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Not All Fun and Games: Sexism and College Women's Alcohol Consumption

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NOT ALL FUN AND GAMES:

SEXISM AND COLLEGE WOMEN'S ALCOHOL CONSUMPTION

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ABSTRACT

Previous research has suggested that racial discrimination (Pascoe & Smart Richman, 2009) and sexist experiences (Zucker & Landry, 2007) are related to increased alcohol consumption. However, ambivalent sexism theory suggests that there are two forms of sexism (Glick & Fiske, 1996; 1997). While hostile sexism refers to overtly negative attitudes towards women, benevolent sexism refers to positively valenced attitudes towards women that still serve to reaffirm masculine dominance. Therefore, the current studies explore the differential effects of experiencing hostile vs. benevolent sexism on college women's alcohol consumption using correlational (Study 1) and quasi-experimental (Study 2) methodologies. In addition, the current studies examine two potential mediators of these effects: anger (Barreto & Ellemers, 2005) and belongingness need threat (van Beest & Williams, 2006). Finally, stigma consciousness (Pinel, 1999) and collective self-esteem (Luhtanen & Crocker, 1992) are examined as potential moderators. Results of Study 1 suggest that hostile sexism experiences in everyday life are related to decreased alcohol consumption via their effects on anger while benevolent sexism experiences are related to increased alcohol consumption. Results of Study 2 suggest that experiencing either a hostile or a benevolent sexism manipulation is related to increased alcohol consumption that evening compared to the control condition.

CHAPTER ONE

INTRODUCTION

> My advice to you is to start drinking heavily.
>
> —Bluto, *Animal House*

In the classic film *National Lampoon's Animal House* (Simmons, Reitman, & Landis, 1978), the main characters throw a toga party at their fraternity in order to boost their spirits and have a good time. The men turn to drinking as a means of forgetting their problems and cheering themselves up. On the other hand, although women are invited to these parties, they seem to have little purpose in the film other than through their relationships with men. However, this portrayal of college women has changed over time. ABC Family's TV show Greek (Nugiel, 2007), explores the complicated social lives of both fraternity men and sorority women. In this portrayal, both men and women turn to alcohol in times of distress as well as when they want to have fun. Similar efforts need to be made in research to understand college student drinking among both men and women. With the gender gap in college drinking decreasing (Johnston, O'Malley, Bachman, Schulenberg, & Miech, 2016; Nolen-Hoeksema, 2004), it is time for researchers to understand unique factors that may lead college women to increase their alcohol consumption.

Such research is especially important because media portrayals regarding college drinking may not be far from the truth, despite the fact that many college students are below the legal drinking age. Research suggests that college students view peers who are more social, as

opposed to those who are more involved in academics, as more likely to drink alcohol (Ashmore, Del Boca, & Beebe, 2002). Furthermore, in an analysis of the data from five national surveys of college student drinking, it was found that about 70% of college students have consumed alcohol within the past thirty days and that about 40% of college students can be classified as heavy drinkers (O'Malley & Johnston, 2002). Such heavy alcohol consumption among college students is associated with a variety of negative consequences including problems with one's health, academics, and social interactions as well as legal troubles (Wechsler et al., 2002). For this reason, it is important to understand factors that may influence college student drinking and contribute to students' experiences of negative alcohol-related consequences.

Furthermore, although college men seem to be at greater risk for heavy alcohol consumption (O'Malley & Johnston, 2002), women may be especially vulnerable to the negative consequences of alcohol use because of physiological differences between men and women (National Institute on Alcohol Abuse and Alcoholism [NIAAA], 2015). The NIAAA warns that a woman will typically have a higher blood alcohol concentration (BAC) than a man of equal weight after consuming the same quantity of alcohol. Similarly, research has shown that women who typically drink four alcoholic drinks in a row have a similar likelihood of experiencing negative alcohol-related consequences as men who typically drink five alcoholic drinks in a row (Wechsler, Dowdall, Davenport, & Rimm, 1995). In addition, female students' alcohol consumption increases their risk for victimization (Parks & Fals-Stewart, 2004). Therefore, the current studies examine factors that may increase alcohol consumption specifically among female undergraduate students.

One potential factor in college women's alcohol consumption may be their experiences with sexism (DeHart, Peterson, Richeson, & Hamilton, 2014; Zucker & Landry, 2007). Research suggests that perceived discrimination is related to unhealthy behaviors (Pascoe & Smart Richman, 2009). Therefore, experiences with sexism may be a factor in college women's alcohol consumption. Support for this notion can be seen in the results of a daily diary study in which daily perceptions of mistreatment were related to greater alcohol consumption among ego-depleted students (DeHart et al., 2014). This suggests that when students are cognitively depleted and lack the resources needed to adaptively respond to a self-threat, they may use alcohol as a means of coping with discrimination. Furthermore, a study examining the mechanisms by which the experience of sexism may increase alcohol consumption found that psychological distress mediated this relation (Zucker & Landry, 2007). Thus, although this study did not differentiate between hostile and benevolent sexism, college women may turn to alcohol as a means of coping with the distress caused by experiencing sexism in their daily lives. This fits with the theory of alcohol consumption as a means of coping with negative emotions (Cooper, Frone, Russell, & Mudar, 1995).

However, research on the concept of "drinking like a guy" suggests another relation between the experience of sexism and alcohol consumption among college women (Young, Morales, McCabe, Boyd, & D'Arcy, 2005). Specifically, focus groups suggest that college women may view heavy alcohol consumption as a means of both proving their equality with male peers and showing off their heterosexuality. Further support for the idea that college women's alcohol consumption is influenced by their expectations of how male peers will view them comes from a study on perceived norms (Hummer, LaBrie, Lac, Sessoms, & Cail, 2012).

This study found that college students of both genders overestimate how much peers of the opposite sex want them to drink and that these perceived reflective norms are related to their own alcohol consumption. Thus, it seems that college women drink in part due to their beliefs about the impact that their alcohol consumption will have on male peers. This suggests that, aside from using alcohol consumption to cope with the psychological distress of experiencing sexism, college women may also consume alcohol as a means of enhancing their social status. Continuing with this line of research, the current studies examine how experiencing sexism is related to college women's alcohol consumption and tests two competing mediators of this relation: anger and belongingness need threat. In addition, the current studies test two forms of identity threat appraisal, collective self-esteem and stigma consciousness, as potential moderators of these effects.

CHAPTER TWO

ALCOHOL CONSUMPTION

> College is about three things: homework, fun, and sleep…but you can only choose two.
>
> —Andy Stern

The motivational model of alcohol use suggests that people drink alcohol in order to regulate both positive and negative emotions (Cooper et al., 1995). Within this theory, drinking to enhance positive emotions is considered to be an appetitive process in which alcohol is used to increase positive affective states and emotional experiences. On the other hand, the theory also suggests that alcohol is used to cope with negative emotional experiences. Drinking to cope is thus a reactive process in which alcohol is consumed in order to escape, avoid, or otherwise regulate negative affective states. Importantly, drinking to cope is only expected to occur when more adaptive means of coping are unavailable. Other theory suggests four drinking motives instead of two (Cooper, 1994; Cox & Klinger, 1988). In this conceptualization, drinking motives can be categorized based on their source (internal or external) and valence (positive or negative). This creates four drinking motives (enhancement, coping, social, and conformity) which are differentially related to alcohol use and alcohol-related consequences. Importantly, research suggests that drinking to regulate negative affect (both through coping and conformity motives) is directly related to increased alcohol-related problems when controlling for alcohol use in a way that drinking to enhance positive affect (both through enhancement and social motives) is not (Cooper, 1994; Cooper et al., 1995). Thus, although students may consume alcohol to

enhance positive emotions, factors that may increase drinking to cope with negative emotions are especially important to identify and understand. The current research examines experiences of sexism as one potential factor that may lead to drinking to cope among college women.

College Student Drinking

The college student population is an important one to study because college may be a setting in which alcohol is consumed more frequently and in greater quantities than at other times in an individual's life. This possibility is supported by data from national surveys estimating that 70% of college students had consumed at least some alcohol within the 30 days prior to completing the survey and that, of these students, 70% had engaged in heavy alcohol consumption within the previous two weeks (O'Malley & Johnston, 2002). These surveys were consistent in their findings that about 40% of all college students had recently engaged in heavy alcohol consumption, regardless of minor variations in the time period examined or the definition of heavy drinking that was used. Furthermore, although college women are still less likely to engage in heavy drinking than college men, there is some evidence in these national surveys to suggest that this gender gap may have narrowed (Johnston et al., 2016; Nolen-Hoeksema, 2004; O'Malley & Johnston, 2002). This increases the importance of studying factors related to alcohol consumption specifically among college women.

Such high levels of alcohol consumption continue to be seen in more recent research as well. In one study, 54% of participants were classified as binge drinkers according to the 5/4 definition of binge drinking (drinking more than five drinks for a male, four for a female, on a single occasion) and 33% according to the .08% definition (drinking enough alcohol to produce a blood alcohol concentration of .08%; Fillmore & Jude, 2011). Furthermore, 56% of college

students scored above the cut-off score on the Alcohol Use Disorders Identification Test (AUDIT), a commonly used screening instrument for at-risk drinkers. These high binge drinking rates show the continuing prevalence of heavy alcohol consumption among undergraduate students in more recent years.

One possible explanation for this large incidence of risky alcohol use by college students may be that the traditional college student can be categorized within the newly defined developmental period of emerging adulthood (Arnett, 2000). Emerging adults have moved beyond adolescence but have not yet taken on the roles and responsibilities of adults. Because of this, they are more open to exploring their identity as they become more serious and focused in their pursuits of love, work, and an established worldview. However, another key feature of emerging adulthood is the prevalence of risk behaviors such as heavy alcohol consumption. College students are less likely to be monitored by their parents than adolescents, yet they also lack the responsibilities of adulthood that would constrain their behavior. For this reason, college students are more able to commit risky behaviors such as drinking heavily.

This lack of adult responsibilities may be a factor in the differences that have been observed in drinking behavior between college students and their non-college attending peers (i.e., individuals of college age who are not attending school; Carter, Brandon, & Goldman, 2010). Research has found that individuals who later attend college may be at decreased risk for alcohol consumption during high school. However, these individuals show a greater increase in alcohol consumption upon leaving home and beginning college. This increase in alcohol consumption is then followed be a decrease in consumption during the last years of college or after graduation. This seems to suggest that, for individuals who attend college, there is

something about the college environment or the emerging adult role that encourages greater alcohol consumption. As these students near graduation and begin to take on the roles and responsibilities of adults, they "mature out" of their heavy alcohol use. Therefore, factors that influence alcohol consumption among college students may be different from those that influence alcohol consumption among adults. However, given the prevalence of alcohol consumption and alcohol-related problems among college students (O'Malley & Johnston, 2002), it is important to understand factors that increase alcohol consumption specifically among this population.

Other factors that may be related to heavy alcohol consumption specifically among college students include the presence of a Greek system and of athletic programs as well as the fact that many college students live in dormitories or Greek houses (Presley, Meilman, & Leichliter, 2002). Recently, a review of findings regarding the differences in alcohol use between college students and their non-college attending peers found that college students consume greater quantities of alcohol, engage in riskier alcohol consumption patterns, drink more frequently, and experience more alcohol-related problems than individuals in the same age range who are not attending college (Carter et al., 2010). Furthermore, critical factors in these findings include age and living situation as some of the studies that they reviewed suggest that these differences may not be found when examining older college students or college students who are living at home. This may support the idea that emerging adults engage in risky alcohol consumption because they lack both parental monitoring and adult responsibilities.

Gender and Alcohol Consumption

Although women consistently consume less alcohol than men, research has shown that the gender gap in alcohol consumption is decreasing (Johnston et al., 2016; Nolen-Hoeksema, 2004). It has been suggested that social sanctions against women drinking, or perceptions that such sanctions exist, may be one factor in this gender gap. In support of this theory, research shows that college students expect women to experience more severe consequences as a result of heavy alcohol consumption while college men actually experience both social pressure to consume alcohol and embarrassment about expressing concerns related to alcohol consumption (Suls & Green, 2003). Related to this, research has suggested that alcohol consumption may be an encouraged aspect of the male gender role while it is discouraged for women (Nolen-Hoeksema, 2004). Similarly, recent research using a college student sample shows that masculine gender identity positively predicts heavy alcohol consumption while feminine gender identity negatively predicts heavy alcohol consumption (Peralta, Steele, Nofziger, & Rickles, 2010). Thus, changes in gender roles over time may be a factor in the decreasing alcohol consumption gap seen between men and women.

However, although women may continue to consume less alcohol than men, research also suggests that women experience more negative consequences than men when controlling for the amount of alcohol consumed (Dumas, Wells, Tremblay, & Graham, 2013; Nolen-Hoeksema, 2004). Part of this difference in alcohol-related consequences is due to differences in blood alcohol concentration (BAC) as a result of consuming the same quantity of alcohol (Nolen-Hoeksema, 2004). Specifically, research suggests that because women tend to be smaller than men, women tend to have less body water by weight than men, and women tend to have less

activity in the enzyme that metabolizes alcohol, the same dose of alcohol has a greater effect on a woman's BAC than on a man's. Differences in how alcohol physically affects men and women increase college women's potential for experiencing negative effects due to their alcohol consumption and concerns for their health.

In addition to more distal concerns, such as women's greater susceptibility to physical illnesses as a result of their alcohol consumption, more proximal concerns that college women may face as a result of their alcohol consumption include greater risk of sexual and physical assault as well as risky sexual behavior (Nolen-Hoeksema, 2004). For example, one study found that college women were more likely to have sex with a partner that is not well known if they were intoxicated (Howells & Orcutt, 2014). Furthermore, although protective behavioral strategies moderate the effects of alcohol consumption on sexual victimization among college women, such strategies do not seem to moderate the link between alcohol consumption and risky sexual behavior (Moorer, Madson, Mohn, & Nicholson, 2013). This suggests that alcohol consumption does increase the chances of college women experiencing negative consequences such as engaging in risky sexual behavior.

Further evidence for differences in the likelihood of experiencing negative consequences due to alcohol consumption can be seen in a longitudinal study in which college freshmen completed 26 weekly assessments of their alcohol consumption and related negative consequences (Dumas et al., 2013). This study supported previous research showing that men were overall more likely to experience many negative alcohol-related consequences, but also found that women had a greater risk of having unplanned sex, being injured, arguing with a friend, or riding with an intoxicated driver on any particular drinking occasion. Furthermore,

when controlling for alcohol consumption on days students drank, this study found that women were more likely to do something they later regretted, have unprotected sex, or have trouble remembering their actions. Thus, although college men are more likely to get in a physical fight, damage property, or drive drunk, college women experience greater risk of negative consequences that are more related to interpersonal interactions than male-stereotypical behaviors. For this reason, the current studies attempt to further understand some of the interpersonal factors that may increase alcohol consumption among college women. Specifically, the current studies examine the impact of sexist experiences on college women's alcohol consumption.

CHAPTER THREE

INTERACTIONS AND ALCOHOL CONSUMPTION

I drink to make other people more interesting.

—Ernest Hemingway

The need to belong and feel accepted is a fundamental human motivation (Baumeister & Leary, 1995). This need drives people to form and maintain relationships and influences their thoughts, feelings, and behaviors. Research suggests that this need to belong may be related to alcohol consumption (Litt, Stock, & Lewis, 2012; Hussong, Hicks, Levy, & Curran, 2001). Furthermore, negative interactions with others that threaten belongingness needs may also motivate alcohol consumption as a means of coping with these unmet needs (DeHart et al., 2014; DeHart, Tennen, Armeli, Todd, & Mohr, 2009; Hamilton & DeHart, 2017).

Interpersonal Interactions and Alcohol Consumption

Research examining the effects of individual differences in the need to belong on alcohol consumption among college students suggests that students may use alcohol as a means of fitting in with close others (Litt et al., 2012). Specifically, this research found that the relation between perceptions of best friend alcohol use and willingness to consume alcohol is stronger among college students who are higher in the need to belong. Other research suggests that, aside from the desire to have meaningful relationships, college students whose friendships are less intimate and who experience less social support consume greater quantities of alcohol when they are coping with hostility or sadness (Hussong et al., 2001). Thus, both experiencing a greater than

average desire to belong and having unmet belongingness needs may be associated with greater alcohol consumption in order to fulfill those needs or cope with them being unmet.

Research has also suggested that interpersonal interactions experienced throughout the day may influence alcohol consumption that night (DeHart et al., 2014; DeHart et al., 2009). In one daily diary study, college students with high implicit self-esteem who had experienced more positive interpersonal interactions throughout the day were more likely to drink with others that night and also reported that they consumed more alcohol that night (DeHart et al., 2009). On the other hand, students with low implicit self-esteem consumed more alcohol while drinking with others on evenings when they had experienced more negative interpersonal interactions throughout the day. Thus, both positive and negative interactions can lead to increased alcohol consumption. However, because drinking to cope with negative emotions (but not drinking to enhance positive emotions) is related to increased negative consequences when controlling for the amount of alcohol consumed (Cooper et al., 1995), negative interpersonal interactions leading to increased alcohol consumption may be especially important for researchers to understand. Following this, previous research has explored the effects of a belongingness threat on college alcohol consumption (Hamilton & DeHart, 2017). This research suggests that, while students normally consume more alcohol when they spend more time drinking, a belongingness threat greatly increases this association among students with low implicit or explicit self-esteem. This suggests that students may consume greater quantities of alcohol when they are attempting to restore unmet belongingness needs and are around others who are drinking.

Another potential factor in college student drinking may be perceived discrimination, as researchers have suggested that discrimination acts as a form of rejection with similar effects on

negative affect and motivated responses (Smart Richman & Leary, 2009). To examine this potential factor, a second daily diary study examined the effects of perceived mistreatment and ego-depletion on alcohol consumption among college students (DeHart et al., 2014). This study found that college students consumed more alcohol on evenings after they had experienced more group-based mistreatment during the day, but only when they were ego-depleted and thus unable to engage in more adaptive coping mechanisms. This suggests that college students who are unable to adaptively cope with discrimination may use alcohol in an attempt to cope with the negative effects of such mistreatment.

Further supporting this idea, a retrospective study that specifically examined the effects of sexism on alcohol consumption found that psychological distress mediated the relation between perceived sexism and alcohol consumption among college women (Zucker & Landry, 2007). Therefore, research seems to suggest that college women who experience sexism as well as other group-based discrimination may at times use alcohol as a means of coping with the negative affect caused by such experiences, however previous studies have not distinguished between hostile and benevolent sexism. The current studies further knowledge of these effects in two ways. The first study examines whether anger or belongingness need threat mediate the effects of experiencing (hostile vs. benevolent) sexism on alcohol consumption. The second study manipulates college women's experiences of sexism during a lab session and examines effects on alcohol consumption that evening. In addition, both studies examine stigma consciousness and collective self-esteem as potential moderators of these effects.

Discrimination and Alcohol Consumption

Although the specific relation between sexism and alcohol consumption has only recently been examined (see DeHart et al., 2014; Zucker & Landry, 2007), much more research has examined the effects of perceived discrimination on health behaviors (such as alcohol consumption) as well as mental and physical health. Results have suggested that experiencing discrimination is related to depression, psychological distress, anger, anxiety, obesity, and high blood pressure as well as decreased self-reported health, well being, self-esteem, and perceptions of control (Williams, Neighbors, & Jackson, 2003). In order to further examine these effects, Pascoe and Smart Richman (2009) conducted a meta-analysis to examine how perceived discrimination affects health. They found that perceived discrimination is related to poorer physical and mental health, which they suggest may be due to stress responses and health behaviors that individuals engage in following discriminatory experiences. In support of this idea that the effects of discrimination on health may be due in part to its effects on health-related behaviors, they found that perceived discrimination is associated with increased unhealthy behaviors and decreased healthy behaviors. Thus, there is reason to believe that experiencing discrimination may be related to greater alcohol consumption, one of the unhealthy behaviors mentioned in the article that may be used by those experiencing discrimination as a means of reducing negative affect.

Furthermore, this relation between discrimination and alcohol consumption can be seen in a variety of populations and using a variety of measures. Specifically, research has suggested that among a community sample of African Americans, perceived discrimination is related to problem drinking (Martin, Tuch, & Roman, 2003), alcohol use disorders (Hunte & Barry, 2012),

and alcohol-related problems (Zapolski, Pedersen, McCarthy, & Smith, 2013; Zemore et al., 2016). Among African American adolescents, discrimination has also been shown to be related to both increased alcohol consumption and increased alcohol-related cognitions via anger and reduced self-control (Gibbons et al., 2012). Similar effects of discrimination on alcohol use have also been found among Asian Americans (Chae et al., 2008), Filipino Americans (Gee, Delva, & Takeuchi, 2006; Kim & Spencer, 2011), Latinos (Otiniano Verissimo, Gee, Ford, & Iguchi, 2014; Zemore et al., 2016), Hispanic adolescents (Unger, Schwartz, Huh, Soto, & Baezconde-Garbanati, 2014), immigrants of different ethnicities living in the Midwest (Tran, Lee, & Burgesss, 2010), and Indian and Pakistani migrants (Tse & Wong, 2015).

