THE RELATIONSHIP BETWEEN SEXISM AND SEXUAL PREJUDICE TOWARDS GAY MEN: AN EXPERIMENTAL PRIMING STUDY

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THE RELATIONSHIP BETWEEN SEXISM AND SEXUAL PREJUDICE TOWARDS GAY MEN: AN EXPERIMENTAL PRIMING STUDY

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Doctoral Dissertation

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ABSTRACT

There is considerable evidence that negative attitudes towards women and gay men are strongly related and contribute to the oppression of both marginalized groups. Feminist theory, gender studies, and social dominance theory concur that patriarchy and rigid gender roles encourage heterosexual men to endorse both sexual prejudice and sexist attitudes. To date, the majority of research has utilized self-report measures to examine the relationship between sexual prejudice and sexism. The current project used experimental priming methodology to deepen counseling psychology's understanding of shared meaning between prejudice towards women and prejudice towards gay men. Schema theory posits that knowledge is stored in semantic networks that are connected through shared associations. Therefore, exposure to a stimulus (i.e., a prime) activates related schemas and may impact responses to subsequent stimuli (i.e., a target). In the current study, participants were randomly assigned to two conditions. In the experimental condition, participants were primed with a sexist vignette. In the control condition, participants read a neutral vignette. After exposure to the stimuli, participants completed an Implicit Attitude Test, which uses response times on a sorting task to assess implicit preference for stimuli associated with heterosexuality or stimuli associated with gay men. An ANCOVA revealed that heterosexual men who read the sexist vignette exhibited significantly more implicit bias towards gay men than the control group. The results of this study have implications for prejudice reduction interventions.

DEDICATION

I dedicate this work to all people who have been harmed by patriarchal oppression. It is my hope that this scholarship will galvanize advocates for women and sexual minorities.

> "There are so many different parts to each of us. And there are so many of us. If we envision the future we desire, we can work to bring it into being. We need all the different pieces of ourselves to be strong, as we need each other and each other's battles for empowerment." - Audre Lorde (1983)

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CHAPTER I

INTRODUCTION

"Homophobia is an effective weapon of sexism."

– Suzanne Pharr (1990, p. 16)

Gay men and heterosexual women are oppressed and marginalized by heterosexual men. This chapter provides a rationale for counseling psychology's continued investigation of the relationship between negative attitudes towards women and negative attitudes towards gay men. Feminist scholars have argued the relationship between sexual prejudice and sexism must be recognized if gender equality is to be achieved (Murphy, 2006). Therefore, understanding sexual prejudice and sexism is a pertinent social justice issue. In this introduction, theoretical and empirical evidence for a relationship between prejudice towards women and gay men is summarized. Schema theory (Rumelhart, 1980) provides a framework for understanding sexism and sexual prejudice as complex cognitive structures, or schemas, which share overlapping features. Research suggests that the accessibility of prejudicial schemas can be manipulated by environmental stimuli (Krosnick, Judd, & Wittenbrook, 2005). To date, research examining the relationship between sexist and sexual prejudice attitudes has consisted of correlational self-report survey research. An experimental priming study substantially expands the field's understanding of heterosexual men's attitudes towards women and

gay men. Understanding how heterosexual men's attitudes about gay men are related to their attitudes about women is important for prevention and intervention efforts.

Social Justice Research

Research that seeks to understand the oppression of gay men and women is consistent with a social justice perspective. Social justice is one of counseling psychology's core values and can be traced back to the field's origins in feminism and civil rights advocacy (Fouad, Gerstein, & Toporek, 2006). The goal of social justice is "full and equal participation of all groups in a society that is mutually shaped to meet their needs. Social justice includes a vision of society in which the distribution of resources is equitable and all members are physically and psychologically safe and secure" (Bell, 1997, p. 3). Social justice cannot be achieved in an oppressive society, as oppression is the exercise of power to disenfranchise, marginalize, or unjustly ostracize particular individuals or groups. Oppression is expressed through individual prejudice and discrimination, integrated into societal institutions (e.g., law, social policy, schools, media), and includes threats of violence, removal of rights, and exclusion from decision-making processes. In an oppressive society, individuals who are seen as "normal" (e.g., White, heterosexual, male) belong to dominant groups and possess more cultural, social, political and interpersonal power compared to those in non-dominant groups (Sue & Sue, 2014).

Oppression of Gay Men

Since heterosexual is considered "normal" historically and in modern society, then it follows that lesbian women, gay men, and other sexual minorities are consider to be deviant and therefore oppressed. In contrast, individuals with a heterosexual

orientation reap the benefits of being part of a dominant group. Although all sexual minorities experience oppression, gay men are more likely to experience violence, discrimination, and harassment compared to other sexual minority groups. According to a large national survey conducted in 2005, 39% of gay male participants reported experiencing violence, attempted crime, or property crime due to their sexual orientation. Over a third (35%) described being threatened with violence, a majority (63%) reported experiencing verbal abuse, and nearly a fifth (17.7%) endorsed job or housing discrimination. In addition, one third (33.2%) of gay men endorsed "I believe most people where I live think less of a person who is gay" (Herek, 2009a).

The violence, harassment, and discrimination reported by gay men is relevant to gay men's well-being. Structural inequalities, discrimination, and internalized prejudice contribute to poor physical and mental health outcomes for gay men (Meyer, 2003). To date, much of the research on the oppression of gay men has focused on identifying its impact on gay men, rather than understanding the sources of oppression (e.g., the individuals with prejudicial attitudes, Aguinaldo, 2008). Therefore, the proposed project aims to understand heterosexual men's negative attitudes towards gay men in order to prevent the oppression of gay men.

Oppression of Women

The oppression of women was highlighted by second wave feminists in the 1960s. Sexism is a broad construct that describes the systems that uphold the oppression of women, including: laws, behaviors, institutions, attitudes, and relationships that are prejudicial or discriminatory against women and girls. Historically and in modern society, men and masculinity have been considered to be superior to women and

femininity. Compared to the dominant gender (i.e., men), women are prevented from fully participating in society, particularly in systems of work, governance, and education. In addition, women and girls are constrained by traditional gender roles and sexually objectified by the culture at large (Masequesmay, 2008).

The oppression of women is multi-faceted. Women and girls are at risk for interpersonal victimization and violence, limited economic resources, and discrimination in the workplace. Violence against women is an epidemic: 20% of women are physically assaulted by a partner and approximately 12% are sexually assaulted at some time in their lives (APA, 2005). In 2015, women in the United States earned 83% of what men earned (Pew Research Center, 2013a). Additionally, despite women's greater participation in the workforce, recent surveys of how US men and women spend their time reveal that women continue to disproportionately bear the burden of domestic labor and childcare (Pew Research Center, 2013b). Feminist psychologists attribute women's heightened risk of poor mental and physical health outcomes to experiences of oppression, bias and discrimination (APA, 2007).

Potential Significance for Advocacy

Social justice researchers should utilize their research to advocate for societal changes to benefit oppressed groups (Ratts, Singh, Nassar-McMillan, Butler & McCullough, 2016). Clearly, both women and gay men are oppressed groups in modern society. The shared origins of sexism and sexual prejudice may represent an opportunity for two marginalized groups, women and gay men, to unite against shared patriarchal oppression (Murphy, 2006). More specifically, this area of research potentially benefits advocacy efforts by guiding the development of effective prevention efforts for sexual

prejudice. Prevention, rather than remediation, of oppression is an important element of social justice efforts because oppression leads to psychological and emotional difficulties and stifles potential for growth (Vera & Speight, 2003). If, as proposed, sexism and sexual prejudice are closely related, this finding may guide the development of feminist sexual prejudice prevention efforts that target sexism and promote egalitarian representations of women in the media.

Prejudicial Attitudes

The proposed project targets a specific manifestation of oppression, prejudicial attitudes, or an individual's negative thoughts, beliefs, and feelings towards marginalized groups that occurs at the level of the individual (Allport, 1954). Negative attitudes towards sexual minorities are often referred to as sexual prejudice (Herek & McLemore, 2013) a modern term for "homophobia," originally described as a fear of being in close proximity to sexual minority men (Weinberg, 1972, p. 4). Herek's conceptual model (2009b) describes sexual prejudice as the assumption that individuals who are not heterosexual (e.g., sexual minorities) are abnormal, unnatural, and deserving of derision, exclusion, and hostility. Sexual prejudice is conceptualized as originating in a culture that views same-sex behavior and attraction as having less value than heterosexuality (Herek, 2009b). Although United States adults' tolerance and support of same-sex relationships is at its highest since public opinion about these issues began to be measured (Pew Research Center, 2016b), negative attitudes towards sexual minorities remain a socially acceptable prejudice, particularly when directed at gay men (Herek & McLemore, 2013). Unsurprisingly, sexual prejudice attitudes are related to discrimination towards sexual minorities (Schope & Eliason, 2000). Sexual prejudice can be measured explicitly, using

self-report, or, as in the proposed study, implicitly, by assessing individual's association of negative constructs with sexual minority individuals (Blair, 2002).

Although attitudes about women have evolved in recent decades, attitudes about traditional gender roles remain entrenched in our culture (Donnelly et al., 2016). Individual person's negative attitudes towards women, similar to negative attitudes towards sexual minorities, are a manifestation of society's oppression of women (APA, 2005; Karakurt & Cumbie, 2012). The conceptualization and measurement of negative attitudes towards women is diverse. The current study focuses on hostile sexism, introduced by Glick and Fiske (1996) as a "classic" prejudice construct. The creators describe hostile sexism as similar to measures of "old fashioned sexism" since the construct includes beliefs about women's inferiority and endorsement of traditional roles for women (Swim, Aikin, Hall, & Hunter, 1995). While sexual prejudice and sexist attitudes are directed at distinct targets, the two prejudices share many features.

The Role of Patriarchy

Feminist theory suggests that patriarchy is the origin of the oppression of both women and gay men, and therefore the origin of both sexual prejudice and sexism. Patriarchy is a political-social system that insists males are inherently superior to women and endowed with the right to dominate and rule over women and children (bell hooks, 2000). A patriarchal society is characterized by women's lack of power and representation in political, economic, social, and legal systems. Sexist attitudes are one consequence of patriarchy (Glick & Fiske, 1996), in addition to violence against women, a lack of positive representation in media, sexual objectification, and less financial and social resources allocated to women. According to Glick and Fiske (1996), hostile sexist

beliefs serve to justify patriarchy by emphasizing women's incompetence to wield power over economic, legal, and political institutions.

Similar to sexism, sexual prejudice is also proposed to stem from a patriarchal system that values men and masculinity over women and femininity. Heterosexuality is considered to be a core component of patriarchy, even deemed "compulsory" by feminist scholars (Rich, 1980). The feminist author Pharr states categorically, ''without the existence of sexism, there would be no homophobia'' (1990, p. 26). From a feminist perspective, both negative attitudes towards women and negative attitudes towards sexual minorities originate from beliefs about appropriate roles for men and women (Capezza, 2007). Gay men are perceived to be more feminine than heterosexual men (Blashill & Powlishta, 2012); therefore, negative attitudes about femininity effectively marginalize both women and gay men. Feminist counseling psychologists call both therapists and researchers to challenge patriarchy as the root of oppression for both sexual minorities and women (Brabeck & Brabeck, 2012).

The literature on heterosexual men and masculinity also documents the shared features of sexism and sexual prejudice towards gay men. Men's Studies author Kimmel (1994) posits that, "homophobia and sexism go hand in hand" (p. 215). It has been suggested that the traditional male role *requires* sexual prejudice (Herek & McLemore, 2013). Consistent with this conceptualization, a central norm in measures of traditional masculinity ideology is avoidance of femininity (Levant, Hall, & Rankin, 2013) and measures that assess masculine norms include negative attitudes towards women and sexual minorities (Thompson & Pleck, 1995). According to the Gender Role Strain Paradigm, male gender norms stem from a patriarchal and sexist society that values

masculinity and men over femininity and women (Pleck, 1981). Therefore, men are motivated to distance themselves from femininity *and* from gay men in order to preserve their power and status. Thompson, Grisanti, and Pleck (1985) suggest that sexual prejudice is likely a ‘‘specific component of a broader antifemininity theme within the male role’’ (p. 424). Kilianski (2003) echoes that “anti-femininity” is the common core underlying heterosexual men’s attitudes towards women and gay men.

In addition to feminist and gender studies literature, Social Dominance Theory (SDT; Pratto, Sidanius, Stallworth & Malle, 1994) presents a similar argument for the relationship between sexism and sexual prejudice. The SDT framework posits that societies are structured according to group-based social hierarchies. According to SDT, since men are at the top of the social hierarchy, they are invested in justifying discrimination and prejudice directed at groups lower in the social hierarchy. Some investigators specifically explain men’s sexual prejudice and sexism as arising from their relative social dominance (MacInnis & Hodson, 2015). In sum, conceptualizations drawing from interdisciplinary theories identify patriarchy, power, and rigid gender roles as shared features in prejudice directed towards women and gay men.

