw playing intramural sports as significant, and so it was retained while the other control variables were dropped. The overall model was statistically significant (p<.001), with a Cragg-Uhler/Nagelkerke's R^2 of .212 (see Table 4.35).

Like the other alcohol related problems, the results of this logistic regression provided partial support for hypothesis 7. Only masculine norm variables were significant predictors of the risk of reporting haven broken things or damaged property after drinking. The norms of Risk Taking (p<.001), Violence (p=.004), and Playboy (p<.001) all significantly predict an increased risk of having reported breaking things or damaging property. There were no significant racial interactions, although the dummy code for Asian was statistically significant (p=.001), indicating that respondents who

identified as Asian were significantly less likely to report having broken or damaged something after drinking than White respondents.

Table 4.35
Broken Things or Damaged Property After Drinking Regressed on on Masculine Norms, Ethnic Identity, Social Dominance Orientation by Race/Ethnicity

Logistic Regression	Coefficient	Standard Error	Odds Ratio	Z	P>|z|
Winning	0.175	0.092	1.191	1.90	0.057
Emotional Control	-0.121	0.093	0.886	-1.30	0.194
Risk Taking	0.603	0.096	1.827	6.28	<0.001**
Violence	0.293	0.101	1.341	2.89	0.004*
Power Over Women	-0.074	0.113	0.929	-0.65	0.514
Playboy	0.555	0.091	1.743	6.09	<0.001**
Self-Reliance	0.028	0.094	1.029	0.30	0.764
Work	-0.132	0.092	0.877	-1.44	0.151
Hetero. Presentation	0.179	0.101	1.196	1.77	0.077
Exploration	-0.003	0.117	0.997	-0.03	0.980
Commitment	-0.085	0.116	0.919	-0.73	0.463
OEQ	-0.032	0.115	0.969	-0.28	0.782
GBD	-0.059	0.120	0.943	-0.49	0.625
Intramural	0.367	0.162	1.444	2.27	0.023*
Black	-0.539	0.485	0.583	-1.11	0.266
Asian	-1.205	0.357	0.300	-3.37	0.001**
Multiracial	-0.360	0.376	0.698	-0.96	0.338
Hispanic	0.337	0.273	1.401	1.24	0.217
Other Race	-0.267	0.706	0.766	-0.38	0.705

Note. OEQ = Opposition to Equality; GBD = Group Based Dominance.
N=1353, Cragg-Uhler/Nagelkerke's R^2 = .212, Log likelihood = -547.543, LR $\chi^2(19) = 187.93$ p > $\chi^2 < 0.001$
** - significant at α=.001, * - significant at α=.05

Conclusion

After running all the analyses, two things seem apparent. The first is that while some norms were significant predictors across the dependent variables related to alcohol consumption and alcohol problems (such as Risk Taking and Playboy), other variables were dependent upon the variable being examined. This suggests that while there are similar underpinnings to each of the dependent variables, the decision making processes that go on for the men in this study vary by context, as would be expected. The second apparent result is that, as predicted by this study's critical approach, who is being studied can have a dramatic impact on the results. For multiple variables, there were significant

interactions with race or ethnicity, where a factor changed in magnitude or even direction.

Even with the relatively small number of non-White men in this study's sample, significant differences by race and ethnicity were apparent. Given the limited statistical power many of the non-White groups had, it is probable to think that other significant differences exist within the population that were not able to be discovered here. In the next chapter, the meaning of this study's finding will be discussed more in depth, as well as more about the limitations of this study, its implications, and directions for future research.

Chapter V

This final chapter seeks to address the purpose of this study, to create a more complete understanding of undergraduate college men's alcohol consumption, and answer the research questions that guided this study:

1. How do masculine norms, ethnic identity, and social dominance orientation predict alcohol consumption?
2. How do masculine norms, ethnic identity, and social dominance orientation predict alcohol problems?

In answering the research questions, this chapter will first situate the findings by discussing the general alcohol behavior of the sample that was analyzed. It will then review the main hypotheses from Chapter III and the outcomes of the analysis from Chapter IV. Next it will discuss the main conclusions that can be drawn from the findings, and the implications of these findings for higher education practice and future research. Finally, the chapter will conclude with a discussion of the contributions of this study to the larger literature on college drinking and undergraduate men's well being.

Student Drinking Behavior

Looking back at the drinking information reported in Chapter III (Table 3.11), the first thing that should stand out is how many students reported not drinking at all. The most common response for how many drinks were consumed in a typical week, and how many in the heaviest week of drinking, was zero. The bottom quartile of men reported having one or fewer drinks in a typical week, four or fewer on their heaviest weeks. The bottom half of students reported they typically did not consume five or more drinks in one evening, and only the top quartile reported regularly binge drinking more than once a

week typically. The large number of non-drinkers should serve as a reminder that even at institutions with higher than average drinking rates, among demographics most likely to consume alcohol, abstaining from drinking is common behavior.

Following this pattern, when examining the reports of ever experiencing various alcohol related problems in Chapter III (Table 3.12), with the exception of ever blacking out, what is remarkable is the large percentage of students who reported never experiencing these problems. Fewer than 20% of respondents indicated that after drinking they had ever: been arrested for driving while intoxicated, had problems with police or campus authorities, injured themselves or others, had a non-driving related accident, or broken things or damaged property. Even at 45%, the question about blacking out is not very surprising because of the limitations of the question. Respondents could have experienced blacking out at any point in their lives, and memory problems after drinking too much are not unusual. Students could respond yes meaning they only ever experienced it once in their life, or it could mean they regularly experienced blacking out.

Taken together, these sets of answers reinforce the position of this study; that alcohol consumption is a particularly important problem facing American colleges, but one that is driven by far fewer college students than is often acknowledged. When considering just how much damage is done as a result of alcohol use on college, to the drinkers, to property, and to other students by those drinking, the imperative to identify who is drinking and what is driving that behavior becomes all that much greater.

Hypothesis Testing

In Chapter III, the following hypotheses were developed to help answer the two research questions for this study:

1. Masculine norm factors will be correlated with social dominance orientation factors
2. Masculine norm factors will be correlated with ethnic identity factors
3. Social dominance orientation factors will be correlated with ethnic identity factors
4. Masculine norms, ethnic identity, and social dominance will all significantly predict alcohol consumption.
5. Masculine norms, ethnic identity, and social dominance will significantly predict alcohol consumption differently by race and Hispanic ethnicity.
6. Masculine norms, ethnic identity, and social dominance will all significantly predict alcohol problems.
7. Masculine norms, ethnic identity, and social dominance will significantly predict alcohol problems differently by race and Hispanic ethnicity.

The hypotheses break down into three main groups. The first three hypotheses are focused on the correlation between the main independent variables. The next two hypotheses focus on the relationship between alcohol consumption and the main independent variables, while the final two hypotheses focus on the relationship between alcohol problems and the main independent variables. The hypotheses will be discussed in the order of these main groups, and then followed by the larger discussion of the research questions from which they arose.

Correlational Findings

Revisiting the correlations between masculine norms, social dominance orientation, and ethnic identity from Chapter IV (Tables 4.1-4.3) provides concrete support for the theoretically mandated inclusion of all three sets of variables in this study.

Scholars such as Crenshaw (1989) and McClintock (1995) remind us that categories such as race, ethnicity, and gender are inseparable from each other, and that these identities are directly tied to the social power/privilege individuals are afforded by the greater society. This relationship is apparent when examining the correlations between masculine norms, social dominance orientation, and ethnic identity.

In answering the first hypothesis, the significant positive correlation between the CMNI-46 and SDO factors (Table 4.1), for example, provides support for the theory that masculinity is constructed not only around power over women, but also over subordinate racial and ethnic groups. Greater conformity to masculine norms, as measured by the Conformity to Masculine Norms Inventory – 46 (CMNI-46), represents more hegemonic constructions of masculinity (Connell & Messerschmidt, 2005; Connell, 1987; Mahalik et al., 2003). Similarly, increased social dominance orientation, as measured by the Social Dominance Orientation scale (SDO), is consistently correlated with higher status ethnic/racial groups (i.e., those benefitting from hegemonic constructions of race/ethnicity) (Levin & Sidanius, 1999; Pratto et al., 1994). That these two sets of factors are positively correlated with each other, is consistent with what would be expected if hegemonic constructions of gender also included hegemonic constructions of race/ethnicity.

Providing further support for the theorized co-construction of gender and ethnicity, are the results from the second hypothesis of the correlation between masculine norms and ethnic identity, as measured by the Revised Multigroup Ethnic Identity Measure (MEIM-R) (Table 4.2). The salience of ethnic identity (where higher ethnic identities scores represent greater salience) has been found to be significantly related to

the race/ethnicity of respondents (Phinney & Alipuria, 1990; Phinney, 1992) with White individuals generally reporting lower levels of ethnic identity than non-White individuals. The significant relationships between MEIM-R and CMNI-46 factors suggests that there is a relationship between how the respondents constructed their gender and how they conceptualize their own ethnic identity.

As discussed in Chapter IV, the masculine norms associated with a willingness to be vulnerable (Risk Taking) or not vulnerable (Emotional Control and Self-Reliance) were significantly correlated with the exploration of ethnic identity, whereas the masculine norms associated with more aggressive forms of masculinity (Winning, Violence, Power Over Women, Heterosexual Presentation) were all associated with a commitment to ethnic identity. This is the kind of relationship one would expect if the construction of gender was related to the way one conceives of their ethnicity.

Finally, providing weak support for the relationship between ethnicity and hegemonic power, are the results of the third hypothesis, the modest correlation between MEIM-R and SDO factors (Table 4.3). As previously mentioned, ethnic identity has been found to be related to race/ethnicity (Phinney & Alipuria, 1990; Phinney, 1992), and social dominance orientation has similarly been found to be related to race/ethnicity (Phinney & Alipuria, 1990; Phinney, 1992). Depending on how respondents interpreted the SDO questions, it is possible to imagine either a positive or negative relationship between ethnic identity and social dominance orientation.

If an individual was thinking of social dominance in terms of racial groups being unequal, it would make sense for ethnic identity to be negatively related to social dominance orientation. That as someone gained a greater understanding for his own

culture and heritage that he might become more accepting of other racial/ethnic groups and have a lower social dominance orientation. Conversely, if someone perhaps thought of the social dominance orientation questions in regards to gender or sexual orientation groups, it would make sense for higher levels of ethnic identity to be associated with a more "traditional" world view, as ethnic identities are grounded in history. This higher level of ethnic identity would then be associated with greater levels of social dominance orientation, as more "traditional" views of gender roles and sexual orientation would be related to the subordination of women and non-heterosexual individuals. The small positive correlation between Commitment and the two SDO factors of Opposition to Equality and Group Based Dominance suggests that Commitment has more to do with a "traditional" set of values, perhaps around gender and sexual identity, than general acceptance of subordinate social groups.

These correlations, taken together, not only support the theoretical foundation of the study, but also reinforce the importance of considering all three sets of independent variables in the same model. Without including all three sets of variables together, it would be impossible to know if any relationship found was a true relationship or was only the result of confounding variables not being included.

Alcohol Consumption Regressions

Reviewing the regression models for the alcohol consumption variables that tested hypothesis four (Tables 4.13-4.15), the first thing that jumps out is the degree to which misogyny as measured by the CMNI-46 appears to be related to increased alcohol consumption. Both the Power Over Women and Playboy factors represent inherently misogynistic values, that men should have control over women's lives and that women

are sexual objects for men's pleasure or status. The Heterosexual Presentation norm factor is also inherently related to misogyny, as homophobia is one of the main ways that hegemonic masculinity is constructed and maintained (Michael Kimmel, 2004). The Playboy norm was a significant predictor of typical weekly drinking, heaviest week drinking, and binge drinking, and was generally associated with increased alcohol consumption. The Power Over Women norm was a significant predictor for typical weekly drinking, and Heterosexual Presentation was significantly associated with weekly binge drinking. Both norms were generally associated with increased alcohol consumption.

The other masculine norm that was repeatedly associated with increased alcohol consumption was Risk Taking. This is not surprising, as previous studies have also found this connection (Iwamoto et al., 2011, 2014). This finding is also consistent with the theoretical argument that alcohol consumption in college is a part of hegemonic masculinity, and that college men do not drink because they are unaware of the risks, but actually because of the risks (Capraro, 2000). This perhaps explains why education-only programs that attempt to lower drinking by educating students on the dangers of drinking are generally ineffective at curbing the behavior (Dejong et al., 2009). If men are drinking because it is dangerous, then spending time and money to tell them how dangerous drinking can be is ineffective at best, and counterproductive at worst.

The risk taking factor driving college men's drinking might also help explain why social norming interventions designed to lower drinking have been found to be ineffective (Foxcroft et al., 2015) or in some cases even exacerbates alcohol consumption by the heaviest drinkers (Mattern & Neighbors, 2004). If a man is drinking because

taking risks is something he values, sending the message that the general campus population consumes less alcohol than previously assumed could serve to make drinking look like a bigger risk (and therefore a greater sign of masculinity) if fewer men do it than previously assumed.

The one masculine norm that was associated with decreased alcohol consumption was Emotional Control, which significantly predicted an increased chance of abstaining from drinking for typical week drinks and heaviest week drinks, but was not a significant predictor for weekly binge drinking. The finding of Emotional Control as a significant predictor of decreased risk is consistent with previous studies (Iwamoto et al., 2011, 2014), and makes sense conceptually as alcohol lowers inhibitions, which in turn would make it more difficult for a man to control which emotions he expressed. This finding also highlights the complicated nature of trying to address drinking on college campuses, as being emotionally restricted would generally be something Colleges would want to discourage in college men, but if decreasing Emotional Control meant inadvertently increasing alcohol consumption, that would also be bad for college men.

Moving to the results from hypothesis five, the thing that jumps out as different from the previous hypothesis is how alcohol behavior varied depending on race/ethnicity. For each dependent variable, one or more racial/ethnic identity group was a statistically significant predictor for both the logistic and negative binomial/Poisson regressions. For each part of each regression there were also statistically significant predictors that were interactions between the main independent variables and racial/ethnic groups. For typical week drinks (Table 4.16), each interaction between race/ethnicity and the independent variables were significantly predicative of decreased risk of consuming alcohol. For

heaviest week drinks (Table 4.17), the interactions between race/ethnicity and the independent variables predicted decreased risk of drinking for the negative binomial regression, but the interaction between multiracial identity and the Playboy norm predicted increased risk of not abstaining from drinking for the logistic regression. In a mirror image, for binge drinking per typical week (Table 4.18), the interactions between race/ethnicity and the independent variables for the logistic regression predicted decreased risk of ever binge drinking, but the interaction between Asian identity and Risk Taking from the Poisson regression significantly predicted increased risk of more binge drinking if an Asian respondent had made the decision to binge drink at all.

Most interactions were for Asian and Hispanic individuals, though there was a statistically significant interaction between multiracial identity and the Playboy norm in the logistic regression for the heaviest week drinks. That these three groups had significant interactions, while Black and the Other Race categories did not, is not surprising, as these were the three largest non-White groups, and so they had the most statistical power. It is also not surprising that when there were significant differences in the risk of consuming more alcohol by race or ethnicity, the general trend was for decreased risk for non-White/non-Hispanic respondents. Drinking in college has widely been documented as a phenomenon driven by White, non-Hispanic men (e.g., Clarke, Kim, White, Jiao, & Mun, 2013; Ham & Hope, 2003; Peralta, 2005). This study's findings not only support the description of college drinking as a White, non-Hispanic male phenomenon, but also illustrate that what drives drinking for White, non-Hispanic men is significantly different than what drives drinking for non-White/Hispanic men.

With the exception of weekly binge drinking, neither the SDO or MEIM-R factors were significant predictors for White respondents, with only the masculine norms from the CMNI-46 significantly predicting risk. For non-White respondents, however, this was not always the case. For many of the interactions, factors that were not significant predictors of alcohol consumption became significant predictors for specific racial/ethnic groups. Group Based Dominance was a significant predictor for Asians in both typical weekly drinking and heaviest week drinking, while it was not for other students. Similarly, Commitment was a significant predictor of typical weekly drinking for Asians, while it was not otherwise significant for any other groups. Heterosexual presentation, likewise, was a significant predictor for Asians and their typical weekly drinking and heaviest week drinking, but not for anyone else. Perhaps most interestingly, in many cases, factors had one effect for the majority of (White) respondents, but had a different effect for specific groups. For example, the Playboy and Power Over Women norms were generally associated with increased alcohol consumption across the dependent variables, but for Asian and Hispanic respondents, increased conformity to these norms were associated with decreased alcohol consumption for typical and heaviest week drinking. For typical binge drinking, Risk Taking and Heterosexual Presentation were associated with increased binge drinking for most respondents, but for Asian respondents they were associated with decreased odds of binge drinking.