Such effects have also been found among college student populations. One study found that African American students who experience more discrimination experience more alcohol-related problems, although there was no association between discrimination and amount of alcohol consumption (Boynton, O'Hara, Covault, Scott, & Tennen, 2014). Furthermore, this study suggested that the effects of discrimination were mediated by depression and, for male students, by anger. These effects of discrimination on alcohol-related problems have also been found among Hispanic college students (Cheng & Mallinckrodt, 2015). Other research has examined potential moderators of these effects such as racial identity (Smart Richman, Boynton, Costanzo, & Banas, 2013) and lack of premeditation (Latzman, Chan, & Shishido, 2013). These studies suggest that having a strong, positive, private regard for one's racial identity has a buffering effect on the effects of perceived discrimination (Smart Richman et al., 2013) while lacking premeditation exacerbates such effects (Latzman et al., 2013).

Research has also examined the differences between social and nonsocial drinking (O'Hara, Armeli, Scott, Covault, & Tennen, 2015). In a daily diary study, male African American undergraduates who had experienced more discrimination in their lifetime reported that they consumed more alcohol on evenings when they were in a more negative mood, but only in a nonsocial drinking context. On the other hand, female African American undergraduates' nonsocial drinking due to negative mood was increased if they had experienced less lifetime discrimination and decreased if they had experienced more lifetime discrimination. Interestingly, in this study, lifetime discrimination and negative mood had no effect on social drinking, although daily experiences of discrimination were not measured. Therefore, it does seem that the effects of discrimination on alcohol consumption among college students may depend upon both gender and drinking context. However, little research has focused specifically upon the effects of experiencing sexism on alcohol consumption. The current research explores these effects specifically among college women who may use alcohol as a coping mechanism or to feel like they belong.

CHAPTER FOUR

AMBIVALENT SEXISM

> Every man I meet wants to protect me. I can't figure out what from.
>
> —Mae West

Glick and Fiske (1996; 1997), in their formulation of ambivalent sexism theory, first differentiated between hostile and benevolent sexism. In their conception of ambivalent sexism, hostile sexism refers to the overtly negative and prejudiced attitudes towards women that often come to mind when first thinking of the concept of sexism (e.g., believing that women seek to control men or make unreasonable demands of men). Benevolent sexism, on the other hand, refers to stereotypical views of women that may seem positive in valence and yet have a tendency to reaffirm masculine dominance (e.g., believing that women need to be protected by men and that men should provide financially for women). Importantly, both hostile and benevolent sexism may have negative consequences for women because both forms of sexism serve to justify and maintain traditional gender roles, men's power and status within society, and stereotypical views of women. Thus, although benevolent sexism may seem positive on a cursory glance, it may have similarly negative consequences for women. Despite this, benevolent sexism may be appealing to some individuals and may even promote life satisfaction by encouraging men and women to view gender roles in society as fair and just (Connelly & Heesacker, 2012). Similarly, people who endorse benevolent sexism tend to be more satisfied

with life, although for women this is because benevolent sexist beliefs lead to the rationalization of gender inequalities (Hammond & Sibley, 2011).

In addition to describing the differences between hostile and benevolent sexism, Glick and Fiske (1996; 1997) argue that these two types of sexism are correlated such that individuals may often endorse both hostile and benevolent sexism. This suggestion has been further supported by research suggesting that most people endorse both forms of sexism at similar rates with mild and moderate ambivalent sexists being much more prevalent within society than strongly ambivalent sexists, non-sexists, or univalent sexists (Sibley & Becker, 2012). However, people are not always accurate in their estimates of others' levels of hostile and benevolent sexism (Rudman & Fetterolf, 2014) or how experiencing hostile and benevolent sexism will affect them (Bosson, Pinel, & Vandello, 2010). Specifically, Rudman and Fetterolf (2014) found that while women tend to overestimate men's endorsement of hostile sexism, they underestimate men's benevolent sexism. Men on the other hand tended to underestimate women's hostile sexism and overestimate women's endorsement of benevolent sexism. Furthermore, while people overestimate the negative effects of experiencing hostile sexism, they underestimate the negative impact that experiencing benevolent sexism has on women (Bosson et al., 2010).

Effects of Hostile and Benevolent Sexism

Although endorsement of hostile and benevolent sexism may be correlated, endorsement of these two forms of sexism have differential effects upon individuals' attitudes and behaviors. For example, hostile sexism seems to be related to negative views of individuals who break traditional gender roles while benevolent sexism may be related to positive views of women who fulfill their traditional gender roles (Boasso, Cover, & Ruscher, 2012). Following this idea,

hostile sexism is related to negative attitudes towards female breadwinners while benevolent sexism is related to positive attitudes towards female caregivers (Gaunt, 2013). Similarly, hostile sexism predicts negative attitudes towards nontraditional men and women while benevolent sexism predicts positive attitudes towards traditional women (Glick, Wilkerson, & Cuffe, 2015). Thus, it seems that hostile sexism may be related to a dislike of women who challenge their traditional roles while benevolent sexism instead rewards women for accepting such traditional gender roles.

Given that traditional gender roles encourage men to work while women stay at home and tend to domestic concerns, research has examined whether or not hostile and benevolent sexism impact women's careers. For example, adolescent girls who endorse benevolent sexism report less desire for a degree, which predicts worse academic performance (Montanes et al., 2012). Other research suggests that, although benevolent sexism may not be perceived as sexist, it negatively impacts performance in job application settings and working memory more so than experiencing hostile sexism (Dardenne, Dumont, & Bollier, 2007). Furthermore, individuals who positively evaluate a sexist interviewer perceive female job applicants as less competent and less deserving of being hired (Good & Rudman, 2010). This is especially problematic given that research suggests that, although women dislike hostile sexists, women positively evaluate an individual who expresses benevolent sexist beliefs (Kilianski & Rudman, 1998). Thus, people expressing benevolent sexist views may be liked despite their negative impact on women's careers.

Another line of research has examined these effects on interactions between men and women and within ongoing heterosexual relationships. This research has suggested that

endorsement of benevolent sexism predicts traditional marriage preferences (Robnett & Leaper, 2013). However, individuals who endorse benevolent sexism are also more willing to end their romantic relationships when their partner does not meet their ideal standards for warmth and trustworthiness (Hammond & Overall, 2014). In addition, although women feel more loved and secure in the relationship when they believe that their male partner endorses benevolent sexism, men feel less loved and secure when they believe that their female partner endorses benevolent sexism (Hammond, Overall, & Cross, 2016). Thus, although benevolent sexist beliefs may be positive for some relationships, such beliefs can also have negative consequences.

Other research has suggested that men's endorsement of hostile sexism is related to negative evaluations of their current relationship and negative behaviors within the relationship (Hammond & Overall, 2013a), greater hostility when discussing a relationship conflict with their romantic partner (Overall, Sibley, & Tan, 2011), and less approachable and friendly behavior when interacting with a female partner (Goh & Hall, 2015). On the other hand, men's endorsement of benevolent sexism is related to more openness to their romantic partner's perspective and less hostility in communicating with their partner (Overall et al., 2011) as well as more patience and approachability in interactions with a female interaction partner (Goh & Hall, 2015). Finally, women's endorsement of benevolent sexism is related to lower relationship satisfaction when experiencing relationship problems (Hammond & Overall, 2013b). Thus, although men who endorse hostile sexism may be more hostile towards women in their interactions, endorsement of benevolent sexism seems to increase the positivity of interactions between the genders so long as there is no conflict in the relationship. This can also be seen in the types of help that men and women provide to their relationship partners (Hammond &

Overall, 2015). Specifically, women who endorse benevolent sexism provide relationship-oriented support to their male partners, which helps their partners to feel more loved and accepted. On the other hand, men who endorse benevolent sexism provide dependency-oriented support to their female partners, which decreases their partners' feelings of competence.

Moreover, research suggests that experiencing either hostile or benevolent sexism can have differential effects on targets. For example, hostile versus benevolent sexist comments seem to have a differential effect on cardiovascular reactivity and recovery in women (Salomen, Burgess, & Bosson, 2015). Specifically, women exposed to a hostile sexist comment experience more anger, which is associated with greater cardiovascular reactivity but quick recovery, while women exposed to a benevolent sexist comment, although less affected initially, demonstrate impaired cardiovascular recovery. Further exploring this effect of hostile sexism on anger, research has suggested that hostile sexism increases feelings of anger and frustration in women while also lowering feelings of security and comfort (Lemonaki, Manstead, & Maio, 2015). Importantly, this research also found that, through its effects on these feelings, exposure to hostile sexism lowered women's readiness to engage in social competition with men. Exposure to hostile sexism also lowers women's intentions to participate in collective action via its effects on gender-specific system justification and perceptions of the advantages of being a woman (Becker & Wright, 2011). Other research shows that exposure to benevolent (but not hostile) sexism leads women to describe themselves as more relational and less task-oriented (Barreto, Ellemers, Piebinga, & Moya, 2010) and to view themselves as incompetent (Dumont, Sarlet, & Dardenne, 2010). There is also some evidence to suggest that exposure to benevolent sexism may impede cognitive performance (Dardenne et al., 2013). Thus, overall, experiencing hostile

sexism appears to increase negative emotions and decrease women's willingness and ability to compete with men while experiencing benevolent sexism may increase women's willingness to accept their traditional gender role.

Therefore, it is important to examine whether hostile and benevolent sexism have similar or different effects on alcohol consumption, a question which has not yet been empirically tested. The above research may suggest that women who experience hostile sexism will experience increased anger and insecurity, which may lead to drinking to cope (see Zucker & Landry, 2007). On the other hand, benevolent sexism may increase women's desire to fit in and be accepted by others. Because of the high rates of alcohol consumption on college campuses and the associations between alcohol consumption and sociability (Ashmore et al., 2002), this desire to gain social approval may also lead to increased alcohol consumption. The current studies examine these predicted effects. This furthers understanding of how hostile and benevolent sexism independently predict an important health behavior.

Identity Threat Appraisals

People differ in their appraisals of both the demands posed by a stressor and the resources they have available to cope with those demands (Major & O'Brien, 2005). Because not everyone views similar discriminatory events as equally self-threatening, individual differences in how these stressors are appraised may influence whether or not an individual experiences identity threat following a discriminatory event. Within the current research, this suggests that individual differences may affect the degree to which sexist experiences affect college women and their behaviors. Therefore, the current research explores two measures of identity threat

appraisal as potential moderators of the effects of sexism on feelings of anger and belongingness need threat and, as a result, on alcohol consumption.

First, the current study examines stigma consciousness as a potential risk factor for the negative effects of experiencing sexism. Research suggests that individuals differ in how likely they are to perceive discrimination and that such perceptions influence behavior (Pinel, 1999). According to the identity threat model of stigma, these expectations about one's likelihood of experiencing discrimination can affect individuals' appraisals of stigma-relevant stressors and how threatened individuals feel by such stressors (Major & O'Brien, 2005). Within the context of sexism, stigma consciousness refers to the extent to which women expect to be stereotyped on the basis of their gender and research suggests that women high in stigma consciousness are more likely to acknowledge the presence of sexism in their lives and more able to provide evidence for its existence (Pinel, 1999). Therefore, the identity threat model of stigma suggests that, because women high in stigma consciousness are more likely to perceive themselves as targets of sexism, they are more likely to experience identity threat. In support of this theory, previous research suggests that women high in stigma consciousness experience more anger and depression following experiences with both hostile and benevolent sexism (Bosson et al., 2010). Therefore, it may be the effects of experiencing hostile and benevolent sexism on feelings of anger, belongingness need threat, and alcohol consumption will be exacerbated among women high in stigma consciousness.

Second, the current study examines collective self-esteem as a potential buffer against the effects of sexism. Social identity theory argues that the self has both personal and social aspects (Tajfel, 1982; Tajfel & Turner, 1979). While personal identity is associated with an individual's

own standing in society, an individual's social identity is associated with an individual's group memberships (such as those based on gender) and how they view those social groups. Within this framework, collective self-esteem serves to buffer individuals against personally self-threatening information (Luhtanen & Crocker, 1992) presumably because individuals with high collective self-esteem have more self resources to draw on (Steele et al., 1993). Furthermore, previous research suggests that high regard for one's racial identity can act as a buffer against the negative effects of perceived racial discrimination (Smart Richman et al., 2013). Presumably, having high collective self-esteem will similarly buffer college women against the effects of experiencing sexism on feelings of anger, belongingness need threat, and (as a result) alcohol consumption.

CHAPTER FIVE

THE CURRENT RESEARCH

The goal of the current research is to further explore how experiencing sexism affects alcohol consumption among college women. Previous research suggests that alcohol consumption is prevalent within the college population (O'Malley & Johnston, 2002) and that college women may be at increased risk for experiencing negative alcohol-related consequences (Nolen-Hoeksema, 2004). Furthermore, research suggests that drinking to regulate negative affect (both through coping and conformity motives) is directly related to increased alcohol-related problems while drinking to enhance positive affect (both through enhancement and social motives) is not (Cooper, 1994; Cooper et al., 1995). Therefore, it is important to examine factors that may lead to drinking to cope specifically among college women. However, previous research has not differentiated between hostile and benevolent sexism when examining their effects on alcohol consumption. The current research tests whether each of these different forms of sexism affects college women's alcohol consumption and examines two potential mechanisms for these effects. In addition, the current study is the first to examine identity threat appraisal as a moderator of the effects of experienced sexism on college women's alcohol consumption.

My first study follows-up on previous research suggesting that college women may consume alcohol as a means of coping with sexism (see DeHart et al., 2014; Zucker & Landry, 2007). Using Amazon's Mechanical Turk, I collected data from college women across the

United States. This study assesses both perceived sexism and alcohol consumption within the previous four weeks and tests whether anger or belongingness need threat mediate the relation between perceived sexism and alcohol consumption. This study also tests whether perceptions of hostile and benevolent sexism have similar effects upon alcohol consumption.

My second study expands upon previous research on this topic by including a sexism manipulation during a lab session and then examining reports of college women's actual alcohol consumption that night (reported the next day). This study experimentally tests the effects of hostile and benevolent sexism on college women's alcohol consumption via anger and belongingness need threat. In addition to measuring actual alcohol consumption the following day, this study also asks participants to report their expectations regarding their own alcohol use that night. Such expectations have been shown to be better predictors of actual alcohol consumption among college students than behavioral intentions (Armitage, Norman, Alganem, & Conner, 2015). This allows Study 2 to examine whether college women's alcohol consumption (as well as any changes in alcohol consumption that may occur due to the sexism manipulation) is intentional or unintentional.

In addition, within both studies, I explore two potential moderators of the effects of sexism on anger, belongingness need threat, and alcohol consumption. Because women high in stigma consciousness may have a stronger affective response (i.e., feel more anger and belongingness need threat) to experiencing both hostile and benevolent sexism (see Bosson et al., 2010), it may be that experiences with sexism have a stronger effect on alcohol consumption among college women high (vs. low) in stigma consciousness. In contrast, because previous research has suggested that racial identity acts as a buffer against the negative effects of

perceived racial discrimination (Smart Richman et al., 2013), it may be that experiences with sexism have a weaker effect on alcohol consumption among college women high (vs. low) in collective self-esteem.

Hypotheses

Hypothesis 1

Previous research suggests that experiencing sexism is related to increased alcohol consumption among college women via its effects on psychological distress (Zucker & Landry, 2007). Therefore, in Study 1, I predict that college women who report having experienced more sexism (hostile or benevolent) will report greater amounts of alcohol consumption. Similarly, in Study 2, I predict that college women in the hostile and benevolent sexism conditions will both report greater alcohol consumption that night than college women in the control condition.

Hypothesis 2

In addition, research suggests that hostile sexism is related to increased anger and frustration, but lowered feelings of security and comfort (Lemonaki et al., 2015). Therefore, I further predict that the effects of experiencing hostile sexism on alcohol consumption will be mediated by both anger and belongingness need threat.

Hypothesis 3

However, although previous research has suggested that the effects of sexism on alcohol consumption are mediated by psychological distress (Zucker & Landry, 2007), other research has suggested that experiencing benevolent sexism is unrelated to reported anger (Salomen et al., 2015). Instead, benevolent sexism experiences seem to be related to an increase in women's beliefs that their self-worth relies on the social approval of others (Barreto et al., 2010).

Therefore, I predict that the effects of experiencing benevolent sexism on alcohol consumption will be mediated by belongingness need threat, but not anger.

Hypothesis 4

Because previous research suggests that stigma consciousness moderates responses to experiences with both hostile and benevolent sexism (Bosson et al., 2010), I predict a moderated mediation model. Specifically, I predict a greater effect of hostile and of benevolent sexism on alcohol consumption among college women high in stigma consciousness compared to those low in stigma consciousness. I also expect that students high in stigma consciousness will show a greater effect of sexism on both anger and belongingness need threat—which will account for the increased alcohol consumption among students high in stigma consciousness. In other words, women high in stigma consciousness (versus low) will consume more alcohol because sexism leads to an increase in both anger and belongingness need threat.

Hypothesis 5

Because previous research suggests that racial identity moderates responses to experiences with racial discrimination (Smart Richman et al., 2013), I predict a moderated mediation model. Specifically, I predict a weaker effect of hostile and benevolent sexism on alcohol consumption among college women high in collective self-esteem compared to those low in collective self-esteem. I also expect that students high in collective self-esteem will show a weaker effect of sexism on both anger and belongingness need threat—which will account for the lower alcohol consumption among students high in collective self-esteem. In other words, women high in collective self-esteem (versus low) will consume less alcohol because sexism is related to less anger and belongingness need threat.

Study 1

Study 1 uses cross-sectional methods to examine the relations between sexism and college women's alcohol consumption as a follow-up to previous research suggesting that experiences with sexism are related to binge drinking via psychological distress (Zucker & Landry, 2007). The current study is the first to examine whether hostile and benevolent sexism have similar effects on college women's alcohol consumption. It also tests potential mediators and moderators of these effects.

Study 1 Method

Participants

Prospective power analysis. To estimate the appropriate sample size for the current study, the procedures outlined by Kenny (2016) for computing the power to detect indirect effects in mediation models was followed using R (2015). Using a low-medium effect size, this analysis suggests that 156 participants are needed to adequately power the hypothesized effects if they exist. Tests of conditional indirect effects were tested using the PROCESS macro (Hayes, 2018) which uses bootstrapping to construct confidence intervals, increasing the chances that the current study has adequate power.

Participants. A total of 3524 individuals completed a screening survey on Amazon's Mechanical Turk to determine their eligibility for participation during the fall semester. Of these, 273 (8%) indicated that they were female undergraduate students who had consumed alcohol in the past two weeks and were invited to participate in the study and 212 (78%) of those invited completed the full study via Mechanical Turk. The final sample excludes 10 participants who, despite the screener survey, indicated within the study that they did not meet study

requirements (i.e., male, non-student). Participants included in analyses ranged in age from 18 to 54 (M = 25.35, SD = 6.43), and were mostly White (65%) and non-Greek affiliates (82%). The sample included 6% freshmen, 12% sophomores, 37% juniors, and 43% seniors. The majority of participants lived off-campus either with roommates (29%) or with their family (28%).

Overview of Procedure

A screening survey asking about gender, college status, and alcohol consumption was posted on Amazon's Mechanical Turk. Workers who completed the screening survey and were qualified to participate in the study (i.e., those who reported that they were female undergraduate students who had consumed alcohol in the past two weeks) were invited to participate in the full study via Mechanical Turk. Participants completed an online study in which they were asked to complete demographic information and individual difference measures of stigma consciousness and collective self-esteem. Next, they were asked to report how frequently they had experienced hostile and benevolent sexism and how often they had consumed alcohol within the past four weeks. In addition, they were asked to report how angry they felt and complete a measure of belongingness need threat for the past four weeks (see Appendix A). Since I am studying alcohol consumption among a population that is largely underage, I obtained a Certificate of Confidentiality from the National Institutes of Health to protect all participants. Participants received 4¢ for completing the screener survey and were compensated for participation in the full study with $2.00.

Measures

Demographic information. In this assessment of demographic information, factors that have been related to alcohol consumption by college students were measured. These included

age, ethnicity, year in school, Greek house membership, and housing environment (Ham & Hope, 2003).

Stigma consciousness. Participants completed the 10-item stigma consciousness questionnaire for women (Pinel, 1999). This measure assesses individual differences in women's expectations regarding whether or not they are likely to experience sexism by asking participants to rate the extent to which they agree with statements such as "Stereotypes about women have not affected me personally" and "Most men have a problem viewing women as equals" on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*). Negative items were reverse scored before averaging items together so that higher values represent greater stigma consciousness ($\alpha = .85$).

Collective self-esteem. Participants completed the 16-item Collective Self-Esteem Scale (CSES; Luhtanen & Crocker, 1992) adapted to measure collective self-esteem based on female identity. This measure assesses participant's collective self-esteem based on their female identity by asking participants to rate the extent to which they agree with statements such as "I feel good about being female" and "Being female is unimportant to my sense of what kind of person I am" on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*). Negative items were reverse scored before averaging items together so that higher values represent more positive private regard ($\alpha = .86$).