The Relationship between Sexual Prejudice and Sexism

There is empirical evidence that men who are prejudiced against sexual minorities are also more likely to endorse a variety of sexist beliefs (Aosved & Long, 2006). Specifically, endorsement of hostile sexism appears to be a significantly related to negative attitudes towards gay men. A meta-analysis found that measures categorized as old fashioned sexism, a similar construct, were stronger predictors of sexual prejudice than other types of sexism measures (e.g., modern; Whitley, 2001). In the last 15 years,

four studies (Davies, 2004; Nagoshi et al., 2008; Sakalli, 2002; Keiller, 2010) reported significant positive correlations between hostile sexist and sexual prejudice attitudes using the hostile sexism subscale of the Ambivalent Sexism Inventory (Glick & Fiske, 1996). It appears there is empirical support from correlational research that sexual prejudice is related to more hostile attitudes toward women, particularly among heterosexual men. However, a critical review of this literature highlights several limitations.

First, the majority of the research does not differentiate between men's and women's attitudes and frequently examines sexual prejudice generally, rather than attitudes towards gay men specifically. Only one study examining hostile sexism (Keiller, 2010) explicitly examined heterosexual men's negative attitudes towards gay men. Therefore, it is difficult to identify the unique role that hostile sexism may play in predicting heterosexual men's attitudes towards gay men. Second, with few exceptions, the majority of the literature documenting the relationship between sexism and sexual prejudice is several decades old and thus outdated. Therefore, it may be inappropriate to generalize these findings to the modern relationship between these constructs. Third, the literature overwhelmingly relies on convenience samples of university students, which may not be representative of the larger population. Most importantly, nearly all of the research relies on self-report survey research, which is limited in its ability to control for the contribution of other factors. Considering these limitations, an experimental investigation of the relationship between negative attitudes towards women and gay men using a modern and diverse sample of heterosexual men will considerably contribute to the literature.

Schema Theory and Priming Experiments

Despite their status as the gold standard of research, experimental methods are underutilized in counseling psychology (Hoyt & Mallinckrodt, 2013). The hallmark of a true experiment is the random assignment of participants to eliminate systematic differences across groups, the manipulation of an independent variable, and the comparison between groups. True experimental designs are useful in terms of controlling and eliminating threats to internal validity (Heppner & Wampold, 2015). It is difficult to use experimental methods to examine prejudice, since you cannot randomly assign participants to have varying degrees of sexist or sexual prejudice attitudes. However, priming methodology allows researchers to assess prejudicial attitudes by randomly assigning participants to be exposed to different stimuli and observing the impact on implicit or explicit prejudicial attitudes.

Schema theory posits that all of one's knowledge is organized into mental structures of preconceived ideas, aka schemas, that help one understand the world. Schema theory is useful in understanding prejudice since prejudicial attitudes can be conceptualized as complex schemas including beliefs, expectations, and experiences with a certain group (Bem, 1981). According to schema theory, schemas are interconnected based on overlapping meaning and shared features. When one schema is activated by a stimulus, this leads to a process of "spreading activation" as other schemas are subsequently activated (Collins & Loftus, 1975). Considering the strong relationship between sexist and sexual prejudice attitudes, it seems likely that both prejudices are elements of complex interconnecting schemata related to gender (Barron, Struckman-Johnson, Quevillon, & Banka, 2008).

Priming experiments allows investigators to manipulate the accessibility, or salience, of a particular schema by exposing participants to specific stimuli (Barrett, 2016). Priming is an unconscious process that occurs when a concept or knowledge structure is triggered or activated by an environmental stimulus (e.g., prime stimuli), thereby becoming more likely to activate other, related, schemata and impact subsequent thoughts, feelings, and behaviors (e.g., target stimuli). According to schema theory, if negative attitudes towards women and negative attitudes towards gay men are semantically related, then presenting sexist stimuli (e.g., "the prime") would activate schemas relevant to sexual prejudice towards gay men. The subsequent activation would hypothetically influence how individuals respond to stimuli related to gay men (e.g., "the target").

Measures of implicit attitudes, rather than explicit attitudes, are frequently used as target stimuli in priming studies because of their resistance to controlled cognitive processes, including social desirability (Blair, 2002). Past investigators demonstrated that exposure to environmental stimuli, including vignettes, words, and video clips, are capable of activating both prejudicial and positive schemas towards gay men. Specifically, exposure to positive media representations (Miller & Lewallen, 2015), vignettes about famous gay and lesbian people (Dasgupta & Rivera, 2008), negative slurs (Nicolas & Skinner, 2012), and religious cues (Harrison & Michelson, 2015) have been found to impact implicit or explicit attitudes towards gay men. However, no study to date has examined if exposure to sexist prejudicial may influence participant's responses to measures of implicit attitudes towards gay men.

Political Ideology

Although all heterosexual men are raised and shaped by a patriarchal society, individual heterosexual men vary in the degree to which sexist schemas and sexual prejudice schemas are related. When designing effective anti-prejudice prevention and intervention efforts, it is important to understand what variables may influence the strength of the relationship between sexism and sexual prejudice. Social Dominance Theory (Pratto et al., 1994) identified conservative political ideology as an important variable in understanding a patriarchal system of male heterosexual dominance. Politically, conservative ideology is associated with opposing civil liberties for women and sexual minorities (Schneider, 2009). It seems likely that heterosexual men's political ideology may influence heterosexual men's response to sexist prime material. Therefore, political ideology is potentially an important variable in the proposed experiment.

Research Question

Previous work on the relationship between sexism and sexual prejudice focused on assessing individual differences in self-reported attitudes, resulting in literature documenting a correlation between sexist beliefs and sexual prejudice towards gay men (Whitley, 2001). However, the correlational work is largely outdated, relies almost exclusively on self report surveys, is limited to convenience samples, and often fails to specifically assess heterosexual men's attitudes towards gay men specifically. In addition to using a more modern and diverse sample, the proposed study will contribute to the literature by using experimental priming methodology to examine the relationship between sexism and sexual prejudice towards gay men. This area of research has potential to unite two distinct advocacy efforts (e.g., anti-sexual prejudice and anti-

sexism) and guide the creation of effective interventions. Furthermore, if how we think about women impacts how we think about gay men, this has far reaching implications for the impact of media on prejudice. In sum, the proposed research question attempts to address the following research questions.

I. Due to their shared origins in patriarchy, are hostile sexism and sexual prejudice closely related schemas for heterosexual men?

II. More specifically, do hostile sexism and sexual prejudice share enough overlapping features for the activation of hostile sexism schema to cause the activation of sexual prejudice schema?

III. Does conservative political orientation strengthen the association between heterosexual men's hostile sexism and sexual prejudice towards gay men?

CHAPTER II

REVIEW OF THE LITERATURE

First, this chapter reviews literature on the conceptualization of prejudicial attitudes, specifically sexual prejudice and sexist attitudes. The current project focuses on identifying shared features and overlapping meaning of prejudicial attitudes towards women and gay men. Feminist theory, gender ideology theory, and social dominance theory are introduced as frameworks for understanding the relationship between sexual prejudice and sexism. The empirical correlational research documenting the relationship between sexism and sexual prejudice is reviewed and critiqued. Next, schema theory and the phenomenon of priming are introduced as useful tools to conceptualize and examine attitudes towards women and gay men as related schemata. Past efforts to prime both implicit and explicit sexual prejudice attitudes are discussed and different methods of creating sexist prime stimuli are evaluated. Common problems in the design of priming research methodologies are reviewed. Political ideology is proposed as a potential moderator of the relationship between sexism and sexual prejudice. The chapter concludes on the aims and hypotheses of the proposed study.

Prejudicial Attitudes

The proposed project evaluates prejudice, or the internalization of societal attitudes about the non-dominant groups, which is one specific component of oppression.

In his landmark book *The Nature of Prejudice*, Gordon Allport (1954) defined prejudice as a "an aversive or hostile attitude towards a person or group, simply because he belongs to that group, and is therefore presumed to have objectionable qualities of the group" (p. 50). Prejudicial attitudes stem from definitions of "out groups" and "in groups" (e.g., heterosexual and gay). It is important to note that attitudes are considered separate from actions, in that an individual may be prejudiced regardless of actions towards that group. However, Allport (1954) notes that individuals often act on prejudicial beliefs by harassing, avoiding, and discriminating against the out-group. From this perspective, discrimination, social avoidance, and harassment towards women and gay men are all potential consequences of hostile feelings experienced by heterosexual men.

Prejudice against Gay Men

Despite growing acceptance and increased civil rights, sexual prejudice remains an acceptable prejudice in the United States dominant culture. In contrast with the historical term "homophobia," sexual prejudice is a modern construct that more accurately frames negative attitudes as prejudicial rather than based primarily in fear (Herek & McLemore, 2013). Sexual prejudice is typically conceptualized as negative attitudes about sexual minority men and women, and may include endorsement of beliefs about the immorality of same-sex attraction, negative attitudes towards LGB civil rights, and feelings of discomfort or disgust (Grey, Robinson, Coleman, & Bockting, 2013). Consistent with a social justice and feminist approach, sexual prejudice attitudes are considered to originate in cultural messages about the inferiority of same sex behavior and attraction rather than from individual's innate personality traits (Herek, 2009b).

As summarized by Worthen (2013), there is considerable evidence that attitudes

towards different sexual minority groups (e.g., lesbian women, gay men, bisexual men and women) are distinct in both tone and intensity. There are unique stereotypes (e.g., "gay men are effeminate") that are applied only to gay men. Furthermore, individuals tend to report more prejudice towards gay men than lesbian women, and this is particularly true for heterosexual men (Herek & McLemore, 2013). Despite this, investigators often fail to adequately account for gender and lump women and men together in their analyses (Worthen, 2013). Because of the complex and gendered nature of sexual prejudice, the current project focuses exclusively on heterosexual men's attitudes towards gay men. Although often used as an umbrella term for negative attitudes, behaviors, and systems impacting all sexual minorities, for the remainder of the manuscript, the term sexual prejudice is used to refer specifically to negative attitudes towards gay men.

Implicit vs. Explicit Attitudes. While most research focuses on explicit measures of prejudice in which participants answer items about their conscious endorsement of prejudicial attitudes, implicit measures of prejudice allow bias to be assessed indirectly. The most commonly used implicit assessment, the IAT, captures the strength of the participant's positive or negative association with a certain group, represented with words and images (Greenwald, McGhee, & Schwartz, 1998). The IAT uses response time in a sorting task as a measure of strength of association, also referred to as "preference" for certain stimuli. Essentially, implicit bias scores are calculated based on how quickly participants are able to pair relevant stimuli (e.g., the word "gay") with positive and negative words (e.g., "happy" or "bad"). It is important to note that while explicit measures of sexual prejudice often include beliefs about stereotypes or civil liberties in

addition to negative evaluations of sexual minorities (Grey et al., 2013), the IAT singularly taps into a global positive or negative associations.

The Sexuality IAT was created specifically to assess implicit bias towards sexual minorities (Project Implicit, 2002). In a sample of more than 380,000 respondents, researchers found that most participants more easily associated gay people with bad and straight people with good when completing the Sexuality IAT. Only 15% of the sample demonstrated an implicit preference for gay and lesbian individuals and couples (Nosek et al., 2007b). Overall, gender differences in implicit sexual prejudice scores are similar to patterns demonstrated in explicit sexual prejudice (Worthen, 2013), in that men demonstrate more implicit bias towards gay men then lesbian women (Steffens, 2005) and overall men's implicit bias scores are higher than women's (Banse, Seise, & Zerbes, 200; Nosek et al., 2007b).

There is considerable disagreement about the nature of implicit attitudes relative to explicit attitudes. The creators of the IAT posit that the test captures automatic judgments about a group, in contrast with explicit measures which assess deliberative judgments (Greenwald et al., 1998). According to some, implicit measures such as the IAT reflect an individual's exposure to prejudicial attitudes in society rather than an individual's judgment or feeling towards that group (Karpinski & Hilton, 2001). In other words, individual's responses to the IAT may reflect more about the availability of culturally reinforced schemas rather than individual differences in prejudice represented by explicit measure (Shepherd, 2011). Although overly simplified, the relationship between explicit and implicit measures can be described as the difference between what we automatically *think* and what we *say* (Steffens, 2005). Although implicit and explicit

attitudes may manifest differently, Herek (2009b) posits that both stem from societal and cultural beliefs about the superiority of heterosexuality. For a detailed review of the relationship between explicit and implicit measures, see Nosek and Smyth (2007).