These findings highlight the intersectional nature of college men's drinking. Although significant differences did not appear for every racial group included in the study, these results highlight how interconnected identities are, rather than being additive qualities that exist independently of each other. The factors driving drinking behavior for

Asian and Hispanic men were different from the White, non-Hispanic men, and in some cases had the opposite effect. As McClintock (1995, p. 5) articulated, "…Race, gender and class are not distinct realms of experience, existing in splendid isolation from each other…. Rather, they come into existence *in and through* relation to each other" [emphasis in original]. These findings support the hypothesis that alcohol consumption is not only a gendered phenomenon, but also a raced issue, and that any meaningful examination of it must be intersectional in nature.

Alcohol Related Problems

Reviewing the findings from testing hypothesis six (Tables 4.26-4.30), a similar pattern emerges between alcohol related problems and masculine norms as was observed with alcohol consumption. Across the five different alcohol problems, Risk Taking and the Playboy norms were significant predictors. The Risk Taking norm is not surprising, as the more risks someone is willing to take, the greater chance of something going wrong is. It would have been surprising if Risk Taking had not been significant. The Playboy norm also makes sense, in that this norm was a significant predictor of all the alcohol consumption variables, and the more alcohol consumed, the more likely a student would be to experience a problem as a result. Both of these variables had previously been found to significantly predict increased risk of experiencing alcohol problems (Iwamoto et al., 2011).

Even with the link from alcohol consumption to alcohol related problems, the fact that the Playboy norm significantly predicts alcohol problems speaks, again, to the misogyny that drives the alcohol culture on college campuses. Other misogynistic norms were also significant predictors for specific alcohol problems. Power Over Women was a

significant predictor for having injured yourself or someone else as a general variable, and was part of significant interaction terms that will be discussed in depth for hypothesis seven.

That misogyny would be associated with alcohol related problems is not surprising. Alcohol use in college is constructed as an explicitly masculine activity (e.g., Capraro, 2000; Lemle & Mishkind, 1989; Peralta, 2007) and masculinity is constructed around a rejection of and disdain for things considered feminine (Connell, 1987; Michael Kimmel, 2004; Vandello & Bosson, 2013). That negative consequences from drinking, driven by masculinity, would be related to misogyny, a defining characteristic of hegemonic masculinity, only makes sense.

The only other masculine norms to significantly predict alcohol problems, were Winning (for blacking out) and Violence (for injuring yourself or others, and for breaking things or damaging property). Although neither of these variables were found to be significant predictors of alcohol problems by Iwamoto et al., (2011), these results are not particularly unusual. In Iwamoto et al.'s study the Rutgers Alcohol Problem Index (RAPI; White & Labouvie, 1989) was used to measure alcohol problems and it differs in important ways from the Daily Drinking Questionnaire (DDQ) alcohol problem questions used in this study. In the RAPI, individuals respond to 23 different alcohol related questions on a scale from 0 (never) to 4 (10 times or more) to indicate how often they have experienced a problem after drinking, and a composite score for the entire instrument is created.

So while this study measured the relationship between specific problems and masculine norms, the Iwamoto study was looking at the relationship between masculine

norms and problems in general. Conceptually, it follows that Winning might predict increased risk of blacking out, as increased conformity to the Winning norm might indicate a view of drinking as a competitive activity, and increased alcohol consumption increases the chances of blacking out. Similarly, it makes sense that problems that involve violent actions (intentionally or unintentionally) to yourself, other people, or property/things would be related to increased conformity to the Violence norm.

The same patterns that emerged from the alcohol consumption regressions were present for the alcohol problem regressions (Tables 4.31-4.35). Across the different alcohol related problems, race and ethnicity were significant factors. Black, Asian, and multiracial identities were significant negative predictors for the odds of having blacked out after drinking, compared to having a White racial identity. Similarly, Black and Asian identities were significant negative predictors of having problems with authorities after drinking. A multiracial identity, compared to identifying as White, was a significant negative predictor of having injured yourself or others after drinking. Identifying as Asian significantly decreased the odds of having broken things or damaged property after drinking compared to White respondents.

As with the alcohol consumption regressions, each logistic regression for the alcohol problems had two or more significant interactions between the main independent variables and racial/ethnic identities except for breaking things or damaging property. Interestingly, some of the problems seemed more strongly related to some identities than others. The fourth alcohol problem (Table 4.33), whether the student had ever injured himself or another after drinking, was strongly related to the multiracial identity. In

addition to that identity being a significant negative predictor, there were also three other interactions with multiracial identity: Risk Taking, Violence, and the Playboy norms.

The interaction with Violence and multiracial identity is interesting, because Violence by itself is significantly positively associated with injuring yourself or someone else. This suggests that the ways in which multiracial men conceptualize the importance or validity of violence in specific situations is different from how the majority White men conceptualize of violence. Violence for the majority of men was associated with breaking things or hurting other people, as one would expect, but for the multiracial men it meant being significantly less likely to report injuring yourself or someone else.

Finally, revisiting the relationship between misogyny and alcohol problems from the previous hypothesis, we find this pattern extends into hypothesis seven. While the masculine norms that were significant predictors of alcohol problems before race/ethnicity were included continue to remain significant, new interactions between race/ethnicity and misogynistic masculine norms emerged. Power Over Women was a significant predictor as part of interaction terms for blacking out (with Hispanic identity), problems with authorities (with Black identity), and injuring yourself or others (with Asian identity). Interestingly, for the interactions with Hispanic and Asian identities, the interaction was associated with decreased risk, while for Black identity the interaction was associated with an increased risk of experiencing alcohol-related problems, compared to their non-Hispanic and White peers respectively.

These findings, once again, support the intersectional approach to examining alcohol behavior among college men. The interactions between racial/ethnic identities and the independent variables demonstrate that the same values can motivate very

different types of behavior, depending on the background of the individual. This suggests that just as the processes that drive alcohol consumption are both raced and gendered, the consequences of that drinking are similarly raced and gendered. In this light it is unsurprising that alcohol prevention interventions have had uneven impacts on college student behavior, as college student drinking is not one phenomenon, but many different phenomena driven by different motivators for different identities.

Discussion of Findings

Having explored the specific hypotheses of this study, the findings of the study fall into three broad categories; the intersectionality of college drinking, the relationship between alcohol and Whiteness, and the relationship between alcohol and students' social environments.

Intersectionality

As outlined by the literature review in Chapter II, drinking in college varies meaningfully by race, ethnicity, and gender. The intersection between a college student's identities has a dramatic impact on that student's relationship with alcohol. This study applied this understanding of alcohol use to its design and analysis in a way that has been previously the realm of a few qualitative studies (Peralta, 2007; Sweeney, 2014). Although the sample size for non-White students was less than ideal, the findings of the study strongly support this approach and confirm that alcohol consumption on a college campus is an intersectional phenomenon.

The analyses for the alcohol consumption variables found significant differences between the White, Non-Hispanic respondents, and the Asian and Hispanic respondents. For typical week drinking, Asian respondents Group Based Dominance, Commitment,

and Heterosexual Presentation were all significant predictors of decreased risk for having additional drinks, while these variables were not significant for White respondents. For Hispanic respondents, Power Over Women was a significant predictor of decreased risk for having additional drinks, while it was a significant predictor of increased risk for non-Hispanic respondents. The same dynamic was observed when examining whether respondents completely abstained from drinking in a typical week. Group Based Dominance was a significant predictor for Asian respondents, but not for White respondents, and the Playboy norm was a significant predictor of greater odds of abstaining from drinking for Hispanic and Asian respondents, but of significant decreased odds of abstaining for White/non-Hispanic respondents (Table 4.16).

The same pattern followed for heaviest week drinking, as was observed for typical week drinking. For heaviest week drinking, Group Based Dominance and Heterosexual Presentation were significant predictors of decreased risk for Asian respondents, but not for White Respondents, of having additional drinks. The Playboy norm was a significant negative predictor of risk for Hispanic respondents for having additional drinks, but was a significant predictor of increased risk for non-Hispanics. Interestingly, for the chances of abstaining from drinking completely during the heaviest drinking week, the only significant interaction term was not for Asian or Hispanic respondents, but between multiracial respondents and the Playboy norm. For multiracial respondents, a higher conformity to the Playboy norm was a significant predictor of decreased odds of abstaining, similar to White respondents, but with a much higher magnitude. A one-point increase in the Playboy norm was associated with an odds ratio

of .361 of abstaining for White respondents, but for multiracial respondents the same increase was associated with an odds ratio of .098 (Table 4.17).

For typical binge drinking, Asian respondents once again had different predictors than the White respondents. Whereas none of the main independent variables predicted increased number of times binge drinking per week (as compared to the control variables) for White respondents, for Asian respondents, Risk Taking was a significant predictor of binge drinking more in a typical week. When examining whether an individual would binge drink at all, Asian respondents had significant predictors of risk for Risk Taking and Heterosexual Presentation, same as White respondents, but in the opposite directions. Risk Taking and Heterosexual Presentation were significant predictors of decreased odds of never binge drinking for White respondents, but were significant predictors of increased odds of never binge drinking for Asians. The difference in directions between ever binge drinking and how many times binge drinking in a week for Risk Taking for Asian respondents is particular interesting, and points to a potential quadratic relationship for this variable for this group, whereas the other variables have appeared to have linear relationships.

Moving to the alcohol related problems, the intersectional nature of college drinking was still on full display. The difference between White and non-White respondents was not whether social dominance orientation or ethnic identity became significant, but how the masculine norms impacted risk. As mentioned previously, for specific problems, masculine norms had different relationships for some non-White respondents. Different alcohol related problems had masculine norms that were

significant predictors for specific racial/ethnic groups that were not significant predictors for White respondents.

Blacking out (Table 4.31) had a negative relationship with Power Over Women for Hispanics that was not significant for non-Hispanics. For problems with authority (Table 4.32), Emotional Control was a significant predictor of increased risk for only Hispanic respondents, while Power Over Women was a significant predictor of increased risk for only Black individuals. Injuring yourself or others (Table 4.33) had Winning as a significant predictor of decreased risk for Hispanics only, and Primacy of (School) Work significantly predicted increased risk for Black respondents only.

As with the alcohol consumption analyses, some interactions changed the direction of the risk for specific groups compared to White respondents. Risk Taking significantly predicted increased risk of blacking out for everyone but Asian individuals, for whom an increased conformity to the norm was associated with a decreased risk (Table 4.31). For injuring yourself or others (Table 4.33), multiracial individuals experienced decreased risk with higher conformity to the Violence norm, while for White respondents the norm was associated with increased risk. Also for this problem, Asian individuals with higher conformity to Power Over Women had decreased risk, while it was associated with increased risk for White respondents.

The findings of different relationships for Hispanic and Asian identified individuals for their alcohol behavior and misogyny are not surprising when considering the discourse around alcohol, the role of women, and the importance of alcohol, in various Asian and Hispanic cultures. For White, non-Hispanic individuals, masculinity is demonstrated through a rejection of the feminine (Connell & Messerschmidt, 2005), and

alcohol consumption is considered a specifically masculine way of proving masculinity and rejecting the feminine, especially for college men (Capraro, 2000; Peralta, 2007). For Asian and Latino men, however, the relationship between masculinity, the feminine, and alcohol, does not run in the same direction.

Like the European-American White culture, the subordination of women and the feminine are a part of Asian and Hispanic cultures, and in some ways, to an even greater degree. A common problem among South Asian immigrants in the United States has been the domestic violence against women, directly related to the role women play in those cultures (Shankar, Das, & Atwal, 2013). Another study (Koo, Stephens, Lindgren, & George, 2012) found that Asian American college men were significantly more likely to hold rape-supportive attitudes, as were lower levels of acculturation and higher levels of ethnic identity. Similarly, for Hispanic/Latino men there is a history of misogyny and homophobia built into the culture from the Spanish conquest (Hardin, 2002).

Where the relationship between masculinity, the feminine, and alcohol diverge for Asian and Latino men is about the inherent masculinity of drinking. Previous studies have showed that various Asian and Hispanic identities are associated with lower drinking for college students than their White/non-Hispanic peers (Iwamoto et al., 2012; Lawrence et al., 2010; Luczak et al., 2001). Research has shown that for both these populations, the alcohol use of adults is a function of their culture's relationship with alcohol. Cook and Caetano (2014) examined how culture and gender impact drinking behavior for Asian and Latino American adults, comparing behavior to socioeconomic status (SES), gender, and the drinking behaviors of the country of origin for their culture. They found that drinking behavior for adult Asian and Latino Americans was directly

related to the drinking behavior of their culture's country of origin, and that these behaviors varied by gender and class. They also found that dangerous drinking behavior was more common for lower SES Latinos. This helps explain why drinking behavior was generally lower for these two groups, that Asian and Latino cultures directly relate to drinking behavior of adults in these populations, and particularly for the type of Latino students who are in college, who are more likely to be from a higher SES.

Taken together, this suggests that whereas the misogynistic values are driving increased alcohol consumption in the White, non-Hispanic men, for the Asian and Hispanic men in this sample, the misogyny is likely related to greater adherence to cultural values that also discourage the type of drinking their White, non-Hispanic peers engage in. It would also imply that the Power Over Women, Heterosexual Presentation, and Playboy norms are capturing an adherence to cultural values that is not otherwise captured by the ethnic identity factors for Hispanic and Asian men.

These findings illustrate in clear terms that the relationship between the discursive masculinity and alcohol use can differ significantly by race and ethnicity. It also suggests that social dominance orientation and ethnic identity might also be significant predictors of alcohol use for non-White respondents in ways that differ from their White peers, although larger numbers of non-White individuals would be needed to know. This, then, is the answer for the two research questions: how the variables predict alcohol consumption and alcohol problems depends on the identities of individuals being studied. This study quantifies what has only previously been described qualitatively, that one's relationship with alcohol depends on the intersections of one's identities.

Alcohol and Whiteness

Stepping back from the specific research questions and hypotheses, one thing that stands out is the lack of significance ethnic identity and social dominance orientation had in predicting alcohol consumption and problems overall. This is surprising given that considered alone both the MEIM-R and SDO had some predicative power for both alcohol consumption and alcohol problem variables. Given the overall Whiteness of the respondents in this analysis, the fact that social dominance orientation had almost no predictive power for White respondents (except for typical binge drinking and non-driving accidents, see Tables 4.18 & 4.34), and ethnic identity had no predictive power at all suggests that a White identity has a different relationship with alcohol than non-White identities do. Supporting this conclusion are previous studies that have found significant relationships between ethnic identity and alcohol use for non-White/non-Hispanic groups (generally with higher levels of ethnic identity being related to lower levels of alcohol consumption) (e.g., Iwamoto, Takamatsu, & Castellanos, 2012; Schwartz et al., 2011; Zamboanga, Raffaelli, & Horton, 2006).

Given the perceived ubiquity of alcohol consumption at residential, four-year, predominately White institutions like the ones in this study, the lack of significance for ethnic identity in predicting alcohol consumption or problems suggests that the relevance of alcohol is perhaps part of the fabric of a White identity, regardless of how salient that identity is personally. This relationship might also explain why social dominance orientation was non-significant for typical and heaviest week drinking for White respondents, but was significant for Asian respondents. If drinking in college is an inherent part of a White identity, then that could transcend the relationship between

alcohol and social dominance orientation in a way that is untrue for other racial/ethnic masculinities.

The other possible framing of these findings is that alcohol use is less a part of White identity, than it is not allowed to be a part of non-White identities. The framing of drinking in college from the greater society is that it is a rite of passage, a way to have fun and bond, and that it should occur in abundance. Since college going is generally framed as something that White students do, especially White students from middle/upper class backgrounds, it may be that the lack of significance of ethnic identity and social dominance orientation as predictive variables is because for the White respondents, alcohol use is not about the oppression of other groups or the salience of their ethnic identity. For White respondents, it appears that alcohol use is about masculinity, what groups an individual is involved in on campus, and where they live.

For non-White respondents, however, alcohol use is about masculinity, but also about ethnic identity, and privilege. Non-White respondents might not drink at the same rates as White respondents because they are aware that racism will cause others to interpret their drinking in a way that is not applied their White peers. Supporting this conception of college drinking is research by Peralta (2005) that found drinking on campus to be an extension of White privilege, where Black students felt that they were singled out and treated harshly for violating alcohol policies in ways that their White peers were not. This could explain why identifying as Black or Asian were significant predictors of increased odds of completely abstaining from alcohol consumption (Tables 4.16-4.18). It would also be consistent with the findings from the alcohol problems, that

whenever a non-White racial identity was a significant predictor, it was of decreased risk for experiencing the problem relative to White respondents, rather than increased risk.

More so than simply being a matter of not being "allowed" to drink in the same ways as White college students, at least for the Asian students in this study, it would appear that their identity actively discourages alcohol use. That the Commitment norm was a significant predictor of decreased typical alcohol consumption is consistent with the finding from Luczak et al. (2001) that Chinese identity was a protective factor against excessive drinking. It would also be consistent with findings by Iwamoto et al. (2012) that lower levels of ethnic identity were associated with a greater risk of experiencing alcohol problems for Asian-American college students.