Ambivalent sexism experiences. Based on the perceived sexist experiences measure used by Fitz and Zucker (2015), participants were asked to indicate how often in the past four weeks they have felt like men in their lives have agreed with the 22 items from the ambivalent sexism inventory (e.g., "Women are too easily offended"[hostile sexism], "Many women have a

quality of purity that few men possess" [benevolent sexism]; Glick & Fiske, 1996) on a 7-point scale (1 = *never*, 7 = *all of the time*). Items were reverse scored according to the ambivalent sexism inventory's scoring procedures. Next, composite hostile sexism experience scores and benevolent sexism experience scores were computed by separately averaging together the 11 hostile (α = .87) and 11 benevolent sexism items (α = .80).

Alcohol use. Alcohol use from the previous four weeks was measured via three items (adapted from Andrew & Cronin, 1997). The first question in this measure asked participants to report on how many days (out of 28) they have consumed alcohol during the past 4 weeks. The second question asked participants to report how many drinks they typically consumed each time they drank. Finally, the third question asked participants to report how often they had consumed four drinks or more in a row (based on the definition of binge drinking for women by Wechsler, Dowdall, Davenport, & Rimm, 1995). Participants were instructed that one standard alcoholic drink is equal to one 12-oz. beer (usually about 5% alcohol content), one 8-oz. glass of malt liquor (usually about 7% alcohol content), one 5-oz. glass of wine (usually about 12% alcohol content), or 1.5-oz. of liquor either straight or in a mixed drink (usually about 40% alcohol content) and were given a visual aid illustrating these drink sizes (NIAAA, n.d.). College students have been shown to provide reasonably accurate self-reports of their alcohol use as compared to friends' reports of their alcohol use (Hagman, Cohn, Noel, & Clifford, 2010) and providing participants with information on what constitutes a standard drink has been shown to lessen the chances of underreporting (Bergen-Cico & Kilmer, 2010).

Anger. Based on the measure of anger used by Barreto and Ellemers (2005), participants were asked to indicate the extent to which they experienced five negative emotions (e.g., angry,

indignant, irritated, disappointed, frustrated) in the previous four weeks on a 7-point scale (1 = *not at all*, 7 = *extremely*). These five items were averaged together to form a composite anger score (α = .88).

Belongingness need threat. In order to measure the threat to participants' belongingness needs, I used a modified version of the belongingness subscale of the Need Threat Scale (van Beest & Williams, 2006). Participants were asked to indicate the extent to which they agreed with five statements (e.g., "In the previous four weeks, I felt as one with others", "In the previous four weeks, I felt like an outsider") on a 7-point scale (1 = *do not agree*, 7 = *agree*). Positive items were reverse scored before averaging items together so that higher values represent greater belongingness need threat (α = .87).

Study 1 Results

Descriptive Statistics

Participants reported consuming alcohol on an average of 6.25 days in the past four weeks (*SD* = 5.57) and consuming an average of 2.59 drinks per drinking occasion (*SD* = 1.26). Participants also reported binge drinking (i.e., consuming four or more drinks at a time) on an average of 2.49 days in the past four weeks (*SD* = 4.41).

Table 1. Means, Standard Deviations, and Correlations

Measure	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age	25.35	6.42	---												
2. Ethnicity	0.66	0.48	.21**	---											
3. Greek house membership	9.17	0.38	-.06	-.09	---										
4. Housing environment	0.28	0.45	.37**	.01	-.16*	---									
5. Stigma consciousness	4.63	1.09	-.10	-.06	-.16*	-.08	---								
6. Collective self-esteem	5.22	0.86	.06	.01	.004	.06	-.05	---							
7. Benevolent sexism experiences	3.28	1.03	.06	-.27**	.13	.18*	-.08	.05	---						
8. Hostile sexism experiences	3.30	1.25	.13	-.06	.05	.08	.04	-.08	.31**	---					
9. Anger	3.61	1.44	-.07	-.06	.01	-.04	.33**	-.10	.06	.27**	---				
10. Belongingness need threat	3.49	1.44	.06	-.04	-.05	.001	.35**	-.35**	.04	.28**	.55**	---			
11. Drinking days	6.25	5.57	.07	.15*	-.02	-.09	-.07	.13	.05	.01	-.14	-.10	---		
12. Average drinks	2.59	1.26	-.02	-.02	.03	-.13	.01	-.01	.01	-.02	-.06	.05	.31**	---	
13. Binge drinking days	2.49	4.41	.12	.10	.14*	-.10	-.17*	-.11	.05	-.03	-.17*	-.01	.64**	.61**	---

Categorical variables were coded in the following ways: Ethnicity 0 = non-White, 1 = White; Greek house membership 0 = Non-member, 1 = Greek house member; housing environment 0 = living with roommates or alone, 1 = living with family.
* = $p < .05$, ** = $p < .01$.

Table 1 shows the descriptive statistics and correlations of relevant variables. White participants reported experiencing less benevolent sexism and consuming alcohol on more days. Greek house members were less likely to live with family, lower in stigma consciousness, and reported more binge drinking days. Participants living with family reported more benevolent sexism experiences. Participants high in stigma consciousness reported greater anger, greater belongingness need threat, and fewer binge drinking days. In contrast, those high in collective self-esteem reported less belongingness need threat. Hostile and benevolent sexism were positively correlated with one another. Hostile sexism experiences were also related to greater anger and belongingness need threat. Participants who reported greater belongingness need threat also reported greater anger. Finally, greater average alcohol consumption was associated with more binge drinking days and participants who reported consuming alcohol on more days during the four weeks also reported consuming greater quantities during an average drinking occasion and binge drinking more often.

Table 2. Effects of Hostile and Benevolent Sexism on Alcohol Consumption

	Number of Drinking Days				Average Number of Drinks Per Occasion				Number of Binge Drinking Days			
	B	*Exp(B)*	χ^2	*p*	*B*	*Exp(B)*	χ^2	*p*	*B*	*Exp(B)*	χ^2	*p*
Constant	1.70	5.45	692.39	<.001	1.01	2.74	128.91	<.001	0.65	1.91	41.27	<.001
Age	0.01	1.01	5.51	.02	0.002	1.00	0.10	.75	0.03	1.03	29.17	<.001
Ethnicity	0.32	1.37	20.56	<.001	-0.03	0.97	0.09	.77	0.43	1.53	15.20	<.001
Greek House Membership	-0.09	0.92	1.11	.29	0.01	1.01	0.01	.92	0.39	1.48	13.34	<.001
Housing Environment	-0.28	0.76	13.89	<.001	-0.14	0.87	1.57	.21	-0.61	0.54	24.68	<.001
Hostile Sexism	-0.003	1.00	0.01	.92	-0.01	0.99	0.09	.77	-0.11	0.90	7.09	.01
Benevolent Sexism	0.09	1.10	7.98	.01	0.01	1.01	0.08	.78	0.21	1.23	14.48	<.001

Hypothesis Testing

Because the number of drinking days, number of drinks consumed, and number of binge drinking days are all count variables, I conducted standard Poisson regression analyses (see Coxe, West, & Aiken, 2009) to test if experiences with either hostile or benevolent sexism predict alcohol consumption (Hypothesis 1). This analysis uses a Poisson distribution error structure and a natural log link function to account for the non-constant variance of the errors and the non-normal conditional distribution of errors inherent in count variables. I included both hostile and benevolent sexism in the same model predicting the number of days on which participants reported consuming alcohol in the past four weeks and, separately, the average number of drinks consumed on each drinking occasion and the number of binge drinking days. Age, ethnicity (0 = Non-White, 1 = White), Greek house membership (0 = Non-member, 1 = Greek house member), and housing environment (0 = Living with roommates or alone, 1 = Living with family) were all included as control variables. All continuous predictor variables were centered prior to analysis.

Contrary to predictions, this analysis revealed no effect of hostile sexism experiences on number of drinking days (see Table 2). However, there was a significant positive effect of benevolent sexism experiences on number of drinking days. Specifically, a participant who reported experiencing one unit more benevolent sexism is expected to consume alcohol on 1.1 times as many days, on average, as a participant experiencing one unit less benevolent sexism. This analysis revealed no effects of either hostile or benevolent sexism on average number of drinks per drinking occasion. Finally, this analysis revealed a significant negative effect of hostile sexism on number of binge drinking days. Specifically, a participant who reported

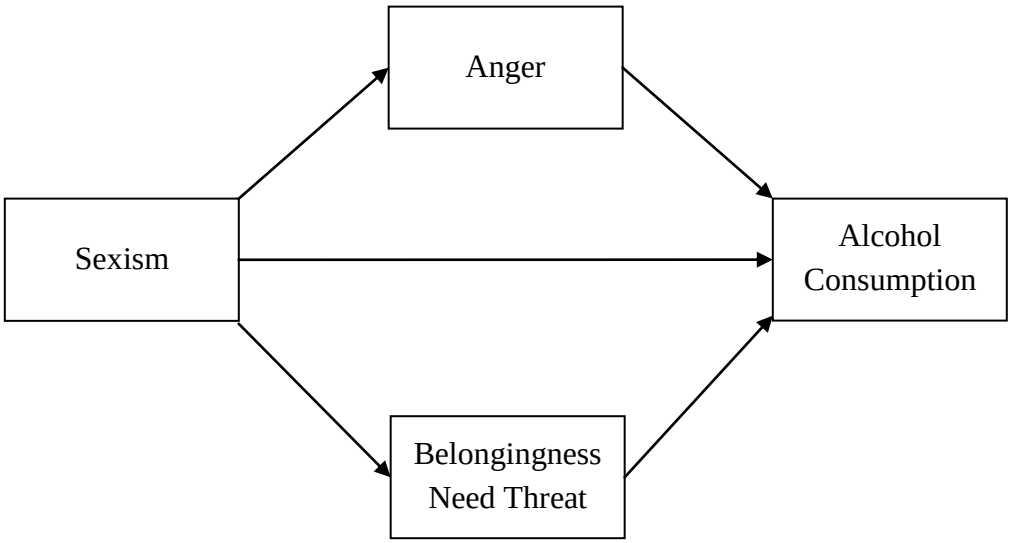
experiencing one unit more hostile sexism is expected to consume alcohol on 0.9 times as many days, on average, as a participant experiencing one unit less hostile sexism. In contrast, there was a significant positive effect of benevolent sexism on number of binge drinking days. Specifically, a participant who reported experiencing one unit more benevolent sexism is expected to consume alcohol on 1.23 times as many days, on average, as a participant experiencing one unit less benevolent sexism. This suggests that the effects of hostile and benevolent sexism on alcohol consumption are complex. While hostile sexism seems to be generally related to decreased alcohol consumption in the current sample, this effect was only significant in predicting binge drinking behavior. In contrast, benevolent sexism seems to be related to greater alcohol consumption, although this effect was not found for reported average number of drinks per occasion.

Testing mediation. Although no support was found for a direct effect of sexism on all forms of alcohol consumption, I next tested for indirect effects of sexism experiences on each of these alcohol consumption variable. This is in line with new theories of mediation which suggest that indirect effects are not constrained by the size of total effects and may exist even when total effects are non-significant (Hayes, 2018). In order to test Hypotheses 2, which suggested that hostile sexism increases alcohol consumption via both anger and belongingness need threat, and Hypothesis 3, which suggests that benevolent sexism increases alcohol consumption via belongingness need threat but not anger, I conducted mediation analyses using the PROCESS macro (Hayes, 2018), which uses ordinary least-squares regression analysis and bootstrap confidence intervals to test indirect effects. This analysis takes advantage of the increased power bootstrapping methods provide as well as the lack of assumptions regarding the normality of

sampling distributions. In addition, I report the results from the heteroscedasticity-consistent standard error estimator to reduce bias due to the count nature of my outcome variables. [1]

Using Model 4 in the SPSS PROCESS macro (Hayes, 2018), I separately tested the effects of hostile and benevolent sexism on number of drinking days, on average number of drinks per drinking occasion, and on number of binge drinking days (see Figure 1). I controlled for demographic information in all analyses and controlled for the other form of sexism in each analysis (i.e., hostile sexism was controlled for in analysis of benevolent sexism effects and vice versa).

Figure 1. Statistical model of relation between sexism and alcohol consumption mediated by anger and belongingness need threat.



[1] Although there are arguments against the use of ordinary least squares regression (which is used by PROCESS) for count variables such as the number of drinking days, Andrew Hayes suggests that the use of PROCESS for these analyses can be appropriate (personal communication, September 13, 2016). Bootstrap confidence intervals are more robust to violations of normality and heteroscedasticity and any additional concerns should be alleviated with use of the heteroscedasticity-consistent standard error estimator.

Table 3. Model Coefficients for the Mediational Model of Hostile Sexism Predicting Number of Drinking Days

	Anger			Belongingness Need Threat			Number of Drinking Days		
	b	*SE*	*p*	*b*	*SE*	*p*	*b*	*SE*	*p*
Constant	-0.73	0.45	.11	-0.70	0.45	.12	3.27	1.95	.10
Age	-0.03	0.02	.23	0.004	0.02	.88	0.06	0.09	.52
Ethnicity	-0.21	0.23	.37	-0.14	.23	.54	1.73	0.84	.04
Greek House Membership	-0.03	0.29	.92	-0.12	0.27	.67	-0.49	1.29	.70
Housing Environment	-0.14	0.26	.60	-0.21	0.27	.44	-1.77	1.14	.12
Benevolent Sexism	-0.04	.13	.76	-0.06	0.12	.61	0.52	0.59	.37
Hostile Sexism	0.34	0.10	<.001	0.35	0.10	<.001	0.22	0.43	.60
Anger	---	---	---	---	---	---	-0.45	0.46	.33
Belongingness Need Threat	---	---	---	---	---	---	-0.22	0.36	.55
	$R^2 = .10$			$R^2 = .09$			$R^2 = .06$		
	$F(6, 180) = 3.20$, $p = .01$			$F(6, 180) = 2.71$, $p = .02$			$F(8, 178) = 1.36$, $p = .22$		

Number of drinking days. Analyses revealed that hostile sexism significantly predicted anger and belongingness need threat. However, when all variables were included in analyses, there was no effect of hostile sexism, anger, or belongingness need threat on number of drinking days (see Table 3). In addition, analyses revealed no significant direct or indirect effects (see Table 4). Contrary to hypotheses, although hostile sexism did predict greater anger and belongingness need threat, this was unrelated to participants' reported number of drinking days.

Table 4. Direct and Indirect Effects of the Mediational Model of Hostile Sexism Predicting Number of Drinking Days

	b	*SE*	95% Confidence Interval
Direct Effect	0.22	0.43	-0.62, 1.06
Total Indirect Effect	-0.23	0.15	-0.55, 0.05
Indirect Effect Via Anger	-0.15	0.15	-0.47, 0.13
Indirect Effect Via Belongingness Need Threat	-0.08	0.13	-0.33, 0.18

Analyses revealed no significant effect of benevolent sexism on either anger or belongingness need threat. Furthermore, when all variables were included in analyses, there was no effect of benevolent sexism, anger, or belongingness need threat on number of drinking days (see Table 5). In addition, analyses revealed no significant direct or indirect effects (see Table 6). Contrary to hypotheses, benevolent sexism did not predict either belongingness need threat or number of drinking days.

Table 5. Model Coefficients for the Mediational Model of Benevolent Sexism Predicting Number of Drinking Days

	Anger			Belongingness Need Threat			Number of Drinking Days		
	b	*SE*	*p*	*b*	*SE*	*p*	*b*	*SE*	*p*
Constant	-0.73	0.45	.11	-0.70	0.45	.12	3.27	1.95	.10
Age	-0.03	0.02	.23	0.004	0.02	.88	0.06	0.09	.52
Ethnicity	-0.21	0.23	.37	-0.14	0.23	.54	1.73	0.84	.04
Greek House Membership	-0.03	0.29	.92	-0.12	0.27	.67	-0.49	1.29	.70
Housing Environment	-0.14	0.26	.60	-0.21	0.27	.44	-1.77	1.14	.12
Benevolent Sexism	-0.04	0.13	.76	-0.06	0.12	.61	0.52	0.59	.37
Hostile Sexism	0.34	0.26	<.001	0.35	0.10	<.001	0.22	0.42	.60
Anger	---	---	---	---	---	---	-0.45	0.46	.33
Belongingness Need Threat	---	---	---	---	---	---	-0.22	0.36	.55
	R^2 = .10			R^2 = .09			R^2 = .06		
	$F(6, 180) = 3.20$, $p = .01$			$F(6, 180) = 2.71$, $p = .02$			$F(8, 178) = 1.36$, $p = .22$		

Table 6. Direct and Indirect Effects of the Mediational Model of Benevolent Sexism Predicting Number of Drinking Days

	b	*SE*	95% Confidence Interval
Direct Effect	0.52	0.59	-0.64, 1.69
Total Indirect Effect	0.03	0.09	-0.17, 0.22
Indirect Effect Via Anger	0.02	0.08	-0.16, 0.17
Indirect Effect Via Belongingness Need Threat	0.01	0.05	-0.07, 0.15

Average number of drinks per drinking occasion. I next tested the same analyses presented above using the average number of drinks per drinking occasion as the outcome variable in place of the number of drinking days. These analyses revealed that hostile sexism significantly predicted anger and belongingness need threat. However, when all variables were included in analyses, there was no effect of hostile sexism, anger, or belongingness need threat on average number of drinks consumed per drinking occasion (see Table 7). In addition, analyses revealed no significant direct or indirect effects (see Table 8). Contrary to hypotheses, although hostile sexism did predict greater anger and belongingness need threat, this was unrelated to participants' reports of the average number of drinks they consumed when they drank.

Table 7. Model Coefficients for the Mediational Model of Hostile Sexism Predicting Average Number of Drinks

	Anger			Belongingness Need Threat			Average Number of Drinks		
	b	*SE*	*p*	*b*	*SE*	*p*	*b*	*SE*	*p*
Constant	-0.92	0.46	.04	-0.79	0.44	.07	2.69	0.43	<.001
Age	-0.02	0.02	.30	0.004	0.03	.87	0.003	0.02	.85
Ethnicity	-0.05	0.23	.81	-0.10	0.23	.67	-0.07	0.21	.72
Greek House Membership	-0.06	0.29	.84	-0.28	0.29	.33	0.05	0.24	.82
Housing Environment	-0.15	0.26	.56	-0.22	0.27	.42	-0.36	0.22	.12
Benevolent Sexism	-0.02	0.13	.90	-0.03	0.12	.81	0.04	0.12	.76
Hostile Sexism	0.32	0.10	.001	0.32	0.10	.001	-0.02	0.08	.78
Anger	---	---	---	---	---	---	-0.12	0.09	.16
Belongingness Need Threat	---	---	---	---	---	---	0.11	0.09	.24
	$R^2 = .09$			$R^2 = .08$			$R^2 = .03$		
	$F(6, 188) = 2.61$, $p = .02$			$F(6, 188) = 2.74$, $p = .01$			$F(8, 186) = 0.69$, $p = .70$		

Table 8. Direct and Indirect Effects of the Mediational Model of Hostile Sexism Predicting Average Number of Drinks

	b	*SE*	95% Confidence Interval
Direct Effect	-0.02	0.08	-0.18, 0.14
Total Indirect Effect	-0.01	0.03	-0.07, 0.05
Indirect Effect Via Anger	-0.04	0.03	-0.11, 0.01
Indirect Effect Via Belongingness Need Threat	0.03	0.03	-0.02, 0.10

Analyses revealed no significant effect of benevolent sexism on either anger or belongingness need threat. Furthermore, when all variables were included in analyses, there was no effect of benevolent sexism, anger, or belongingness need threat on number of drinking days (see Table 9). In addition, analyses revealed no significant direct or indirect effects (see Table 10). Contrary to hypotheses, benevolent sexism did not predict either belongingness need threat or average number of drinks consumed per drinking occasion.