Unsurprisingly, the evidence suggests that the relationship between implicit attitudes and discriminatory or prejudicial behavior towards members of the out-group is complicated. While there is evidence that implicit attitudes predict non-verbal behaviors towards out-group members, there is also evidence that individuals exhibit control over behavior regardless of implicit bias (Dasgupta & Rivera, 2006). Importantly, perhaps the most salient difference between implicit and explicit measures is the relative influence of social desirability or self-preservation instincts on participant's scores. Although there is some ability for individuals to control their IAT results, with sufficient motivation or training (see Steffens, 2004), explicit measures of prejudice are obviously more susceptible to participants minimizing their prejudice. For example, subjects instructed to fake positive attitudes toward gay men were able to do so on a self-report questionnaire but not on the Sexuality IAT (Banse et al., 2001).

Impact. Whether implicit or explicit, there is no question that sexual prejudice has a direct impact on the health and well being of gay men. Unsurprisingly, individuals who report anti-gay harassment and violence identified prejudice as the primary motivation (Franklin, 2000). Individuals who report prejudicial attitudes were more likely to endorse harassment, discrimination and violence towards sexual minorities and less likely to endorse helping sexual minorities (Schope & Eliason, 2000). Beyond self report, one experiment found that that men who reported more prejudice towards gay men expressed more anger and aggression towards a gay male confederate (i.e., willingness to

administer a shock) than towards a heterosexual male confederate (Bernat, Calhoun, Adams, & Zeichner, 2001). Furthermore, implicit and explicit sexual prejudice attitudes are associated with attitudes toward LGB civil rights (Worthington, Dillon, & Becker-Schutte, 2005).

Prejudice against Women

Within the literature, there is considerable variety in the conceptualization of sexist attitudes. The construct of hostile sexism is most relevant when examining the relationship between prejudice towards women and prejudice towards gay men. The construct of hostile sexism was first proposed by Glick and Fiske (1996) in an attempt to clarify the broad construct of sexist attitudes. The investigators generally describe sexist attitudes as including paternalistic attitudes, an emphasis on gender differences, and a focus on heterosexual relationships. Glick and Fiske further outline two major components; benevolent and hostile sexism (1996). The two types of sexism share the fundamental assumption that women and men are inherently different; however, they vary in the characteristics that they attribute to women.

Glick and Fiske (1996) describe hostile sexism as the "classic understanding of prejudice" towards women (p. 491), as well as stereotypes about women's inferiority to men. The term "classic" refers to a common distinction of classic versus modern prejudice. Typically, classic prejudice involves stereotypical beliefs regarding the attributes of a group, coupled with an explicitly hostile affect. In contrast, modern prejudice is often considered to lack hostile and aversive affective components. Modern sexism is more consistent with Glick and Fiske's description of benevolent sexism, which is a subjectively positive view of women, albeit very stereotypical. In general, hostile

sexism is directed at women who violate traditional roles (e.g., career women, feminists, and sexually empowered women). In contrast, benevolent sexism is directed at homemakers, wives, and other women in traditionally submissive and chaste roles (Glick & Fiske, 2001).

It can be difficult to differentiate hostile sexism from other conceptualization of sexism. Hostile sexism is consistent with the construct of "old fashioned sexism", which is described as beliefs in women's inferiority and endorsement of traditional roles for women (Swim et al., 1995). Hostile sexism is perhaps most different from modern sexism, which focuses more on current gender-related political issues (e.g., "*Discrimination against women is no longer a problem*"). Although modern sexism is correlated with hostile sexism (r = .65, Glick & Fiske, 1996), hostile sexism captures overtly negative feelings towards women rather than feelings about gender equality (Whitley, 2001). It is also important to note that the construct of hostile sexism is not interchangeable with the construct of traditional gender role attitudes. Traditional gender role attitudes are beliefs about socially appropriate roles, behaviors, activities for women and men. Traditional gender roles are certainly a component of "old-fashioned sexism" and hostile sexism (Swim et al., 1995); however, there are several distinctions between hostile sexism and traditional gender role beliefs. First, traditional gender role beliefs are about how women "*should"* behave or act (e.g., "women should stay in the kitchen"), while hostile sexism describes beliefs about what women fundamentally "*are*" (e.g., "all women hate men"). Second, hostile sexism includes a sense of negative feelings towards women, while traditional gender role beliefs do not.

Impact. Similar to sexual prejudice, hostile sexism is directly related to the well-being of women. Hostile sexism has been shown to predict sexual harassment (Diehl, Rees, & Bohner, 2012), and rape myth acceptance (see Suarez & Gadalla, 2010, for a review) and contributes to verbal and physical aggression towards women (Karakurt & Cumbie, 2012). Because of the negative affect component, the construct of hostile sexism is considered particularly relevant to understanding men's sexual prejudice (Capezza, 2007). In order to dismantle the structural and individual oppression of both women and gay men, it is important to understand how they may be related.

What do Sexism and Sexual Prejudice Have in Common?

Patriarchy

Several feminist theories posit that prejudice against non-heterosexual orientations (sexual prejudice) and prejudice against a gender (sexism) are both products, even pillars, of a patriarchal society. According to feminist theory, patriarchy is a social system in which males hold primary power and predominate in roles of political leadership, moral authority, social privilege, family domain, and control of property. Historically, patriarchy has manifested itself in the social, legal, political, religious and economic organization of most contemporary societies (Ferguson, 1999). Feminist scholars have described patriarchal society as organized around ideas of male heterosexual superiority (bell hooks, 2000). The oppression of gay men and the oppression of women both maintain the status quo of heterosexual male superiority (Brabeck & Brabeck, 2012). According to this perspective, negative attitudes towards women and negative attitudes towards sexual minorities are related, although distinct, manifestations of patriarchy (Capezza, 2007). The fact that men, compared to women,

express more sexist (Swim et al., 1995) and sexually prejudiced (Worthen et al., 2013) attitudes can be interpreted as evidence of men's greater support of the patriarchal status quo.

More specifically, radical lesbian feminism movements describe women's expected subordination to men as intrinsically related to society's expectations for heterosexual relationships. Rich (1980) said that the oppression of lesbian women is fundamental to maintain the power of heterosexual men. Pharr (1990) approaches the relationship theoretically when she describes sexual prejudice as a "weapon" for sexism. Specifically, she argues that homophobia and sexism both uphold patriarchy by reinforcing traditional gender roles and perpetuating traditional institutions like heterosexual marriage and the nuclear family. She elaborates that female empowerment and non-heterosexuality both challenge the system of male dominance, and are therefore threats that must be oppressed (Pharr, 1990). The prominent feminist bell hooks similarly describes the norms that dictate sexual behavior and gender performance as rooted in and sustained by male dominance (bell hooks, 2000).

Taking a social constructivist approach, Madureira (2007) argues that both sexism and sexual prejudice serve to reinforce rigid boundaries about the proper roles of women and the relationships between men and women. In a patriarchal society, sexual orientation and gender expression are conflated, in that same sex relationships are considered to be a violation of the traditional male role (Davies, 2004). A man's attraction to other men suggests that he is feminine (Blashill & Powlishta, 2012), and reciprocally, a man's feminine gender expression indicates that he is gay (Sirin, McCreary, & Mahalik, 2004). Unsurprisingly, there is compelling evidence that sexual prejudice, particularly towards

gay men, is driven and exacerbated by perceived violation of traditional gender roles (Blashill & Powlishta, 2012). Since sexual minorities defy the conventional rules about "appropriate" sexual desires for men and women, they are considered "gender deviants" (Murphy, 2006). Heterosexual men with traditional gender role beliefs are at the top of the gender hierarchy, and in order to perpetuate their power and status, they must oppress both women and individuals who violate the compulsory heterosexuality of traditional gender roles (Maduiera, 2007). Simply put, if women are inferior, and gay men are similar to women, then they also must be inferior (Kimmel, 1994). Interestingly, the constructs of sexism and sexual prejudice are considered to be so fundamentally related, that scales assessing attitudes about women are often used to validate measures of sexual prejudice (Grey et al., 2013).

Men and Masculinities Literature

Sociologist and psychologists studying men and masculinities have highlighted the role of power and dominance in men's oppression of women and sexual minorities, particularly gay men. West and Zimmerman (1987) describe how traditional gender roles require men to perform dominance over others to reinforce and legitimize the social hierarchy. Similarly, Connell and Messerschmidt (2005) describe how dominant conceptualizations of masculinity (e.g., hegemonic masculinity) reconfigure and adapt to cultural changes to maintain male dominance. They note that male dominance is not a self-reproducing system, but rather results from continual maintenance, including acts of prejudice and violence against women and sexual minorities. In his book "Masculinities and Crime", Messerschmidt (1993) describes how heterosexual men's capacity to

exercise power over women and gay men explains the prevalence of violent crimes committed by men.

For decades, conceptualizations of the male role have included themes of sexism and compulsory heterosexuality. According to the Gender Role Strain Paradigm, a patriarchal society resulted in a male gender role that includes prejudices towards women and gay men (Pleck, 1981). In our society, men are required to pursue and coerce women to have sex. Consequently, women are treated as a sexual object to be conquered and sexual minority men are treated as inferior. More recently, Herek and McLemore (2013) strongly suggest that the traditional male role requires expressions of sexual prejudice, particularly towards gay men. Consistent with these theoretical conceptualizations, a recent review of measures of traditional masculinity ideologies found that most measures include negative attitudes towards women, femininity, and/or sexual minorities as a core tenet of masculinity (Thompson & Bennett, 2015).

Masculinities scholarship specifically identifies "anti-femininity" as the shared feature underlying heterosexual men's prejudice towards women and gay men. Kilianski (2003) describes how masculine identity prescribes prejudice towards gay men and women. He elaborates that masculinity requires men be devoid of any feminine characteristics and devalue the femininity perceived as inherent in both women and gay men (Kilianski, 2003). According to theories of traditional masculinity ideology (Thompson & Pleck, 1995), men must prove heterosexuality and masculinity by distancing oneself from femininity. Kimmel (1994) highlights how men and boys police each other's gender expression, constantly looking for evidence that other men are feminine and therefore, inferior. Furthermore, he argues that men's expression of sexual

prejudice stems from a fear of being seen as feminine, in other words a fear of being similar to women or gay men. More evidence for the relationship between sexual prejudice and sexism can be found by critically examining the word "sissy", a slur directed at gay men that attacks their pre-supposed femininity.

Beyond theory, men and masculinities scholarship has demonstrated empirical support for the connection between heterosexual men's sexism and sexual prejudice. In the *Journal of Men's Studies*, Stevenson and Medler (1995) used Pharr's essay on homophobia as a weapon of sexism as inspiration for an empirical investigation into sexual prejudice and sexist attitudes among men and women, finding ample support that negative attitudes towards sexual minorities are strongly related to various sexist attitudes.

Social Dominance Theory

Outside of feminist and gender studies literature, social psychology presents a similar argument for the relationship between sexism and sexual prejudice. Social Dominance Theory (SDT; Pratto et al., 1994) is a framework positing that human societies are structured according to group-based social hierarchies, with inequalities maintained through structural and individual means. According to SDT, since men are at the top of the social hierarchy, they consequently demonstrate greater endorsement and support for the hierarchy. According to Pratto and colleagues (1994), individual differences in support of the societal hierarchy is called social dominance orientation (SDO). SDO is hypothesized to justify and maintain social hierarchies and inequalities, including prejudicial attitudes towards other social groups that are situated lower in the hierarchy. Specifically, Sidanius and Pratto (1999) suggest that men high in SDO use

sexist attitudes to maintain, justify, and/or exacerbate societal dominance of men over women. This echoes Kimmel's suggestion, "women and gay men are the *other* against whom heterosexual men must stack the deck so they they always win" (p. 216, 1994). MacInnis and Hodson (2015) extended this analysis by asserting that men high in SDO use sexism to justify the oppression of gay men. The authors elaborate that since gay men are perceived as feminine (Blashill & Powlishta, 2012), sexist attitudes are used to criticize gay men and justify their low position on the hierarchy. Specifically, they posit that the consistent finding that men report more sexual prejudice than women can be explained by men's SDO and sexism. In sum, feminist, men studies, and social psychology conceptualizations converge to identify patriarchal power hierarchies as the origin of both sexism and sexual prejudice.