If excessive alcohol use is seen in Asian cultures as inappropriate behavior, then this might also explain why higher levels of social dominance orientation (in the form of Group Based Dominance) was associated with less alcohol consumption for Asian respondents. Social dominance orientation measures the support for nonegalitarian and hierarchical social systems (Sidanius & Pratto, 1999), so if excessive alcohol use is antithetical to the appropriate behavior of the highest status Asian groups, it would follow that higher levels of social dominance orientation would be predictive of lower levels of alcohol consumption.

Taken all together, these findings suggest that Whiteness has a complicated but meaningful relationship with alcohol for the college students in this study. Alcohol consumption was significantly related to White masculinity in ways that differed from non-White masculinities. Sometimes that meant the non-White masculinities predicted greater alcohol use, but generally the difference was in favor of less alcohol use for non-

White men. White ethnicity, on the other hand, showed no relationship to alcohol use, while non-White ethnicities showed negative relationships with alcohol use. Similarly, social dominance orientation showed little relationship to alcohol use for White respondents, but showed significant negative relationship with alcohol use for Asian respondents. In these ways, Whiteness promoted alcohol use through masculinity that generally exceeded non-White masculinities, and also failed to put in place the prohibitions against alcohol use in the form of ethnic identity or social dominance orientation that the non-White identities did.

Alcohol and Students' Social Environments

The final important takeaway from the findings is that even after accounting for all the masculine norms, ethnic identity, and social dominance factors, significant differences in drinking behavior were predicted by students' social environments. Unsurprisingly, living at home was significantly associated with consuming less alcohol, as this would leave students with fewer opportunities to socialize with their peers than if they were living on or near campus, especially if they are under the age of 21. Also expected, being a varsity athlete was a significant predictor of alcohol consumption. Multiple studies have found varsity athletes, specifically male varsity athletes, to be among those consuming the most alcohol in college (e.g., Martens, Dams-O'Connor, & Beck, 2006; Meilman, Leichliter, & Presley, 1999; Nelson & Wechsler, 2001; Wilson, Pritchard, & Schaffer, 2004)

What was surprising, however, was that for each dependent variable, varsity athletics was only significant in the logistic regressions, meaning that being a varsity athlete meant the odds of abstaining from drinking were significantly lower, but after that

it provided no significant value in predicting how much one would consume (other than more than zero). Intramural athletic participation was also a significant predictor of increased alcohol consumption, for all the dependent variables, in both parts of the regressions, but interestingly being a club sport athlete was not a significant predictor for any of the alcohol consumption variables. Club sports exist as a sort of half-way place between varsity athletics and intramural athletics, being generally a greater time commitment and more competitive than intramural athletics but less so than varsity athletics, and so it is interesting that while the other two sports variables were significant, it was not.

Previous research has found intramural athletics to be related to increased alcohol consumption compared to non-athletes (Grossbard, Geisner, Neighbors, Kilmer, & Larimer, 2007), so its significance is not surprising. Other research has found that intramural athletes consume more alcohol than varsity or club sport athletes (Barry, Howell, Riplinger, & Piazza-Gardner, 2015). Little research has been done that specifically focuses on club sport athletes, either focusing on varsity or intramural athletes, or combining all levels of athletic participation into one group, making it more difficult to explain possible differences between club athletes and other groups. Andes, Poet, and McWilliams (2012), found that club sport athletic status was negatively correlated with protective alcohol behaviors (behaviors that lower risk of experiencing injury due to drinking alcohol), but was not correlated with more dangerous alcohol consumption behavior. It is possible that effect on alcohol consumption behavior for club sports is smaller than that from intramural or varsity athletics, and that the 195

individuals who indicated they participated in club sports was too small a group to detect a significant difference that actually exists.

Finally, fraternity status was also a significant predictor of alcohol consumption for typical weekly drinking and heaviest week drinking, but not for binge drinking (Tables 4.16-4.18). Fraternity status has been found to be a significant predictor of alcohol consumption in previous research (Ham & Hope, 2003; Larimer, Turner, Mallett, & Markman Geisner, 2004; Meilman et al., 1999; White & Hingson, 2013) and so it was expected to predict increased alcohol consumption. For typical week drinks, Fraternity status significantly predicted increased alcohol consumption for the negative binomial regression. For heaviest week drinks, Fraternity status significantly predicated increased alcohol consumption for the negative binomial regression as well as significantly predicted decreased risk of completely abstaining from drinking for the logistic regression.

The only surprise in the results for Fraternity status was that it was not a significant predictor for either part of the binge drinking regression. Previous studies have consistently found fraternity status to predict increased binge drinking (e.g., Nelson & Engstrom, 2013; Wechsler, Dowdall, Davenport, & Castillo, 1995). The lack of significance in this study seems most likely due to the limited number of fraternity men in the sample. The number of men who reported they were in a fraternity was relatively low at 88 (6% of respondents), and so there is a reasonable chance that the lack of finding significance could be the result of low statistical power rather than the lack of a real difference in the population.

Some of the reason why these variables account for significant differences in alcohol consumption is no doubt in part due to the ability of these groups to make alcohol available to their members. With the exception of living at home, these other groups typically have students from all class years in them, and a range of different aged students. This means that more senior students, who are over the age of 21, can purchase alcohol and make it more readily available to the members of the organization who are under the age of 21. It is also probable, however, that it is more than just increased availability that makes membership in these groups associated with increased alcohol consumption. If that was the only reason, then club sports also would have been a significant predictor. It is very probable that these groups have organizational cultures that encourage increased alcohol consumption in ways that other groups do not.

Finally, just as with the alcohol consumption variables, there were control variables that were significant for the alcohol problems, meaning that social values and racial/ethnic identity could not account for the drinking problems alone. The most common control variable was participating in Intramural athletics, which significantly predicted increased risk for three of the five problems (blacking out, problems with authorities, and breaking things or damaging property). Intramural athletics has been found in previous research to predict increased alcohol problems (Grossbard et al., 2007) and so this finding is not surprising.

The other control variable that showed significance was whether someone lived in a fraternity house, which significantly increased the risk of reporting a non-driving accident after drinking. While living in a fraternity house implies membership in a fraternity, which has been associated with increased alcohol problems (Iwamoto et al.,

2011), it is a bit surprising that living in a fraternity house was significant but not fraternity status. Living in a fraternity house has been found to be associated with decreased risk of binge drinking compared to being a fraternity member who lives elsewhere (Nelson & Engstrom, 2013), and so decreased risk of binge drinking should mean decreased risk of alcohol related problems relative to other fraternity members. As only 16 individuals reported living in a fraternity house, it is possible that this result is an example of Type I error, rather than a representation of what is occurring in the population.

When this study was designed, I thought it was possible that when previous studies had found significant differences for members of varsity athletics and fraternities because those groups had hegemonic cultures rather than separate alcohol cultures. If it was only the hegemonic cultures, then accounting for the degree to which those hegemonic values were internalized through the Conformity to Masculine Norms Inventory and the Social Dominance Orientation scale should have left those variables as non-significant predictors. The fact that they did still retain significance implies that there are specific values these organizations hold towards alcohol use that is distinct from their hegemonic natures.

Other studies have pointed to motivators for college students outside of constructions of gender/race/ethnicity, such as the availability of alcohol (Dejong et al., 2009), positive alcohol expectancies (expecting consuming alcohol to have positive impacts) (Iwamoto et al., 2014), and the perception of how much other college students drink (e.g., Cialdini & Trost, 1998; Iwamoto et al., 2011; Tobin, Davey-Rothwell, Yang, Siconolfi, & Latkin, 2014). It is possible that these factors might also be what is behind

these groups predicting alcohol consumption and problems, beyond just their association with hegemonic constructions of gender and race/ethnicity. It is also possible that it these factors represent something else, perhaps each one distinct from the other, and more comprehensive research is needed to help explain it.

Implications

For Practice

For higher education administrators, this study's findings should encourage them to think more critically about who their students are, and how they are trying to reach them. This study highlights the degree to which drinking consumption and the resulting problems, are influenced by the intersection of how college men construct their gender and their race. The fact that a relatively small part of the college population is responsible for the most problematic drinking is not a new discovery, but this study tells us some important things about what drives their behavior. For the White men in this study, heavier drinking was related to greater risk taking and misogynistic values. For Asian and Hispanic men, some of the misogynistic values actually seemed to decrease risk for drinking. Greater salience of ethnic identity was associated with decreased risk for non-White students, and greater levels of social dominance orientation seemed to be associated with increased risk for the same population.

The implication of this is that what works for one part of a college's population may not be effective for another. A message that is effective with White men, might be counter-productive, or just ineffective, targeting Asian or Black men. This means that programs like Alcohol.edu that are typically delivered to every incoming college student before their first semester are going to be ineffective at reducing risky behavior unless it

is adjusted to give different types of messages to different types of students. While it is understandable that colleges might feel a need to provide basic education to its incoming first-year students about the dangers of alcohol, so that they can diminish their potential legal liability, this study suggests that this approach may actually be increasing risky behavior.

It would not be difficult to imagine that a program like Alcohol.edu might evolve so that the first section asks questions about previous behavior and values, and then depending on how they respond, tailored messages could be delivered to discourage risky behavior in a way that would be better received. For men who indicated a high conformity to the norm of Risk Taking, it might be helpful to send the message that alcohol violations, or decreased GPA from too much drinking, might meaningfully prevent students from being able to participate in different activities that a high risk taker might want to, such as perhaps studying abroad, or going on wilderness trips, etc. In this way alcohol is reframed as something that prevents them from taking on exciting new opportunities rather than a challenge they want to 'get away with.'

For students who reported high conformity to the more misogynistic masculine norms (Power Over Women, Playboy, Heterosexual Presentation), it might be more productive to illustrate the different ways that men become victims (whether or sexual or physical assault) when they are intoxicated, so that for men who view power as important view alcohol consumption as something that reduces, rather than increases, their own power and control. In this way, the intervention would become more similar to motivational interviewing, a method that asks students to think critically about the issues they like and dislike about drinking, and highlighting the discrepancies between a

student's values and their behavior. This method has been one of the most effective alcohol interventions (Lundahl et al., 2010), and so it makes sense to find ways to incorporate the results of this study to make existing approaches more effective.

In addition to providing more specific interventions to college students, and college men specifically, this study speaks to the need to address the culture of students and institutions. Misogynistic masculine norms such as Power Over Women, Playboy, and Heterosexual Presentation were commonly associated with both increased alcohol consumption, and alcohol problems. It stands to reason that if colleges were able to decrease the degree to which male students felt being feminine or a female was a bad thing, it would also decrease the degree to which college men felt the need to consume alcohol as a way of proving their masculinity. As masculinity has been found to be related to both adolescent males and females' alcohol use (Iwamoto & Smiler, 2013), it stands to reason that changing the discursive masculinity on a college campus would not only benefit the men of the institution, but also directly benefit the women above and beyond the decreased problems caused by intoxicated men. This also suggests that women can and should also be a part of the effort to shift the way masculinity is constructed at an institution, as they are a part of the discourse even if they are not gatekeepers in the same way that other men are (Kimmel, 2004).

Another problematic cultural value related to increased alcohol consumption for non-White respondents was social dominance orientation, and specifically Group Based Dominance. This norm is associated with support for suppressing subordinate groups, and so lowering this value in college students would not only help increase students'

support for inter-group equality, but also hopefully would lower the motivation of non-White students to prove their social status through alcohol consumption.

To successfully address college drinking, then, the culture of an institution must shift so that a more inclusive environment is created. This is means that promoting social justice is not only a matter of creating a space where people from non-privileged background feel included, but also a matter of saving lives and decreasing the harm that happens to hundreds of thousands of college students every year. Unfortunately, there is no easy way to shift the culture of an institution, especially away from one reinforced by the larger society a college is embedded in. One potential way to help shift the culture of an institution is through the curriculum.

A study out of France found that college students who were exposed to social science classes had their beliefs about the determinism of genetics ("geneticism" in the study) decrease, which corresponded with a decrease in social dominance orientation (Dambrun, Kamiejski, Haddadi, & Duarte, 2009). Many colleges have distribution requirements to graduate, where students have to take a certain number of courses from a variety of backgrounds so they can be considered well educated, and including courses that challenged the idea of genetic determinism could be one way to help shift the culture of an institution.

Another study of social dominance orientation found that it was negatively related to empathy (Sidanius et al., 2013), and although the study found that increased social dominance orientation decreased empathy more than increased empathy decreased social dominance orientation, a focus on courses that would increase empathy could only help.

According to research, increased exposure to service learning courses could be one such way for academics to increase empathy (Lundy, 2007).

Similarly, coursework can be used to help decrease misogyny and sexism. A study by Case (2007) found that students who took courses that focused on issues of sex discrimination had lower prejudice against women, more egalitarian attitudes, and increased support for feminist values after taking the course. Specifically taking women studies courses did not significantly differ in results of decreasing prejudice compared to other diversity courses, but they did result in greater self-identification with feminism.

Finally, courses that help students explore their ethnic identity, and learn more about their own cultures should have a positive impact on the drinking of non-White students. Increased salience of ethnic identity has been found to be a protective factor both in this study for Asian students for their typical weeks per drink, but also in other studies as well. Iwamoto et al.,(2012) found that lower levels of ethnic identity were associated with greater alcohol problems for Asian American college students, while Schwartz et al. (2011) found that Black students with increased ethnic identity used alcohol in less hazardous ways. This means that offering Black studies and Asian studies courses not only sends a message that non-White/non-European cultures are worth studying and learning about, but it also can help students from these backgrounds gain a greater sense of self that should help them avoid dangerous alcohol use.

While coursework can help to address the culture of an institution, there is also work that can be done through Student Affairs divisions to help address the cultural climate of an institution. While there are only so many students that an administrator can directly interact with, there are a large variety of student leaders and employees that

administrators can educate and train, who will interact with their peers in ways that could be very positive. Through incorporating a focus on increasing empathy, cultural awareness, and awareness of structural discrimination against women, and other oppressed groups into the training of student staff and student leaders, it can become possible to more effectively shift student culture. Drury and Kaiser (2014) highlight the importance of allies in working to end discrimination, and how emerging literature supports the idea that the most effective individuals in confronting sexism are male allies. With this in mind, Student Affairs divisions across institutions should consider how they can specifically train and then deploy male undergraduates to confront their male peers, that would be more easily ignored if coming from females.

Outside of specifically focusing on students, institutions should also focus on training their faculty and staff to decrease implicit or explicit sexism and misogyny and social dominance orientation, as well working to increase opportunities for increased exploration and commitment to students' ethnic identities. Students are not the only individuals who hold bias views, and so the culture that promotes dangerous alcohol consumption will only be changed when all the different groups who are part of the campus community are working to do so. This means that faculty and staff need to see working to promote more egalitarian, less sexist environments not as some additional task, or an obstacle to them doing their real job, but as part of their mission and critical to their success. That means that messaging needs to be consistent across the institution, and that the metrics that faculty and staff are evaluated on include these metrics.

Finally, even after accounting for the differences in drinking behavior caused by various social values, there will still be student groups and organizations that

intentionally or unintentionally promote dangerous drinking behavior. Colleges must make sure they know which groups are associated with this problematic behavior, and then understand what it is about those groups that is driving the behavior. In this study, intramural athletic status was frequently a significant predictor of more dangerous behavior, and so it would benefit Student Affairs divisions, and particularly Recreational Sports departments to pay attention to these groups as at increased risk. Since intramural athletics are formally recognized by institutions and use institutional facilities, there are opportunities to increase supervision and require students to participate in alcohol prevention interventions to help ameliorate that risk.

Fraternities, intramural athletes, and varsity athletes are all obvious places to start, but it is likely that other groups, such as marching bands or acapella groups might also promote dangerous drinking depending on the social environment of an institution. As drinking is so greatly influenced by student cultures, there is no substitute for knowing all the different sub-cultures that exist on a campus so that the problematic ones can be addressed and changed, whether through education programs, or in the most severe cases, perhaps revoking the group's right to exist for four years so that those students can graduate and a new culture can be created.

If institutions do not do so already, they should begin by looking at their student conduct reports and compare the names of students being charged with violating alcohol policies or present at locations where alcohol policies were being violated, against those for different student clubs and organizations. In this way, administrators are most likely to be able to identify groups with the most problematic behavior, whether they are athletic teams, student government, or student clubs. If students who are transported for

medical assistance after drinking are not charged with conduct violations, these records should also be checked student group rosters, to look for patterns of dangerous behavior.

Once student groups are recognized as having problems with alcohol, administrators should work to identify the problem and how to help alleviate it. For groups that have advisors or coaches, those individuals should be made aware of the problem and consulted on how the problem can be addressed. Likewise, college administrators should make sure that coaches and advisors know that the issue of alcohol abuse by students is an important one to the institution and that they can and should report any concerns they have to the appropriate individual/office so the appropriate changes can be made. It should be made clear that the institution will not accept these problems being ignored, but that a coach or advisor would not get in trouble if they were to bring the problem to attention.