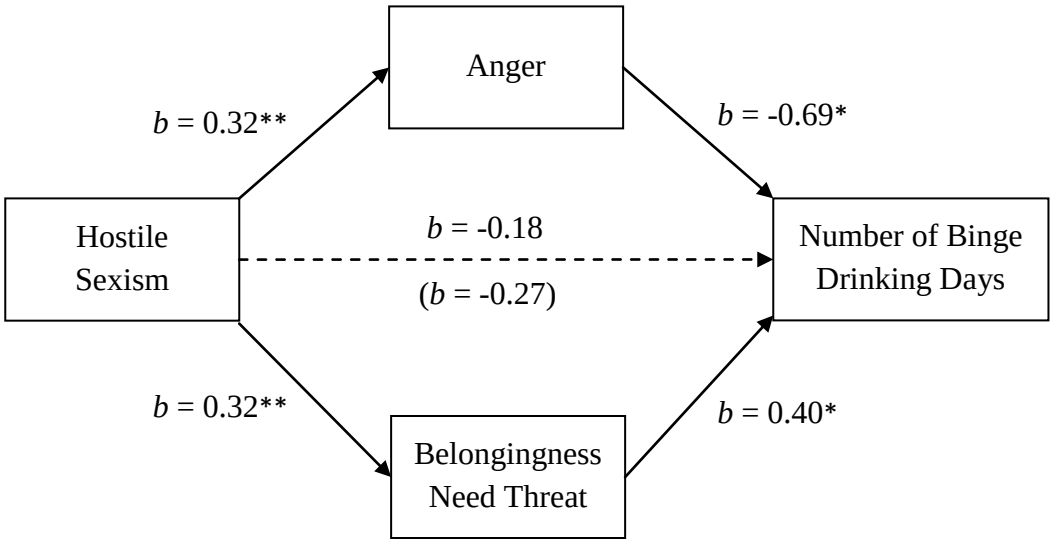
Table 9. Model Coefficients for the Mediational Model of Benevolent Sexism Predicting Average Number of Drinks

	Anger			Belongingness Need Threat			Average Number of Drinks		
	b	*SE*	*p*	*b*	*SE*	*p*	*b*	*SE*	*p*
Constant	-0.92	0.46	.04	-0.79	0.44	.07	2.69	0.43	<.001
Age	-0.02	0.02	.30	0.004	0.03	.87	0.003	0.02	.85
Ethnicity	-0.05	0.23	.81	-0.10	0.23	.67	-0.07	0.21	.72
Greek House Membership	-0.06	0.29	.84	-0.28	0.29	.33	0.05	0.24	.82
Housing Environment	-0.15	0.26	.56	-0.22	0.27	.42	-0.36	0.22	.12
Benevolent Sexism	-0.02	0.13	.90	-0.03	0.12	.81	0.04	0.12	.76
Hostile Sexism	0.32	0.10	.001	0.32	0.10	.001	-0.02	0.08	.78
Anger	---	---	---	---	---	---	-0.12	0.09	.16
Belongingness Need Threat	---	---	---	---	---	---	0.11	0.09	.24
	R^2 = .09			R^2 = .08			R^2 = .03		
	$F(6, 188) = 2.61$, $p = .02$			$F(6, 188) = 2.74$, $p = .01$			$F(8, 186) = 0.69$, $p = .70$		

Table 10. Direct and Indirect Effects of the Mediational Model of Benevolent Sexism Predicting Average Number of Drinks

	b	*SE*	95% Confidence Interval
Direct Effect	0.04	0.12	-0.20, 0.27
Total Indirect Effect	-0.001	0.02	-0.04, 0.04
Indirect Effect Via Anger	0.002	0.02	-0.04, 0.05
Indirect Effect Via Belongingness Need Threat	-0.003	0.02	-0.04, 0.03

Figure 2. Path model of hostile sexism predicting number of binge drinking days.



* = $p < .05$, ** = $p < .01$. Dashed line signifies nonsignificant path. Total effect of hostile sexism on number of binge drinking days appears in parentheses.

Number of binge drinking days. I next tested the same analyses presented above using number of binge drinking days as the outcome variable (see Figure 2). These analyses revealed that hostile sexism significantly predicted anger and belongingness need threat. Furthermore, when all variables were included in analyses, there was a significant negative effect of anger on binge drinking days and a marginally significant positive effect of belongingness need threat on

binge drinking days, although no significant direct effect of hostile sexism was found (see Table 11). In addition, analyses revealed no significant direct or total effects, but a significant negative indirect effect via anger and a significant positive indirect effect via belongingness need threat (see Table 12). Contrary to hypotheses, it was found that hostile sexism, through its effect on anger, was related to decreased binge drinking behavior. However, these analyses did provide some support for Hypothesis 2 in that hostile sexism did seem to predict greater binge drinking behavior via its effect on belongingness need threat.

Table 11. Model Coefficients for the Mediational Model of Hostile Sexism Predicting Number of Binge Drinking Days

	Anger			Belongingness Need Threat			Number of Binge Drinking Days		
	b	*SE*	*p*	*b*	*SE*	*p*	*b*	*SE*	*p*
Constant	-0.86	0.46	.06	-0.71	0.43	.10	1.06	1.65	.52
Age	-0.02	0.02	.34	0.01	0.02	.70	0.09	0.08	.23
Ethnicity	-0.11	0.23	.64	-0.15	0.23	.50	0.94	0.62	.13
Greek House Membership	-0.04	0.29	.89	-0.26	0.28	.35	1.48	1.16	.20
Housing Environment	-0.06	0.26	.82	-0.14	0.27	.60	-1.51	0.68	.03
Benevolent Sexism	-0.03	0.13	.85	-0.05	0.12	.69	0.48	0.39	.23
Hostile Sexism	0.32	0.10	.001	0.32	0.10	.001	-0.18	0.26	.50
Anger	---	---	---	---	---	---	-0.69	0.30	.02
Belongingness Need Threat	---	---	---	---	---	---	0.40	0.20	.05
	$R^2 = .08$			$R^2 = .08$			$R^2 = .10$		
	$F(6, 193) = 2.43$, $p = .03$			$F(6, 193) = 2.71$, $p = .02$			$F(8, 191) = 1.58$, $p = .13$		

Table 12. Direct and Indirect Effects of the Mediational Model of Hostile Sexism Predicting Number of Binge Drinking Days

	b	*SE*	95% Confidence Interval
Direct Effect	-0.18	0.26	-0.69, 0.34
Total Indirect Effect	-0.09	0.11	-0.35, 0.10
Indirect Effect Via Anger	-0.22	0.11	-0.48, -0.04
Indirect Effect Via Belongingness Need Threat	0.13	0.07	0.002, 0.30

Analyses revealed no significant effect of benevolent sexism on either anger or belongingness need threat. Furthermore, there was no effect of benevolent sexism on number of binge drinking days (see Table 13). However, when all variables were included in analyses, there was a significant negative effect of anger and a significant positive effect of belongingness need threat on number of binge drinking days. Finally, analyses revealed no significant direct or indirect effects (see Table 14). This suggests that, although the mediators significantly predicted number of binge drinking days, benevolent sexism did not predict either the mediators or alcohol consumption. Contrary to hypotheses, although belongingness need threat predicted more binge drinking days, benevolent sexism did not predict either belongingness need threat or number of binge drinking days.

Table 13. Model Coefficients for the Mediational Model of Benevolent Sexism Predicting Number of Binge Drinking Days

	Anger			Belongingness Need Threat			Number of Binge Drinking Days		
	b	*SE*	*p*	*b*	*SE*	*p*	*b*	*SE*	*p*
Constant	-0.86	0.46	.06	-0.71	0.43	.10	1.06	1.65	.52
Age	-0.02	0.02	.34	0.01	0.02	.70	0.09	0.08	.23
Ethnicity	-0.11	0.23	.64	-0.15	0.23	.50	0.94	0.62	.13
Greek House Membership	-0.04	0.29	.89	-0.26	0.28	.35	1.48	1.16	.21
Housing Environment	-0.06	0.26	.82	-0.14	0.27	.60	-1.51	0.68	.03
Benevolent Sexism	-0.03	0.13	.85	-0.05	0.12	.69	0.48	0.39	.23
Hostile Sexism	0.32	0.10	.001	0.32	0.10	.001	-0.18	0.26	.50
Anger	---	---	---	---	---	---	-0.69	0.30	.02
Belongingness Need Threat	---	---	---	---	---	---	0.40	0.20	.05
	R^2 = .08			R^2 = .08			R^2 = .10		
	$F(6, 193) = 2.43$, $p = .03$			$F(6, 193) = 2.71$, $p = .02$			$F(8, 191) = 1.58$, $p = .13$		

Table 14. Direct and Indirect Effects of the Mediational Model of Benevolent Sexism Predicting Number of Binge Drinking Days

	b	*SE*	95% Confidence Interval
Direct Effect	0.48	0.39	-0.30, 1.25
Total Indirect Effect	-0.001	0.09	-0.18, 0.19
Indirect Effect Via Anger	0.02	0.10	-0.18, 0.23
Indirect Effect Via Belongingness Need Threat	-0.02	0.05	-0.14, 0.08

Testing moderation. Next, in order to test whether the effects of sexism on alcohol consumption are moderated by either stigma consciousness (Hypothesis 4) or collective self-esteem (Hypothesis 5), I conducted standard Poisson regression analyses including stigma consciousness, collective self-esteem, interactions between each of these two variables and hostile sexism, and interactions between each of these two variables and benevolent sexism. Including all of the same covariates as before, I used this model to test whether stigma consciousness and collective self-esteem moderate the effects of hostile and benevolent sexism on each of my three alcohol consumption variables.

Number of drinking days. This analysis suggests that the effects of both hostile and benevolent sexism were dependent upon individual differences in identity threat appraisal (see Table 15).

Table 15. Number of Drinking Days as a Function of Hostile Sexism, Benevolent Sexism, Stigma Consciousness, and Collective Self-Esteem

	B	*Exp(B)*	$\chi^2(1)$	*p*
Constant	1.71	5.50	689.22	<.001
Age	0.01	1.01	4.65	.03
Ethnicity	0.31	1.36	19.37	<.001
Greek House Membership	-0.12	0.89	2.11	.15
Housing Environment	-0.33	0.72	19.03	<.001
Hostile Sexism	-0.002	1.00	0.01	.93
Benevolent Sexism	0.09	1.09	6.23	.01
Stigma Consciousness	-0.05	0.95	3.23	.07
Collective Self-Esteem	0.12	1.13	11.63	.001
Hostile Sexism X Stigma Consciousness	0.07	1.07	9.63	.002
Hostile Sexism X Collective Self-Esteem	-0.05	0.95	3.30	.07
Benevolent Sexism X Stigma Consciousness	-0.01	0.99	0.08	.78
Benevolent Sexism X Collective Self-Esteem	0.13	1.14	11.37	.001

In order to determine the nature of the significant Hostile Sexism X Stigma Consciousness interaction, I examined the effects of hostile sexism predicting number of drinking days separately for participants one standard deviation above (high stigma consciousness) and below (low stigma consciousness) average stigma consciousness (Aiken & West, 1991). Among students high in stigma consciousness, there was a significant positive effect of hostile sexism experiences on number of drinking days, $B = 0.07$, $Exp(B) = 1.07$, $\chi^2(1) = 5.85$, $p = .02$. In contrast, among students low in stigma consciousness, there was a marginally

significant negative effect of hostile sexism experiences on number of drinking days, B = -0.08, $Exp(B)$ = 0.93, $\chi^2(1) = 2.99$, $p = .08$. This suggests that reporting more hostile sexism experiences is related to greater frequency in alcohol consumption among students high in stigma consciousness but a lower rate of drinking days for students low in stigma consciousness.

In order to determine the nature of the marginally significant Hostile Sexism X Collective Self-Esteem interaction and the significant Benevolent Sexism X Collective Self-Esteem interaction, I examined the effects of hostile and benevolent sexism predicting number of drinking days separately for participants one standard deviation above (high collective self-esteem) and below (low collective self-esteem) average collective self-esteem (Aiken & West, 1991). Analyses reveal no significant simple effects of hostile sexism experiences on number of drinking days for students with either low collective self-esteem, B = 0.04, $Exp(B)$ = 1.04, $\chi^2(1) = 1.04$, $p = .31$, or students with high collective self-esteem, B = -0.05, $Exp(B)$ = 0.96, $\chi^2(1) = 1.80$, $p = .18$.

Next, I examined the significant interaction effect between collective self-esteem and benevolent sexism. Examination of the effects of benevolent sexism suggests that there was no effect of benevolent sexism on number of drinking days among students with low collective self-esteem, B = -0.03, $Exp(B)$ = 0.98, $\chi^2(1) = 0.23$, $p = .63$. However, among student with high collective self-esteem, there was a significant positive effect of benevolent sexism on number of drinking days, B = -.20, $Exp(B)$ = 1.22, $\chi^2(1) = 20.91$, $p < .001$. This suggests that benevolent sexism experiences are related to greater drinking frequency among students with high collective self-esteem, but not for those with low collective self-esteem.

Average number of drinks per drinking occasion. Analysis of drinking quantity suggests that neither the effects hostile nor of the effects of benevolent sexism experiences depended upon either stigma consciousness or collective self-esteem (see Table 16).

Table 16. Average Number of Drinks as a Function of Hostile Sexism, Benevolent Sexism, Stigma Consciousness, and Collective Self-Esteem

	B	*Exp(B)*	$\chi^2(1)$	*p*
Constant	1.00	2.73	124.59	<.001
Age	0.003	1.003	0.15	.70
Ethnicity	-0.02	0.98	0.03	.87
Greek House Membership	0.01	1.01	0.01	.94
Housing Environment	-0.15	0.87	1.59	.21
Hostile Sexism	-0.02	0.98	0.30	.58
Benevolent Sexism	0.03	1.03	0.25	.62
Stigma Consciousness	0.01	1.01	0.02	.89
Collective Self-Esteem	-0.01	0.99	0.05	.83
Hostile Sexism X Stigma Consciousness	0.01	1.01	0.08	.78
Hostile Sexism X Collective Self-Esteem	0.04	1.04	0.64	.43
Benevolent Sexism X Stigma Consciousness	0.01	1.01	0.03	.87
Benevolent Sexism X Collective Self-Esteem	-0.07	0.94	1.28	.26

Number of binge drinking days. Analysis of binge drinking frequency suggests that the effects of hostile sexism are qualified by a significant Hostile Sexism X Stigma Consciousness interaction (see Table 17). Among students high in stigma consciousness, there was only a marginally significant negative effect of hostile sexism experiences on number of binge drinking

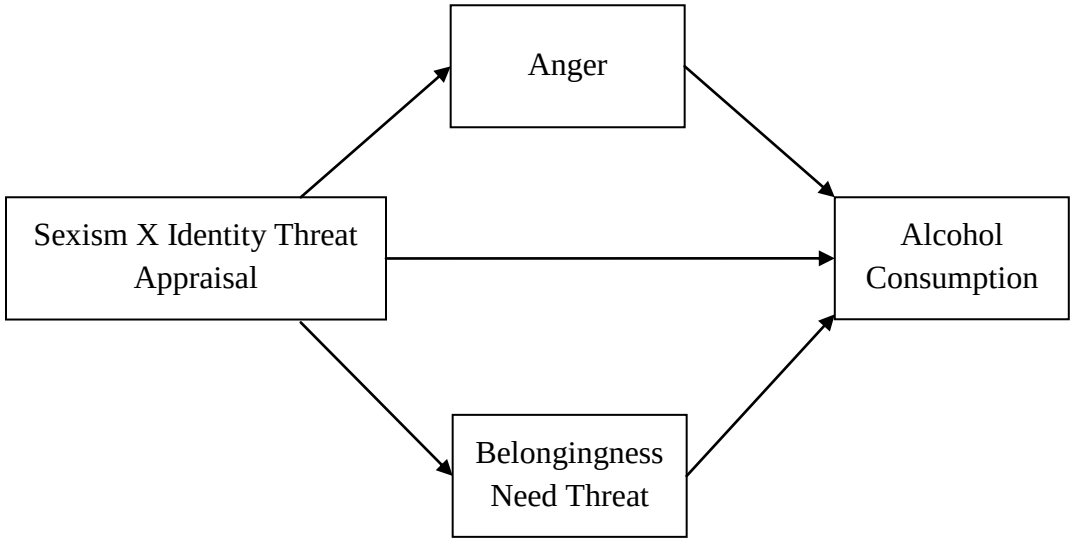
days, B = -0.09, $Exp(B)$ = 0.92, $\chi^2(1) = 2.72$, $p = .10$. In contrast, among students low in stigma consciousness, there was a significant negative effect of hostile sexism experiences on number of binge drinking days, B = -0.26, $Exp(B)$ = 0.78, $\chi^2(1) = 16.78$, $p < .001$. This suggests that students who report experiencing more hostile sexism experiences report fewer binge drinking days, particularly if they are low in stigma consciousness. In contrast, the effects of benevolent sexism were not moderated by stigma consciousness or collective self-esteem.

Table 17. Number of Binge Drinking Days as a Function of Hostile Sexism, Benevolent Sexism, Stigma Consciousness, and Collective Self-Esteem

	B	*Exp(B)*	$\chi^2(1)$	*p*
Constant	0.61	1.83	34.79	<.001
Age	0.03	1.04	29.21	<.001
Ethnicity	0.43	1.54	15.14	<.001
Greek House Membership	0.26	1.29	5.43	.02
Housing Environment	-0.66	0.52	27.54	<.001
Hostile Sexism	-0.17	0.84	14.51	<.001
Benevolent Sexism	0.29	1.34	23.12	<.001
Stigma Consciousness	-0.23	0.80	28.92	<.001
Collective Self-Esteem	-0.25	0.78	23.93	<.001
Hostile Sexism X Stigma Consciousness	0.08	1.08	5.05	.03
Hostile Sexism X Collective Self-Esteem	-0.03	0.97	0.43	.51
Benevolent Sexism X Stigma Consciousness	0.04	1.04	1.04	.31
Benevolent Sexism X Collective Self-Esteem	-0.01	1.00	0.01	.94

Testing moderated mediation. Finally, I conducted moderated mediation analyses using the PROCESS macro (Hayes, 2018). This analysis allows me to determine whether the mediation effects tested for above exist only among students particularly susceptible to the effects of experiencing sexism. Using Model 10, I separately tested the effects of hostile and benevolent sexism on number of drinking days (see Figure 3).

Figure 3. Statistical model of sexism and identity threat appraisal impacting alcohol consumption via by anger and belongingness need threat.



Number of drinking days. Analyses testing effects of hostile sexism revealed no moderation effects of stigma consciousness or collective self-esteem (see Table 18). This suggests that, contrary to hypotheses, neither stigma consciousness nor collective self-esteem moderates the effects of hostile sexism on the number of days participants consumed alcohol in the past four weeks. In addition, analyses revealed no significant indices of moderated mediation (see Table 19).

Table 18. Model Coefficients of the Moderated Mediation Model of Hostile Sexism Predicting Number of Drinking Days

	Anger			Belongingness Need Threat			Number of Drinking Days		
	b	*SE*	*p*	*b*	*SE*	*p*	*b*	*SE*	*p*
Constant	0.16	0.21	.44	0.12	0.19	.53	5.76	0.73	<.001
Age	-0.02	0.12	.38	0.01	0.02	.55	0.06	0.09	.50
Ethnicity	-0.13	0.23	.57	-0.07	0.21	.75	1.81	0.88	.04
Greek House Membership	0.15	0.30	.62	0.10	0.27	.72	-0.67	1.40	.64
Housing Environment	-0.07	0.26	.80	-0.04	0.25	.89	-2.03	1.17	.08
Benevolent Sexism	-0.01	0.12	.96	-0.04	0.12	72	0.65	0.56	.25
Hostile Sexism	0.31	0.10	.003	0.34	0.11	.002	0.01	0.49	.98
Anger	---	---	---	---	---	---	-0.56	0.45	.22
Belongingness Need Threat	---	---	---	---	---	---	0.04	0.43	.92
Stigma Consciousness	0.42	0.10	<.001	0.43	0.11	<.001	-0.01	0.49	.98
Collective Self-Esteem	-0.04	0.14	.78	-0.48	0.14	<.001	0.68	0.60	.26
Hostile Sexism X Stigma Consciousness	0.01	0.08	.90	-0.08	0.09	.35	0.43	0.44	.34
Hostile Sexism X Collective Self-Esteem	-0.05	0.11	.67	-0.002	0.12	.99	-0.09	0.41	.82
	$R^2 = .20$			$R^2 = .29$			$R^2 = .09$		
	$F(10, 176) = 3.97$, $p < .001$			$F(10, 176) = 7.78$, $p < .001$			$F(12, 174) = 1.36$, $p = .19$		

Table 19. Indices of Partial Moderated Mediation in Model of Hostile Sexism Predicting Number of Drinking Days

	Anger			Belongingness Need Threat		
	Index	*SE*	95% Confidence Interval	Index	*SE*	95% Confidence Interval
Stigma Consciousness	-0.01	0.05	-0.13, 0.10	-0.003	0.04	-0.10, 0.09
Collective Self-Esteem	0.03	0.07	-0.12, 0.18	-0.0001	0.05	-0.11, 0.10

Analyses testing effects of benevolent sexism revealed no moderation effects of stigma consciousness or collective self-esteem (see Table 20). This suggests that, contrary to hypotheses, neither stigma consciousness nor collective self-esteem moderates the effects of benevolent sexism on the number of days participants consumed alcohol in the past four weeks. In addition, analyses revealed no significant indices of moderated mediation (see Table 21).