Sexism and Sexual Prejudice: Empirical Evidence

In addition to theoretical connections, attitudes towards gay men and women are also empirically related constructs. Broadly, sexual prejudice is significantly positively correlated with various sexism measures, including rape myth acceptance and modern sexism scales (Aosved & Long, 2006). Because of the diversity of sexism as a construct, it can be difficult to distinguish the relative contribution of different types of sexist beliefs (e.g., hostile sexism, traditional gender role ideology, etc.) in predicting sexual prejudice. Although there are theoretical distinctions, many of the items on various sexism scales exhibit substantial overlap. Overall, a meta-analysis found that old fashioned sexism scales account for as much as 23% of the variance in sexual prejudice compared to other sexism scales (Whitley, 2001). Interestingly, this meta-analysis highlights two problems that pervade the literature on the relationship between sexism

and sexual prejudice: 1) failing to adequately account for gender and 2) failing to adequately differentiate between different conceptualizations of sexism.

Whitley's (2001) meta analysis included studies with samples of only men, only women, and mixed samples of men and women. Additionally, the dependent variable varied among prejudice against gay men only, lesbian women only, and all sexual minorities. Including all of these studies in one meta-analysis is problematic, since there is evidence that men and women's attitudes towards different sexual minority groups (e.g., gay men) are distinct in intensity and nature. Worthen (2013) calls for always separating out analyses based on gender, highlighting how heterosexual men fetishize sexual relationships between women, while they perceive sexual relationships between men as "disgusting." Additionally, heterosexual men consistently report significantly more prejudice towards gay men then heterosexual women. Although Herek (1988) and others have designed measures that assess attitudes towards gay men and lesbian women separately, researchers often ignore gender by globally assessing men's and women's attitudes towards all sexual minorities. The global approach provides a particular challenge when reviewing literature for the present study, which focuses exclusively on heterosexual men's attitudes towards gay men.

Although Whitely (2001) made a helpful and important differentiation between modern and old fashioned measures of sexism, the measures that were described as "old fashioned sexism" varied significantly. While some measures are consistent with hostile sexism as described by Glick and Fiske (1996), others are more accurately described as measures of traditional gender role beliefs. In order to draw conclusions about the relationship between hostile sexism and sexual prejudice attitudes towards gay men, it is

important to identify the specific conceptualizations of sexism that are most relevant.

Old fashioned sexism self-report. Consistent with Whitley's (2001) meta-analysis, there is well established literature documenting a relationship between self-reported sexual prejudice and prejudice towards women using old fashioned sexism scales that pre-date the creation of the Hostile Sexism scale (for a review, see Black, Oles & Moore, 1998). For example, one study found that the Sex-Role Egalitarianism Scale (SRES; Beere, King, Beere, & King, 1984) was a strong predictor of hatred directed towards sexual minorities, after controlling for social desirability (Tejeda, 2004). Walker and colleagues (2000) found that sexual prejudice was a strong predictor of sexism as measured by the Macho Scale (Villemez & Touhey, 1977), which captures endorsement of stereotypes and discrimination against women. In addition, Parrot and colleagues (2002), found that sexual prejudice was related to a measure of hostile beliefs towards women (Hostility Towards Women scale; Check, Malamuth, Elias, & Barton, 1985). The Attitudes Toward Women Scale (AWS, Spence & Helmreich, 1972) which assesses endorsement of traditional roles for women in the private and public sphere and includes items like "*a woman should not expect to go to exactly the same places or to have quite the same freedom of action as a man*", is the old fashioned sexism scale used most frequently in studies of sexual prejudice.

The AWS is similar to the Hostile Sexism scale, and they are correlated (r = .68; Glick & Fiske, 1996). However, compared to the Hostile Sexism scale, the AWS contains more items about endorsement of traditional gender roles for women. The meta-analysis described above (Whitley, 2001) identified the AWS as a strong predictor of sexual prejudice, outperforming measures of modern sexism and gender role beliefs. Similarly,

AWS was more strongly correlated with attitudes towards gay men than a measure of modern sexism in a sample of undergraduate students (Aosved & Long, 2006). Another study found that the AWS predicted unique variance in men and women's attitudes towards sexual minorities, after controlling for authoritarianism and social dominance orientation (Whitley & Egisdottir, 2000). In addition, AWS scores were correlated with sexual prejudice towards lesbians and gay men (r = .52) in a samples of male and female counselors (Wise & Bowman, 1997) and in a sample of undergraduate men and women (r = .41; Raja & Stokes, 1998). Unfortunately, none of this research examined participant's attitudes towards gay men and lesbian women separately. Only one study (Herek, 1988), has specifically demonstrated that heterosexual men's AWS scores were strongly correlated with their negative attitudes towards gay men. Overall, this investigation found that AWS was one of the strongest predictors of men's attitudes towards gay men (r = .58), second only to religious ideology. In conclusion, there is strong and consistent evidence that old fashioned sexism is related to sexual prejudice. However, with few exceptions, the literature linking old fashioned sexism scales to sexual prejudice is several decades outdated.

Hostile sexism self-report. Research using the Ambivalent Sexism Inventory (Glick & Fiske, 1996), which includes both benevolent and hostile sexism subscales, is more recent than the literature using the AWS but relies heavily on convenience sampling of undergraduate students. Using a sample recruited from undergraduate psychology courses, Barron and colleagues (2008) found that ambivalent sexism broadly was a strong predictor of heterosexual men's sexual prejudice towards gay men, in a multiple regression analysis controlling for religiosity and contact with sexual minorities.

Surprisingly, in the last 15 years, only four studies examined correlations between sexual prejudice attitudes using the hostile sexism subscale of the Ambivalent Sexism Inventory.

The four studies that specifically examined hostile sexism and sexual prejudice confirmed the hypothesis that the two constructs are correlated. One study found that overall sexual prejudice was positively associated with hostile sexism in male undergraduate students (N = 300, r = .21; Nagoshi et al., 2008). Strangely, Nagoshi and colleagues (2008) included non-heterosexual participants in their sample. However, these results were replicated in a sample of Turkish heterosexual male college students (N = 124, r =.30; Sakalli, 2002). Furthermore, Sakalli (2002) found that hostile sexism was a superior predictor of sexual prejudice than benevolent sexism. A third study found that sexual prejudice towards gay men specifically was positively associated with hostile sexism in a sample of undergraduate heterosexual and women (N = 517; r =.42; Davies, 2004). Overall, the findings were consistent across a variety of samples.

Consistent with prior critiques, the three studies described above failed to differentiate between attitudes towards attitudes towards gay men specifically, and attitudes towards sexual minorities generally (Worthen, 2013). To the author's knowledge, only one study specifically measured heterosexual men's attitudes towards gay men and hostile attitudes towards women. Keiller (2010), in a sample of 104 undergraduate heterosexual men, found a significant correlation between hostile sexism and sexual prejudice towards gay men (r = .38). However, due to the use of a small convenience sample, it is difficult to generalize these results to a broader population.

Implicit attitudes. Two studies have used IATs (Greenwald et al., 1998) to examine the relationship between attitudes towards women and gay men (Banse et al.,

2001; Steffens, 2005). Steffens (2005) found that men's explicit attitudes about women in the workplace was significantly positively correlated with implicit bias towards gay men in a small (N = 20) sample of German men. Banse and colleagues (2001), also in a small German sample (N = 51), found that heterosexual participant's scores on the Sexuality IAT were not significantly correlated with their Gender IAT scores, which assess preference for women in traditional roles. These results provide mixed evidence for the association between sexism and sexual prejudice towards gay men. However, due to small German samples, the results should be interpreted with caution.

Critique of Existing Literature

In sum, there is empirical evidence that heterosexual men's sexual prejudice is related to their hostile attitudes towards women. However, a critical review of the literature highlights several limitations. First, although there is clear evidence that men and women often hold different attitudes towards sexual minority men and women respectively (Worthen, 2013), and that men endorse more sexist attitudes than women (Glick & Fiske, 1996), the majority of the research does not account for gender. Specifically, studies fail to differentiate between men's and women's attitudes and examine sexual prejudice broadly, rather than attitudes towards gay men specifically. Therefore, it is difficult to identify the unique relationship between *heterosexual men*'s sexism and sexual prejudice towards gay men.

Second, with few exceptions, the majority of the literature documenting the relationship between sexism and sexual prejudice is several decades outdated. This is problematic considering how attitudes have rapidly evolved. In 2016, following the legalization of gay marriage, over half (55%) of responders reported supporting same sex

marriage. This is a substantial change from the approximate third (35%) of respondents indicating support in 2005 (Pew, 2016b). Although the evidence suggests that recent decades of activism have improved attitudes towards sexual minorities, 65% of heterosexual men in a recent sample report agreeing, at least slightly, with at least one item on a measure of negative attitudes towards gay men (Alto, 2015). Similarly, over the last three decades, attitudes about the female gender role have evolved to be more supportive of career women and working mothers (Donnelly et al., 2016). Considering that attitudes about women and sexual minorities have changed substantially over time (Herek & McLemore, 2013; Swim, Becker, Lee, & Pruitt, 2011), it may be inappropriate to generalize outdated findings to a modern understanding of the relationship between constructs.

Third, the majority of studies used undergraduate convenience samples to assess the relationship between sexual prejudice and sexism. Mathy, Schillace, Coleman, and Berquist (2002) stated: "The ultimate measure of any sampling methodology is its ability to reliably represent the population from which its data were drawn" (p. 259). However, the overwhelming majority of psychological data is derived from convenience samples comprised of undergraduate students from one geographical locale which are not representative of the general population (Henrich, Heine, & Norenzayan, 2010). The current study supplements a college convenience sample by recruiting participants on Craigslist. Research suggests that samples recruited from Craigslist are more diverse in race/ethnicity, age, education, and sexual orientation than samples recruited on college campuses (Alto, McCullough, & Levant, 2018).

Overall, the correlational literature suggests that heterosexual men's attitudes about gay men are closely related to attitudes about women. However, new data with more representative samples beyond undergraduate men is needed. More importantly, correlational studies are limited in their ability to make inferences about the causal relationship between two constructs (Heppner & Wampold, 2015). Experimental designs, as used in the current project, allow the investigator to examine the relationship between hostile sexism and sexual prejudice while controlling for the role of confounding variables using random assignment. Since it is impossible to randomly assign participants to hold different attitudes, the current study randomly assigns participants to be primed with different stimuli and observes the impact on implicit prejudice. A review of schema theory and priming methodology as it relates to understanding prejudice is provided below.

Priming and Schema Theory

It has been suggested that the relationship between sexual prejudice and sexism can be understood as two components of complex interconnecting schemata related to gender (Barron et al., 2008). A schema describes a pattern of thought that organizes categories of information and the relationships among them. It can also be described as a mental structure of preconceived ideas representing some aspect of the world. Schemata comprise multiple types of knowledge, including concrete categories (e.g., the symbol *a* is a member of the alphabet) and complex cultural beliefs (e.g., expectations for traditional gender roles). According to schema theory, all of our knowledge about the world is embedded and organized in schemata (Rumelhart 1980). The original concept of schemas was proposed and demonstrated in a series of experiments by Bartlett in the

early 20th century (Bartlett, 1932). Bartlett presented participants with an unfamiliar story, then monitored how they recalled information from the story (i.e., War of Ghost's Experiment). Bartlett found that individuals' existing schemas influenced how they encoded and recalled the information presented. In other words, people used pre-existing ideas about the world to remember and recall the story.

Schemata allow individuals to understand large quantities of information that is presented simultaneously. Associative networks of schemata allow semantic concepts to activate other related semantic concepts, in a process known as *spreading activation* (Collins & Loftus, 1975). Due to spreading activation, simple environmental stimuli can have broad impacts on cognitive processes. For example, when an individual sees a dog on the street, the "dog schema" is activated, which may include general knowledge about dogs, past experiences with dogs, and expectations for dog's behavior. In addition, schema theory posits that the activation spreads to related schemata, in the present example, perhaps to "pets", "cats" or "leashes." Patterns of schema activation are theorized to be influenced by the semantic relationship between schemas (e.g., a dog is a kind of pet). The more properties (e.g., shared characteristics) two concepts have in common, the more closely related are the concepts, and the more likely it is for the other schema to be activated (Collins & Loftus, 1975). Schema theory is one way of conceptualizing prejudice, in that stereotypes about women or gay men are cognitively organized into schemas. Bem (1981) proposed humans are constantly organizing information about men, women, and sexual minorities into related gender and sexual orientation schemas in order to understand our heavily gendered culture.