The other way that institutions can be sure that they are not missing problematic alcohol use by different cultures is through the use of anonymous surveys. Institutions should survey their students once a year, across class years, to get a sense of the groups they belong to, where they live, and the demographic groups they belong to, as all of these factors are related to alcohol use (Ham & Hope, 2003). Through this kind of surveying, an institution can look for groups that might be engaged in dangerous behavior that would not otherwise come to its attention through existing methods, such as the student conduct system. The findings from this survey caution that any surveys conducted, however, must take an intersectional approach to examining alcohol consumption. Drinking and its consequences are directly related to the multiple identities of individuals and how those identities interact, and so if those differences are ignored,

the picture the survey paints would be inaccurate. At the bare minimum, the survey should ask students about their gender, race, where they live, and what groups they are involved in.

For Future Research

This study helps illustrate the need for further in-depth investigation of the intersectional nature of college student drinking. As discussed in Chapter III, this study had to investigate differences in alcohol consumption by race and Hispanic ethnicity, but in an ideal study, there would have been a sample that could have been further divided into more ethnic groups. Various studies have already demonstrated significant differences in drinking behavior between Asian ethnicities (e.g Iwamoto et al., 2012; Luczak, Wall, Shea, Byun, & Carr, 2001; O'Hare, 1995), and so it is very probable that if you were to repeat this study with only Asian students, and separated them further by ethnicity, there would be different results than what this study found. As the majority of the Asian men in this study were from Chinese origin, it is possible that the findings of this study for Asian men mostly reflect reality for that specific ethnic group, and may not apply equally to Japanese, Korean, or Vietnamese men.

Similarly, further studies that examine the differences between Hispanic men by race and ethnicity, and multiracial men should be conducted, as these groups were placed together in a way that likely masks the difference phenomena at work. Understanding college men's drinking would also benefit from more in-depth study of how ethnicity impacts the drinking behavior of White and Black men. This study did not differentiate between men who identified as ethnically Jewish or not, though there is research to suggest this could be an important factor (Luczak et al., 2002), and it is reasonable to

assume that differences within the Black population (whether by religious differences, or differences between being Afro-Caribbean and African-American) could also have significant impact. One way of doing this would be to add measures for not only ethnic identity, but also racial identity, which would introduce a host of new potential interactions.

Another avenue of research would be looking for differences by sexual orientation. This study did not attempt to differentiate between differences in sexual orientation in how masculine norms and other social values were constructed and related to alcohol behavior. As sexual orientation directly impacts how gender is constructed (B. Wilson et al., 2010), future research should be constructed that adds sexual orientation as another axis on which to measure how masculine norms, ethnic identity, and social dominance orientation shape drinking behavior. In addition to conducting more detailed research on individuals who identify as male, all these avenues of investigation should also be followed for female (and non-binary) identified college students as masculine values do not only impact men's alcohol use (Iwamoto & Smiler, 2013).

This study also did not fully account for the ways in which the institutional characteristics of the colleges surveyed might have been related to drinking behavior, by accounting for things such as the percentage of the student body that was White or male, or if there were fraternities available to join or not. Since men only reasonably had the chance to join fraternities at three of the institutions, the inclusion of the variable suggests that men at the other institutions chose not to join, when they did not have the choice. To ensure that the model was correctly specified, future research should be sure to account for these dimensions that could reasonably be related to differences across campuses

through hierarchical linear modeling.

Another implication of this study for future research, while obvious, is that you have to use the appropriate methods to understand a problem. If zero-inflated regression models for count data had not been used to analyze the alcohol consumption variables, the results would have been very different. Emotional Control and varsity athletic status were only significant predictors in the logistic regression portions of the analysis, significantly predicting whether a student would totally abstain from consuming or not. This difference in methods, perhaps in part, explains some of the differences in results between other studies which utilized negative binomial regressions (Iwamoto et al., 2011, 2012) rather than zero-inflated models.

Theoretically, zero-inflated make the most sense for the analysis of alcohol data, as college students have two interrelated decisions to make: the first is whether or not to consume any alcohol, and then if they decide they want to, how much they want to consume (and in which ways they want to consume it (drinking games, binge drinking, pacing themselves etc.). Zero-inflated models account for the relationship between these two decisions, while a Poisson or negative binomial regression only model one decision, how much to drink, which may or may not include no drinks. Similarly, it would be possible to utilize negative binomial or Poisson hurdle regression models, but those methods presuppose that the first decision (whether to drink or not) is completely unrelated to the second decision (how much to drink) (Long & Freese, 2014), which is clearly not the case for alcohol consumption. Although zero-inflated models are more complicated, research that uses inappropriate methods are not providing accurate

information, and efforts need to be made to assure that future alcohol research is using the appropriate methods for analysis.

In addition to the right statistical methods, the other component to choosing the appropriate method is that the epistemology of the researcher will shape the ontology of the research. Without taking a critical quantitative perspective, this study would not have included social dominance orientation as a variable, nor would it have included the interaction terms between the racial/ethnic variables and the main independent variables. Without including these parts of the analysis, the conclusion would have been that with this sample, ethnic identity is a non-significant factor in college men's drinking behavior, and that risk taking and misogynistic masculine norms drive increased consumption and problems for everyone. It would have missed the ways in which the independent variables changed in direction and magnitude depending on the race or ethnicity of the individual for some of the variables.

The critical approach also potentially explains the differences between Iwamoto et al.'s (2011, 2014) finding norms such as Heterosexual Presentation, Primacy of Work, and Self-Reliance significant predictors while this study generally did not. In both studies, Iwamoto et al. had majority Asian men in their sample from a single institution on the west coast, while the participants of this study were predominately White. This study did find significant interactions between Heterosexual Presentation and Asian racial identity for all three alcohol consumption variables, and it is very possible with a larger sample of Asian men, there might have been significant effects for Self-Reliance and Primacy of (School) Work too. As this study, and so many previous studies, have demonstrated the intersection between gender and race in alcohol behavior, to not take a

critical approach to this subject (whether quantitative or qualitative) means obscuring what is really going on in a way that disadvantages everyone, but particularly overlooks the experiences of students of color. This means that for future studies, at a bare minimum, research on college student alcohol use needs to focus in on one specific subpopulation of the same gender and ethnicity, or if analyzing a wider range of identities, to be sure to include the differences in these identities as part of the analysis.

Finally, the relative lack of significance for ethnic identity and social dominance orientation in both models calls for more investigation. The results of this study combined with the literature on race, ethnicity, and gender raises the possibility that rather than directly effecting alcohol behavior, social dominance orientation and ethnic identity are mediating the relationship between masculine norms and alcohol. New analysis testing for mediating effects is needed to better understand how all the variables in the model are related to alcohol use, and if those relationships are significantly different depending on the ethnicity of the respondents.

Conclusion

Like most human endeavors, the results of this study will be less than the ambitions that motivated it. In an ideal world, every avenue of interest would be able to be explored, and every finding would have a full and satisfactory answer to why things resulted as they did. Sadly, despite the best planning and efforts, no single study can investigate every potential question, even within a narrow focus, nor explain every finding without raising yet more questions. The positive upside to this limitation, however, is that there are always new things that can be learned, findings that can be explored further, and new insights that can be gained.

Even with all its limitations, this study provides an exciting starting point for future research. It built off of important theoretical work, and combined different lines of inquiry into a single study that points the way to future research that can make real differences in students lives. Through demonstrating the intersectional nature of college students' alcohol use, this study paves the way for more accurate and nuanced understanding of this important problem. The critical quantitative design of this study also highlights the importance of considering how power and privilege impact students' realities in ways that are not always immediately obvious. It is my hope that more researchers will adopt this critical perspective when approaching college drinking, so that new research can uncover the lived experiences of college students and start working to improve it.

Appendix A: Email to Subjects

1st Email

Subject: Your help needed!

Dear [First Name]

You have been selected to participate in a research project examining the relationship between alcohol consumption and social values related to identity and inter-group relations. This research is part of PhD student Scott Radimer's dissertation for his degree in Higher Education, and the information gained from it will be used to help inform alcohol policy at your institution, and other institutions nationally, to better fit the realities of college men today. If you complete the survey you will have an opportunity to enter a raffle to win one of 10 $50 gift cards to Amazon.com. It is a short survey and should take you **about 7-15 minutes** to complete. Below you will find the URL for the survey.

[URL]

Thank you,

Subsequent Emails

Subject: Your help needed!

Hello [First Name]

Earlier you were invited to participate in a research project examining the relationship between alcohol consumption and social values related to identity and inter-group relations. If you have not already done so, there is still time to complete the survey and have a chance to win a $50 gift card to Amazon.com.

This research is part of PhD student Scott Radimer's dissertation for his degree in Higher Education, and the information gained from it will be used to help inform alcohol policy at your institution, and other institutions nationally, to better fit the realities of college men today. It is a short survey and should take **about 7-15 minutes** to complete it. Below you will find the URL for the survey.

[URL]

Thank you,

Appendix B: Survey

Internet Survey Consent Form

You are being asked to participate in a research study titled "Masculine Norms, Ethnic Identity, Social Dominance Orientation, and Alcohol Consumption Among Undergraduate Men." You were randomly selected to participate in this project because you were identified as a full-time, male, undergraduate student at your institution.

The purpose of this study is to better understand how different social attitudes/values about gender, ethnicity, and privilege are related to alcohol consumption by undergraduate men.
This study will be conducted through this online survey. The survey should take you approximately 15 minutes to complete.

There are no direct benefits to you, but you may feel gratified having an opportunity for increased self-reflection and knowing that you helped further the scholarly work in this research area. There are no known risks to this research beyond those typical of everyday life. There may be unknown risks unknown at this time.

As compensation for completing the survey, you will have an opportunity to enter a raffle to win one of 10 $50 gift cards to Amazon.com. There are no costs to you associated with your participation. You can enter the raffle even if you end the survey early.

This Principal Investigator is not collecting any identifying information so your response will be anonymous. All data will be stored on a secured computer and remain confidential. Please note that regulatory agencies, the Boston College Institutional Review Board, and the Boston College internal auditors may review research records.

You participation is voluntary. If you choose not to participate it will not affect your relations with Boston College/[Your Institution]. You are free to withdraw or skip questions for any reason. There are no penalties for withdrawing or skipping questions.

If you have questions or concerns concerning this research you may contact the Principal Investigator Scott Radimer at scott.radimer@bc.edu or 617-870-3919, **or his Faculty Advisor Dr. Heather Rowan-Kenyon at** heather.rowan-kenyon@bc.edu **or 617-552-4200.** If you have questions about your rights as a research participant, you may contact the Office for Research Protections, Boston College, at 617-552-4778 or irb@bc.edu.

This study was reviewed by the Boston College Institutional Review Board and its approval was granted on *[insert approval date]*.

You are encouraged to print this form for your records.

If you agree to the statements above and agree to participate in this study, please press the "Consent Given" button below.

In this country, people come from many different cultures and there are many different words to describe the different backgrounds or ethnic groups that people come from. Some examples of the names of ethnic groups are Hispanic, Black, Asian American, Native American, Irish- American, and White. These questions are about your ethnicity or ethnic group.

I understand pretty well what my ethnic group membership means to me.

Strongly Disagree
Disagree
Agree
Strongly Agree

I have a strong sense of belonging to my own ethnic group.

Strongly Disagree
Disagree
Agree
Strongly Agree

I have spent time trying to find out more about my ethnic group, such as its history, traditions, and customs.

Strongly Disagree
Disagree
Agree
Strongly Agree

I have often done things that will help me understand my ethnic background better.

Strongly Disagree
Disagree
Agree
Strongly Agree

I have often talked to other people in order to learn more about my ethnic group.

Strongly Disagree
Disagree
Agree
Strongly Agree

I feel a strong attachment towards my own ethnic group.

Strongly Disagree
Disagree
Agree
Strongly Agree

The following pages contain a series of statements about how people might think, feel or behave. The statements are designed to measure attitudes, beliefs, and behaviors associated with both traditional and non-traditional masculine gender roles.

Thinking about your own actions, feelings and beliefs, please indicate how much you personally agree or disagree with each statement.

There are no right or wrong responses to the statements. You should give the responses that most accurately describe your personal actions, feelings and beliefs. It is best if you respond with your first impression when answering.

In general, I will do anything to win

Strongly Disagree
Disagree
Agree
Strongly Agree

If I could, I would frequently change sexual partners

Strongly Disagree
Disagree
Agree
Strongly Agree

I hate asking for help

Strongly Disagree
Disagree
Agree
Strongly Agree

I believe that violence is never justified

Strongly Disagree
Disagree
Agree
Strongly Agree

Being thought of as gay is not a bad thing

Strongly Disagree
Disagree
Agree
Strongly Agree

In general, I do not like risky situations

Strongly Disagree
Disagree
Agree
Strongly Agree

Winning is not my first priority

Strongly Disagree
Disagree
Agree
Strongly Agree

I enjoy taking risks

Strongly Disagree
Disagree
Agree
Strongly Agree

I am disgusted by any kind of violence

Strongly Disagree
Disagree
Agree
Strongly Agree

I ask for help when I need it

Strongly Disagree
Disagree
Agree
Strongly Agree

My schoolwork is the most important part of my life

Strongly Disagree

Disagree
Agree
Strongly Agree

I would only have sex if I was in a committed relationship

Strongly Disagree
Disagree
Agree
Strongly Agree

I bring up my feelings when talking to others

Strongly Disagree
Disagree
Agree
Strongly Agree

I would be furious if someone thought I was gay

Strongly Disagree
Disagree
Agree
Strongly Agree

I don't mind losing

Strongly Disagree
Disagree
Agree
Strongly Agree

I take risks

Strongly Disagree
Disagree
Agree
Strongly Agree

It would not bother me at all if someone thought I was gay

Strongly Disagree
Disagree
Agree
Strongly Agree

I never share my feelings

Strongly Disagree
Disagree
Agree
Strongly Agree

Sometimes violent action is necessary

Strongly Disagree
Disagree
Agree
Strongly Agree

In general, I control the women in my life

Strongly Disagree
Disagree
Agree
Strongly Agree

I would feel good if I had many sexual partners

Strongly Disagree
Disagree
Agree
Strongly Agree

It is important for me to win

Strongly Disagree
Disagree
Agree
Strongly Agree

I don't like giving all my attention to work

Strongly Disagree
Disagree
Agree
Strongly Agree

It would be awful if people thought I was gay

Strongly Disagree
Disagree

Agree
Strongly Agree

I like to talk about my feelings

Strongly Disagree
Disagree
Agree
Strongly Agree

I never ask for help

Strongly Disagree
Disagree
Agree
Strongly Agree

More often than not, losing does not bother me

Strongly Disagree
Disagree
Agree
Strongly Agree

I frequently put myself in risky situations

Strongly Disagree
Disagree
Agree
Strongly Agree

Women should be subservient to men

Strongly Disagree
Disagree
Agree
Strongly Agree

I am willing to get into a physical fight if necessary

Strongly Disagree
Disagree
Agree
Strongly Agree

I feel good when schoolwork is my first priority

Strongly Disagree
Disagree
Agree
Strongly Agree

I tend to keep my feelings to myself

Strongly Disagree
Disagree
Agree
Strongly Agree

Winning is not important to me

Strongly Disagree
Disagree
Agree
Strongly Agree

Violence is almost never justified

Strongly Disagree
Disagree
Agree
Strongly Agree

I am happiest when I'm risking danger

Strongly Disagree
Disagree
Agree
Strongly Agree

It would be enjoyable to date more than one person at a time

Strongly Disagree
Disagree
Agree
Strongly Agree

I would feel uncomfortable if someone thought I was gay

Strongly Disagree
Disagree
Agree

Strongly Agree

I am not ashamed to ask for help

Strongly Disagree
Disagree
Agree
Strongly Agree

Schoolwork comes first

Strongly Disagree
Disagree
Agree
Strongly Agree

I tend to share my feelings

Strongly Disagree
Disagree
Agree
Strongly Agree

No matter what the situation I would never act violently

Strongly Disagree
Disagree
Agree
Strongly Agree

Things tend to be better when men are in charge

Strongly Disagree
Disagree
Agree
Strongly Agree

It bothers me when I have to ask for help

Strongly Disagree
Disagree
Agree
Strongly Agree

I love it when men are in charge of women

Strongly Disagree
Disagree
Agree
Strongly Agree

I hate it when people ask me to talk about my feelings

Strongly Disagree
Disagree
Agree
Strongly Agree

I try to avoid being perceived as gay

Strongly Disagree
Disagree
Agree
Strongly Agree

Below are a series of statements with which you may either agree or disagree. For each statement, please indicate the degree of your agreement/disagreement.

Some groups of people are simply inferior to other groups.

Strongly Disagree
Disagree
Somewhat Disagree
Neither Agree nor Disagree
Somewhat Agree
Agree
Strongly Agree

In getting what you want, it is sometimes necessary to use force against other groups.

Strongly Disagree
Disagree
Somewhat Disagree
Neither Agree nor Disagree
Somewhat Agree
Agree
Strongly Agree

It's OK if some groups have more of a chance in life than others.