Table 20. Model Coefficients of the Moderated Mediation Model of Benevolent Sexism Predicting Number of Drinking Days

	Anger			Belongingness Need Threat			Number of Drinking Days		
	b	*SE*	*p*	*b*	*SE*	*p*	*b*	*SE*	*p*
Constant	0.14	0.20	.49	0.11	0.19	.56	5.72	0.74	<.001
Age	-0.02	0.02	.35	0.02	0.02	.46	0.04	0.09	.69
Ethnicity	-0.13	0.23	.57	-0.05	0.21	.81	1.70	0.84	.04
Greek House Membership	0.18	0.30	.56	0.07	0.27	.80	-0.34	1.37	.80
Housing Environment	-0.05	0.26	.85	-0.07	0.25	.79	-1.75	1.17	.14
Benevolent Sexism	-0.01	0.13	.93	-0.02	0.12	.85	0.41	0.68	.55
Hostile Sexism	0.33	0.10	<.001	0.30	0.10	.003	0.36	0.44	.41
Anger	---	---	---	---	---	---	-0.53	0.45	.24
Belongingness Need Threat	---	---	---	---	---	---	-0.04	0.43	.93
Stigma Consciousness	0.41	0.10	<.001	0.43	0.11	<.001	-0.08	0.51	.87
Collective Self-Esteem	-0.03	0.14	.84	-0.50	0.13	<.001	0.78	0.62	.21
Benevolent Sexism X Stigma Consciousness	0.004	0.08	.96	0.01	0.07	.91	0.19	0.73	.79
Benevolent Sexism X Collective Self-Esteem	0.06	0.15	.68	0.05	0.18	.80	0.68	0.71	.34
	$R^2 = .20$			$R^2 = .29$			$R^2 = .08$		
	$F(10, 176) = 4.21$, $p < .001$			$F(10, 176) = 7.30$, $p < .001$			$F(12, 174) = 1.43$, $p = .16$		

Table 21. Indices of Partial Moderated Mediation in Model of Benevolent Sexism Predicting Number of Drinking Days

	Anger			Belongingness Need Threat		
	Index	*SE*	95% Confidence Interval	Index	*SE*	95% Confidence Interval
Stigma Consciousness	-0.002	0.06	-0.16, 0.10	-0.0003	0.03	-0.07, 0.06
Collective Self-Esteem	-0.03	0.10	-0.28, 0.14	-0.002	0.07	-0.16, 0.14

Average number of drinks per drinking occasion. I next tested the same analyses presented above using average number of drinks per drinking occasion as the outcome variable in place of the number of drinking days. Analyses testing effects of hostile sexism revealed no moderation effects of stigma consciousness or collective self-esteem (see Table 22). This suggests that, contrary to hypotheses, neither stigma consciousness nor collective self-esteem moderates the effects of hostile sexism on the number of drinks participants typically consumed when they drank alcohol in the past four weeks. In addition, analyses revealed no significant indices of moderated mediation (see Table 23).

Table 22. Model Coefficients of the Moderated Mediation Model of Hostile Sexism Predicting Average Number of Drinks

	Anger			Belongingness Need Threat			Average Number of Drinks		
	b	*SE*	*p*	*b*	*SE*	*p*	*b*	*SE*	*p*
Constant	-0.01	0.21	.98	0.05	0.18	.77	2.72	0.19	<.001
Age	-0.02	0.02	.49	0.01	0.02	.61	0.004	0.02	.80
Ethnicity	-0.003	0.23	.99	-0/05	0.21	.81	-0.06	0.22	.79
Greek House Membership	0.14	0.30	.64	-0.02	0.27	.93	0.05	0.26	.83
Housing Environment	-0.07	0.26	.80	-0.05	0.25	.84	-0.36	0.24	.13
Benevolent Sexism	-0.01	0.13	.95	-0.02	0.12	.83	0.05	0.13	.68
Hostile Sexism	0.30	0.10	.004	0.32	0.10	.002	-0.05	0.11	.68
Anger	---	---	---	---	---	---	-0.13	0.09	.15
Belongingness Need Threat	---	---	---	---	---	---	0.12	0.19	.21
Stigma Consciousness	0.40	0.10	<.001	0.41	0.11	<.001	0.002	0.11	.98
Collective Self-Esteem	-0.09	0.13	.51	-0.52	0.13	<.001	0.04	0.13	.76
Hostile Sexism X Stigma Consciousness	-0.01	0.08	.91	-0.11	0.09	.20	0.04	0.10	.66
Hostile Sexism X Collective Self-Esteem	-0.11	0.11	.35	-0.06	0.12	.62	0.03	0.10	.74
	$R^2 = .19$			$R^2 = .29$			$R^2 = .03$		
	$F(10, 184) = 3.56$, $p < .001$			$F(10, 184) = 7.69$, $p < .001$			$F(12, 182) = 0.49$, $p = .92$		

Table 23. Indices of Partial Moderated Mediation in Model of Hostile Sexism Predicting Average Number of Drinks

	Anger			Belongingness Need Threat		
	Index	*SE*	95% Confidence Interval	Index	*SE*	95% Confidence Interval
Stigma Consciousness	0.001	0.01	-0.02, 0.03	-0.01	0.02	-0.05, 0.01
Collective Self-Esteem	0.01	0.02	-0.01, 0.06	-0.01	0.02	-0.05, 0.02

Analyses testing effects of benevolent sexism revealed no moderation effects of stigma consciousness or collective self-esteem (see Table 24). This suggests that, contrary to hypotheses, neither stigma consciousness nor collective self-esteem moderates the effects of benevolent sexism on the number of drinks participants typically consumed when they drank alcohol in the past four weeks. In addition, analyses revealed no significant indices of moderated mediation (see Table 25).

Table 24. Model Coefficients of the Moderated Mediation Model of Benevolent Sexism Predicting Average Number of Drinks

	Anger			Belongingness Need Threat			Average Number of Drinks		
	b	*SE*	*p*	*b*	*SE*	*p*	*b*	*SE*	*p*
Constant	-0.01	0.21	.94	0.04	0.18	.81	2.74	0.20	<.001
Age	-0.01	0.02	.52	0.02	0.02	.44	0.003	0.02	.85
Ethnicity	0.02	0.23	.93	-0.01	0.21	.96	-0.07	0.21	.75
Greek House Membership	0.15	0.30	.61	-0.04	0.27	.87	0.04	0.26	.88
Housing Environment	-0.06	0.26	.81	-0.08	0.25	.74	-0.37	0.23	.11
Benevolent Sexism	0.02	0.13	.88	0.02	0.11	.83	0.04	0.14	.75
Hostile Sexism	0.28	0.10	.004	0.26	0.10	.01	-0.04	0.08	.65
Anger	---	---	---	---	---	---	-0.13	0.09	.14
Belongingness Need Threat	---	---	---	---	---	---	0.12	0.09	.23
Stigma Consciousness	0.40	0.10	<.001	0.42	0.11	<.001	0.02	0.12	.88
Collective Self-Esteem	-0.09	0.13	.49	-0.54	0.12	<.001	0.03	0.13	.83
Benevolent Sexism X Stigma Consciousness	-0.02	0.08	.76	-0.02	0.07	.82	0.02	0.17	.91
Benevolent Sexism X Collective Self-Esteem	-0.08	0.14	.57	-0.04	0.14	.76	-0.13	0.12	.27
	$R^2 = .18$			$R^2 = .29$			$R^2 = .04$		
	$F(10, 184) = 3.41$, $p < .001$			$F(10, 184) = 7.73$, $p < .001$			$F(12, 182) = 0.58$, $p = .86$		

Table 25. Indices of Partial Moderated Mediation in Model of Benevolent Sexism Predicting Average Number of Drinks

	Anger			Belongingness Need Threat		
	Index	*SE*	95% Confidence Interval	Index	*SE*	95% Confidence Interval
Stigma Consciousness	0.003	0.01	-0.02, 0.03	-0.002	0.01	-0.03, 0.02
Collective Self-Esteem	0.01	0.02	-0.04, 0.05	-0.01	0.02	-0.04, 0.04

Number of binge drinking days. I next tested the same analyses presented above using the number of binge drinking days as the outcome variable. Analyses testing effects of hostile sexism revealed no moderation effects of stigma consciousness or collective self-esteem (see Table 26). Results suggests that, contrary to hypotheses, neither stigma consciousness nor collective self-esteem moderates the effects of hostile sexism on the number of days participants report binge drinking in the past four weeks. In addition, analyses revealed no significant indices of moderated mediation (see Table 27).

Table 26. Model Coefficients of the Moderated Mediation Model of Hostile Sexism Predicting Number of Binge Drinking Days

	Anger			Belongingness Need Threat			Number of Binge Drinking Days		
	b	*SE*	*p*	*b*	*SE*	*p*	*b*	*SE*	*p*
Constant	-0.001	0.21	.99	0.05	0.18	.76	2.14	0.53	<.001
Age	-0.01	0.02	.50	0.02	0.02	.41	0.10	0.07	.16
Ethnicity	-0.05	0.23	.84	-0.09	0.20	.66	0.94	0.64	.14
Greek House Membership	0.15	0.29	.60	0.0003	0.26	.99	1.11	1.24	.37
Housing Environment	0.01	0.26	.97	0.01	0.25	.97	-1.70	0.72	.02
Benevolent Sexism	-0.01	0.12	.96	-0.03	0.12	.79	0.56	0.37	.14
Hostile Sexism	0.29	0.10	.01	0.31	0.10	<.001	-0.40	0.38	.29
Anger	---	---	---	---	---	---	-0.62	0.29	.04
Belongingness Need Threat	---	---	---	---	---	---	0.43	0.23	.06
Stigma Consciousness	0.42	0.10	<.001	0.44	0.10	<.001	-0.49	0.37	.18
Collective Self-Esteem	-0.10	0.13	.47	-0.51	0.13	<.001	-0.54	0.43	.21
Hostile Sexism X Stigma Consciousness	-0.004	0.08	.96	-0.09	0.08	.28	0.37	0.37	.32
Hostile Sexism X Collective Self-Esteem	-0.10	0.11	.38	-0.04	0.12	.76	-0.12	0.29	.69
	R^2 = .18			R^2 = .29			R^2 = .14		
	$F(10, 189) = 3.79$, $p < .001$			$F(10, 189) = 7.87$, $p < .001$			$F(12, 187) = 1.27$, $p = .24$		

Table 27. Indices of Partial Moderated Mediation in Model of Hostile Sexism Predicting Number of Binge Drinking Days

	Anger			Belongingness Need Threat		
	Index	*SE*	95% Confidence Interval	Index	*SE*	95% Confidence Interval
Stigma Consciousness	0.002	0.05	-0.11, 0.10	-0.04	0.04	-0.14, 0.03
Collective Self-Esteem	0.06	0.07	-0.06, 0.24	-0.02	0.05	-0.13, 0.09

Analyses testing effects of benevolent sexism revealed no moderation effects of stigma consciousness or collective self-esteem (see Table 28). Results suggests that, contrary to hypotheses, neither stigma consciousness nor collective self-esteem moderates the effects of benevolent sexism on the number of days participants report binge drinking in the past four weeks. In addition, analyses revealed no significant indices of moderated mediation (see Table 29).

Table 28. Model Coefficients of the Moderated Mediation Model of Benevolent Sexism Predicting Number of Binge Drinking Days

	Anger			Belongingness Need Threat			Number of Binge Drinking Days		
	b	*SE*	*p*	*b*	*SE*	*p*	*b*	*SE*	*p*
Constant	-0.01	0.21	.96	0.05	0.18	.78	2.15	0.56	<.001
Age	-0.01	0.02	.51	0.02	0.02	.31	0.09	0.07	.22
Ethnicity	-0.03	0.23	.91	-0.06	0.20	.76	0.88	0.63	.16
Greek House Membership	0.16	0.29	.57	-0.02	0.26	.93	1.22	1.25	.33
Housing Environment	0.01	0.26	.96	-0.02	0.25	.92	-1.54	0.72	.04
Benevolent Sexism	0.02	0.13	.90	0.01	0.11	.95	0.44	0.51	.39
Hostile Sexism	0.28	0.09	.004	0.26	0.10	.01	-0.22	0.25	.39
Anger	---	---	---	---	---	---	-0.58	0.30	.05
Belongingness Need Threat	---	---	---	---	---	---	0.36	0.23	.12
Stigma Consciousness	0.42	0.10	<.001	0.44	0.11	<.001	-0.46	0.40	.25
Collective Self-Esteem	-0.10	0.13	.44	-0.53	0.12	<.001	-0.55	0.46	.23
Benevolent Sexism X Stigma Consciousness	-0.02	0.08	.84	-0.01	0.07	.93	0.21	0.68	.76
Benevolent Sexism X Collective Self-Esteem	-0.08	0.14	.56	-0.04	0.14	.79	-0.22	0.46	.63
	$R^2 = .18$			$R^2 = .29$			$R^2 = .13$		
	$F(10, 189) = 3.70$, $p < .001$			$F(10, 189) = 7.94$, $p < .001$			$F(12, 187) = 1.08$, $p = .38$		

Table 29. Indices of Partial Moderated Mediation in Model of Benevolent Sexism Predicting Number of Binge Drinking Days

	Anger			Belongingness Need Threat		
	Index	*SE*	95% Confidence Interval	Index	*SE*	95% Confidence Interval
Stigma Consciousness	0.01	0.05	-0.11, 0.11	-0.002	0.03	-0.08, 0.06
Collective Self-Esteem	0.05	0.09	-0.14, 0.24	-0.01	0.05	-0.12, 0.10

Study 1 Discussion

Analyses revealed mixed support for study hypotheses. Contrary to Hypothesis 1, analyses suggest that hostile sexism was negatively related to binge drinking behavior. However, in line with Hypothesis 1, benevolent sexism predicted increased drinking and binge drinking frequency. Interestingly, neither form of sexism significantly predicts the average number of drinks participants reported consuming on each drinking occasion.

Hypothesis 2 suggested that hostile sexism should have a significant effect on drinking behavior via both anger and belongingness need threat. In contrast, findings suggest that hostile sexism had a negative effect on binge drinking frequency via anger. However, support for this hypothesis was found in a positive effect of hostile sexism on binge drinking frequency via its effects on belongingness need threat. The finding that anger is related to decreased alcohol consumption is interesting and counters previous research findings suggesting that angry rumination is associated with greater drinking (Ciesla, Dickson, Anderson, & Neal, 2011) and

that college students drink more on evenings when they have experienced more anger during the day (Mohr, Armeli, Tennen, & Todd, 2010). No support was found for Hypothesis 3, which suggested that benevolent sexism would positively predict drinking behavior via belongingness need threat.

Some support was found for Hypothesis 4, which suggested that stigma consciousness would exacerbate the effects of both hostile and benevolent sexism. Specifically, hostile sexism was found to have a positive effect on number of drinking days for students high in stigma consciousness and a negative effect for students low in stigma consciousness. However, stigma consciousness did not moderate effects of hostile sexism on either anger or belongingness need threat. Furthermore, hostile sexism negatively predicted binge drinking frequency for students low in stigma consciousness.

Finally, no support was found for Hypothesis 5, which suggested that collective self-esteem would buffer students against the effects of both hostile and benevolent sexism. Instead, a positive effect of benevolent sexism on drinking frequency was found for students with high collective self-esteem. Further, collective self-esteem did not moderate effects of benevolent sexism on belongingness need threat.

Study 2

Study 2 was conducted to further test the effects examined in Study 1. I wanted to examine whether similar effects would be found using quasi-experimental methodology that allows for an experimental manipulation of sexism and reduces retrospective bias in reports of alcohol consumption. This study experimentally manipulated hostile and benevolent sexism during a lab session that took place on a Friday or Saturday. Students were asked to report on

the number of drinks consumed the previous evening during a follow-up survey completed the day after their lab session rather than measuring reports of retrospective experiences and behaviors across the previous four weeks.

Study 2 Method

Participants

Prospective power analysis. To estimate the appropriate sample size for the current study, the procedures outlined by Kenny (2016) for computing the power to detect indirect effects in mediation models was followed using R (2015). Using a low-medium effect size, this analysis suggests that 156 participants are needed to adequately power the hypothesized effects if they exist. Tests of conditional indirect effects were tested using the PROCESS macro (Hayes, 2018) which uses bootstrapping to construct confidence intervals, increasing the chances that the current study has adequate power.

Participants. Participants include 199 female Loyola University Chicago undergraduates, recruited through the psychology department participant pool (n = 187) and on campus advertisement (n = 12) during the fall semester. All participants indicated that they had consumed alcohol in the past two weeks in order to be eligible for the study. The final sample excludes 23 participants who failed the manipulation checks (i.e., wrote about hostile sexism in the benevolent sexism condition, wrote about benevolent sexism in the hostile sexism condition, or wrote about sexism in the control condition).[2] Participants included in analyses ranged in age

[2] Participants were more likely to be excluded from analyses if they were assigned to the control condition χ^2 (2) = 12.06, p = .002. Participants were also more likely to be excluded from analyses if they had completed the lab session on a Saturday, χ^2 (1) = 6.60, p = .01. However, participants who were excluded from analyses did not differ from those who were included in year in school, Greek house membership or living arrangements, all χ^2s < 1.75, all ps > .33. Participants who were excluded from analyses also did not differ from those who were included in age, t(197) = 1.60, p = .11. Finally, participants who were excluded from analyses did not differ from those who were

from 18 to 29 (M = 19.22, SD = 1.42), and were mostly White (60%), freshmen (50%), and non-Greek affiliates (84%). The majority of participants lived in a dormitory on campus with roommates (69%). Of these participants, 152 (86%) began the follow-up survey including the primary dependent variable, alcohol consumption, and were included in analyses predicting this variable.[3]

Overview of Procedure

The experimental portion of this study (Time 1 assessment) took place on a Friday or Saturday[4] while classes were in session. Upon arrival in the research lab, participants were asked to complete a computer-based survey including demographic questions, evening plans, measures of stigma consciousness and collective self-esteem, a sexism manipulation and manipulation check, and measures of anger, belongingness need threat, and drinking expectations for that night (see Appendix B).

The follow-up survey (Time 2) was emailed to participants the following day at noon and participants were given until 9pm to complete the survey (see Appendix C). This survey measured alcohol consumption the previous night. A reminder email was sent at 5pm to participants who had not yet completed the survey. Debriefing information was sent to all participants, regardless of whether or not they had completed the follow-up survey, the following morning at 8am. This included a list of campus services (i.e. wellness center) to contact if

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included in anger, belongingness need threat, or collective self esteem, all ts < 1.03, all ps > .30, although those included were marginally higher in stigma consciousness, $t(197) = 1.89$, $p = .06$.

[3] Participants who did not begin the follow-up survey did not differ from those who did so in experimental condition, ethnicity, year in school, Greek house membership, living arrangements, or day of week when they completed the lab session, all χ^2s < 5.02, all ps > .17. Participants who did not begin the follow-up survey also did not differ from those who did so in age, $t(174) = -1.29$, $p = .20$. Finally, participants who did not begin the follow-up survey did not differ from those who did in anger, belongingness need threat, stigma consciousness, or collective self-esteem, all ts < .52, all ps > .60.

[4] Research has shown that college students consume more alcohol on weekend days vs. weekdays (Maggs, Williams, & Lee, 2011).

participants are having problems with friends, roommates, or romantic partners or in other areas of college life such as alcohol use.

Since I am studying alcohol consumption among a population that is largely underage, I obtained a Certificate of Confidentiality from the National Institutes of Health to protect all participants. Participants from the participant pool were compensated for their participation with two hours of course credit for completion of the lab session and an additional credit hour for completion of the follow-up survey. Participants who were not part of the participant pool were compensated for their participation with $10 for completion of the lab session and an additional $5 for completion of the follow-up survey. Additionally, in order to increase compliance, participants who completed the follow-up survey on time were entered into a raffle for a chance to win a $50 prize.

Time 1 Measures

Demographic information. The same demographic information collected in Study 1 was collected in Study 2.

Evening plans. Participants were asked to report their plans for the evening by selecting as many options as applied from a checklist including study, attend a school event, go to a party, spend time with friends, spend time with a significant other, spend time with family, and other. Results were coded to indicate whether or not students had social plans for that evening (0 = no, 1 = indicated social plans such as attending a party or spending time with friends).

Stigma consciousness. Participants completed the same measure of stigma consciousness as in Study 1 (α = .74).

Collective self-esteem. Participants completed the same measure of collective self-esteem as in Study 1 ($\alpha = .73$).

Sexism manipulation. Participants were told that the researchers were interested in students' interest in newspapers articles that describe the results of psychological research. They were then randomly assigned to read one of three bogus news articles (based on Lemonaki et al., 2015; see Appendix D). All three articles started out the same with a question about whether or not men and women are the same and indicated that the rest of the article was presenting data from a national survey. In the hostile sexism condition, the results of the survey indicated that people tend to believe several of the hostile sexism items from the ambivalent sexism inventory (Glick & Fiske, 1996). In the benevolent sexism condition, the survey results instead supported beliefs in benevolent sexism items from the ambivalent sexism inventory. Finally, the control condition supported neutral views about men and women's differences in workout type (i.e., going to the gym vs. jogging in the park). All participants spent 2 minutes reading the article.

Manipulation checks. First, participants were asked to spend 2 minutes responding to each of four open-ended questions about what they read about in the article. They were asked specifically to indicate their overall impression of the article, the purpose of the article, two beliefs stated in the article about men, and two beliefs stated in the article about women. Responses were coded for relevance to hostile and benevolent sexism. Participants in the hostile sexism condition who did not mention sexism or who wrote about benevolent sexism were excluded. Participants in the benevolent sexism condition who did not mention sexism or who wrote about hostile sexism were excluded. Finally, participants in the control condition who wrote about sexism were excluded. Second, participants were asked to rate the article on five

dimensions (i.e., intuitiveness, reasonableness, believability, persuasiveness, and significance) on a 9-point scale (1=*not at all*, 9=*extremely*; Murray & Holmes, 1993). These items were combined to form a measure of article credibility (α = .84).