Priming Schemas

Schema activation may also depend on priming, which is the deliberate exposure of an environmental stimulus (e.g., prime stimulus) in order to impact a response to future stimuli (e.g., target stimulus). Priming is an automatic process that occurs when a concept or knowledge structure is automatically triggered or activated by the prime, thereby becoming more likely to affect subsequent thoughts, feelings, and behaviors in response to the target stimuli. In the classic example, when a person reads the word "color", they are more likely to recognize color words (e.g., red) compared to non-color words in a word recognition task (Barrett, 2016). Conceptual or semantic priming refers to prime and target stimuli that share meaning or categorization (e.g., tables and chairs are both furniture; Barrett, 2016). Priming can be used to test the hypothesis that two schemas are semantically related. In order to examine this possibility, individuals are exposed to the prime stimuli and the subsequent response to the target stimuli is observed. If the prime influences participant's responses the target stimuli, this is evidence that the prime and target are semantically related.

Priming studies are often used to examine the impact of prejudicial attitudes on participant's thoughts, feelings, and behaviors. Studies indicate that priming automatic attitudes towards racial groups can contribute to negative evaluations of group members and contribute to subtle behavioral changes towards that group (Fazio, Jackson, Dunton, & Williams, 1995). This phenomenon was replicated with sexual minorities. Specifically, investigators demonstrated that individuals with implicit sexual prejudice attitudes were less friendly with gay confederates after being primed with stereotypes (Dasgupta & Rivera, 2006). Krosnick and colleagues (2005) describe attitudes as a specific type of

cognitive schema activated automatically and outside of awareness. This automatic activation occurs within few hundred milliseconds after the stimuli is encountered and requires limited cognitive resources. The degree of activation depends on the accessibility of information. Specifically, automatic activation is most likely to occur when individuals strongly hold the attitudes and the prime stimuli is closely associated with the attitude (Krosnick et al., 2005). In the proposed test of priming, the goal is to determine if the association between sexism (the prime) and sexual prejudice (the target) is strong enough to automatically activate prejudicial attitudes towards gay men. Broadly, the literature on priming sexual prejudice attitudes falls into two categories, studies that use explicit attitudes or implicit attitudes as the target stimuli.

Priming Explicit Sexual Prejudice

Priming research has established that exposure to environmental stimuli impacts explicit (e.g., self-report) negative attitudes towards gay men. One study randomly assigned 107 undergraduate students to view clips of a gay male television character (i.e., Max from the show *Happy Days*) or a control condition with a clip from the show that did not include the gay character. After exposure to the prime, participants completed a measure about attitudes towards gay men. In order to mask the purpose of the study, participants were told there were multiple versions of a questionnaire relating to different social groups, when in fact all participants completed the same questionnaire. Using an ANOVA to compare mean scores, results revealed that male (but not female) participants exposed to clips of the gay character reported more explicit negative attitudes towards gay men compared to the control group (Miller & Lewallen, 2015). This study's attention to gender is unique in that researchers specifically assessed priming men's attitudes

towards gay men, which were demonstrably different than women's attitudes towards gay men.

Several studies have focused on the impact of religious primes on explicit sexual prejudice, yielding mixed results. In one study, 135 undergraduate men and women were randomly assigned to read a religious passage or read a neutral passage (Gilad & Stepanova, 2015). After reading the passage, participants completed several measures, including a measure of sexual prejudice towards sexual minorities. Contrary to the investigator's hypothesis, participants primed with the religious content did not report more explicit prejudice compared to participants in the control condition. In a second study about the impact of religious primes, the investigators recruited a national sample of 500 male and female participants using an online survey platform (Harrison & Michelson, 2015). Participants were randomly exposed to a pro-marriage equality quote attributed to a reverend or a pro-marriage equality quote attributed to a citizen. After reading the paragraph, participants answered several questions about their support of marriage equality and same sex adoption. In a multiple regression analysis controlling for age, gender, and political affiliation, experimental condition was a strong predictor of participant's support for LGB equality. Specifically, participants exposed to the quote attributed to the reverend were significantly more likely to support marriage equality and same sex adoption.

There are several methodological concerns in the religious prime studies described above (Gilad & Stepanvoa, 2015; Harrison & Michelson, 2015). First, consistent with critiques of correlational research (Worthen, 2013), investigators did not assess differences in response to the prime based on participant's gender, and often

assessed global attitudes towards sexual minorities rather than attitudes towards gay men specifically, in both studies. Second, Harrison and Michelson (2015) report that participants answered a question about religiosity before exposure to the prime (i.e., quote). Although it was presented covertly, it seems likely that answering this question may have activated religious schemas that may have influenced participant's response to the prime and target stimuli. Third, in both of the religious prime studies, it is unclear what participants were told about the nature of the study. If participants reading the prime stimuli guessed that the intention was to influence their answers in the subsequent surveys, they may have acted in opposition to the perceived intent of the study (Loersch & Payne, 2011). One technique to avoid the complication of participant's intentional "opposition" to the prime response is to use implicit, rather than explicit, measures of prejudice as the target stimuli.

Priming Implicit Sexual Prejudice

Generally, investigators interested in understanding how priming may impact prejudice prefer implicit measures because implicit associations are especially susceptible to priming effects (for review, see Blair, 2002). This is unsurprising considering that the developers of the IAT were influenced by schema theory, and originally described the IAT as a measure of schema activation (Greenwald et al., 1998). Proponents of implicit measures argue that implicit assessments prevent consciously controlled responses that stem from social desirability. In contrast, explicit measures of prejudice, which require conscious deliberation about a specific group (e.g., gay men), are less likely to be impacted by the automatic associations activated by exposure to the prime (Krosnick et al., 2005). Social desirability is a concern when studying sexual prejudice, since there is

evidence that participants' concerns about other people's judgment influences their response to explicit sexual prejudice measures (Goldman, 2008). In light of these arguments, an implicit measure, specifically the Sexuality IAT, is proposed as the target stimuli for the proposed project.

The Sexuality IAT has served as the target stimuli in several previous priming studies. Nicolas and Skinner (2012) primed 66 undergraduate participants with vignettes before completing the Sexuality IAT. The experimental condition vignette contained the word "gay" as an insult and the control condition used the words "lame" or "stupid." An independent samples *t*-test revealed that participants in the experimental condition exhibited more implicit sexual prejudice (Nicolas & Skinner, 2012). Interestingly, no gender differences were found on overall sexual prejudice. Participants were told that the research was assessing the impact of slang words on memory in order to mask the presentation of the prime. In this study, a single word change within a vignette was enough to influences participant's scores on the Sexuality IAT.

In a second study, 256 undergraduate students were randomly assigned to be primed with verbal presentations about famous gay and lesbian people or famous heterosexual people (Dasgupta & Rivera, 2008). Participants were told the study was about the impacts of educational lessons, and were asked to sign up for a second study (perceived to be unrelated) the following week, which included the Sexuality IAT. One week later, participants exposed to positive gay role models displayed less implicit sexual prejudice compared to participants with no exposure to the prime (Dasgupta & Rivera, 2008). In addition to the IAT, participants were asked about their awareness of the experimental hypotheses in order to ensure that participants were unaware of the

importance of the prime stimulus. Together, the findings from Dasgupta and Rivera (2008), and Nicolas and Skinner (2012), suggest that exposure to either positive or negative stimuli can initiate spreading activation of other positive or negative schemas related to sexual minorities.

The impact of a prime stimulus on implicit and explicit sexual prejudice attitudes is not always consistent. In one study, investigators randomly assigned 700 participants recruited from a website to be exposed to the Golden Rule (e.g., *Do unto others as you would have them do unto you*) or a neutral control item. To avoid participant's being aware of the prime, the prime was embedded within a sentence completion task (Vilaythong, Lindner, & Nosek, 2010). In addition to the Sexuality IAT, participants also completed an explicit measure of sexual prejudice. After the IAT, the investigators asked participants to identify which statements were part of the sentence completion task from a list as a manipulation check. Participants who did not identify the Golden Rule were removed since they did not adequately attend to the prime. Using a MANCOVA, investigators found that participants in the experimental condition reported significantly less explicit prejudice than participants in the control condition, controlling for political and religious affiliation. There was no difference in the IAT scores in the two conditions. However, there is a significant flaw in the study design. Investigators collected demographic information about religious, political affiliation and gender before random assignment. Therefore, it is possible that answering these questions activated schemas that subsequently influenced participant's response to the prime and target stimuli.

Separate from religious or media primes, investigators have found that priming of alcohol cues increased implicit sexual prejudice (Greitemeyer & Nierula, 2016). A

sample of 103 undergraduate men and women were asked to complete a word recognition task before completing the Sexuality IAT and an explicit measure of sexual prejudice. Participants who were exposed to alcohol related words in the task displayed more implicit bias than participants who were not exposed to the alcohol stimuli. Interestingly, the alcohol prime impacted implicit, but not explicit attitudes. Separate analyses for gender were not reported. At the conclusion of the study, participants were asked to guess at the purpose of the study to ensure that the desired deception was successful. A critical review of these studies reveal varying degrees of attention to common research design issues in priming studies.

Unique Methodological Concerns in Priming Research

Although the process of priming is hypothesized to occur outside of conscious awareness, the prime stimulus may be presented either unconsciously or consciously. When the prime stimulus is presented outside of the participant's conscious perceptions by briefly (e.g., 80 milliseconds) flashing a word or picture on a computer screen, it is called *unconscious* priming. In contrast, when participants can perceive the prime stimulus (e.g., watching a video or reading a list of words), this is described as *conscious* priming. Since hostile sexism would be difficult to prime unconsciously, conscious priming is more appropriate for the proposed project. In the case of conscious priming, it is ideal to design the study so that the participant is unaware of the *influence* of the prime on subsequent tasks, but not unaware of the prime itself. In other words, participants must attend to the prime stimulus, but it should be covertly presented (Molden, 2014). For example, Chan and colleagues (2014) placed a binder labeled prominently with the prime word in clear view of the participants while they completed several surveys, which served

as the target stimuli. The presentation of prime words may also be covertly hidden in tests of cognitive ability or other surveys (Barrett, 2016), which is common practice in the previously described priming studies. In the proposed study, participants will be provided with a plausible (but false) explanation for the presentation of the stimulus, in order to mask the purpose of the prime.

In conscious priming designs, the covert presentation of the prime stimulus is critical to ensure that participants are unaware of the impact of the stimulus on subsequent cognitive, emotional, and behavioral changes. When participants are unaware of the priming process, they attribute their motivations, cognitions, and emotions to their own natural response, rather than a response to the prime stimuli (Molden, 2014). In contrast, if participants are suspicious about the purpose of the study they may attribute their own reactions to the prime or even act in opposition to the primed information (Loersch & Payne, 2011). In order to ensure that participants are unaware, best practices suggest that experimenters use a manipulation check to assess the participant's awareness of the influence of the prime stimulus on the target stimulus (e.g., inquiring "*What was the purpose of this study*?" Chan, Tong, & Tan, 2014). When priming has successfully occurred, participants respond to target stimuli differently after exposure to a prime stimulus. In the proposed project, if priming of sexist attitudes successfully occurs, then participants will react differently to a subsequently presented target stimulus, which in this case is the Sexuality IAT.

Common Problems

Previous priming research provides compelling evidence that presenting stimuli semantically or conceptually related to sexual prejudice (e.g., religion) can subsequently

activate sexual prejudice stimuli. However, a critical reading of the literature highlights several pervasive methodological issues. First, as previously discussed, similar to correlational studies about sexual prejudice, many investigators fail to explicitly take gender into account. Next, although it is important to ensure that participants are not aware of the relationship between the prime and the target stimuli (Molden, 2014), with few exceptions (Dasgupta & Rivera, 2008; Miller & Lewallen, 2015), investigators exert minimal effort to obscure the purpose of the study. Furthermore, only one of the reviewed priming studies (Dasgupta & Rivera, 2008) assessed participant's knowledge of study purpose to ensure that participants weren't acting in opposition to their perception of experimenter expectations (Loerch & Payne, 2011). Finally, in some studies participants completed demographic or other questions before the presentation of the prime (e.g., Harrison & Michelson, 2015). When other stimuli are presented in addition to the prime, other schemata may unintentionally be activated, which may impact participant's response to both the prime and the target stimuli. In order to strive for methodological rigor, the proposed study will deceive clients about the purpose of the study, assess for participant's understanding of the purpose of the study, and place all demographics items after the completion of the IAT.

Sexist Prime Stimuli

An important concern within priming methodology is the creation of prime stimuli, in this case a prime stimulus that activates hostile sexism schemas. Past investigators of various experimental priming studies have been creative in their design of sexist prime stimuli. For example, vignettes portraying sexist humor were found to increase heterosexual men's explicit endorsement of stereotypes about women (Ford,

Wentzel, & Lorion, 2001). In another study, men were primed with traditional gender-stereotyped words (e.g., nurturing) in a memory task which impacted their reported objectification of women in a subsequent task (Rice & Barth, 2015). Rudman and Borgida (1995) confirmed that after exposure to sexist commercials, men were more likely to recognize sexist compared to non-sexist words in a word recognition task, indicating that commercials were effective at activating sexist schemas. Additionally, a study found that priming female participants with pictures featuring women in traditionally female roles (e.g., elementary school teacher, and homemaker) was effective at activating schemas related to internalized sexism (Rudman & Phelan, 2010). In sum, these results suggest that exposure to various sexist primes (e.g., commercials, vignettes, pictures) impacted participant's responses to relevant target stimuli (e.g., stereotypes, objectification), through the process of spreading activation.