Strongly Disagree
Disagree

Somewhat Disagree
Neither Agree nor Disagree
Somewhat Agree
Agree
Strongly Agree

To get ahead in life, it is sometimes necessary to step on other groups.

Strongly Disagree
Disagree
Somewhat Disagree
Neither Agree nor Disagree
Somewhat Agree
Agree
Strongly Agree

If certain groups stayed in their place, we would have fewer problems.

Strongly Disagree
Disagree
Somewhat Disagree
Neither Agree nor Disagree
Somewhat Agree
Agree
Strongly Agree

It's probably a good thing that certain groups are at the top and other groups are at the bottom.

Strongly Disagree
Disagree
Somewhat Disagree
Neither Agree nor Disagree
Somewhat Agree
Agree
Strongly Agree

Inferior groups should stay in their place.

Strongly Disagree
Disagree
Somewhat Disagree
Neither Agree nor Disagree
Somewhat Agree
Agree
Strongly Agree

Sometimes other groups must be kept in their place.

Strongly Disagree
Disagree
Somewhat Disagree
Neither Agree nor Disagree
Somewhat Agree
Agree
Strongly Agree

It would be good if groups could be equal.

Strongly Disagree
Disagree
Somewhat Disagree
Neither Agree nor Disagree
Somewhat Agree
Agree
Strongly Agree

Group equality should be our ideal.

Strongly Disagree
Disagree
Somewhat Disagree
Neither Agree nor Disagree
Somewhat Agree
Agree
Strongly Agree

All groups should be given an equal chance in life.

Strongly Disagree
Disagree
Somewhat Disagree
Neither Agree nor Disagree
Somewhat Agree
Agree
Strongly Agree

We should do what we can to equalize conditions for different groups.

Strongly Disagree
Disagree
Somewhat Disagree

Neither Agree nor Disagree
Somewhat Agree
Agree
Strongly Agree

We should have increased social equality.

Strongly Disagree
Disagree
Somewhat Disagree
Neither Agree nor Disagree
Somewhat Agree
Agree
Strongly Agree

We would have fewer problems if we treated people more equally.

Strongly Disagree
Disagree
Somewhat Disagree
Neither Agree nor Disagree
Somewhat Agree
Agree
Strongly Agree

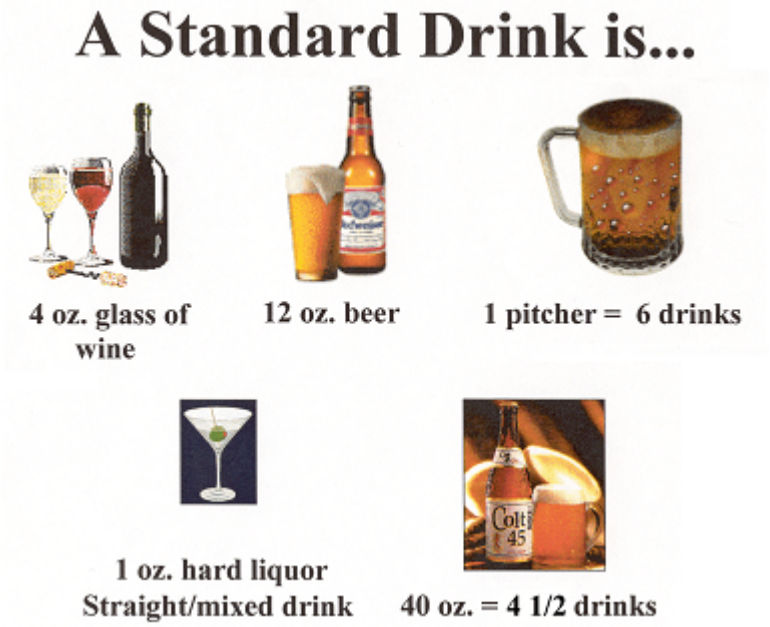
We should strive to make incomes as equal as possible.

Strongly Disagree
Disagree
Somewhat Disagree
Neither Agree nor Disagree
Somewhat Agree
Agree
Strongly Agree

No one group should dominate in society.

Strongly Disagree
Disagree
Somewhat Disagree
Neither Agree nor Disagree
Somewhat Agree
Agree
Strongly Agree

For the questions below, to be as accurate as possible, please keep in mind what one standard drink is considered.



INSTRUCTIONS FOR RECORDING DRINKING DURING **A TYPICAL WEEK** IN THE CALENDAR BELOW. PLEASE FILL-IN YOUR DRINKING RATE AND TIME DRINKING DURING A TYPICAL WEEK IN THE LAST 3 MONTHS.

First, think of a typical week in the last 30 days you. (Where did you live? What were your regular weekly activities? Were you working or going to school? Etc.) Try to remember as accurately as you can, how much and for how long you typically drank in a week during that one-month period?

For each day of the week in the calendar below, fill in the number of standard drinks typically consumed on that day in the upper box and the typical number of hours you drank that day in the lower box.

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Number of Drinks							
Number of Hours Drinking							

INSTRUCTIONS FOR RECORDING DRINKING FOR YOUR **HEAVIEST DRINKING WEEK** IN THE CALENDAR BELOW, PLEASE FILL-IN YOUR DRINKING RATE AND TIME DRINKING DURING YOUR HEAVIEST DRINKING WEEK IN THE LAST 3 MONTHS.

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Number of Drinks							
Number of Hours Drinking							

First, think of your heaviest drinking week in the last 30 days. (Where did you live? What were your regular weekly activities? Where you working or going to school? Etc.) Try to remember as accurately as you can, how much and for how long did you drink during your heaviest drinking week in that one-month period?

For each day of the week in the calendar below, fill in the number of standard drinks typically consumed on that day in the upper box and the typical number of hours you drank that day in the lower box.

In terms of experiences ***after drinking***, have you ever:

	Yes	**No**
Blacked out		
Been arrested for driving while intoxicated (DWI)?		
Had problems with police or campus authorities not related to DWI? (noise violations, fights, etc.)		
Injured yourself or someone else?		
Had an accident other than driving related?		
Broken things or damaged property?		

Appendix C: Permission to Use Inventories

Anthony D. Ong
To: Scott Radimer
Request for MEIM-R

April 29, 2015 at 6:09 AM
Important

AD

Dear Scott,

Thank you for your interest. I have attached the 2007 article and also a copy of the MEIM-R with some additional information. You are welcome to use the measure in your research.

Sincerely,

Anthony Ong

07-JCP-EID-ConcMeas.pdf

MEIM-R-2007.doc

Collins, R Lorraine
To: Scott Radimer
Daily Drinking Questionnaire (DDQ)

April 27, 2015 at 10:18 AM
Inbox - BC Google Apps

CR

Thank you for your interest in the DDQ. The DDQ assesses typical drinking during each of the seven days of the week. Researchers then use the estimates for each day to generate numbers that represented typical drinking per week (by adding across the seven days), typical drinking per month (by multiplying the weekly total by 4) and so on. You have my permission to use the DDQ in your research.

I have attached a file (labeled DDQ items) that contains the items from the DDQ, which we typically embed within a "General Information Questionnaire" (GIQ). The GIQ items that are specific to the DDQ are questions 13 and 14 (the graphic for item 13 can take a few seconds to appear on your screen). You are free to use any other aspects of the GIQ that you think might be helpful in your study. In case you need it, I also have attached a file (labeled DDQ) that contains information regarding the psychometrics of the DDQ. I hope these materials are helpful.

Good luck with your research!

R. Lorraine Collins, Ph.D.
Associate Dean for Research
Professor of Community Health and Health Behavior
School of Public Health and Health Professions
University at Buffalo
3435 Main Street, 305 Kimball Tower
Buffalo, New York 14214-8028
Direct phone: 716-829-6951
Fax: 716-829-6040
E-mail: lcollins@buffalo.edu
http://sphhp.buffalo.edu

*Permission to use CMNI granted verbally by Committee Reader Dr. James Mahalik

Pratto, Felicia
To: Scott Radimer
Re: Permission to use SDO

April 26, 2015 at 10:25 PM
Inbox - BC Google Apps

PF

You can definitely use it, free, without permission. That is why we published it! We have a short version too; see
http://intergroup.uconn.edu/cdi/sdoincontext.html

Dr. Felicia Pratto
Dept of Psychology 406 Babbidge Road University of Connecticut Storrs, CT 06269-1020 USA Dept fax: 001-860-486-3150

Most recent publication:
Prati, F., Moscatelli, S., Rubini, M., & Pratto, F. (March, 2015). Predicting Support for Arabs' Autonomy from Social Dominance: The Role of Identity Complexity and Dehumanization. *Political Psychology.*
Visit our lab website: http://intergroup.uconn.edu/

See More from Scott Radimer

Scott Radimer
To: FELICIA.PRATTO@uconn.edu
Permission to use SDO

April 24, 2015 at 2:42 PM
Archive - BC Google Apps (All Mail)

SR

Hello Dr. Pratto,

I am a PhD student in Higher Education at Boston College working on my dissertation proposal, and I was hoping that I could have your permission to use the 16-item Social Dominance Orientation scale from Appendix C of Pratto, Sidanius, Stallworth & Malle (1994). I am researching how masculine norms, ethnic identity, and social dominance orientation predict alcohol consumption by undergraduate men. If you could let me know at your earliest convenience if it would be ok for me to use the instrument, and if so, if there were any steps I needed to complete to gain permission to use it, I would greatly appreciate it.

Thank you very much for your time,

Scott Radimer

Appendix D: Factor Loadings

Table D.1
Social Dominance Orientation Factor Loadings

Question	Group Based Dominance	Opposition to Equality
Some groups of people are simply inferior to other groups.	.718	
In getting what you want, it is sometimes necessary to use force against other groups.	.551	
It's OK if some groups have more of a chance in life than others.	.583	
To get ahead in life, it is sometimes necessary to step on other groups.	.586	
If certain groups stayed in their place, we would have fewer problems.	.755	
It's probably a good thing that certain groups are at the top and other groups are at the bottom.	.784	
Inferior groups should stay in their place.	.744	
Sometimes other groups must be kept in their place.	.727	
It would be good if groups could be equal		.742
Group equality should be our ideal		.766
All groups should be given an equal chance in life		.582
We should do what we can to equalize conditions for different groups		.801
We should have increased social equality		.806
We would have fewer problems if we treated people more equally		.646
We should strive to make incomes as equal as possible		.586
No one group should dominate in society		.525

Note = Bolded questions were reverse coded

Table D.2
Revised Multigroup Ethnic Identity Measure Factor Loadings

Question	Exploration	Commitment
I have spent time trying to find out more about my ethnic group, such as its history, traditions, and customs.	.581	
I have often done things that will help me understand my ethnic background better.	.850	
I understand pretty well what my ethnic group membership means to me.	.763	
I have a strong sense of belonging to my own ethnic group.		.789
I have often talked to other people in order to learn more about my ethnic group.		.584
I feel a strong attachment towards my own ethnic group.		.914

Table D.3
Conformity to Masculine Norms Inventory-46 Factor Loadings

Questions	Winning	Emotional Control	Risk Taking	Violence
In general, I will do anything to win	.640			
Winning is not my first priority	.694			
I don't mind losing	.775			
It is important for me to win	.766			
More often than not, losing does not bother me	.766			
Winning is not important to me	.743			
I bring up my feelings when talking to others		.769		
I never share my feelings		.723		
I like to talk about my feelings		.806		
I tend to keep my feelings to myself		.748		
I tend to share my feelings		.863		
I hate it when people ask me to talk about my feelings		.664		
In general, I do not like risky situations			.744	
I enjoy taking risks			.797	
I take risks			.705	
I frequently put myself in risky situations			.694	
I am happiest when I'm risking danger			.621	
I believe that violence is never justified				.793
I am disgusted by any kind of violence				.700
Sometimes violent action is necessary				.704
I am willing to get into a physical fight if necessary				.658
Violence is almost never justified				.686
No matter what the situation I would never act violently				.703

Questions	Power Over Women
In general, I control the women in my life	.644
Women should be subservient to men	.780
Things tend to be better when men are in charge	.732
I love it when men are in charge of women	.793

Table D.3
Conformity to Masculine Norms Inventory-46 Factor Loadings (Continued)

Questions	Playboy	Self-Reliance	Primacy of (School) Work	Heterosexual Presentation
If I could, I would frequently change sexual partners	.820			
I would only have sex if I was in a committed relationship	.628			
I would feel good if I had many sexual partners	.830			
It would be enjoyable to date more than one person at a time	.588			
I hate asking for help		.834		
I ask for help when I need it		.695		
I never ask for help		.662		
I am not ashamed to ask for help		.693		
It bothers me when I have to ask for help		.741		
My school work is the most important part of my life			.712	
I don't like giving all my attention to work			.346	
I feel good when school work is my first priority			.722	
School Work comes first			.749	
Being thought of as gay is not a bad thing				.733
I would be furious if someone thought I was gay				.792
It would not bother me at all if someone thought I was gay				.800
It would be awful if people thought I was gay				.816
I would feel uncomfortable if someone thought I was gay				.817
I try to avoid being perceived as gay				.652

Note = Bolded questions were reverse coded

Appendix E: Figures

Figure E.1

Number of Drinks in a Typical Week

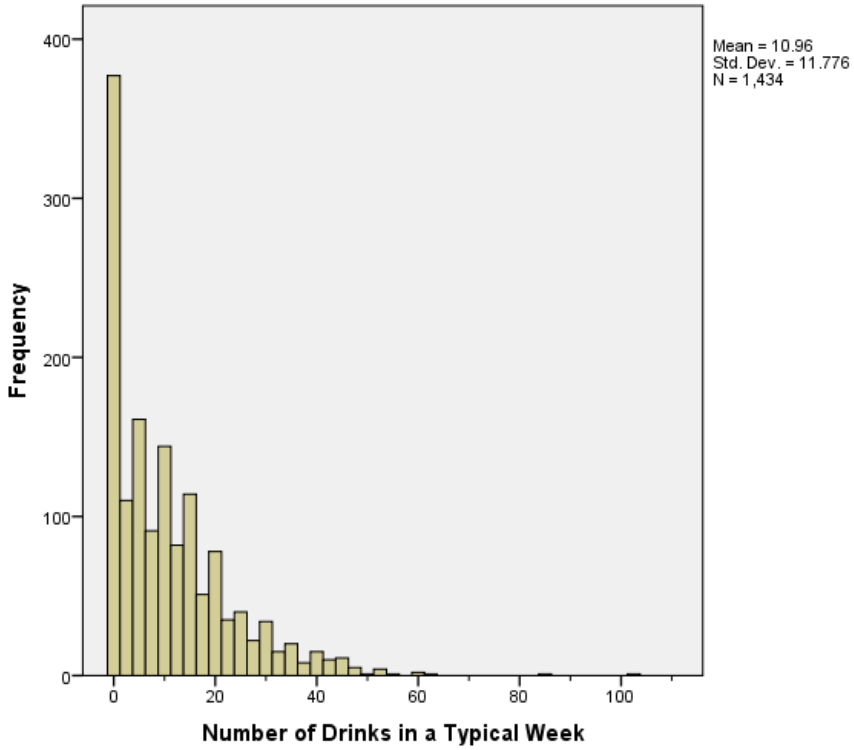


Figure E.2
Number of Drinks For Heaviest Week

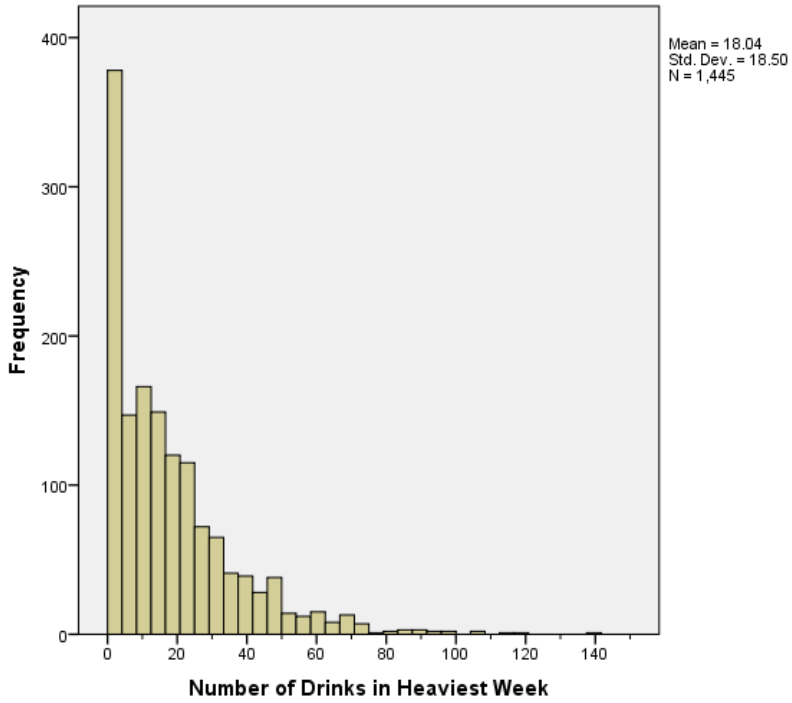
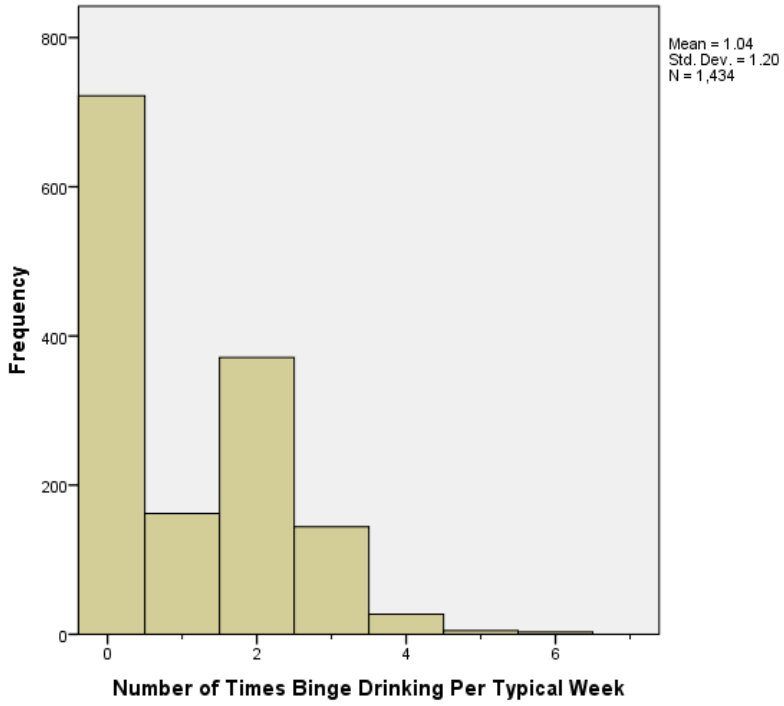