Anger. Participants completed the same measure of anger as in Study 1 (α = .91).

Belongingness need threat. Participants completed the same measure of belongingness need threat as in Study 1 (α = .90).

Expectations regarding alcohol consumption that night. One item assessed participants' expectations about whether or not they would consume alcohol ("How likely is it that you will drink alcohol tonight?") on a 7-point scale (1 = *extremely unlikely*, 7 = *extremely likely*; Armitage et al., 2015).

Time 2 Measures (Assessed the Next Day)

Alcohol consumption. The previous night's alcohol consumption was assessed by having participants report the number of standard alcoholic drinks they had consumed over the course of the previous evening. Participants received the same information regarding standard alcoholic drinks as in Study 1. From these data, we were also able to determine whether participants met the criteria for binge drinking (0 = no binge, 1 = binge). Binge drinking was defined as 4 or more drinks (Wechsler & Nelson, 2001).

Reasons preventing alcohol consumption. Participants were asked to report whether anything prevented them from consuming alcohol or moderated their alcohol consumption by selecting as many options as applied from a checklist including health issues, academic obligations, athletic obligations, extracurricular obligations, religious obligations, employment obligations, plans with friends, family obligations, inability to obtain alcohol, and other. Results

were coded to indicate whether or not students had any reason that prevented them from consuming as much alcohol as they otherwise would have (0 = no, 1 = yes).

Suspicion probe. In order to determine whether or not participants were suspicious of the manipulation or were aware of the purpose of this study, participants answered one open ended question ("What do you think this study was about?"). Participants who were able to guess the hypotheses or have suspicions close enough to interfere with their responses were not included in analyses.

Study 2 Results

Random Assignment Check

To ensure that random assignment was successful and that participants in the control, benevolent sexism, and hostile sexism conditions did not significantly differ from one another, I conducted a one-way analysis of variance (ANOVA) to compare group means on age. This analysis showed no difference in age between the three conditions, $F(2, 173) = 0.33$, $p = .72$. Next, I conducted two-way chi-square tests comparing participants in the control, hostile, and benevolent conditions on ethnicity, year in school, Greek house membership, living arrangements, and day of week participants completed the lab session. None of these tests revealed significant differences between participants based on condition, all χ^2s < 8.38 all ps > .23. Finally, I conducted one-way analysis of variance (ANOVA) tests to compare group means on stigma consciousness and collective self-esteem. These analyses showed no difference in stigma consciousness, $F(2, 173) = 1.32$, $p = .17$, or collective self-esteem, $F(2, 173) = 1.88$, $p = .16$, between the three conditions. This indicates that random assignment across conditions was successful.

Manipulation Check

I checked that participants in the hostile sexism, benevolent sexism, and control conditions found the article to be equally credible. To do this, I conducted a one-way analysis of variance (ANOVA) predicting article credibility from sexism condition (0 = control condition, 1 = benevolent sexism condition, 2 = hostile sexism condition). This analysis showed a significant main effect of condition on article credibility, $F(2, 173) = 6.63$, $p = .002$. This suggests that the credibility of the article varied across the three conditions. The first linear contrast suggests that participants' views of the experimental article were equal in the control ($M = 4.21$) condition compared with the combined hostile ($M = 3.49$) and benevolent ($M = 4.45$) sexism conditions, $t(173) = -0.95$, $p = .45$. The second linear contrast suggests that participants viewed the hostile sexism ($M = 3.49$) article as less credible than the benevolent sexism ($M = 4.45$) article, $t(173) = -3.50$, $p < .001$.[5] This suggests that the hostile sexism article was seen as less credible than the control and benevolent sexism articles. Article credibility is therefore included as a control variable in all future analyses.

Descriptive Statistics

The number of drinks consumed ranged from 0 to 10 ($M = 1.20$, $SD = 2.06$) with 51 participants (34% of participants reporting alcohol consumption) indicating that they consumed at least one drink.

[5] This effect remains significant when controlling for stigma consciousness and collective self-esteem in analyses, $F(2, 171) = 5.70$, $p = .004$. I also tested whether stigma consciousness or collective self-esteem moderate the effects of sexism condition on article credibility using Model 2 of the PROCESS macro (Hayes, 2018). This analysis revealed a significant Hostile Sexism X Stigma Consciousness interaction, $b = -0.68$, $t(167) = -1.98$, $p = .05$. No other significant interactions were found, all ts < 0.55, all ps > .12. Probing of the significant interaction revealed no effect of hostile sexism on article credibility among students low in stigma consciousness, $b = -0.04$, $t(167) = -0.09$, $p = .93$. In contrast, among students high in stigma consciousness, those in the hostile sexism condition viewed the article as less credible than those in the control condition, $b = -1.21$, $t(167) = -2.84$, $p = .01$.

Hypothesis Testing

Alcohol consumption. Because the number of drinks consumed is a count variable, I conducted standard Poisson regression analysis (see Coxe, West, & Aiken, 2009) to test whether experimental condition impacted that night's alcohol consumption (Hypothesis 1). I created dummy variables comparing hostile and benevolent sexism to the control condition and controlled for article credibility, day of lab session (0 = Friday, 1 = Saturday), age, ethnicity (0 = Non-White, 1 = White), Greek house membership (0 = Non-member, 1 = Greek house member), housing environment (0 = Living with roommates or alone, 1 = Living with family), evening plans (0 = No social plans, 1 = Plans to attend a party or interact with friends), and whether students were unable to drink for any reason (0 = Yes, 1 = No). In line with hypotheses, this analysis revealed a positive effect of hostile sexism condition on number of drinks consumed as well as a positive effect of benevolent sexism condition on number of drinks consumed (see Table 30). In contrast with Study 1, which found a negative effect of hostile sexism on alcohol consumption, this suggests that participants in the hostile sexism condition consumed more alcohol that evening than those in the control condition.[6] Specifically, a participant in the hostile sexism condition is expected to consume an average of 1.88 times as many drinks as a participant in the control condition. In addition, participants in the benevolent sexism condition consumed more alcohol that evening than those in the control condition. Specifically, a participant in the benevolent sexism condition is expected to consume an average of 1.53 times as many drinks as a participant in the control condition. These results of benevolent sexism are consistent with findings in Study 1.

[6] A comparison of the hostile sexism condition to the benevolent sexism condition suggests that participants exposed to the hostile sexism article consumed marginally more drinks than participants exposed to the benevolent sexism article, $B = 0.35$, $Exp(B) = 1.41$, $\chi^2(1) = 3.12$, $p = .08$.

Table 30. Evening Alcohol Consumption as a Function of Hostile Sexism and Benevolent Sexism

	B	*Exp(B)*	$\chi^2(1)$	*p*
Constant	-25.23	0.00	12164.12	<.001
Article Credibility	0.15	1.16	7.29	.01
Day of Lab Session	-0,03	0.98	0.01	.93
Age	0.16	1.17	11.90	.001
Ethnicity	0.26	1.30	1.95	.16
Greek House Membership	0.42	1.52	5.61	.02
Housing Environment	-0.95	0.39	5.42	.02
Drinking Limited	-1.19	0.31	45.87	<.001
Hostile Sexism	0.63	1.88	7.74	.01
Benevolent Sexism	0.42	1.53	3.78	.05

Testing mediation. I next tested my predictions regarding mediated effects of sexism condition on alcohol consumption via anger and belongingness need threat. Hypothesis 2 predicted that the effects of hostile sexism would be mediated by both anger and belongingness need threat while Hypothesis 3 predicted that the effects of benevolent sexism would be mediated by belongingness need threat only. To test these predictions, I used Model 4 in the SPSS PROCESS macro (Hayes, 2018), which allows for multicategorical predictor variables (i.e., three sexism conditions), to predict alcohol consumption as a function of sexism condition mediated by anger and belongingness need threat. This creates two dummy variables using the control condition as the comparison group. The first dummy variable compares the hostile sexism condition to the control condition while the second dummy variable compares the

benevolent sexism condition to the control condition. I also included demographic information, lab session day, evening plans, and reasons not to drink as control variables in all analyses. In addition, I report results from the heteroscedasticity-consistent standard error estimator to reduce bias due to the count nature of my outcome variable (number of drinks is a count variable).

Analyses revealed that hostile sexism (compared to the control condition) significantly positively predicted anger and marginally positively predicted belongingness need threat. However, there was only a marginally significant positive effect of benevolent sexism (compared to the control condition) on anger and no significant effect of benevolent sexism on belongingness need threat. Furthermore, once anger and belongingness need threat were included in the analysis, none of these variables significantly predicted alcohol consumption (see Table 31).

Table 31. Model Coefficients for the Mediational Model of Sexism Condition Predicting Alcohol Consumption

	Anger			Belongingness Need Threat			Alcohol Consumption		
	b	*SE*	*p*	*b*	*SE*	*p*	*b*	*SE*	*p*
Constant	1.95	0.59	.001	2.97	0.70	<.001	0.77	0.53	.15
Article Credibility	-0.35	0.08	<.001	-0.32	0.08	<.001	0.17	0.12	.14
Day of Lab Session	0.58	0.52	.27	-0.28	0.42	.50	0.12	0.66	.85
Age	-0.02	0.10	.81	-0.05	0.08	.56	0.18	0.08	.04
Ethnicity	0.34	0.25	.17	0.08	0.26	.75	0.29	0.35	.41
Greek House Membership	0.40	0.29	.18	0.47	0.30	.12	0.85	0.63	.18
Housing Environment	0.22	0.42	.61	0.03	0.40	.94	-0.55	0.32	.09
Drinking Limited	0.41	0.24	.10	0.44	0.26	.09	-1.29	0.39	.001
Hostile Sexism	0.98	0.30	.001	0.51	0.30	.09	0.56	0.47	.23
Benevolent Sexism	0.51	0.31	.10	0.01	0.29	.97	0.33	0.42	.43
Anger	---	---	---	---	---	---	0.03	0.15	.82
Belongingness Need Threat	---	---	---	---	---	---	-0.05	0.12	.68
	$R^2 = .28$			$R^2 = .19$			$R^2 = .24$		
	$F(10, 141) = 5.72$, $p < .001$			$F(10, 141) = 3.86$, $p < .001$			$F(12, 139) = 4.99$, $p < .001$		

In addition, analyses revealed no significant relative direct or indirect effects (see Table 32). Contrary to Hypothesis 2, although hostile sexism did predict greater anger and belongingness need threat, there was no effect of anger or belongingness need threat on alcohol consumption. This also contradicts the results of Study 1, which suggested that anger was related to decreased alcohol consumption while belongingness need threat was related to increased alcohol consumption. Contrary to Hypothesis 3, benevolent sexism was positively related to anger rather than belongingness need threat and neither predicted alcohol consumption.

Table 32. Relative Direct and Indirect Effects of the Mediational Model of Sexism Condition Predicting Alcohol Consumption

	Hostile Sexism			Benevolent Sexism		
	b	*SE*	95% Confidence Interval	*b*	*SE*	95% Confidence Interval
Relative Direct Effect	0.56	0.41	-0.26, 1.38	0.33	0.39	-0.45, 1.11
Relative Indirect Effect Via Anger	0.03	0.15	-0.26, 0.32	0.02	0.08	-0.16, 0.20
Relative Indirect Effect Via Belongingness Need Threat	-0.03	0.07	-0.18, 0.11	-0.001	0.04	-0.08, 0.07

Testing moderation. Next, in order to test whether the effects of the sexism manipulation on evening alcohol consumption are moderated by either stigma consciousness (Hypothesis 4) or collective self-esteem (Hypothesis 5), I conducted standard Poisson regression analyses including stigma consciousness, collective self-esteem, interactions between each of these two

variables and my dummy variables representing hostile and benevolent sexism. Including all of the same covariates as before, I used this model to test whether stigma consciousness and collective self-esteem moderate the effects of hostile and benevolent sexism on drinking behavior. This analysis suggested that the effect of hostile sexism on alcohol consumption was qualified by a marginally significant Hostile Sexism X Collective Self-Esteem interaction (see Table 33). However, the effects of benevolent sexism on alcohol consumption were not qualified by either stigma consciousness or collective self-esteem.

Table 33. Evening Alcohol Consumption as a Function of Hostile Sexism, Benevolent Sexism, Stigma Consciousness, and Collective Self-Esteem

	B	*Exp(B)*	$\chi^2(1)$	*p*
Constant	-24.46	0.00	8381.46	<.001
Article Credibility	0.16	1.17	8.12	.004
Day of Lab Session	-0.17	0.85	0.28	.59
Age	0.14	1.14	8.00	.01
Ethnicity	0.24	1.28	1.62	.20
Greek House Membership	0.39	1.48	4.34	.04
Housing Environment	-0.96	0.38	5.50	.02
Drinking Limited	-1.22	0.29	45.02	<.001
Hostile Sexism	0.77	2.17	8.90	.003
Benevolent Sexism	0.60	1.82	5.61	.02
Stigma Consciousness	0.44	1.55	2.48	.12
Collective Self-Esteem	-0.28	0.76	1.00	.32
Hostile Sexism X Stigma Consciousness	-0.28	0.75	0.82	.37
Hostile Sexism X Collective Self-Esteem	0.57	1.77	3.08	.08
Benevolent Sexism X Stigma Consciousness	-0.24	0.79	0.55	.46
Benevolent Sexism X Collective Self-Esteem	0.50	1.65	1.68	.20

Among students high in collective self-esteem, there was a significant positive effect of hostile sexism condition on number of drinks consumed, $B = 0.46$, $Exp(B) = 3.08$, $\chi^2(1) = 9.69$, $p = .002$. In contrast, among students low in collective self-esteem, there was no effect of hostile sexism condition on number of drinks consumed, $B = 0.43$, $Exp(B) = 1.53$, $\chi^2(1) = 2.15$, $p = .14$.

Contrary to Hypothesis 5, this suggests that the positive effect of hostile sexism is found only among students high in collective self-esteem.

Testing moderated mediation. Finally, I conducted moderated mediation analyses using Model 10 of the PROCESS macro (Hayes, 2018). This analysis allows me to determine whether the mediation effects tested for above exist only among students particularly susceptible to the effects of experiencing sexism. Using the same two dummy variables created for testing mediation effects, in which each of the two sexism conditions is compared to the control condition, I test a moderated mediation model in which experimental condition and identity threat appraisal interact to predict anger, belongingness need threat, and alcohol consumption.

Analyses testing effects of sexism condition on alcohol consumption revealed a marginally significant Benevolent Sexism X Stigma Consciousness interaction predicting belongingness need threat (see Table 34). Probing this interaction revealed no significant effect of benevolent sexism on belongingness need threat when stigma consciousness was high, b = 0.66, $t(135) = 1.60$, $p = .11$, or when stigma consciousness was low, b = -0.36, $t(135) = -0.92$, $p = .36$. Hostile sexism significantly predicted greater anger and belongingness need threat. Collective self-esteem negatively predicted belongingness need threat. However, there were no significant effects on alcohol consumption. This suggests that, contrary to hypotheses, neither stigma consciousness nor collective self-esteem moderates the effects of sexism condition on evening alcohol consumption. In addition, analyses revealed no significant indices of moderated mediation (see Table 35).

Table 34. Model Coefficients of the Moderated Mediation Model of Sexism Condition Predicting Alcohol Consumption

	Anger			Belongingness Need Threat			Alcohol Consumption		
	b	*SE*	*p*	*b*	*SE*	*p*	*b*	*SE*	*p*
Constant	2.02	0.55	<.001	2.84	0.65	<.001	0.92	0.59	.12
Article Credibility	-0.31	0.09	<.001	-0.27	0.08	.002	0.21	0.13	.11
Day of Lab Session	0.39	0.57	.49	-0.37	0.46	.43	0.09	0.63	.89
Age	-0.04	0.09	.69	-0.04	0.08	.62	0.16	0.08	.05
Ethnicity	0.43	0.25	.09	0.23	0.26	.37	0.30	0.34	.38
Greek House Membership	0.37	0.28	.19	0.40	0.28	.16	0.77	0.63	.22
Housing Environment	0.17	0.44	.70	-0.16	0.41	.70	-0.55	0.37	.14
Drinking Limited	0.53	0.24	.03	0.59	0.25	.02	-1.28	0.39	.001
Hostile Sexism	1.06	0.31	.001	0.70	0.29	.02	0.58	0.52	.27
Benevolent Sexism	0.56	0.31	.08	0.15	0.28	.59	0.36	0.44	.41
Anger	---	---	---	---	---	---	0.01	0.15	.94
Belongingness Need Threat	---	---	---	---	---	---	-0.07	0.13	.61
Stigma Consciousness	0.32	0.26	.22	-0.06	0.28	.84	0.14	0.41	.72
Collective Self-Esteem	-0.38	0.34	.28	-0.81	0.27	.003	-0.14	0.54	.80
Hostile Sexism X Stigma Consciousness	0.08	0.32	.81	0.49	0.36	.18	0.14	0.61	.82
Hostile Sexism X Collective Self-Esteem	-0.20	0.44	.66	0.31	0.41	.45	0.40	0.76	.60
Benevolent Sexism X Stigma Consciousness	0.28	0.39	.47	0.59	0.34	.08	0.11	0.56	.85
Benevolent Sexism X Collective Self-Esteem	0.52	0.53	.33	0.47	0.44	.29	0.26	0.80	.74
	$R^2 = .37$			$R^2 = .31$			$R^2 = .26$		
	$F(16, 135) = 6.59$, $p < .001$			$F(16, 135) = 4.68$, $p < .001$			$F(18, 133) = 3.28$, $p = .001$		

Table 35. Indices of Partial Moderated Mediation in Model of Sexism Condition Predicting Alcohol Consumption

		Anger			Belongingness Need Threat		
		Index	*SE*	95% Confidence Interval	Index	*SE*	95% Confidence Interval
Hostile Sexism							
	Stigma Consciousness	0.001	0.05	-0.11, 0.10	-0.03	0.08	-0.21, 0.12
	Collective Self-Esteem	-0.002	0.06	-0.12, 0.16	-0.02	0.07	-0.18, 0.12
Benevolent Sexism							
	Stigma Consciousness	0.003	0.07	-0.16, 0.16	-0.04	0.09	-0.24, 0.13
	Collective Self-Esteem	0.01	0.11	-0.21, 0.28	-0.03	0.09	-0.26, 0.12

Binge drinking. Next, I examined whether the sexism manipulation predicted binge drinking that night using a logistic regression analysis. Binge drinking behavior (0 = no, 1 = yes) was predicted from manipulated sexism condition (indicator coding was used with the control condition as the reference) with demographic information, day of lab session, evening plans,

article credibility, and reasons not to drink included as covariates. The logistic regression model was statistically significant, $\chi^2(10) = 42.60$, $p < .001$. The model explained 43% (Nagelkerke R^2) of the variance in binge drinking behavior and correctly classified 87.5% of cases. Participants in the hostile sexism condition were 7.62 times more likely to report binge drinking than participants in the control condition (see Table 36). This contrasts with results from Study 1, which found that hostile sexism was negatively associated with alcohol consumption. Consistent with results from Study 1, participants in the benevolent sexism condition were 5.35 times more likely to report binge drinking than participants in the control condition.

Table 36. Model Coefficients from Logistic Regression Analysis Predicting Binge Drinking from Sexism Manipulation Condition

	b	Wald χ^2	*p*	Odds Ratio
Constant	-21.27	0.00	.99	0.00
Article Credibility	0.28	2.07	.15	1.33
Day of Lab Session	0.23	0.04	.84	1.26
Age	0.39	3.41	.07	1.47
Ethnicity	1.34	3.01	.08	3.81
Greek House Membership	0.99	2.37	.12	2.68
Housing Environment	-19.90	0.00	.08	3.81
Drinking Limited	-2.20	10.08	.002	0.11
Hostile Sexism	2.03	4.35	.04	7.62
Benevolent Sexism	1.68	3.21	.07	5.35

Testing mediation. Because the PROCESS macro cannot be used for dichotomous outcome variables, I next tested whether anger or belongingness need threat predict binge

drinking behavior controlling for sexism condition in analyses. The logistic regression model was statistically significant, $\chi^2(12) = 43.45$, $p < .001$. The model explained 44% (Nagelkerke R^2) of the variance in binge drinking behavior and correctly classified 88.2% of cases. Contrary to hypotheses, neither anger nor belongingness need threat was found to significantly predict binge drinking (see Table 37). These results are also contrary to results of Study 1, which found that anger was positively related to alcohol consumption while belongingness need threat was positively related to alcohol consumption. However, there remained a significant effect of hostile sexism and a marginally significant effect of benevolent sexism on binge drinking when anger and belongingness need threat were included in the model.