Since conceptualizations of sexism are varied and include related but distinct constructs of traditional gender role beliefs and hostile prejudicial attitudes, it follows that the design of sexist primes are diverse (e.g., jokes, pictures, stories). Ultimately, it is important to assess that the prime stimulus activates the construct intended by the investigators. Researchers often conduct pre-testing (Ford et al., 2001; Rudman & Bordiga, 1995; Rudman & Phelan, 2010) to assess if the meaning and impact of the stimuli is what was intended by the investigators. For example, prior to experimentation, Rudman and Bordiga (1995) asked 40 undergraduate students to rate the commercials, using a Likert style scale, on degree of female objectification and sexism.

To the author's knowledge, no prior investigator has designed prime stimuli to specially evoke the construct of hostile sexism. However, there is evidence that exposing

participants to gender related stimuli may influence their implicit and explicit sexual prejudice. Specifically, Herek (2002) randomly assigned participants recruited in a nationwide telephone survey of heterosexual men and women to complete items about gay men before items about lesbian women, or the reverse order. An ANOVA analysis revealed that heterosexual men reported more overall prejudice when asked about attitudes about gay men *before* they were asked about attitudes towards lesbian women. The items were embedded in a larger questionnaire about social attitudes, therefore exposure to other items may have influenced participant's reactions to the presentation of the prime and target stimuli. Interestingly, a similar order effect was found in another investigation using an implicit measure of sexual prejudice. Specifically, participants' implicit bias towards lesbian women after completing a test of implicit bias towards gay men was greater than when it was presented before (Steffens, 2005). Together, these results suggest that answering items about gay men primed overall negative associations that carried over to items about lesbian women. The proposed study will expand on these findings by examining if prejudice towards women, activated by exposure to a sexist vignette, will carry over to negative associations twoards gay men, assessed by a modification of the Sexuality IAT.

Political Ideology

There are likely differences in the degree to which individual men's schemas for sexual prejudice and sexism overlap. In a patriarchal society, all people are exposed to patriarchal ideas, however certain social groups may be more entrenched in prejudicial worldviews. In the United States, conservative political ideology is chiefly associated with the Republican party, and more recently the Tea Party movement. Major priorities

within American conservatism include support for “traditional values”, which includes traditional gender roles for men and women and a belief in the superiority of heterosexuality. Historically, the conservative political movement has advocated against civil liberties for sexual minorities and women (Schneider, 2009). The values and policies of American conservatism align with a patriarchal agenda of heterosexual and male superiority. Social Dominance Theory (Pratto et al., 1994; described at length previously) conceptualizes conservative political ideology as consistent with a high social dominance orientation you would expect to see at the top of the social hierarchy (e.g., heterosexual men). Consistent with this conceptualization, heterosexual men are more likely to identify with a conservative political ideology (e.g., Republican Party) compared to women (Pew Research Center, 2015), and sexual minorities (Pew Research Center, 2016a).

There is empirical support that conservative political ideology is associated with explicit prejudice towards women and sexual minorities. A large national sample found that conservative political ideology is correlated with hostile sexism and a preference for women to be in traditional roles (Christopher & Wojda, 2008). In a study examining the contributions of various demographic variables (e.g., age, region, race and gender) on overall reported sexual prejudice, conservative political beliefs were directed and indirectly associated with more prejudice (Brown & Henriquez, 2008). Unsurprising, conservative political beliefs are also associated with less support for gay civil rights (Brown & Henriquez, 2011). A study using the IAT show similar patterns, in that participants who identified as “strong conservatives” showed a stronger preference for heterosexual couples than any other political identification (Nosek et al., 2007b).

Considering conservative political ideology's association with both sexism and sexual prejudice, the schemas for prejudice towards gay men and prejudice towards women may be more strongly associated for heterosexual men with a conservative political ideology. In other words, political ideology may act as a moderator, in that it influences the strength or direction of a relationship between a predictor and a criterion (Frazier, Tix, & Barron, 2004).

Research Aims

Despite the significant theoretical and empirical evidence for a relationship between prejudice towards women and gay men, no study to the author's knowledge has examined the impact of a sexist prime on implicit sexual prejudice attitudes in any population. An experimental priming methodology, using best practices identified in the literature, is uniquely suited to determine if hostile sexism and sexual prejudice towards gay men are closely related schemas. The current study will focus on heterosexual men, since there is considerable evidence that heterosexual men report more prejudice towards gay men than other sexual minorities (Steffens, 2005; Worthen, 2013) and that the nature of that prejudice is closely related to attitudes towards women (Keiller, 2010).

Experimental priming methodologies provide a unique opportunity to determine if the relationship between sexual prejudice and sexism is due to overlapping conceptual schemas with shared features. Since priming studies require rigorous experimental control, particular care is taken to identify best practices for study design. The empirical priming literature documents that exposure to various prime stimuli (e.g., religious vignettes, humor) can impact responses to sexual prejudice stimuli, including the Sexuality IAT. In the current project, participants are randomly assigned to one of two

conditions. In order to mask the priming process, participants are told that this is a study about individual's opinions about the United States judicial system and cognitive ability. All participants read a vignette about a man and woman who are getting a divorce and fighting about custody. In the control condition, the woman is described using neutral language. In the experimental condition, the woman is described as controlling, sensitive, and manipulative in order to prime attitudes related to hostile sexism.

After reading the vignette and answering questions about the custody decision, all participants are asked to complete the Sexuality IAT (Project Implicit, 2002) to assess their implicit preference for heterosexual couples and individuals over gay male couples and individuals. In order to further the deception, the Sexuality IAT is described as a test of cognitive ability. Participants are also asked about their political beliefs, since conservative political ideology is a strong predictor of sexual prejudice. If, as the literature on sexism and sexual prejudice suggests, sexual prejudice and sexism are semantically related schemas, then according to schema theory exposure to sexist stimuli will activate sexual prejudice schemas, captured by a test of implicit prejudice. Therefore, there are two hypotheses:

I. Participants exposed to the sexist prime will demonstrate more implicit prejudice on the IAT compared to participants in the control condition.

II. Political ideology will moderate the relationship between experimental condition and IAT scores, in that the relationship will be stronger for participants with more conservative ideology.

CHAPTER III

RESEARCH METHODS

This chapter outlines the methods of the present study. Specifically, the author describes the participants, recruitment protocol, experimental procedures, and materials.

Participants

A total of 170 participants who self-identified both as "men" and as "heterosexual" from a dropdown list of options for gender identity and sexual orientation identity were included in the present study. None of the participants self-identified as transgender. Participants were predominantly White (*N* = 119, 70%), with the largest other racial and ethnic groups being Asian (*N* = 16, 9.4%) and Black (*N* = 15, 8.8%) participants. Participants' age ranged from 18 to 75 years of age (*M* = 30.73, *SD* = 16.71). The mode was 19 years, and the median age was 21 years. Approximately half of participants identified as middle class (*N* = 89, 52.4%). In terms of religious affiliation, approximately half the sample identified as Christian (*N* = 91, 53.5%). Other common religious affiliations include Agnostic (*N* = 23, 13.5%), no reported religious affiliation (*N* = 19, 11.2%), and other (*N* = 14, 8.2%). In terms of education, the majority of the sample reported at least some college (*N* = 137, 80.6%). Most of the sample had not taken an IAT test before (*N* = 130, 76.5%), and the remainder of the sample had completed one or two IAT tests previously.

Politically, the sample was normally distributed with the largest group identifying as "moderate" (41.2%). The proportions of "somewhat conservative" (12.9%) and "somewhat liberal" (10.6%) were similar. Similar rates were observed for "moderately liberal" (15.3%) and "moderately conservative" (12.9%). The extreme ends of the political spectrum, "extremely conservative" (5%) and "extremely liberal" (5%) were rare in the present sample.

Recruitment

Participants were recruited using two methods: Craigslist (N = 74) and Introduction to Psychology classes at the University of Akron (N = 96). Participants from upper-level Psychology classes were not recruited due to increased likelihood they are familiar with IAT methodology. Students in Introduction to Psychology were offered extra credit as an incentive to complete the survey. Participants on Craigslist were entered into a drawing to win one of four Amazon gift cards (three were $25; one was $50). Craigslist was used because it reaches a more diverse population than other online recruitment methods (Ramo, Hall, & Prochaska, 2010) and supplementing convenience samples with Craigslist samples may lead to a sample that is more representative of the general population (Alto et al., 2018).

Statistical analysis software (G*Power; Faul, Erdfelder, Lang, & Buchner, 2007) was used to calculate the necessary sample size to achieve desirable effect sizes and adequate power. For an ANOVA fixed effects analysis with two groups, conservatively estimating a small to moderate partial eta squared effect size (η^2 = .25, Ferguson, 2009) with error (α = .05) and power ($1-\beta$ = .80), the desired sample size was estimated to be 128 participants. The current sample of 170 exceeds this requirement.

Procedure

Participants were provided a link to take them to Qualtrics, an online software program. The survey was designed so that people can only access the survey once, and they cannot return to the previous page once they select "Next Page." First, participants read an informed consent document with information regarding the study and consented to participate by clicking "Proceed." Inclusion criteria was described as "Men 18 years of age and older." In order to avoid priming participants to think about sexual orientation, heterosexual orientation was not listed as an inclusion criterion. Instead, all non-heterosexual identified men were excluded from data analyses. The study description, which was designed to mask the true purpose of the study, stated:

> *We are interested in learning about men's attitudes about the United States judicial system and how it relates to a test of cognitive ability. If you choose to participate in this study, you will complete a short questionnaire and a series of timed tasks.*

Participants who consented were randomly assigned, using the setting embedded in Qualtrics survey software, to one of two conditions. Depending on the assigned condition, participants read either the experimental or control vignette (see Appendix A). All participants answered several questions in response to the vignette (see Appendix B) designed to mask the purpose of the study. In the present study, 94 participants were assigned to the sexist condition and 76 participants were assigned to the control condition. The unequal numbers in each group are due to more participants being removed from the dataset in the control condition (see discussion of data cleaning in Chapter IV). After exposure to the prime, participants proceeded to the next page where

they were asked to complete an IAT, which is a series of timed tasks. The specific procedure and materials for the IAT are described more in depth in a later section.

Post IAT Questions. After completion of the IAT, the next page of the survey consisted of demographic questions and two follow-up items (see Appendix C). The demographics

are presented after the IAT in order to avoid any potential confounding priming effect. On the same page, participants were asked an open-ended question: "*What do you think the purpose of the study was*?" This question was used to determine if participants suspected that sexual prejudice and sexist items were the focus of the study. While most of the participants correctly guessed that homophobic attitudes were part of the study, this was not a concern unless participants guessed at the role of the prime materials (e.g., the vignettes). Nine participants were excluded from analyses because they guessed the purpose of the study was to understand "gender," "gender roles," "feminism," "gender bias," or a similar answer.

Finally, participants were asked how many IAT tests they have completed in the past (e.g., "*The cognitive ability sorting task you completed is called an "Implicit Attitude Test," to the best of your knowledge, how many have you completed prior to today*?"). Due to an abundance of caution about the impact of previous experience on IAT scores (see Steffen, 2004), participants who had completed more than two prior IAT tests (N = 40) were not included in the analyses.

Checks. On the next page, participants answered a manipulation check and three attention checks (see Appendix D). Four different attention checks were piloted with a sample of heterosexual men (N = 30). One of the questions seemed to be particularly

difficult for participants in the pilot study to answer correctly (e.g., "Why is Claire stressed?") and therefore was not used in the actual study. The three remaining attention checks were used to assess how closely participants attended to the vignette. Participants who did not answer the attention questions or answered more than one question incorrectly (including "I don't know") were excluded from analyses (N = 12). Almost one third of the sample (N = 51, 29%) answered one of the three attention check questions incorrectly or indicated they did not know the answer.