Figure E.3
Number of Times Binge Drinking per Typical Week



Appendix F: Multicollinearity & Intercorrelations

Table F.1
Variance Inflation Factor for Typical Week Drinks

Variable	VIF
Group Based Dominance	2.49
Power Over Women	2.02
Commitment	2.00
Opposition to Equality	1.99
Exploration	1.95
Heterosexual Presentation	1.74
Asian * Group Based Dominance	1.36
Asian * Heterosexual Presentation	1.35
Winning	1.34
Playboy	1.33
Emotional Control	1.32
Self-Reliance	1.30
Violence	1.28
Hispanic	1.26
Risk Taking	1.25
Hispanic * Playboy	1.21
Asian	1.18
Other Race	1.17
Intramural	1.13
Primacy of (School) Work	1.11
Black	1.08
Varsity	1.07
Multiracial * Playboy	1.07
Fraternity	1.06
Multiracial	1.05
Home	1.03

Note. VIF = Variance Inflation Factor
Mean VIF = 1.39

Table F.2
Variance Inflation Factor for Heaviest Week Drinks

Variable	**VIF**
Group Based Dominance	2.45
Power Over Women	2.00
Commitment	2.00
Opposition to Equality	2.00
Exploration	1.96
Heterosexual Presentation	1.74
Asian * Group Based Dominance	1.35
Asian * Heterosexual Presentation	1.34
Winning	1.33
Emotional Control	1.33
Playboy	1.33
Self-Reliance	1.30
Violence	1.27
Hispanic	1.26
Risk Taking	1.25
Hispanic * Playboy	1.21
Asian	1.18
Other Race	1.17
Intramural	1.13
Primacy of (School) Work	1.11
Black	1.08
Multiracial * Playboy	1.07
Varsity	1.07
Fraternity	1.06
Multiracial	1.05
Home	1.03

Note. VIF = Variance Inflation Factor
Mean VIF = 1.39

Table F.3
Variance Inflation Factor for Weekly Binge Drinking

Variable	**VIF**
Group Based Dominance	2.20
Power Over Women	2.02
Commitment	1.99
Opposition to Equality	1.96
Exploration	1.95
Heterosexual Presentation	1.73
Risk Taking	1.37
Winning	1.34
Emotional Control	1.32
Self-Reliance	1.30
Violence	1.27
Asian * Heterosexual Presentation	1.21
Hispanic	1.19
Playboy	1.18
Other Race	1.17
Asian	1.17
Asian * Risk Taking	1.13
Intramural	1.12
Primacy of (School) Work	1.10
Black	1.08
Varsity	1.07
Fraternity	1.06
Multiracial	1.04
Home	1.03

Note. VIF = Variance Inflation Factor
Mean VIF = 1.38

Table F.4
Variance Inflation Factors for Blacking Out

Variable	**VIF**
Group Based Dominance	2.17
Power Over Women	2.1
Commitment	2.01
Opposition to Equality	1.95
Exploration	1.95
Heterosexual Presentation	1.56
Risk Taking	1.34
Emotional Control	1.33
Self-Reliance	1.30
Winning	1.29
Violence	1.25
Hispanic	1.21
Other Race	1.19
Playboy	1.17
Hispanic * Power Over Women	1.16
Asian * Risk Taking	1.13
Asian	1.11
Work	1.10
Intramural	1.10
Black	1.08
Multiracial	1.04

Note. VIF = Variance Inflation Factor
Mean VIF = 1.41

Table F.5
Variance Inflation Factors for Problems with Authorities

Variable	**VIF**
Group Based Dominance	2.18
Power Over Women	2.01
Commitment	2.00
Opposition to Equality	1.95
Exploration	1.94
Heterosexual Presentation	1.57
Emotional Control	1.45
Self-Reliance	1.30
Winning	1.28
Violence	1.25
Risk Taking	1.22
Hispanic	1.19
Other Race	1.17
Playboy	1.17
Hispanic * Emotional Control	1.14
Primacy of (School) Work	1.11
Asian	1.11
Intramural	1.10
Black	1.08
Black * Power Over Women	1.05
Multiracial	1.04

Note. VIF = Variance Inflation Factor
Mean VIF = 1.40

Table F.6
Variance Inflation Factors for Injured Self or Others

Variable	**VIF**
Group Based Dominance	2.18
Power Over Women	2.13
Commitment	2.00
Opposition to Equality	1.97
Exploration	1.96
Heterosexual Presentation	1.55
Winning	1.34
Multiracial * Risk Taking	1.34
Emotional Control	1.33
Self-Reliance	1.30
Violence	1.30
Risk Taking	1.28
Multiracial * Violence	1.26
Playboy	1.22
Hispanic	1.19
Multiracial	1.19
Other Race	1.16
Primacy of (School) Work	1.16
Multiracial * Playboy	1.13
Asian * Power Over Women	1.12
Hispanic * Winning	1.12
Asian	1.10
Black	1.09
Black * Primacy of (School) Work	1.07

Note. VIF = Variance Inflation Factor
Mean VIF = 1.40

Table F.7
Variance Inflation Factors for Non-Driving Accident

Variable	VIF
Group Based Dominance	2.15
Commitment	1.99
Power Over Women	1.98
Opposition to Equality	1.94
Exploration	1.93
Heterosexual Presentation	1.53
Emotional Control	1.32
Self-Reliance	1.29
Winning	1.25
Violence	1.24
Risk Taking	1.21
Playboy	1.16
Non-White	1.11
Work	1.10
Hispanic	1.05
Fraternity House	1.01

Note. VIF = Variance Inflation Factor
Mean VIF = 1.46

Table F.8
Variance Inflation Factors for Broken Things or Damaged Property

Variable	**VIF**
Group Based Dominance	2.17
Commitment	1.99
Power Over Women	1.99
Opposition to Equality	1.95
Exploration	1.94
Heterosexual Presentation	1.56
Emotional Control	1.32
Self-Reliance	1.30
Winning	1.28
Violence	1.25
Risk Taking	1.22
Hispanic	1.19
Other Race	1.17
Playboy	1.16
Asian	1.11
Primacy of (School) Work	1.10
Intramural	1.10
Black	1.08
Multiracial	1.04

Note. VIF = Variance Inflation Factor
Mean VIF = 1.42

Table F.9
Intercorrelations of Independent Variables

Factor	1	2	3	4	5	6	7	8	9	10	11	12	13
1. OEQ	-												
2. GBD	.705**	-											
3. Exploration	-.037	.051	-										
4. Commitment	.097**	.183**	.661**	-									
5. Winning	.197**	.203**	-.003	.077**	-								
6. Emotional Control	.141**	.104**	-.104**	-.038	.146**	-							
7. Risk Taking	.108**	.163**	.060*	.054*	.184**	-0.031	-						
8. Violence	.265**	.310**	.002	.063*	.251**	.055*	.287**	-					
9. Power Over Women	.494**	.551**	.017	.179**	.302**	.172**	.212**	.279**	-				
10. Playboy	.068*	.125**	.013	.000	.150**	.011	.243**	.163**	.231**	-			
11. Self-Reliance	.106**	.091**	-.091**	-.035	.084**	.402**	-.030	.036	.090**	.059*	-		
12. Work	.016	.040	-.012	.037	.196**	.105**	-.096**	-.053	.043	.014	-.038	-	
13. Hetero Present	.388**	.380**	.014	.172**	.272**	.178**	.059*	.185**	.541**	-0.011	.033	.080**	-

Note. OEQ= Opposition to Equality; GBD = Group Based Dominance; Work = Primacy of (School) Work; Hetero Present = Heterosexual Presentation.
** = Correlation is significant at the .01 level (2-tailed), * = Correlation is significant at the .05 level (2-tailed).

References

ACHA. (2013). ACHA NCHA II Spring 2013 Reference Group Data Report.

ACHA. (2015). *Spring 2015 Reference Group Data Report*.

Agger, B. (1991). Critical theory, poststructuralism, postmodernism: Their sociological relevance. *Annual Review of Sociology*, *17*(1), 105–131.

Agger, B. (2014). *Cultural studies as critical theory*. Routledge.

Akrami, N., Ekehammar, B., & Yang-Wallentin, F. (2011). Personality and social psychology factors explaining sexism. *Journal of Individual Differences*, *32*(3), 143–160.

Alfonso, J., & Deschenes, S. D. (2013). Do drinking games matter? An examination by game type and gender in a mandated student sample. *The American Journal of Drug and Alcohol Abuse*, *39*(5), 312–9.

American College Health Association. (2014). *Spring 2014 Reference Group Executive Summary Table of Contents*. Hanover, MD.

Andes, S., Poet, K., & McWilliams, S. (2012). The culture of high-risk alcohol use among club and intramural athletes. *Journal of American College Health*, *60*(8), 556–61.

Asbrock, F., Sibley, C., & Duckitt, J. (2010). Right-wing authoritarianism and social dominance orientation and the dimensions of generalized prejudice: A longitudinal

test. *European Journal of Personality*, *24*, 324–340.

Azur, M., Stuart, E., Frangakis, C., & Leaf, P. (2011). Multiple imputation by chained equations: What is it and how does it work? *International Journal of Methods in Psychiatric Research*, *20*(1), 40–49.

Barry, A. E., Howell, S. M., Riplinger, A., & Piazza-Gardner, A. K. (2015). Alcohol use among college athletes: Do intercollegiate, club, or intramural student athletes drink differently? *Substance Use & Misuse*, *50*(3), 302–307.

Blume, A. W., Lovato, L. V, Thyken, B. N., & Denny, N. (2011). The relationship of microaggressions with alcohol use and anxiety among ethnic minority college students in a historically white institution. *Cultural Diversity & Ethnic Minority Psychology*, *18*(1), 45–54.

Bobzean, S., DeNobrega, A., & Perrotti, L. (2014). Sex differences in the neurobiology of drug addiction. *Experimental Neurology*, *259*, 64–74.

Borsari, B. E., & Carey, K. B. (1999). Understanding fraternity drinking: Five recurring themes in the literature, 1980-1998. *Journal of American College Health*, *48*(1), 30–7.

Bracey, J., Bámaca, M., & Umaña-Taylor, A. (2004). Examining ethnic identity and self-esteem among biracial and monoracial adolescents. *Journal of Youth and Adolescence*, *33*(2), 123–132.

Brannon, R., & Juni, S. (1984). A scale for measuring attitudes about masculinity. *JSAS*

Catalog of Selected Documents in Psychology, *14*(6).

Brown, S., Unger Hu, K., Mevi, A., Hedderson, M., Shan, J., Quesenberry, C., & Ferrara, A. (2014). The multigroup ethnic identity measure-revised: measurement invariance across racial and ethnic groups. *Journal of Counseling Psychology*, *61*(1), 154–61.

Brown, T., & Jones, L. (2001). *Action research and postmodernism: Congruence and critique.* Philadelphia: Open University Press.

Buss, A., & Perry, M. (1992). The agression questionnaire. *Journal of Personality and Social Psychology*, *63*(3), 452.

Butler, J. (1990). *Gender Trouble*. New York: Routledge.

Cahalan, D., Cisin, I., & Crossley, H. (1969). *American drinking practices: A national study of drinking behavior and attitudes*. New Brunswick, N.J.: Rutgers Center of Alcohol Studies.

Calder, J. (1998). Survey research methods. *Medical Education*, *32*(6), 638–652.

Capraro, R. (2000). Why college men drink: Alcohol, adventure, and the paradox of masculinity. *Journal of American College Health*, *48*(6), 307–315.

Carey, K., Scott-Sheldon, L., Carey, M., & DeMartini, K. (2007). Individual-level interventions to reduce college student drinking: A meta-analytic review. *Addictive Behaviors*, *32*(11), 2469–94.

Carter, A., Brandon, K., & Goldman, M. (2010). The college and noncollege experience: a review of the factors that influence drinking behavior in young adulthood. *Journal*

of Studies on Alcohol and Drugs, *71*(5), 742–750.

Case, K. A. (2007). Raising male privilege awareness and reducing sexism: An evaluation of diversity courses. *Psychology of Women Quarterly*, *31*(4), 426–435.

Center for Disease Control and Prevention. (2012). *Suicide facts at a glance*.

Chakawa, A., Butler, R., & Shapiro, S. (2015). Examining the psychometric validity of the Multigroup Ethnic Identity Measure-Revised (MEIM-R) in a community sample of African American and European American adults. *Cultural Diversity & Ethnic Minority Psychology*, *Advance on*.

Chen, A. (1999). Lives at the center of the periphery, lives at the periphery of the center: Chinese American masculinities and bargaining with hegemony. *Gender & Society*, *13*(5), 584–607.

Cialdini, R., & Trost, M. (1998). Social influence: Social norms, conformity and compliance. In D. Gilbert, S. Fiske, & G. Lindzey (Eds.), *The Handbook of Social Psychology,*.

Clarke, N., Kim, S., White, H., Jiao, Y., & Mun, E. (2013). Associations between alcohol use and alcohol-related negative conseuqneces among black and white college men and women. *Journal of Studies on Alcohol and Drugs*, *74*(4), 521–531.

Cohen, J. (1992). Statiscal Power Analysis. *Current Directions in Psychological Science*. Cambridge University Press.

Cokley, K. (2005). Racial(ized) Identity, Ethnic Identity, and Afrocentric Values:

Conceptual and Methodological Challenges in Understanding African American Identity. *Journal of Counseling Psychology*, *52*(4), 517–526.

Collins, R., Koutsky, J., Morsheimer, E., & MacLean, M. (2001). Binge drinking among underage college students: A test of a restraint-based conceptualization of risk for alcohol abuse. *Psychology of Addictive Behaviors*, *15*(4), 333–340.

Collins, R., & Lapp, W. (1992). The temptation and restraint inventory for measuring drinking restraint. *British Journal of Addiction*, *87*(4), 625–633.

Collins, R., Parks, G., & Marlatt, G. (1985). Social determinants of alcohol consumption: The effects of social interaction and model status on the self-administration of alcohol. *Journal of Consulting and Clinical Psychology*, *53*(2), 189–200.

Connell, R. (1987). *Gender and power*. Stanford, CA: Stanford University Press.

Connell, R., & Messerschmidt, J. (2005). Hegemonic masculinity: Rethinking the concept. *Gender & Society*, *19*(6), 829–859.

Cook, C., Heath, F., & Thompson, R. (2000). A meta-analysis of response rates in Web- or Internet-based surveys. *Educational and Psychological Measurement*, *60*(6), 821–836.

Cook, W., & Caetano, R. (2014). Ethnic drinking cultures, gender, and socioeconomic status in Asian American and Latino drinking. *Alcoholism: Clinical and Experimental Research*, *38*(12), 3043–3051.

Cooper, M. (1994). Motivations for alcohol use among adolescents: Development and

validation of a four-factor model. *Psychological Assessment*, *6*(2), 117–128.

Correia, C., Murphy, J., & Barnett, N. (2012). *College student alcohol abuse: A guide to assessment, intervention, and prevention*. Hoboken, New Jersey: John Wiley & Sons.

Courtenay, W. H. (2000). Constructions of masculinity and their influence on men's well-being: A theory of gender and health. *Social Science & Medicine*, *50*(10), 1385–401.