Table 37. Model Coefficients from Logistic Regression Analysis Predicting Binge Drinking from Mediating Variables

	b	Wald χ^2	*p*	Odds Ratio
Constant	-21.74	0.00	.99	0.00
Article Credibility	0.20	0.86	.35	1.22
Day of Lab Session	0.21	0.03	.86	1.22
Age	0.42	3.79	.05	1.52
Ethnicity	1.46	3.40	.07	4.30
Greek House Membership	1.05	2.60	.11	2.86
Housing Environment	-20.33	0.00	.99	0.00
Drinking Limited	-2.20	9.87	.002	0.11
Hostile Sexism	2.16	4.57	.03	8.64
Benevolent Sexism	1.70	3.21	.07	5.49
Anger	0.02	0.01	.94	1.02
Belongingness Need Threat	-0.23	0.62	.43	0.80

Testing moderation. Next, in order to test whether the effects of sexism on binge drinking are moderated by either stigma consciousness (Hypothesis 4) or collective self-esteem (Hypothesis 5), I conducted logistic regression analysis including these two identity threat appraisal variables and their interactions with the sexism manipulation dummy variables. The logistic regression model was statistically significant, $\chi^2(16) = 47.35$, $p < .001$. The model explained 48% (Nagelkerke R^2) of the variance in binge drinking behavior and correctly classified 88.2% of cases. Neither stigma consciousness nor collective self-esteem moderated the effects of sexism manipulation condition on binge drinking (see Table 38).

Table 38. Model Coefficients from Moderation Logistic Regression Analysis Predicting Binge Drinking

	b	Wald χ^2	*p*	Odds Ratio
Constant	-24.20	0.00	.99	0.00
Article Credibility	0.32	2.13	.14	1.37
Day of Lab Session	0.01	0.00	.99	1.01
Age	0.42	2.68	.10	1.52
Ethnicity	1.18	2.27	.13	3.24
Greek House Membership	0.87	1.47	.23	2.39
Housing Environment	-20.37	0.00	.99	0.00
Drinking Limited	-2.28	9.19	.002	0.10
Hostile Sexism	5.03	2.41	.12	152.37
Benevolent Sexism	4.64	2.16	.14	103.63
Stigma Consciousness	4.18	1.58	.21	65.29
Collective Self-Esteem	-0.99	0.47	.49	0.37
Hostile Sexism X Stigma Consciousness	-4.08	1.48	.22	0.02
Hostile Sexism X Collective Self-Esteem	1.46	0.88	.35	4.30
Benevolent Sexism X Stigma Consciousness	-3.81	1.27	.26	0.02
Benevolent Sexism X Collective Self-Esteem	1.00	0.33	.57	2.71

Drinking expectations. Finally, I conducted standard regression analysis to test whether experimental condition impacts that night's drinking expectations, rather than reported drinking behavior. I controlled for demographic information and article credibility. This analysis revealed no significant effect of either hostile sexism condition or benevolent sexism condition

on drinking expectations (see Table 39). This suggests that drinking expectations did not differ between experimental conditions.

Table 39. Sexism Condition Predicting Drinking Expectations

	B	*t*	*p*
Constant	3.38	8.50	<.001
Article Credibility	0.22	1.92	.06
Day of Lab Session	-0.43	-0.60	.55
Age	0.11	0.83	.41
Ethnicity	0.43	1.19	.24
Greek House Membership	0.08	0.16	.88
Housing Environment	-1.04	-1.92	.06
Hostile Sexism	0.49	1.13	.26
Benevolent Sexism	0.50	1.16	.25

Table 40. Model Coefficients for the Mediational Model of Sexism Condition Predicting Drinking Expectations

	Anger			Belongingness Need Threat			Drinking Expectations		
	b	*SE*	*p*	*b*	*SE*	*p*	*b*	*SE*	*p*
Constant	2.88	0.25	<.001	3.35	0.23	<.001	3.93	0.65	<.001
Article Credibility	-0.39	0.07	<.001	-0.25	0.08	.001	0.19	0.13	.14
Day of Lab Session	0.51	0.49	.30	-0.28	0.40	.48	-0.54	0.82	.51
Age	-0.02	0.11	.83	-0.05	0.08	.55	0.10	0.11	.40
Ethnicity	0.28	0.23	.23	0.09	0.23	.71	0.43	0.37	.25
Greek House Membership	0.26	0.28	.36	0.34	0.27	.21	0.14	0.53	.80
Housing Environment	0.32	0.38	.41	0.03	0.40	.94	-1.06	0.52	.05
Hostile Sexism	0.97	0.28	.001	0.45	0.26	.09	0.51	0.47	.27
Benevolent Sexism	0.54	0.28	.05	0.05	0.25	.84	0.46	0.44	.30
Anger	---	---	---	---	---	---	0.09	0.14	.52
Belongingness Need Threat	---	---	---	---	---	---	-0.24	0.13	.08
	$R^2 = .27$			$R^2 = .13$			$R^2 = .09$		
	$F(8, 167) = 7.89$, $p < .001$			$F(8, 167) = 2.67$, $p = .01$			$F(10, 165) = 1.42$, $p = .17$		

Testing mediation. I next used Model 4 in the SPSS PROCESS macro (Hayes, 2018) to predict drinking expectations as a function of sexism condition mediated by anger and belongingness need threat. Analyses revealed that hostile sexism (compared to the control condition) significantly predicted anger and marginally predicted belongingness need threat. In addition, benevolent sexism (compared to the control condition) significantly predicted anger. However, there was no effect of benevolent sexism on belongingness need threat. Furthermore, except for a marginally significant negative effect of belongingness need threat on drinking expectations, none of these variables significantly predicted drinking expectations when all variables were included in the model (see Table 40). In addition, analyses revealed no significant relative direct or indirect effects (see Table 41). This suggests that the sexism manipulation did not influence drinking expectations via anger or belongingness need threat.

Table 41. Relative Direct and Indirect Effects of the Mediational Model of Sexism Condition Predicting Drinking Expectations

	Hostile Sexism			Benevolent Sexism		
	b	*SE*	95% Confidence Interval	*b*	*SE*	95% Confidence Interval
Relative Direct Effect	0.51	0.47	-0.41, 1.44	0.46	0.44	-0.41, 1.33
Relative Indirect Effect Via Anger	0.09	0.14	-0.19, 0.37	0.05	0.09	-0.11, 0.24
Relative Indirect Effect Via Belongingness Need Threat	-0.11	0.10	-0.37, 0.02	-0.01	.07	-0.16, 0.13

Testing moderation. Next, in order to test whether the effects of sexism on drinking expectations are moderated by either stigma consciousness or collective self-esteem, I conducted moderation analyses using the PROCESS macro (Hayes, 2018). Using Model 2, I tested whether stigma consciousness and collective self-esteem moderate the effects of sexism manipulation condition on drinking expectations. This analysis suggests that neither stigma consciousness nor collective self-esteem significantly moderate the effects of sexism condition on drinking expectations (see Table 42).

Table 42. Model Coefficients for the Moderated Model of Sexism Condition Predicting Drinking Expectations

	b	*SE*	*p*
Constant	3.34	0.41	<.001
Article Credibility	0.22	0.12	.07
Day of Lab Session	-0.64	0.80	.43
Age	0.10	0.10	.32
Ethnicity	0.47	0.37	.21
Greek House Membership	0.19	0.54	.73
Housing Environment	-1.15	0.54	.04
Hostile Sexism	0.60	0.47	.20
Benevolent Sexism	0.50	0.45	.27
Stigma Consciousness	-0.10	0.41	.80
Collective Self-Esteem	-0.06	0.53	.91
Hostile Sexism X Stigma Consciousness	0.09	0.56	.87
Hostile Sexism X Collective Self-Esteem	-0.78	0.65	.23
Benevolent Sexism X Stigma Consciousness	0.74	0.53	.16
Benevolent Sexism X Collective Self-Esteem	0.62	0.88	.49
	$R^2 = .12$		
	$F(14, 161) = 1.80$, $p = .04$		

Table 43. Model Coefficients of the Moderated Mediation Model of Sexism Condition Predicting Drinking Expectations

	Anger			Belongingness Need Threat			Drinking Expectations		
	b	*SE*	*P*	*b*	*SE*	*p*	*b*	*SE*	*p*
Constant	2.83	0.26	<.001	3.18	0.23	<.001	4.31	0.67	<.001
Article Credibility	-0.38	0.07	<.001	-0.23	0.08	.005	0.16	0.13	.23
Day of Lab Session	0.41	0.52	.43	-0.35	0.41	.39	-0.76	0.79	.34
Age	-0.04	0.10	.67	-0.05	0.08	.47	0.09	0.11	.43
Ethnicity	0.37	0.23	.11	0.20	0.24	.42	0.52	0.38	.17
Greek House Membership	0.21	0.27	.44	0.34	0.27	.21	0.29	0.55	.60
Housing Environment	0.40	0.23	.11	-0.07	0.41	.87	-1.18	0.55	.03
Hostile Sexism	0.98	0.29	<.001	0.59	0.26	.02	0.77	0.48	.11
Benevolent Sexism	0.54	0.29	.06	0.16	0.25	.53	0.54	0.45	.23
Anger	---	---	---	---	---	---	0.02	0.14	.86
Belongingness Need Threat	---	---	---	---	---	---	-0.33	0.13	.02
Stigma Consciousness	0.37	0.25	.14	-0.09	0.27	.74	-0.14	0.44	.75
Collective Self-Esteem	-0.41	.32	.20	-0.74	0.26	.01	-0.29	0.53	.58
Hostile Sexism X Stigma Consciousness	-0.05	0.31	.86	0.41	0.37	.26	0.23	0.57	.68
Hostile Sexism X Collective Self-Esteem	-0.05	0.42	.91	0.29	0.41	.48	-0.69	0.65	.30
Benevolent Sexism X Stigma Consciousness	0.05	0.34	.87	0.61	0.32	.06	0.94	0.55	.09
Benevolent Sexism X Collective Self-Esteem	0.38	0.51	.46	0.46	0.45	.31	0.76	0.88	.39
	R^2 = .33			R^2 = .23			R^2 = .15		
	$F(14, 161) = 6.93$, $p < .001$			$F(14, 161) = 3.87$, $p < .001$			$F(16, 159) = 2.47$, $p = .002$		

Testing moderated mediation. Finally, I conducted moderated mediation analyses using Model 10 of the PROCESS macro (Hayes, 2018). This analysis allows me to determine whether the mediation effects tested for above exist only among students particularly susceptible to the effects of experiencing sexism. Analyses testing effects of sexism condition on drinking expectations revealed no moderation effects of stigma consciousness or collective self-esteem (see Table 43). Hostile sexism significantly predicted anger and belongingness need threat while benevolent sexism marginally predicted anger. In addition, collective self-esteem negatively predicted belongingness need threat. However, this effect was qualified by a marginally significant Benevolent Sexism X Stigma Consciousness interaction predicting belongingness need threat.

This interaction was probed in PROCESS by tests of conditional effects at high (one standard deviation above the mean) and low (one standard deviation below the mean) values of stigma consciousness. When stigma consciousness was low, these analyses revealed no significant effect of benevolent sexism on belongingness need threat, $b = -0.35$, $t(162) = -0.98$, $p = .33$. however, when stigma consciousness was high, there was a marginally significant positive effect of benevolent sexism on belongingness need threat, $b = 0.65$, $t(162) = 1.71$, $p = .09$. This suggests that benevolent sexism may be related to greater belongingness need threat only among college women who are higher in stigma consciousness.

Finally, there was a significant negative effect of belongingness need threat on drinking expectations. This suggests that students who felt that their belonging was less threatened reported greater expectations that they would drink alcohol that evening. However, analyses revealed no significant indices of moderated mediation (see Table 44).

Table 44. Indices of Partial Moderated Mediation in Model of Sexism Condition Predicting Drinking Expectations

		Anger			Belongingness Need Threat		
		Index	*SE*	95% Confidence Interval	Index	*SE*	95% Confidence Interval
Hostile Sexism							
	Stigma Consciousness	-0.001	0.04	-0.10, 0.09	-0.14	0.13	-0.45, 0.07
	Collective Self-Esteem	-0.001	0.06	-0.13, 0.13	-0.09	0.15	-0.44, 0.15
Benevolent Sexism							
	Stigma Consciousness	0.001	0.05	-0.09, 0.12	-0.20	0.15	-0.59, 0.003
	Collective Self-Esteem	0.01	0.09	-0.16, 0.22	-0.15	0.17	-0.58, 0.11

Study 2 Discussion

Study 2 revealed mixed support for the hypotheses. In line with Hypothesis 1, both the hostile sexism condition and the benevolent sexism condition were found to predict greater alcohol consumption that evening and greater chances of binge drinking. This partially

contradicts the results of Study 1, which found a positive effect of benevolent sexism on alcohol consumption but a negative effect of hostile sexism.

No support was found for Hypothesis 2, which suggested that hostile sexism should lead to increased alcohol consumption through its effects on anger and belongingness need threat. Although hostile sexism was found to predict both anger and belongingness need threat, no evidence was found for an indirect effect of hostile sexism on alcohol consumption via its effects on these feelings. These results contradict findings of Study 1, which suggested that hostile sexism had an negative indirect effect via anger and a positive indirect effect via belongingness need threat. In addition, no support was found for Hypothesis 3, which suggested that benevolent sexism should lead to increased alcohol consumption through its effects on belongingness need threat. Contrary to this prediction, some evidence suggests that benevolent sexism may have been related to greater anger among this sample while it was unrelated to belongingness need threat. Further, neither of these feelings predicted alcohol consumption.

Hypothesis 4 suggested that the effects of hostile and benevolent sexism should be stronger among students high in stigma consciousness. No support was found for this hypothesis. Finally, Hypothesis 5 suggested that collective self-esteem should serve as a buffer against the negative effects of sexism. In contrast, and consistent with results of Study 1, results seem to suggest that the effects of hostile sexism are only found among students high in collective self-esteem.

CHAPTER SIX

GENERAL DISCUSSION

Across two studies, I found mixed support for the hypothesis that both hostile and benevolent sexism would be related to increased alcohol consumption. Using a cross-sectional methodology to examine the effects of hostile and benevolent sexism experiences in everyday life, Study 1 found that hostile sexism is generally related to decreased alcohol consumption while benevolent sexism is generally related to increased alcohol consumption. In contrast, in an examination of the effects of a sexism manipulation on evening alcohol consumption, Study 2 found that both the hostile sexism condition and the benevolent sexism condition were generally related to increased alcohol consumption that evening in comparison to the control condition. This highlights the importance of examining the independent effects of hostile and benevolent sexism as well as the importance of using different methodologies to study these effects. While past research has suggested that students who report that they have experienced general sexism in their lives over the past year also reported more frequent binge drinking in the past two weeks (Zucker & Landry, 2007), the current studies suggest that this relation is more complex than previously indicated. It may be that the both the nature of the sexist experiences and the timeframe of interest are important factors to consider. This may help to explain why hostile sexism may be related to decreased alcohol consumption in a retrospective study, but to an increase in alcohol consumption that evening.

The current studies also examined anger and belongingness need threat as potential mediators of the effects of sexism on alcohol consumption. While previous research has suggested that psychological distress functions as a mediator between general sexism and binge drinking behavior (Zucker & Landry, 2007), the current studies sought to determine whether hostile and benevolent sexism would impact alcohol consumption via the same or different pathways. Study 1 found some evidence that hostile sexism experiences are related to less frequent binge drinking partially because of their positive effect on anger. However, this finding was not replicated in Study 2, which examined effects of a sexism manipulation on drinking behavior that evening. In study 2, while hostile sexism was related to greater anger, anger was unrelated to reported alcohol consumption that evening. Interestingly, benevolent sexism also seemed to predict increased anger among participants in Study 2. This may be due to changes in awareness of benevolent sexism among current students. Finally, both studies found some support for the idea that hostile sexism is related to greater belongingness need threat. Furthermore, the results of Study 1 suggest that hostile sexism led to increased frequency of binge drinking indirectly via an increase in belongingness need threat.

It is interesting that no effect of benevolent sexism on belongingness need threat was found in either of the current studies. Future researchers may want to try a stronger and more personal manipulation of benevolent sexism. For example, researchers could have participants interact with a confederate who expresses benevolent sexist attitudes. It is also possible that, although benevolent sexism is related to an increase in women's beliefs that their self-worth relies on the social approval of others (Barreto et al., 2010), it may be unrelated to concerns about their own acceptance and belonging if they currently feel that they have the approval of

those around them. Thus, benevolent sexism may not directly affect belongingness need threat (as found in the current studies). Instead, it may make women more susceptible to feeling like they do not belong if their social standing is threatened by some negative interpersonal interaction.

The current studies also examined both stigma consciousness and collective self-esteem as potential moderators of the above effects. Results of Study 1 suggest that hostile sexism may have a positive effect on alcohol consumption for students with high stigma consciousness and a negative effect among students with low stigma consciousness. This fits with predictions that stigma consciousness would exacerbate the effects of sexism. However, this study also found a positive effect of benevolent sexism on alcohol consumption among students high in collective self-esteem. This contradicts predictions that collective self-esteem should serve as a buffer against the effects of sexism. Furthermore, the results of Study 2 suggest that the positive effects of hostile sexism on alcohol consumption occur primarily among students high in collective self-esteem. Thus, further research is needed to understand how identity threat appraisals influence reactions to both hostile and benevolent sexism.

Strengths and Limitations

Although the current studies did not find consistent support for the hypotheses, they did have some important strengths. Study 1 was the first study to expand upon previous research examining the effects of sexism on alcohol consumption by separately testing the effects of hostile and benevolent sexism. Especially given the contrasting results of hostile and benevolent sexism found in this study, this is an important step in examining whether these two forms of sexism have similar effects on college women's health behaviors. In addition, Study 1 benefitted

from having a more diverse range of participants. By surveying college women across the United States, this study's sample avoided including primarily freshman students currently enrolled in psychology classes. Instead, participants spanned the range of class years and, presumably, avoided oversampling of psychology majors. Future researchers should use this and other methods to increase diversity in samples even when studying a college student population.

A primary strength of Study 2 is the combination of an experimental manipulation with the measurement of actual drinking behavior outside of the lab. Little prior research has combined the elements of a lab manipulation with measurement of behavior in a natural setting. Differences in the results when predicting drinking expectations versus actual alcohol consumption demonstrate the importance of measuring actual drinking behavior outside of the lab. Prior research examining the effects of sexism on alcohol consumption (e.g., Zucker & Landry, 2007) has relied on cross-sectional methodology which does not allow researchers to test causal relations between variables. The methodology used in this study allows for greater understanding of the factors leading to college women's alcohol consumption and may be useful in future studies.

However, the current studies do have some limitations that are important to consider. First, Study 1 employed retrospective measurement of daily experiences. Research conducted on college students suggests that retrospective reports of alcohol consumption are highly correlated with reports of alcohol consumption obtained through diary methods (Townsend & Duka, 2002). However, such retrospective reporting was found to result in an overall underestimation of the number of drinks participants actually consumed that is particularly prevalent among those who consume larger quantities of alcohol. Such a bias in reporting may have negatively affected the

reliability of the current results. In contrast, the methodology used in Study 2 allows for testing of daily effects of sexism on alcohol consumption and minimizes retrospective bias.

In addition, there were some problems with the sexism manipulation. First, participants indicated that the hostile sexism article was less credible than the control article. This effect was also found primarily among college women high in stigma consciousness. Additionally, a larger proportion of participants from the control condition, compared to the sexism conditions, were excluded from analyses for failure to correctly identify information presented in the article. It seems that many students viewed the article as sexist and applied sexist schemas to help them recall the information presented in the article. For example, although the article states that men like cooking while women like playing sports, many participants in this condition reported the opposite of these results when asked about men and women. Including all participants from the control condition does not change the current results. However, future researchers may want to use a different control article that does not allow for this biased interpretation by participants.

Future Directions

Future research should consider the use of daily diary methodologies that would allow researchers to examine patterns of results over time. It may be that daily experiences in real life are related to evening alcohol consumption in a manner that is too complex to study in cross-sectional studies such as Study 1 and one time assessments such as Study 2. A daily diary approach would allow researchers to measure college women's reactions to sexism in their everyday lives and examine their effects on health behaviors such as alcohol consumption that evening. Another potential approach would be to ask women to recall their own personal

experiences with sexism. Making the experimental manipulation more personal in this manner might lead to stronger effects.

In addition, it would be interesting to consider the effects of participants' endorsement of hostile and benevolent sexism in addition to their experiences with each form of sexism. While previous research has explored both personal endorsement and exposure, the current research tested only exposure to sexism. It may be that personal endorsement of sexism is an important factor in college women's alcohol consumption or that sexist beliefs moderate the effects of sexist experiences.

Finally, future research should further examine the effects of alcohol consumption on feelings of belongingness and anger. Prior research has suggested that some students fall into a cycle in which weekly affect leads to increased consumption which in turn influences affect in the following week (Hussong et al., 2001). Although the current studies found mixed results for the effects of anger and belongingness need threat on alcohol consumption, these feelings were predicted by sexism and show some relation to alcohol consumption among college women. Future research should further examine whether other factors, such as coping drinking motives or expectancies that drinking will improve social interactions, may influence how these feelings influence alcohol consumption and whether alcohol consumption may have a reciprocal effect on these feelings.