To assess if the manipulation of the independent variable (e.g., the sexist or control vignette) worked as intended, participants were asked, "*In your opinion, did Claire remind you of common negative stereotypes about women*?" The manipulation check was presented after the study purpose question, because it provides a "hint" about the study's purpose. Participants were not able to go back to a previous page and change their answers. Participants responded on a Likert scale from 1 (*Extremely yes*) to 7 (*Extremely no*). Five participants selected the option "I am not sure." Results of an independent samples *t*-test revealed significantly different responses to this question based on experimental condition ($t(139) = -9.18$, $p < .001$). The alternative *t*-test with more limited degrees of freedom was interpreted because Levene's test was significant ($F = 5.61$, $p = .02$), indicating unequal variance across groups. Specifically, participants in the sexist condition (N = 94) more strongly agreed with the statement that Claire reminded them of negative stereotypes (M = 2.51, SD = 1.40) compared to participants in the control condition (N = 76, M = 4.69, SD = 1.59). The result confirms the experimental manipulation was successful, in that participants perceived the two

vignettes as significantly different from one another, in terms of concordance with negative stereotypes about women (i.e., hostile sexism).

Debrief and Incentives. On the final page, participants read an educational debrief in which the deception of the study design is explained (see Appendix E). Consistent with professional ethical guidelines (APA, 2010), participants were informed about the deception of the study and the necessary reasons for deception. In accordance with ethical standard 8.07 (APA, 2010), participants were also given an option to remove their data. Sixteen participants requested that their data be removed from the study. Finally, participants were directed to link to an external website where they could provide their information so that they could be entered into the raffle to win gift cards. This information is not tied to any of their responses in order to maintain confidentiality. For a visual summary of the research procedure, see Figure 1.

Materials

Demographics. Participants answered questions about age, socioeconomic status, sexual orientation identity, race/ethnicity, level of education, religious identity, and political ideology (see Appendix B). A 7-point Likert style item assessed political orientation ("*Which of these items best describes your political beliefs*?" 1= *Extremely conservative*, 7 = *Extremely liberal*).

Vignettes. The sexist vignette was developed by the author in an effort to describe the female character (Claire) in a manner that is consistent with the description of women in the 11 non-reverse scored items of the Hostile Sexism subscale developed by Glick and Fiske (1996; see Appendix A). The sexist vignette is intended to activate hostile sexism schemas. The control vignette was similarly developed to be neutral in

order to avoid priming schemas related to hostile sexism. The vignettes were revised through several trials of pre-testing until a sample of heterosexual men (N = 7) reached consensus about Claire's behavior (see Appendix F for pre-testing survey). Specifically, the pre-testing participants reported total consensus that Claire's description in the experimental vignette was similar to the hostile sexism items, and conversely that her behavior in the control vignette was not similar to any of them.

Implicit Attitude Test (IAT). The Sexuality IAT (Project Implicit, 2002) was specifically developed to assess participant's implicit preference for heterosexual couples and individuals compared to gay and lesbian couples and individuals. Unfortunately, similar to critiques of explicit measures (Worthen, 2013), the Sexuality IAT does not differentiate between implicit bias against gay men and lesbian women. Therefore, a modified version of the Sexuality IAT (Project Implicit, 2002) was used to evaluate implicit attitudes. The program iatgen (Carpenter et al., 2017) is freely available software that allows investigators to design their own IATs and administer them using Qualtrics survey software. The iatgen program automates data cleaning and scoring in accordance with Greenwald and colleagues' (2003) recommendations (described in depth below). While the IAT can be administered in a laboratory setting or online, the largest source of IAT data stems from Project Implicit (2002), Harvard's online laboratory. Besides ease of access, a compelling reason to collect IAT data online is the lack of an experimenter, since there is evidence that experimenter characteristics (including perceived sexual orientation) may influence participants' results (Berry, 2015).

IAT procedure. The IAT consists of seven sets of trials, called "blocks", and takes approximately 5 minutes. In each trial, participants see a target stimulus (e.g., a

word or image) on the screen. When the target appears, the participant "sorts" the stimulus into one of four categories as rapidly as possible by pressing either the "E" or "I" key. The key one should press is indicated in the upper left and right corners of the screen (for a visual representation, see Figure 2). If the participant makes a mistake, a red X appears, and the participant is forced to correct the mistake. The original Sexuality IAT asks participants to sort stimuli into four categories: good, bad, heterosexual, and homosexual. Each of the four categories includes stimuli, words and pictures that fit into the target category. In order to make the Sexuality IAT specific to gay men only, the original "homosexual" category was renamed gay men, and several small changes in wording were adapted (for a complete list of stimuli and modifications see Appendix G). Other researchers have made similar modifications to the Sexuality IAT in order to target implicit bias towards gay men specifically (Jellison, McConnell, & Gabriel, 2004). Steffens (2005) found that this type of modification did not significantly influence internal reliability. While the categories vary in different blocks (described in detail below), participants receive the following instructions at the start of each block.

> "Put a left finger on the E key for items that belong to the category (insert category here). Put a right finger on the I key for items that belong to the category (insert category here). Items will appear one at a time. If you make a mistake, a red X will appear. Press the other key to continue. Go as fast as you can while being accurate. Press the space bar when you are ready to continue."

Two of the blocks are termed *compatible,* since they ask participants to pair target stimuli with the category that is congruent with biased associations. In the compatible blocks, participants were asked to sort all "Heterosexual" and all "Good" targets together

(e.g., to the left) and all "Gay" and "Bad" targets together (e.g., to the right). Conversely, the other two blocks are called *incompatible*, since the task is to pair target stimuli with categories that are incongruent with biased associations. In both incompatible blocks, participants will be asked to sort all "Heterosexual" and "Bad" targets together, and all "Gay" and "Good" targets together. There is a 20-trial practice block and a 40-trial critical block for both the compatible and incompatible blocks.

The order of the incompatible and compatible blocks is randomized and counterbalanced, as are the left/right starting positions. In addition to the two compatible and two incompatible blocks, there are three additional blocks of practice trials throughout the procedure. The first practice block consists of 20 practice trials familiarizing participants with only the target stimuli (e.g., heterosexual and gay men stimuli) and sorting procedure. The second practice block is similar and only uses the category stimuli (e.g., good and bad stimuli). The third practice block, called reverse category, gives participants a chance to practice sorting good and bad stimuli when the "left" and "right" directions are switched (Greenwald et al., 1998; see Figure 3 for a visual summary). Rigorous examination of the IAT procedure has revealed that reliability of the IAT is relatively unaffected by variations in number of trials, the number of exemplars per concept, and the time interval between trials (Greenwald, Poehlman, Uhlmann, & Banaji, 2009).

IAT scoring. The response speed for each sorting task is measured in milliseconds from the presentation of the stimuli to the participant's selection of the computer key. Originally, the IAT was scored using a simple within-person *t*-test comparing average reaction times for all correct trials in the compatible condition (block

4) and the average reaction time for all correct trials in the incompatible condition (block 7). Participants who completed the compatible condition faster than the incompatible were considered to be more biased. Although the gist of this technique remains true, the modern scoring algorithm is a bit more complex. In the present study, the program iatgen automatically followed the modern scoring procedures described below.

Greenwald, Nosek, and Banaji (2003) modified the original scoring in a number of ways in order to improve the predictive validity of the IAT. First, modern scoring includes four blocks: the two practice blocks (Blocks 3 & 6) as well as the original critical blocks (Blocks 4 & 7). Second, all response times for trials with an error are replaced with the participant's mean response time for that block plus a "penalty" of 600 ms. According to Greenwald and colleagues (2003), including error trials with penalties increases the validity of IAT scores, particularly when examining the correlation of the IAT with explicit measures of prejudice. In the present study, an error occurred in 9.5% of trials, which is within the range of past reports of average error rates (Carpenter et al., 2018). Third, trials with a response time of longer than 10,000 ms are dropped, since participants are instructed to do the task "as quickly as possible," and 10 seconds to complete a trial is clearly excessive. In the present study, less than 0.002% of trials were dropped due to excessive length. Fourth, subjects for whom more than 10% of trials have latency of less than 300 ms are dropped, since at this speed it is likely the participant did not attend to the task. In the present study, six participants were dropped from analyses due to excessive speed.

The most significant change in the modern scoring algorithm is the standardization of scores, which occurs after the calculations described above. Some

participants are faster or slower than others overall, adding statistical 'noise' to the overall variance in reaction times. To correct this, the participant's speed is standardized at the participant level by calculating a within-person difference and dividing it by a pooled standard deviation. The standardized score is created by subtracting the mean response time of the incompatible blocks (Blocks 3 & 4) from the mean response times of the two compatible blocks (Blocks 6 & 7). In other words, the difference is calculated between the response time on the two blocks where participants were asked to pair "Gay Men" stimuli with positive stimuli and the two blocks where participants were asked to do the opposite. These two differences are averaged, and then divided by a pooled standard deviation of the participant's response times in all four trials (B3, B4, B6 & B7). This scoring is summarized by the following equation:

$$\frac{(\text{MeanTime}_{B4} - \text{MeanTime}_{B7}) + (\text{MeanTime}_{B3} - \text{MeanTime}_{B6}) / 2}{\text{SD}_{\text{PooledB3-7}}}$$

This calculation yields a *D*-score, analogous to Cohen's *d* at the participant level (1988), which ranges from – 2 to + 2. For the modified IAT created in iatgen for this project, a negative *D* value would indicate bias consistent with sexual prejudice (*Heterosexual = Positive*; *Gay Men = Negative*), whereas a positive *D* value indicates the opposite bias (*Heterosexual = Negative*; *Gay Men = Positive*), and a zero score indicates no bias. Although the modern scoring is more complicated, the general idea remains the same. Prejudiced participants will complete the compatible blocks faster than the incompatible blocks and will end up with a negative score. For ease of interpretation, D scores were reverse coded, and all scores were modified to be positive values (i.e., $D_{Modified} = (D_{Original} * -1) + 2$). Therefore, in the present study, *D* scores range from 0

(*Preference for Gay Stimuli*) to 4 (*Preference for Heterosexual Stimuli*), with a score of 2 indicating no preference.

IAT validity. Generally, the IAT has been shown to have moderately strong psychometric properties, with strong convergent, construct, and predictive criterion evidence for validity. Convergent construct evidence for validity is provided by results indicating that heterosexual individuals tend to demonstrate a stronger preference for heterosexual couples compared to sexual minority individuals (Nosek et al., 2007b). There is significant debate surrounding the predictive validity of the IAT, particularly surrounding the relative predictive strength of implicit and explicit measures. A meta-analysis of 15 research samples (1,094 subjects) found a small average association (r = .18) for gender and sexual orientation IAT's prediction of behavioral, judgment, and physiological measures (Greenwald et al., 2009). Interestingly, this result was one of the smallest validity effect sizes reported by the meta-analysis, which generally illustrated that predictive evidence for validity of the IAT varies widely depending on the topic and the criterion variable. Although the Greenwald and colleague's meta-analysis lumped together IATs about gender bias and sexual orientation bias, Dasgupta and Rivera (2006) found that the Sexuality IAT specifically was a significant predictor of negative non-verbal behavior with a gay confederate, as observed by an independent judge.

The Greenwald and colleagues (2009) meta-analysis found convergent evidence for the IAT's validity with self-report measures (average r = .36; Greenwald et al., 2009). This is consistent with Nosek and colleagues' (2007b) findings that the Sexuality IAT and self-reported attitudes (e.g., "*How strongly do you prefer heterosexual individuals to homosexual individual*?") were moderately related (r = .43). Similarly, another study

found that an IAT specifically modified to assess attitudes towards gay men was moderately correlated (r = .36) with several explicit measures of sexual prejudice towards gay men (Jellison et al., 2004). The moderate association between the IAT and self-report measures are often interpreted as discriminant evidence for validity of the IAT. Since implicit bias is an automatic reaction that is not influenced by deliberate processes, including social desirability Implicit bias is considered to be a distinct, although closely related, construct to explicit bias. Interestingly, there is evidence that the IAT demonstrates incremental evidence for validity compared to self-report measures when predicting prejudicial judgments and behaviors (Greenwald et al., 2009), providing support that implicit and explicit measures are not simply two sides of the same coin.

Reliability. In general, the IAT is known to be relatively reliable compared to other implicit measures, but it may be less reliable when compared to some self-report measures (Greenwald et al., 2009). In the present study, the split-half Spearman Brown statistic was .82, which indicates strong internal consistency. Split-half evidence for reliability is an estimation of reliability that is calculated by comparing two forms of the test, in this case by comparing D-scores calculated using only odd trials to D-scores calculated only using even trails (see DeHouwer & DeBruycker, 2007). This is consistent with the prior finding that the Sexuality IAT demonstrated acceptable internal consistency reliability with a Cronbach's alpha of .79 in a sample of over 38,000 people (Nosek et al., 2007b).