Crenshaw, K. (1989). Demarginalizing the intersection of race and sex: A Black feminist critique of antidiscrimination doctrine, feminist theory and antiracist politics. *U. Chi. Legal F.*, 139.

Creswell, J. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches.* (4th ed.). Thousand Oaks, CA: SAGE Publications.

Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*. London: SAGE Publications.

Cuellar, I., Arnold, B., & Maldonado, R. (1995). Acculturation rating scale for Mexican Americans-II: A revision of the original ARSMA scale. *Hispanic Journal of Behavioral Sciences*, *17*(3), 275–304.

Dambrun, M., Kamiejski, R., Haddadi, N., & Duarte, S. (2009). Why does social dominance orientation decrease with university exposure to the social sciences? The impact of institutional socialization and the mediating role of "geneticism."

European Journal of Social Psychology., *39*, 88–100.

Davies, J., McCrae, B., Frank, J., Dochnahl, A., Pickering, T., Harrison, B., … Wilson, K. (2000). Identifying male college students' perceived health needs, barriers to seeking help, and recommendations to help men adopt healthier lifestyles. *Journal of American College Health*, *48*(6), 259–267.

de Visser, R. O., & Smith, J. a. (2007). Alcohol consumption and masculine identity among young men. *Psychology & Health*, *22*(5), 595–614.

DeJong, W., & Langford, L. (2002). A typology for campus-based alcohol prevention: Moving toward environmental management strategies. *Journal of Studies on Alcohol and Drugs*.

Dejong, W., Larimer, M., Wood, M., & Hartman, R. (2009). NIAAA's rapid response to college drinking problems initiative: Reinforcing the use of evidence-based approaches in college alcohol prevention. *Journal of Studies on Alcohol and Drugs*, *Supplement*(16), 5–11.

Drury, B. J., & Kaiser, C. R. (2014). Allies against sexism: The role of men in confronting sexism. *Journal of Social Issues*, *70*(4), 637–652.

Eisler, R., & Skidmore, J. (1987). Masculine gender role stress scale development and component factors in the appraisal of stressful situations. *Behavior Modification*, *11*(2), 123–136.

Epstein, D. (1998). Marked men: Whiteness and masculinity. *Agenda*, (37), 49–59.

Fachini, A., Aliane, P., Martinez, E., & Furtado, E. (2012). Efficacy of brief alcohol screening intervention for college students (BASICS): A meta-analysis of randomized controlled trials. *Substance Abuse Treatment, Prevention, and Policy*, *7*, 40.

Fan, W., & Yan, Z. (2010). Factors affecting response rates of the web survey: A systematic review. *Computers in Human Behavior*, *26*(2), 132–139.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A. (2009). Statistical power analyses using G*Power 3.1: tests for correlation and regression analyses. *Behavior Research Methods*, *41*(4), 1149–1160.

Fleming, C., White, H., Haggerty, K., Abbott, R., & Catalano, R. (2012). Educational paths and substance use from adolescence into early adulthood. *Journal of Drug Issues*, *42*(2).

Foucault, M. (1980). *Power/knowledge: Selected interviews and other writings, 1971-1977.* (C. Gordon, Ed.). New York: Pantheon.

Fowler, F. (2009). *Survey research methods* (4th ed.). Thousand Oaks, CA: SAGE Publications.

Fox, J., & Tang, W. (2013). Sexism in online video games: The role of conformity to masculine norms and social dominance orientation. *Computers in Human Behavior*, *33*, 314–320.

Foxcroft, D., Moreira, M., Almedia Santimano, N., & Smith, L. (2015). *Social norms*

information for alcohol misuse in university and college students (Review).

Fraenkel, J., Wallen, N., & Hyun, H. (2012). *How to design and evaluate research in education* (8th ed.). New York: McGraw-Hill.

Freire, P. (2006). *Pedagogy of the oppressed*. New York: Continuum.

Galdas, P. M., Cheater, F., & Marshall, P. (2005). Men and health help-seeking behaviour: Literature review. *Journal of Advanced Nursing*, *49*(6), 616–623.

Gebotys, R. (2010). Multicollinearity. In A. Mills, G. Durepos, & E. Wiebe (Eds.), *Encyclopedia of case study research* (pp. 600–602). Thousand Oaks, CA: SAGE Publications.

Giroux, H. (2008). Rethinking the boundaries of educational discourse: Modernism, postmodernism, and feminism. In *Pedagogy And The Politics Of Hope Theory, Culture, And Schooling: A Critical Reader*. New York: Westview Press.

Grace, A. (1997). Where critical postmodern theory meets practice: Working in the intersection of instrumental, social, and cultural education. *Studies in Continuing Education*, *19*(1), 51–70.

Graham, J. W. (2009). Missing data analysis: Making it work in the real world. *Annual Review of Psychology*, *60*, 549–576.

Grossbard, J., Geisner, I. M., Neighbors, C., Kilmer, J. R., & Larimer, M. E. (2007). Are drinking games sports? College athlete participation in drinking games and alcohol-related problems. *Journal of Studies on Alcohol and Drugs*, *68*(1), 97–105.

Ham, L., & Hope, D. (2003). College students and problematic drinking: A review of the literature. *Clinical Psychology Review*, *23*(5), 719–759.

Hardin, M. (2002). Altering masculinities: The spanish conquest and the evolution of the Latin American machismo. *International Journal of Sexuality & Gender Studies*, *7*(1), 1–22.

Harper, S., Harris, F., & Mmeje, K. (2005). A theoretical model to explain the overrepresentation of college men among campus judicial offenders: Implications for campus administrators. *Journal of Student Affairs Research and Practice*, *42*(4), 565–589.

Harris, F. (2008). Deconstructing masculinity : A qualitative study of college men's masculine conceptualizations and gender performance. *NASPA Journal*, *45*(4), 453–474.

Helms, J. (1996). 4.Toward a methodology for measuring and assessing racial as distinguished from ethnic identity. *Multicultural Assessment in Counseling and Clinical Psychology.*

Hilbe, J. (2011). *Negative Binomial Regression* (2nd ed.). Cambridge, UK: Cambridge University Press.

Hingson, R., Heeren, T., Winter, M. R., & Wechsler, H. (2003). Early age of first drunkenness as a factor in college students' unplanned and unprotected sex attributable to drinking. *Pediatrics*, *111*(1), 34–41.

Hingson, R., Heeren, T., Winter, M., & Wechsler, H. (2005). Magnitude of alcohol-related mortality and morbidity among U.S. college students ages 18-24: Changes from 1998 to 2001. *Annual Review of Public Health*, *26*, 259–79.

Hingson, R., Heeren, T., Zakocs, R., Kopstein, A., & Wechsler, H. (2002). Magnitude of alcohol-related mortality and morbidity among U.S. college students ages 18-24. *Journal of Studies on Alcohol*.

Hingson, R., & White, A. (2010). Magnitude and prevention of college alcohol and drug misuse: U.S. college students ages 18-24. In J. Kay & V. Schwartz (Eds.), *Mental Health in the college community*. London: Wiley.

Hingson, R., & White, A. (2012). Prevalence and consequences of college student alcohol use. In C. Correia, J. Murphy, & N. Barnett (Eds.), *College student alcohol abuse: A guide to assessment, intervention, and prevention.* Hoboken, New Jersey: John Wiley & Sons.

Hingson, R., Zha, W., & Weitzman, E. R. (2009). Magnitude of and trends in alcohol-related mortality and morbidity among U.S. college students ages 18-24, 1998-2005. *Journal of Studies on Alcohol and Drugs. Supplement*, (16), 12–20.

Ho, A., Sidanius, J., Pratto, F., Levin, S., Thomsen, L., Kteily, N., & Sheehy-Skeffington, J. (2012). Social dominance orientation: Revisiting the structure and function of a variable predicting social and political attitudes. *Personality and Social Psychology Bulletin*, *38*, 583–606.

Holley, L., Kulis, S., Marsiglia, F., & Keith, V. (2006). Ethnicity versus ethnic identity :

What predicts substance use norms and behaviors? *Journal of Social Work Practice in the Addictions*, *6*(3), 53–79.

hooks, b. (1984). *Feminist Theory: from margin to center* (1st ed.). Boston: South End Press.

Horton, N. J., & Kleinman, K. P. (2007). Much ado about nothing: A comparison of missing data methods and software to fit incomplete data regression models. *The American Statistician*, *61*(1), 79–90.

Hsu, K., & Iwamoto, D. K. (2014). Testing for measurement invariance in the conformity to masculine norms-46 across White and Asian American college men : Development and validity of the CMNI-29. *Psychology of Men & Masculinity*, *15*(4), 397–406.

Human Rights Campaign. (2015). Collecting transgender-inclusive gender data in workplace and other surveys. Retrieved from http://www.hrc.org/resources/entry/collecting-transgender-inclusive-gender-data-in-workplace-and-other-surveys

Iwamoto, D., Cheng, A., Lee, C., Takamatsu, S., & Gordon, D. (2011). "Man-ing" up and getting drunk: The role of masculine norms, alcohol intoxication and alcohol-related problems among college men. *Addictive Behaviors*, *36*(9), 906–11.

Iwamoto, D., Corbin, W., Lejuez, C., & MacPherson, L. (2014). College men and alcohol use: Positive alcohol expectancies as a mediator between distinct masculine norms and alcohol use. *Psychology of Men & Masculinity*, *15*(1), 29–39.

Iwamoto, D., & Smiler, A. (2013). Alcohol makes you macho and helps you make friends: The role of masculine norms and peer pressure in adolescent boys' and girls' alcohol use. *Substance Use & Misuse*, *48*(5), 371–378.

Iwamoto, D., Takamatsu, S., & Castellanos, J. (2012). Binge drinking and alcohol-related problems among U.S.-born Asian Americans. *Cultural Diversity & Ethnic Minority Psychology*, *18*(3), 219–227.

Jost, J., & Thompson, E. (2000). Group-based dominance and opposition to equality as independent predictors of self-esteem, ethnocentrism, and social policy attitudes among African Americans and European Americans. *Journal of Experimental Social Psychology*, *36*(3), 209–232.

Kelly, C. (2008). White men: An exploration of the intersections of masculinity, whiteness and colonialism and the engagement of counter-hegemonic projects. In E. Uchendu (Ed.), *Masculinity in Contemporary Africa* (pp. 110–132). Oxford, UK: African Books Collective.

Kiesling, S. (2001). Stances of whiteness and hegemony in fraternity men's discourse. *Journal of Linguistic Anthropology*, *11*(1), 101–115.

Kilgore, D. (2001). Critical and postmodern perspectives on adult learning. *New Directions for Adult and Continuing Education*, *2001*(89), 53–62.

Kimmel, M. (2004). Masculinity as homophobia: Fear, shame, and silence in the construction of gender identity. In P. Rothenberg (Ed.), *Race, Class, and Gender in the United States: An Integrated Study*. New York: Worth.

Kimmel, M. (2008). *Guyland: The perilous world where bous become men*. New York: Harper.

Kimmel, M., & Messner, M. (2010). Introduction. In M. Kimmel & M. Messner (Eds.), *Men's Lives* (8th ed., p. xi). Boston: Allyn & Bacon.

Knight, J., Wechsler, H., & Kuo, M. (2002). Alcohol abuse and dependence among U.S. college students*. *Journal of Studies on Alcohol*.

Koo, K., Stephens, K., Lindgren, K., & George, W. (2012). Misogyny, acculturation, and ethnic identity: Relation to rape-supportive attitudes in Asian American college men. *Archives of Sexual Behavior*, *41*(4), 1005–1014.

Kulis, S., Marsiglia, F., Kopak, A., Olmsted, M., & Crossman, A. (2012). Ethnic identity and substance use among Mexican-heritage preadolescents: Moderator effects of gender and time in the United States. *The Journal of Early Adolescence*, *32*(2), 165–199.

LaBrie, J., Pedersen, E., Lamb, T., & Quinlan, T. (2007). A campus-based motivational enhancement group intervention reduces problematic drinking in freshmen male college students. *Addictive Behaviors*, *32*(5), 889–901.

Larimer, M., Turner, A., Mallett, K., & Markman Geisner, I. (2004). Predicting drinking behavior and alcohol-related problems among fraternity and sorority members: Examining the role of descriptive and injunctive norms. *Journal of Addictive Behaviors*, *18*(3), 203–212.

Lawrence, S., Abel, E., & Hall, T. (2010). Protective strategies and alcohol use among college students: Ethnic and gender differences. *Journal of Ethnicity in Substance Abuse*, *9*(4), 284–300.

Leichliter, J., Meilman, P. W., Presley, C. A., & Cashin, J. R. (1998). Alcohol use and related consequences among students with varying levels of involvement in college athletics. *Journal of American College Health*, *46*(6), 257.

Lemeshow, S., & Hosmer, D. (1982). A review of goodness of fit statistics for use in the development of logistic regression models. *American Journal of Epidemiology*, *115*(1), 92–106.

Lemle, R., & Mishkind, M. E. (1989). Alcohol and Masculinity. *Journal of Substance Abuse Treatment*, *6*(4), 213–22.

Levant, R., Smalley, K., Aupont, M., House, A., Richmond, K., & Noronha, D. (2007). Initial validation of the male role norms inventory-revised (MRNI-R). *The Journal of Men's Studies*, *15*(1), 83–100.

Levin, S., & Sidanius, J. (1999). Social dominance and social identity in the United States and Israel: Ingroup favoritism or outgroup derogation? *Political Psychology*, *20*(1), 99–126.

Li, T., Beard, J., Orr, W., Kwo, P., & Ramchandani, V. (1998). Gender and ethnic differences in alcohol metabolism. *Alcoholism: Clinical and Experimental Research*, *22*(3), 771–772.

Little, R. (1988). A test of missing completely at random for generalised estimating equations with missing data. *Journal of the American Statistical Association*, *83*(4), 1198–1202.

Little, R., & Rubin, D. (2002). *Statistical analysis with missing data* (2nd ed.). Hoboken, New Jersey: Wiley.

Liu, W., & Iwamoto, D. (2007). Conformity to masculine norms, Asian values, coping strategies, peer group influences and substance use among Asian American men. *Psychology of Men & Masculinity*, *8*(1), 25–39.

Long, J. S., & Freese, J. (2014). *Regression models for categorical dependent variables using Stata* (3rd ed.). Stata Press.

Love, A. S., Yin, Z., Codina, E., & Zapata, J. T. (2006). Ethnic identity and risky health behaviors in school-age Mexican-American children. *Psychological Reports*, *98*, 735–744.

Luczak, S., Shea, S., Carr, L., Li, T., & Wall, T. (2002). Binge drinking in Jewish and non-Jewish White college students. *Alcoholism: Clinical and Experimental Research*, *26*(12), 1773–8.

Luczak, S., Wall, T., Shea, S., Byun, S., & Carr, L. (2001). Binge drinking in Chinese, Korean, and White college students: Genetic and ethnic group differences. *Psychology of Addictive Behaviors*, *15*(4), 306–309.

Lundahl, B., Kunz, C., Brownell, C., Tollefson, D., & Burke, B. (2010). A meta-analysis

of motivational interviewing: Twenty-five years of empirical studies. *Research on Social Work Practice*, *20*(2), 137–160.

Lundy, B. L. (2007). Service learning in life-span developmental psychology: Higher exam scores and increased empathy. *Teaching of Psychology*, *34*(1), 23–27.

Lyotard, J. (1984). *The postmodern condition: A report on knowledge (G. Bennington & B. Massumi, trans)*. Minneapolis, MN: University of Minnesota Press.

Mahalik, J., Burns, S., & Syzdek, M. (2007). Masculinity and perceived normative health behaviors as predictors of men's health behaviors. *Social Science & Medicine (1982)*, *64*(11), 2201–9.

Mahalik, J., Locke, B., Ludlow, L., Diemer, M., Scott, R., Gottfried, M., & Freitas, G. (2003). Development of the conformity to masculine norms inventory. *Psychology of Men & Masculinity*, *4*(1), 3–25.

Manfreda, K. L., Bosnjak, M., Berzelak, J., Hass, I., & Vehovar, V. (2008). Web surveys versus other survey modes: A meta-analysis comparing response rates. *International Journal of Market Research*, *50*(1), 79–104.

Marsiglia, F. F., Kulis, S., & Hecht, M. L. (2001). Ethnic labels and ethnic identity as predictors of drug use among middle school students in the Southwest. *Journal of Research on Adolescence*, *11*(1), 21–48.

Martens, M. P., Dams-O'Connor, K., & Beck, N. C. (2006). A systematic review of college student-athlete drinking: Prevalence rates, sport-related factors, and

interventions. *Journal of Substance Abuse Treatment*, *31*(3), 305–16. http://doi.org/10.1016/j.jsat.2006.05.004

Martin, P., & Hummer, R. (1989). Fraternities and Rape on Campus. *Gender and Society*, *3*(4), 457–473.