Conclusion

Although the current studies did not entirely support the hypotheses, they provide insight into the effects of sexism on college women. The finding that hostile sexism in particular was related to increased anger and belongingness need threat highlights the negative effects that this

form of discrimination can have on college women. Although the effects of these negative feelings on alcohol consumption were mixed in the current studies, future researchers should continue to examine how hostile and benevolent sexism uniquely predict behavior. Furthermore, the current studies do provide some evidence that both hostile and benevolent sexism may be related to alcohol consumption among college women. Given the many negative consequences associated with alcohol consumption, additional research into these effects is warranted.

APPENDIX A

STUDY 1 SURVEY

1. What is your date of birth?
    - Response options: Numerical entry of date
2. What is your gender?
    - Response options: Male/Female/Other—text entry option
3. What is your ethnicity?
    - Response options: African American, Black, African, Caribbean/Asian American, Asian, Pacific Islander/European American, Anglo, Caucasian/Hispanic American, Latino, Chicano/Native American, American Indian/Bi-Racial, Multi-Racial/Other—text entry option
4. What is your year in school?
    - Response options: Freshman/Sophomore/Junior/Senior/Other—text entry option
5. Are you a member of a fraternity or sorority?
    - Response options: Yes/No
6. What are your current living arrangements?
    - Response options: Live on campus in a dormitory - live alone/Live on campus in a dormitory - live with roommates/Live off campus in an apartment or house - live alone/Live off campus in an apartment or house - live with roommates/Live off campus in an apartment or house - live with family/Other – text entry option
7. Please indicate how much you agree or disagree with the following statements on the scale provided.
    - Response options: 7-point scale from strongly disagree to strongly agree

    1. Stereotypes about women have not affected me personally.

2. I never worry that my behaviors will be viewed as stereotypically female.
3. When interacting with men, I feel like they interpret all my behaviors in terms of the fact that I am a woman.
4. Most men do not judge women on the basis of their gender.
5. My being female does not influence how men act with me.
6. I almost never think about the fact that I am female when I interact with men.
7. My being my female does not influence how people act with me.
8. Most men have a lot more sexist thoughts than they actually express.
9. I often think that others are unfairly accused of being sexist.
10. Most men have a problem viewing women as equals.

8. Please indicate how much you agree or disagree with the following statements on the scale provided.

- Response options: 7-point scale from strongly disagree to strongly agree

1. I am a worthy member of the female gender.
2. I often regret that I am female.
3. Overall, women are considered good by others.
4. Overall, being female has very little to do with how I feel about myself.
5. I feel I don't have much to offer to the female gender.
6. In general, I'm glad to be female.
7. Most people consider women, on average, to be more ineffective than other groups.
8. Being female is an important reflection of who I am.
9. I am a cooperative participant in the activities of the female gender.

10. Overall, I often feel that being female is not worthwhile.

11. In general, others respect women.

12. Being female is unimportant to my sense of what kind of a person I am.

13. I often feel I'm a useless member of the female gender.

14. I feel good about being female.

15. In general, others think that women are unworthy.

16. In general, being female is an important part of my self-image.

9. Please indicate how often in the past four weeks you have felt like men in your life (e.g., male romantic partners, friends, and family members) have seemed to agree with the following statements.

- Response options: 7-point scale from never to all of the time

1. No matter how accomplished he is, a man is not truly complete as a person unless he has the love of a woman.

2. Many women are actually seeking special favors, such as hiring policies that favor them over men, under the guise of asking for "equality."

3. In a disaster, women ought not necessarily be rescued before men.

4. Most women interpret innocent remarks or acts as being sexist.

5. Women are too easily offended.

6. People are often truly happy in life without being romantically involved with a member of the other sex.

7. Feminists are not seeking for women to have more power than men.

8. Many women have a quality of purity that few men possess.

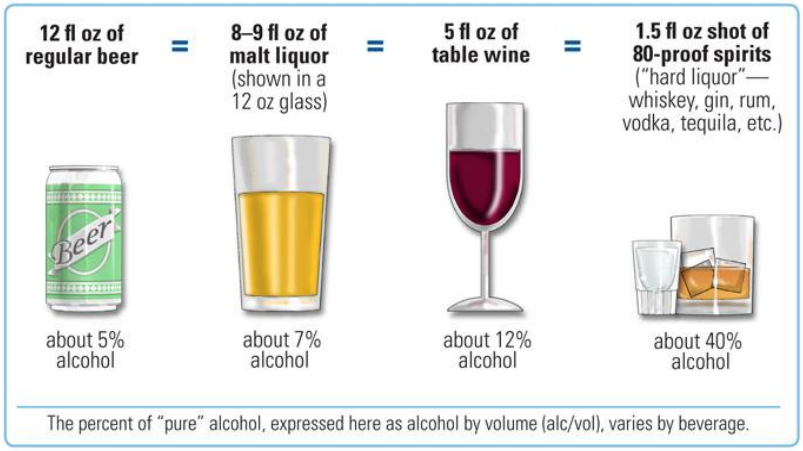
9. Women should be cherished and protected by men.
10. Most women fail to appreciate fully all that men do for them.
11. Women seek to gain power by getting control over men.
12. Every man ought to have a woman whom he adores.
13. Men are complete without women.
14. Women exaggerate problems they have at work.
15. Once a woman gets a man to commit to her, she usually tries to put him on a tight leash.
16. When women lose to men in a fair competition, they typically complain about being discriminated against.
17. A good woman should be set on a pedestal by her man.
18. There are actually very few women who get a kick out of teasing men by seeming sexually available and then refusing male advances.
19. Women, compared to men, tend to have a superior moral sensibility.
20. Men should be willing to sacrifice their own well being in order to provide financially for the women in their lives.
21. Feminists are making entirely reasonable demands of men.
22. Women, as compared to men, tend to have a more refined sense of culture and good taste.

10. On how many days have you had alcoholic beverages to drink in the past 4 weeks?

- Response options: 0-28

11. How much did you drink, on average, each time you drank in the past 4 weeks? One drink equals one 12-oz. can or bottle of beer, one 12-oz. wine cooler, one 4-oz. glass of wine, or one 1-oz. of liquor straight or in a mixed drink. See image below from the NIAAA.

    - Response options: 6-point scale from one drink per occasion more than 5 drinks per occasion



12. In the past 4 weeks, how often have you drunk four drinks or more at one time?

    - Response options: 0-28

13. To what extent did you experience each of the following emotions in the previous four weeks?

    - Response options: 7-point scale from not at all to extremely

    1. Angry

    2. Indignant

    3. Irritated

    4. Disappointed

    5. Frustrated

14. To what extent do you agree with each of the following statements?

- Response options: 7-point scale from do not agree to agree

1. In the previous four weeks, I felt as one with others.

2. In the previous four weeks, I had the feeling that I belonged.

3. In the previous four weeks, I did not feel accepted.

4. In the previous four weeks, I felt connected with others.

5. In the previous four weeks, I felt like an outsider.

APPENDIX B

STUDY 2 TIME 1 SURVEY

1. In order to connect your answers on this survey with your answers on tomorrow's follow-up survey, we need you to provide us with your email address. Below, please enter the email address at which you wish to receive tomorrow's survey.
    - Response options: Text entry
2. What is your date of birth?
    - Response options: Numerical entry of date
3. What is your gender?
    - Response options: Male/Female/Other
4. What is your ethnicity?
    - Response options: African American, Black, African, Caribbean/Asian American, Asian, Pacific Islander/European American, Anglo, Caucasian/Hispanic American, Latino, Chicano/Native American, American Indian/Bi-Racial, Multi-Racial/Other
5. What is your year in school?
    - Response options: Freshman/Sophomore/Junior/Senior/Other
6. Are you a member of a fraternity or sorority?
    - Response options: Yes/No
7. What are your current living arrangements?
    - Response options: Live on campus in a dormitory - live alone/Live on campus in a dormitory - live with roommates/Live off campus in an apartment or house - live alone/Live off campus in an apartment or house - live with roommates/Live off campus in an apartment or house - live with family/Other – text entry option

8. Please check any of the below activities that you plan to engage in tonight.
    - Response options: Study or do work for class/Attend a school sponsored event/Go to a party or bar/Spend time with friends/Spend time with a significant other/Spend time with family/Other – text entry option
9. Please indicate how much you agree or disagree with the following statements on the scale provided.
    - Response options: 7-point scale from strongly disagree to strongly agree

    1. Stereotypes about women have not affected me personally.

    2. I never worry that my behaviors will be viewed as stereotypically female.

    3. When interacting with men, I feel like they interpret all my behaviors in terms of the fact that I am a woman.

    4. Most men do not judge women on the basis of their gender.

    5. My being female does not influence how men act with me.

    6. I almost never think about the fact that I am female when I interact with men.

    7. My being my female does not influence how people act with me.

    8. Most men have a lot more sexist thoughts than they actually express.

    9. I often think that others are unfairly accused of being sexist.

    10. Most men have a problem viewing women as equals.
10. Please indicate how much you agree or disagree with the following statements on the scale provided.
    - Response options: 7-point scale from strongly disagree to strongly agree

    1. I am a worthy member of the female gender.

2. I often regret that I am female.
3. Overall, women are considered good by others.
4. Overall, being female has very little to do with how I feel about myself.
5. I feel I don't have much to offer to the female gender.
6. In general, I'm glad to be female.
7. Most people consider women, on average, to be more ineffective than other groups.
8. Being female is an important reflection of who I am.
9. I am a cooperative participant in the activities of the female gender.
10. Overall, I often feel that being female is not worthwhile.
11. In general, others respect women.
12. Being female is unimportant to my sense of what kind of a person I am.
13. I often feel I'm a useless member of the female gender.
14. I feel good about being female.
15. In general, others think that women are unworthy.
16. In general, being female is an important part of my self-image.

11. We are also interested in learning more about how students evaluate a popular media article that summarizes the results of psychological research. Please read the following article carefully as you will be asked to evaluate it on several dimensions.
    1. Participants are given a bogus article entitled "Are they fundamentally different?" Participants will be randomly assigned to the hostile sexism, benevolent sexism, or control condition. In the hostile sexism condition, the article indicates that people tend to have negative beliefs about women. In the benevolent sexism condition, the article

indicates that people tend to believe things about women that seem positive, but reinforce male dominance. Finally, in the control condition, the article indicates that men and women both value friendship and honesty. For the text of the articles, please see appendix D.

12. What are your overall impressions of the article that you just read?
    - Text box
13. What is the purpose of the article?
    - Text box
14. According to the survey, what do people tend to think about men? Please indicate at least two commonly held beliefs.
    - Text box
15. According to the survey, what do people tend to think about women? Please indicate at least two commonly held beliefs.
    - Text box
16. Please rate the article that you read on the following dimensions.
    - Response options: 9-point scale from not at all to extremely

    1. Intuitiveness

    2. Reasonableness

    3. Believability

    4. Persuasiveness

    5. Significance

17. To what extent are you currently experiencing each of the following emotions?

- Response options: 7-point scale from not at all to extremely

1. Angry

2. Indignant

3. Irritated

4. Disappointed

5. Frustrated

18. To what extent do you agree with each of the following statements?

- Response options: 7-point scale from do not agree to agree

1. Right now, I feel as one with others.

2. Right now, I have the feeling that I belong.

3. Right now, I do not feel accepted.

4. Right now, I feel connected with others.

5. Right now, I feel like an outsider.

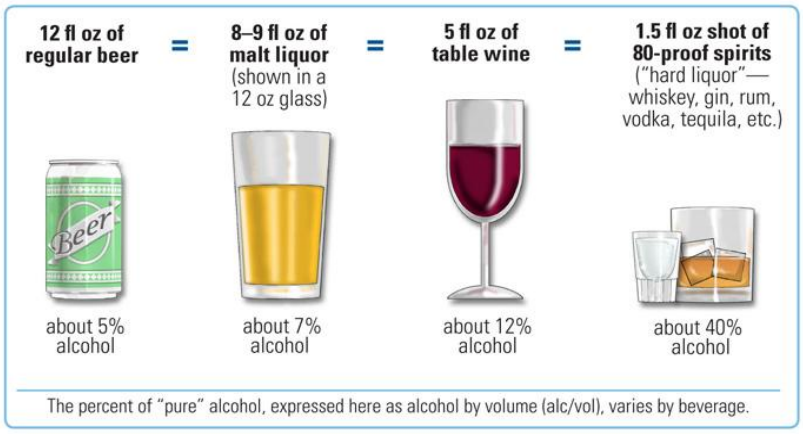
19. How likely is it that you will drink alcohol tonight?

- Response options: 7-point scale from extremely unlikely to extremely likely

APPENDIX C

STUDY 2 TIME 2 SURVEY

1. In order for us to connect your responses on this survey with the responses you made yesterday, we need you to enter the same email address you provided us with yesterday. Please provide your email address below.
    - Response options: Text entry
2. How many alcoholic drinks did you consume last night? One drink equals one 12-oz. can or bottle of beer, one 12-oz. wine cooler, one 4-oz. glass of wine, or one 1-oz. of liquor straight or in a mixed drink. See image below from the NIAAA. Round up to the nearest whole number. Type in "0" if you did not have any alcoholic beverages last night.
    - Response options: Numerical entry



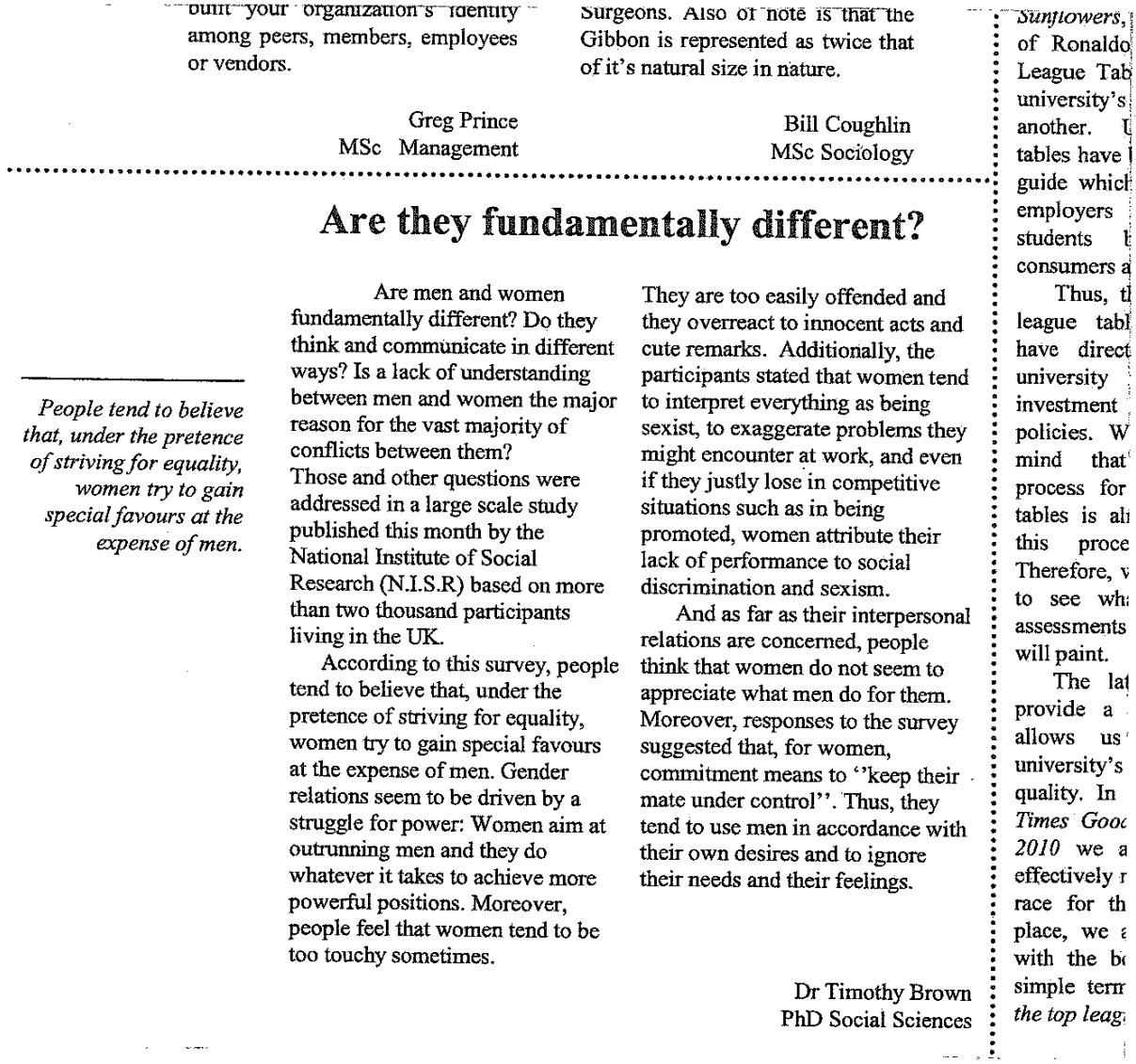
3. Is there anything that prevented you from consuming alcohol last night (or that moderated your alcohol consumption)?
    - Response options: Yes, health issues/Yes, academic obligations/Yes, athletic obligations/Yes, extracurricular obligations/Yes, religious obligations/Yes, employment obligations/Yes, plans with friends/Yes, family obligations/Yes, unable to obtain alcohol/No/Other-text entry option
4. What do you think this study was about? What do you think the study's hypotheses were?
    - Response options: Text entry

APPENDIX D

STUDY 2 BOGUS ARTICLES

Participants see one of three versions of a bogus article from Lemonaki et al. (2015)

Hostile sexism article:



built your organization's identity among peers, members, employees or vendors.

Greg Prince
MSc Management

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Bill Coughlin
MSc Sociology

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Are they fundamentally different?

People tend to believe that, under the pretence of striving for equality, women try to gain special favours at the expense of men.

Are men and women fundamentally different? Do they think and communicate in different ways? Is a lack of understanding between men and women the major reason for the vast majority of conflicts between them? Those and other questions were addressed in a large scale study published this month by the National Institute of Social Research (N.I.S.R) based on more than two thousand participants living in the UK.

According to this survey, people tend to believe that, under the pretence of striving for equality, women try to gain special favours at the expense of men. Gender relations seem to be driven by a struggle for power: Women aim at outrunning men and they do whatever it takes to achieve more powerful positions. Moreover, people feel that women tend to be too touchy sometimes. They are too easily offended and they overreact to innocent acts and cute remarks. Additionally, the participants stated that women tend to interpret everything as being sexist, to exaggerate problems they might encounter at work, and even if they justly lose in competitive situations such as in being promoted, women attribute their lack of performance to social discrimination and sexism.

And as far as their interpersonal relations are concerned, people think that women do not seem to appreciate what men do for them. Moreover, responses to the survey suggested that, for women, commitment means to ''keep their mate under control''. Thus, they tend to use men in accordance with their own desires and to ignore their needs and their feelings.

Dr Timothy Brown
PhD Social Sciences

Benevolent sexism article:

built your organization's identity among peers, members, employees or vendors.

Greg Prince
MSc Management

Also of note is that the Gibbon is represented as twice that of it's natural size in nature.

Bill Coughlin
MSc Sociology

Are they fundamentally different?

People believe that women are very sensitive and delicate and sometimes they seem to be so vulnerable that makes men feel responsible for their protection.

Are men and women fundamentally different? Do they think and communicate in different ways? Is a lack of understanding between men and women the major reason for the vast majority of conflicts between them? Those and other questions were addressed in a large scale study published this month by the National Institute of Social Research (N.I.S.R) based on more than two thousand participants living in the UK.

According to this survey, people tend to believe that a man could never feel complete regardless of his attainments unless he has a woman in his life to support him and to care about him. Moreover, people feel that women are unique, with an exceptional sense of morality and empathy for those in need.

Additionally, the participants stated that women are superior to men in terms of good taste and have a more refined sense of culture. They also indicated that women are very sensitive and delicate and sometimes they seem to be so vulnerable that makes men feel responsible for their protection.

And as far as their interpersonal relations are concerned, people think that a good woman ought to be treated like a princess – a princess of a man's heart and life. And to that end, a man should strive to provide financial support for his beloved woman and do his best in order to make his woman feel happy and secure.

Dr Timothy Brown
PhD Social Sciences

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Are they fundamentally different?

People believe that both men and women value friendship and that both sexes consider honesty and respect as the most important ingredients for a successful relationship.

Are men and women fundamentally different? Do they think and communicate in different ways? Is a lack of understanding between men and women the major reason for the vast majority of conflicts between them? These and other questions were addressed in a large scale study published this month by the National Institute of Social Research (N.I.S.R) based on more than two thousand participants living in the UK.

According to this survey, people tend to believe that both men and women like keeping fit and healthy. Nevertheless, women prefer to go to the gym, while men prefer to jog or cycle in the park. Moreover, people believe that, in their free time, both men and women enjoy reading a good novel and watching a film on TV.

In terms of their favourite hobbies, the participants stated that men love going camping, cooking and collecting football cards or stamps. Women, on the other hand, enjoy performing arts (e.g., acting, singing), playing sports and shopping.

With regard to men and women's favourite food, participants suggested that, while men prefer eating meat and chocolate, women love pasta and strawberries.

And as far as their interpersonal relations are concerned, responses to the survey suggested that both men and women value friendship and that both sexes consider honesty and respect as the most important ingredients for a successful relationship.

Dr Timothy Brown
PhD Social Sciences

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