Martin, S. (2001). The links between alcohol, crime and the criminal justice system: explanations, evidence and interventions. *The American Journal on Addictions / American Academy of Psychiatrists in Alcoholism and Addictions*, *10*(2), 136–58.

Mathematics, E. of. (2016). Bernoulli trials. Retrieved January 1, 2016, from https://www.encyclopediaofmath.org/index.php/Bernoulli_trials

Mattern, J., & Neighbors, C. (2004). Social norms campaigns: examining the relationship between changes in perceived norms and changes in drinking levels. *Journal of Studies on Alcohol*, *65*(4), 489.

McCabe, S. (2002). Gender Differences in Collegiate Risk Factors for Heavy Episodic Drinking. *Journal of Studies on Alcohol*.

McClintock, A. (1995). *Imperial leather: Race, gender, and sexuality in the colonial contest.* Routledge.

Meilman, P. W., Leichliter, J., & Presley, C. A. (1999). Greeks and athletes : Who drinks more ? *Journal of American College Health*, *47*(4).

Miller, E., Neal, D., Roberts, L., Baer, J., Cressler, S., Metrik, J., & Marlatt, G. (2002). Test-retest reliability of alcohol measures: Is there a difference between Internet-

based assessment and traditional methods? *Psychology of Addictive Behaviors*, *16*(1), 56–63.

National Center for Health Statistics. (2007). *Health, United States 2007: With chartbook on trends in the health of Americans*.

National Institute on Alcohol Abuse and Alcoholism. (2002). *A call to action: Changing the culture of drinking at U.S. colleges*.

National Institute on Alcohol Abuse and Alcoholism. (2007). *What colleges need to know now: An update on college drinking research*.

Nelson, S., & Engstrom, C. M. (2013). Fraternity influences on binge drinking and grade point averages. *Journal of Student Affairs Research and Practice*, *50*(4), 393–415. http://doi.org/10.1515/jsarp-2013-0028

Nelson, T. F., & Wechsler, H. (2001). Alcohol and college athletes. *Medicine & Science in Sports & Exercise*, *33*(1), 43–47.

Nulty, D. (2008). The adequacy of response rates to online and paper surveys: what can be done? *Assessment & Evaluation in Higher Education*, *33*(3), 301–314.

O'Hare, T. (1995). Brief report differences in asian and white drinking: Consumption level , drinking contexts , and expectancies. *Addictive Behaviors*, *20*(2), 261–266.

O'Malley, P., & Johnston, L. (2002, March). Epidemiology of alcohol and other drug use among American college students. *Journal of Studies on Alcohol. Supplement*.

O'Neil, J., Helms, B., Gable, R., David, L., & Wrightsman, L. (1986). Gender-role

conflict scale: College men's fear of femininity. *Sex Roles*, *6*.

Omi, M., & Winant, H. (2001). Racial formations. In P. Rothenberg (Ed.), *Race, Class, and Gender in the United States: An Integrated Study* (pp. 11–20). Worth Publishers.

Owen, J. (2011). Assessing the factor structures of the 55- and 22-item versions of the conformity to masculine norms inventory. *American Journal of Men's Health*, *5*(2), 118–128.

Padgett, D. (2011). *Qualitative and mixed methods in public health*. SAGE Publications.

Parent, M., & Moradi, B. (2009). Confirmatory factor analysis of the Conformity to Masculine Norms Inventory and development of the Conformity to Masculine Norms Inventory-46. *Psychology of Men & Masculinity*, *10*(3), 175–189.

Peña, Y., & Sidanius, J. (2002). US patriotism and ideologies of group dominance: A tale of asymmetry. *The Journal of Social Psychology*, *142*(February 2015), 782–790.

Peralta, R. (2005). Race and the culture of college drinking: An analysis of white privilege on campus. In *Cocktails & dreams: An interpretive perspective on substance use* (pp. 127–141.).

Peralta, R. (2007). College alcohol use and the embodiment of hegemonic masculinity among european american men. *Sex Roles*, *56*(11-12), 741–756.

Peralta, R., Callanan, V., Steele, J., & Wiley, L. (2011). The Effects of Gender Identity and Heavy Episodic Drinking on Alcohol-Related Violence. *Gender Issues*, *28*(3),

111–133.

Perkins, H. (2002). Surveying the damage: A review of research on consequences of alcohol misuse in college populations. *Journal of Studies on Alcohol*.

Perkins, H., & Wechsler, H. (1996). Variation in perceived college drinking norms and its impact on alcohol abuse: A nationwide study. *Journal of Drug Issues*, *26*(4), 961–974.

Perry, R., & Sibley, C. G. (2011). Social Dominance Orientation. *Journal of Individual Differences*, *32*, 110–116.

Phinney, J. (1990). Ethnic identity in adolescents and adults: Review of research. *Psychological Bulletin*, *108*(3), 499–514.

Phinney, J. (1992). The multigroup ethnic identity measure: A new scale for use with diverse groups. *Journal of Adolescent Research*, *7*(2), 156–176.

Phinney, J. (1996). Understanding ethnic diversity: The role of ethnic identity. *American Behavioral Scientist*, *40*(2), 143–152.

Phinney, J., & Alipuria, L. (1990). Ethnic identity in college students from four ethnic groups. *Journal of Adolescence*, *13*(2), 171–183.

Phinney, J., & Ong, A. (2007). Conceptualization and measurement of ethnic identity: Current status and future directions. *Journal of Counseling Psychology*, *54*(3), 271–281.

Polit, D. (2010). *Statistics and data alysis for nursing research* (2nd ed.). Upper Saddle

River, NJ: Pearson.

Pollock, J., Halkitis, P., Moeller, R., Solomon, T., Barton, S., Blachman-Forshay, J., … Love, H. (2012). Alcohol use among young men who have sex with men. *Substance Use & Misuse*, *47*(1), 12–21.

Porter, S., Whitcomb, M., & Weitzer, W. (2004). Multiple surveys of students and survey fatigue. In *New Directions for Institutional Research* (Vol. 2004, pp. 63–73).

Poteat, V. P., & Anderson, C. J. (2012). Developmental changes in sexual prejudice from early to late adolescence: The effects of gender, race, and ideology on different patterns of change. *Developmental Psychology*, *48*(5), 1403–1415.

Pratto, F., Sidanius, J., Stallworth, L., & Malle, B. (1994). Social dominance orientation: A personality variable predicting social and political attitudes. *Journal of Personality and Social Psychology*, *67*(4), 741–763.

Pregibon, D. (1980). Goodness of link tests for generalized linear models. *Journal of the Royal Statistical Society. Series C (Applied Statistics)*, *29*(1), 15–23.

Presley, C., & Pimentel, E. (2006). The introduction of the heavy and frequent drinker: A proposed classification to increase accuracy of alcohol assesments in postsecondary educational settings. *Journal of Studies on Alcohol and Drugs*.

Priest, N., Walton, J., White, F., Kowal, E., Baker, A., & Paradies, Y. (2014). Understanding the complexities of ethnic-racial socialization processes for both minority and majority groups: A 30-year systematic review. *International Journal of*

Intercultural Relations, *43*, 139–155.

Privitera, G. (2012). *Statistics for the behavioral sciences*. London: SAGE Publications.

Rikowski, G., & McLaren, P. (2002). Postmodernism in educational theory. In D. Hill, P. McLaren, M. Cole, & G. Rikowski (Eds.), *Marxism against postmodernism in educational theory* (pp. 3–13). New York: Lexington Books.

Rosenberg, M. (1986). *Conceiving the self*. Melbourne, FL: Krieger.

Rothenberg, P. (Ed.). (2001). *Race, class, and gender in the United States: An integrated study* (5th ed.). New York: Worth Publishers.

Sánchez-Fernández, J., Muñoz-Leiva, F., & Montoro-Ríos, F. (2012). Improving retention rate and response quality in Web-based surveys. *Computers in Human Behavior*, *28*(2), 507–514.

Schafer, J. (1999). Multiple imputation: A primer. *Statistical Methods in Medical Research*, *8*(1), 3–15.

Scheier, L. M., Botvin, G. J., Diaz, T., & Ifill-Williams, M. (1997). Ethnic Identity as a Moderator of Psychosocial Risk and Adolescent Alcohol and Marijuana Use: Concurrent and Longitudinal Analyses. *Journal of Child & Adolescent Substance Abuse*, *6*, 21–47.

Schwartz, S., Weisskirch, R., Zamboanga, B., Castillo, L., Ham, L., Huynh, Q., … Cano, M. (2011). Dimensions of acculturation: Associations with health risk behaviors among college students from immigrant families. *Journal of Counseling*

Psychology, *58*, 27–41.

Seidman, S. (1994). Introduction. In S. Seidman (Ed.), *The postmodern turn: New perspectives on social theory* (pp. 1–23). Cambridge, UK: Cambridge University Press.

Senchak, M., Leonard, K. E., & Greene, B. W. (1998). Alcohol use among college students as a function of their typical social drinking context. *Psychology of Addictive Behaviors*, *12*(1), 62–70.

Shankar, J., Das, G., & Atwal, S. (2013). Challenging cultural discourses and beliefs that perpetuate Domestic Violence in South Asian communities: A discourse analysis. *Journal of International Women's Studies*, *14*(1).

Sher, K., Bartholow, B., & Nanda, S. (2001). Short- and long-term effects of fraternity and sorority membership on heavy drinking: A social norms perspective. *Psychology of Addictive Behaviors*, *15*(1), 42–51.

Sidanius, J., Kteily, N., Sheehy-Skeffington, J., Ho, A., Sibley, C., & Duriez, B. (2013). You're inferior and not worth our concern: The interface between empathy and social dominance orientation. *Journal of Personality*, *81*(3), 313–323.

Sidanius, J., Levin, S., Liu, J., & Pratto, F. (2000). Social dominance orientation, anti-egalitarianism and the political psychology of gender: an extension and cross-cultural replication. *European Journal of Social Psychology*, *30*(February 1997), 41–67.

Sidanius, J., & Pratto, F. (1993). The inevitability of opression and the dynamics of social dominance. In P. Sniderman, P. Tetlock, & E. Carmines (Eds.), *Prejudice, politics, and the American dilemma* (pp. 173–211). Stanford, CA: Stanford University Press.

Sidanius, J., & Pratto, F. (1999). *Social dominance: An intergroup theory of social hierarchy and oppression*. New York: Cambridge University Press.

Sidanius, J., Pratto, F., & Bobo, L. (1994). Social dominance orientation and the political psychology of gender: A case of invariance? *Journal of Personality and Social Psychology*, *67*(6), 998–1011.

Sidanius, J., Pratto, F., van Laar, C., & Levin, S. (2004). Social dominance theory: Its agenda and method. *Political Psychology*, *25*(6), 845–880.

Simons-Morton, B., Haynie, D., Liu, D., Chaurasia, A., Li, K., & Hingson, R. (2016). The effect of residential, school, work status, and social influence on the prevalence of alcohol use among emerging adults. *Journal of Studies on Alcohol and Drugs*, *77*.

Smith, T., & Silva, L. (2011). Ethnic identity and personal well-being of people of color: a meta-analysis. *Journal of Counseling Psychology*, *58*(1), 42–60.

Stage, F. K. (2007). Answering critical questions using quantitative data. *New Directions for Institutional Research*, *2007*(133), 5–16.

Stinson, D., & Bullock, E. (2012). Transitioning into contemporary theory: Critical postmodern theory in mathematics education research. In L. Van Zoest, J. Lo, & J. Kratky (Eds.), *Proceedings of the 34th annual meeting of the North American*

Chapter of the International Group for the Psychology of Mathematics Education (pp. 1163–1169). Kalamazoo, MI: Western Michigan University.

Substance Abuse and Mental Health Services Administration. (2006). *Results from the 2005 national survey on drug use and health: National findings*.

Sue, D., Capodilupo, C., Torino, G., Bucceri, J., Holder, A., Nadal, K., & Esquilin, M. (2007). Racial microaggressions in everyday life. *American Psychologist*, *62*(4), 271–286.

Sweeney, B. (2014). Party animals or responsible men: social class, race, and masculinity on campus. *International Journal of Qualitative Studies in Education*, *27*(6), 804–821.

Tisdell, E. (1998). Poststructural feminist pedagogies: The possibilities and limitations of feminist emancipatory adult learning theory and practice. *Adult Education Quarterly*, *48*(3), 139–156.

Tobin, K., Davey-Rothwell, M., Yang, C., Siconolfi, D., & Latkin, C. (2014). An examination of associations between social norms and risky alcohol use among African American men who have sex with men. *Drug and Alcohol Dependence*, *134*, 218–21.

Tukey, J. (1949). One degree of freedom for non-additivity. *Biometrics*, *5*(3), 232–242.

U.S. Census Bureau. (2015). The American Community Survey. U.S. Department of Commerce.

Uy, P., Massoth, N., & Gottdiener, W. (2013). Rethinking male drinking: Traditional masculine ideologies, gender-role conflict, and drinking motives. *Psychology of Men & Masculinity*, *15*(2).

Vandello, J., & Bosson, J. (2013). Hard won and easily lost: A review and synthesis of theory and research on precarious manhood. *Psychology of Men & Masculinity*, *14*(2), 101–113.

Weber, L. (2001). *Understanding Race, Class, Gender, and Sexuality: A conceptual framework*. Boston: McGraw Hill.

Wechsler, H., Dowdall, G., Davenport, A., & Castillo, S. (1995). Correlates of college student binge drinking. *American Journal of Public Health*, *85*(7), 921–926.

Wechsler, H., Lee, J., Kuo, M., & Lee, H. (2000). College binge drinking in the 1990s: A continuing problem: Results of the harvard school of public health 1999 college alcohol study. *Journal of American College Health*.

Wechsler, H., Lee, J., Kuo, M., Seibring, M., Nelson, T., & Lee, H. (2002). Trends in college binge drinking during a period of increased prevention efforts: Findings from 4 harvard school of public health college alcohol study surveys: 1993-2001, *50*(5), 1993–2001.

Wechsler, H., & Nelson, T. (2008). What we have learned from the harvard school of public health college alcohol study: Focusing attention on college student alcohol consumption and the environmental conditions that promote it. *Journal of Studies on Alcohol and Drugs*, *69*(4), 481–490.

What Works Clearinghouse. (2014). *Procedures and Standards Handbook Version 3.0* (3rd ed.). U.S. Department of Education.

White, A. (2003). What happened? Alcohol, memory blackouts, and the brain. *Alcohol Research and Health*, *27*(2), 186–96.

White, A., & Hingson, R. (2013). The burden of alcohol use: Excessive alcohol consumption and related consequences among college students. *Alcohol Research : Current Reviews*, *35*(2), 201–218.

White, A., Hingson, R., Pan, I.-J., & Yi, H.-Y. (2011). Hospitalizations for alcohol and drug overdoses in young adults ages 18-24 in the United States, 1999-2008: results from the Nationwide Inpatient Sample. *Journal of Studies on Alcohol and Drugs*, *72*(5), 774–86.

White, H., & Labouvie, E. (1989). Twoards the assuessment of adolescent problem drinking*. *Journal of Studies on Alcohol*, *50*(1), 30–37.

White, I., Royston, P., & Wood, A. (2011). Multiple imputation using chained equations: Issues and guidance for practice. *Statistics in Medicine*, *30*(July), 377–399.

Williams, P. (1991). *The alchemy of race and rights: Diary of a law professor*. Cambridge, MA: Harvard University Press.

Wilsnack, R. W., Vogeltanz, N. D., Wilsnack, S. C., Harris, T. R., Ahlström, S., Bondy, S., … Weiss, S. (2000). Gender differences in alcohol consumption and adverse drinking consequences: cross-cultural patterns. *Addiction (Abingdon, England)*,

95(2), 251–65.

Wilson, B., Harper, G., Hidalgo, M., Jamil, O., Torres, R., & Fernandez, M. (2010). Negotiating dominant masculinity ideology: strategies used by gay, bisexual and questioning male adolescents. *American Journal of Community Psychology*, *45*(1-2), 169–85.

Wilson, G., Pritchard, M., & Schaffer, J. (2004). Athletic status and drinking behavior in college students: The influence of gender and coping styles. *Journal of American College Health*, *52*(6), 269–273.

Wright, K. (2005). Researching internet-based populations: Advantages and disadvantages of online survey research, online questionnaire authoring software packages, and web survey services. *Journal of Computer-Mediated Communication*.

Yoon, E. (2011). Measuring ethnic identity in the Ethnic Identity Scale and the Multigroup Ethnic Identity Measure-Revised. *Cultural Diversity & Ethnic Minority Psychology*, *17*(2), 144–155.

Zamboanga, B. L., Raffaelli, M., & Horton, N. J. (2006). Acculturation status and heavy alcohol use among Mexican American college students: Investigating the moderating role of gender. *Addictive Behaviors*, *31*, 2188–2198.

Zamboanga, B. L., Tomaso, C. C., Kondo, K. K., & Schwartz, S. J. (2014). Surveying the literature on acculturation and alcohol use among Hispanic college students: We're not all on the same page. *Substance Use & Misuse*, *49*, 1074–1078.