An exception to the IAT's generally strong psychometric properties is its poor test-retest reliability. The overall test–retest reliability of IAT measures was recently reported to have a median value of r = .56 across nine available reports (Nosek,

Greenwald, & Banaji, 2007a). The specific test-retest reliability of the Sexuality IAT is similarly poor in a German sample of both heterosexual and gay men and women (r = .52; Banse et al., 2001). Although problematic at first glance, inconsistent results at retesting are actually unsurprising given the nature of the test. When participants first complete the IAT, they are unaware that the IAT's central measurement mechanism is reaction time. After the participant has taken the test the first time, they may guess that timing is important, or they may simply be more prepared for the sorting task, and therefore less vulnerable to the influence of bias. There is conflicting evidence if people are better able to influence their score when they have prior experience with the test. Some investigators found that prior experience increases ability to influence scores (Steffens, 2004), whereas others found that knowledge of the IAT mechanisms has no impact (Greenwald et al., 2009). In the present study, a cautious approach was adopted, and participants with extensive prior experience with IATs (i.e., reported completing more than two prior tests) were not included in the analyses.

CHAPTER IV

RESULTS

First, the process of data cleaning and screening is described in detail. Next, the data are evaluated for predictors of implicit bias, in order to identify potential covariates for relevant analyses. Evidence for internal experimental evidence for validity is evaluated. Finally, results of hypotheses and post-hoc tests are discussed. For convenience of interpretation, in the results and discussion portions of the manuscript, participant's D-scores will be referred to as implicit bias scores. All data analyses were conducted using SPSS (version 25).

Preliminary Analyses

Data Cleaning

Five hundred and thirty six participants consented to participate in the study. A large number of participants were removed for not finishing the survey (N = 191). Participants who were under the age of 18, or who endorsed a non-heterosexual orientation, or who indicated a non-male gender identity were excluded from analyses for meeting the inclusion criteria (N = 76). As described in the previous chapter, participants who guessed at the purpose of the study (N = 9), answered more than one attention check incorrectly (N = 12), completed more than two prior IATs (N = 40), or requested that their data be removed (N = 16) were excluded from analyses. Consistent with best

practice guidelines, participants were removed for too fast reaction times on the IAT (e.g., > 10% of trials faster than 300 ms, $N = 6$). During recruitment of participants on Craigslist, an anonymous person posted the survey link on a social media site encouraging people to take the survey and deceive the study's investigator. At the investigator's request, the post was removed 12 days after it was originally posted on the site. Due to concerns that participants may have completed the survey with bad intentions, the participants who completed the survey during that time period were excluded from analyses ($N = 16$). Upon the conclusion of data cleaning, the final sample included 170 heterosexual male participants.

Descriptive Statistics

The average implicit bias score in the sample was 2.64 ($SD = .38$). The scores ranged from 1.26 to 3.48. In the present study, a score of four indicates strong implicit bias against gay men, a score of two indicates no preference for either group, and a score of zero indicates strong implicit preference for gay men. A very small proportion of scores ($N = 8$, 4.7%) demonstrated a preference for gay men. According to the typical classification system (Greenwald et al., 2003), which is drawn from Cohen's (1988) effect size designations, scores can be designated as a "slight", "moderate" or "strong" preference for each group (see Table 1 for a summary). In the present sample, one participant met the criteria for a "strong preference" for gay men, while seven participants demonstrated a "slight" preference for gay men. Twelve participants' scores (7.1%) indicated no preference for either group. The remainder of the sample exhibited a preference for heterosexual stimuli, with over half of the sample demonstrating "strong" implicit bias ($N = 97$, 57.1%), approximately a fifth showing "moderate" bias ($N = 37$,

21.8%), and a smaller number with "slight" bias (N = 15, 8.8%). Overall, the sample appears to be more biased than Nosek and colleagues larger national sample (2007b), in which 15% indicated a preference for sexual minorities and 68% showed implicit bias (compared to 87% of the present sample). The relatively higher prevalence of implicit bias does not seem to be due to the experimental manipulation, as the control condition was also overwhelming prejudiced (84.2%). The discrepancy with prior findings may be due to population differences. Specifically, this study assessed heterosexual men's bias towards gay men specifically, while Nosek and colleagues were reporting both men and women's attitudes towards sexual minorities generally. Since heterosexual men typically report more prejudice than women, and typically report more prejudice towards gay men than other sexual minorities (Worthen, 2013), the increased bias in the present study is unsurprising.

Data Screening

The two continuous variables used in study analyses, D-Scores and political affiliation scores, were both screened for normality. Univariate normality was assessed through the use of *z*-scores, with a cutoff of 3.29 suggesting the existence of univariate outliers (Tabachnick & Fidell, 2012). One univariate outliers was identified, the participant's implicit bias score was greater than one standard deviation below the mean (z = - 3.57). The outlier, the only participant who exhibited a strong preference for gay men, was not excluded from analyses, since the outlier score lies on the tail of a normal distribution curve. Mahalanobis distance was calculated for the combination of indicators used in the subsequent analyses. Then, scores were compared to a chi-square distribution

utilizing the number of variables as the degrees of freedom. Based on this value, no multivariate outliers were identified.

The data was also assessed for skewness and kurtosis. Tabachnick and Fidell (2012) recommend calculating *z*-scores for skew and kurtosis by dividing the statistic by the standard error; any statistic higher than 3.29 ($p = .001$) may represent a non-normal distribution. These calculations revealed that implicit bias scores were slightly skewed, with skewness of -.635 (SE = .19). There was no evidence of kurtosis in the implicit bias scores. Considering we live in a society where sexual prejudice is common, it is expected for the implicit bias to be slightly skewed to the left. Therefore, no transformations were conducted. Identical calculations were performed with the political orientation score, and no evidence for skewness or kurtosis was found.

Demographic Covariates

In order to identify potential covariates for the main analyses, Pearson correlations were examined for relationships between the dependent variable, implicit bias scores, and the following continuous demographic variables: age, education, political orientation, socio-economic status, and number of IATs previously completed. Age was the only variable that significant predicted implicit bias scores. Specifically, a higher age was associated with more implicit sexual prejudice ($r = .18$, $p < .05$). Therefore, age was included as a covariate in any analyses used to test study hypotheses.

Tests were also run to determine if there were significant demographic differences in average implicit bias score. Independent samples *t*-tests revealed no significant differences in implicit bias for Christian participants compared to non-Christian participants ($t(168) = .55$, $p = .58$) or between White participants and non-White

participants (t(168) = .11, p = .93). However, there was a significant differences in implicit bias scores based on how participants were recruited into the study (t(168) = 2.43, p<.05). Levene's test indicated equal variances (F = 1.17, p = .28) indicating the equality of variance assumption was not violated. On average, participants recruited from Craigslist demonstrated higher implicit bias scores (M = 2.72, SD = 0.36) than participants recruited from the university (M = 2.58, SD = 0.39). Considering the finding of a positive correlation between age and implicit bias (reported above), this result is not surprising, as the average age of a Craigslist participant (N = 45.23) is older than an average college student participant (N = 19.48). Therefore, a dichotomous variable indicating the recruitment source (1 = *Craigslist*, 2 = *University*) was also included as a covariate in subsequent analyses.

Experimental Validity

The internal validity of an experiment relies on the assumption that random assignment to condition effectively controls for the potential impact of individual differences on the dependent variable. Several analyses were conducted in order to confirm that the experimental and control groups were not significantly different from each other (see Table 2). A series of ANOVA analyses was used to evaluated group differences in average scores on the continuous demographic variables. The ANOVA tests revealed no significant group difference in age (F(1,168) = .33, p = .57), socioeconomic status (F(1,168) = .74, p = .39), level of education (F(1,168) = .69, p = .41), political orientation (F(1,168) = .00, p = 1.00), or prior experience with the IAT (F(1,168) = .54, p = .46). Chi-square analyses were used to evaluate if the representation of different demographic groups was significantly different in the experimental and

control conditions. Chi-square tests found no significant group differences in the frequency of different religious identities ($\chi 2(8) = 5.43$, $p = .71$) or racial and ethnic identities ($\chi 2(6) = 5.38$, $p = .61$). The proportion of participants recruited from SONA and participants recruited from Craigslist was not significantly different between groups ($\chi 2(1) = .11$, $p = .76$). In sum, the experimental and control conditions were not significantly different from each other on any of the demographic variables collected in this sample. These results provide evidence that random assignment was successful at minimizing threats to internal validity.

Study Hypotheses

Hypothesis One

The first study hypothesis predicted that participants exposed to the sexist prime would demonstrate more implicit bias on the IAT compared to participants in the control condition. Figure 4 provides a visual representation of the mean difference in scores between conditions. An analysis of covariance (ANCOVA) test was conducted to determine if the mean implicit bias score of participants in the sexist condition was significantly higher than the mean implicit bias score of participants in the control condition. Based on results of preliminary analyses described above, age and recruitment source were entered as covariates. Levene's test was not significant ($F_{(1,168)} = 1.07$, $p = .30$), indicating the equality of variance assumption was not violated. Confirming the study's primary hypothesis, the ANCOVA revealed that implicit bias scores in the sexist condition (M = 2.69, SD = 0.35) were significantly higher than implicit bias scores in the control condition (M = 2.59, SD =. 35, $F(1,168) = 4.65$, $p < .05$, $\eta^2_P = .029$). According to Richardson (2011), this can be interpreted as a small to moderate effect size, since a

small effect size for partial eta squared ranges from .0099 to .0588. Neither of the covariates, age ($F(1,168) = .97$, $p = .32$) or recruitment source ($F(1,168) = .56$, $p = .46$), were significant predictors in the model.

In summary, exposure to the sexist vignette was associated with a significant increase in implicit bias scores**.** While the effect size of the present study was small, as Ferguson (2009) highlights, it is important to note that effect size interpretation is context specific. In this case, the impact of the vignette on the response time during the IAT may be small; however, the impact of that schema activation on subsequent behavior and judgments is potentially quite large. For example, past priming studies repeatedly demonstrate that people utilize activated knowledge in their judgments, even when the activation arises from unrelated and irrelevant sources and, at times, even after a substantial delay following the initial activation (Molden, 2014).

Hypothesis Two

The study's second hypothesis predicted that political ideology would moderate the relationship between experimental condition and implicit bias scores, in that the relationship will be stronger for participants with more conservative ideology. Interestingly, in contrast with the previous finding, political ideology was not a significant predictor of implicit bias scores ($r = .07$, $p = .34$). Despite this surprising result, the investigator persisted in testing the moderation hypothesis. Typically, when researchers compare means across groups, analysis of variance (ANOVA) tests are conducted, as seen with the first study hypothesis. However, Hayes (2013) posits that regression analyses are superior to ANOVAs when it comes to analyzing moderation. Specifically, the regression procedure is more general and flexible, since it allows

categorical predictors, continuous predictors, and any combination of the two to be used. Therefore, Haye's (2013) statistical macro PROCESS, which functions as an add-on module to SPSS, was used to test the second hypothesis. PROCESS takes the computational burden off the shoulders of the researcher, and reduces human error, by providing user friendly ways to estimate models and calculate various effects. PROCESS uses an ordinary least squares path analytical framework to estimate interactions in moderation models and utilizes simple slopes when probing interactions.

Consistent with procedures for the first hypothesis, age and recruitment source were entered into the model as covariates. Therefore, implicit bias scores were regressed onto age, recruitment source, political affiliation, experimental condition, and an interaction term created to represent the hypothesized moderation: condition x political affiliation. Consistent with best practice, the PROCESS macro centers each variable. The model was significant ($F(5, 164) = 2.81$, $p < .05$) and explained 7.89% of the variance in implicit bias scores (see Table 3). Experimental condition was the only significant predictor of implicit bias in the model ($\beta = .12$, $p < .05$). The interaction between experimental condition and political affiliation was not a significant predictor of implicit bias ($\beta = .02$, $p = .68$). Contrary to the prediction of the second hypothesis, this result finds no evidence that political affiliation moderates the relationship between condition and implicit bias. To further probe the relationship, a Pearson correlation was run for participants in each condition. Replicating the finding in the whole sample, political ideology and implicit bias scores were not correlated for participants in the experimental condition ($N = 94$, $r = .13$, $p = .20$) or the control condition ($N = 76$, $r = .01$ $p = .95$) . In

sum, the results do not confirm the investigator's hypothesis that politically conservative participants are more susceptible to the impact of the sexist prime materials.

Post-Hoc Hypothesis

Interestingly, and contrary to expectations, the only significant demographic predictors of implicit bias scores in the present sample were age and source of recruitment (i.e.., Craigslist vs. university sample). A point-biserial correlation reveals that age and recruitment source are significantly correlated in the present sample (r_{pb} = .77, $p < .01$), in that participants in the Craigslist sample tend to be older than the university sample. Considering this finding, the investigator was interested in examining age as a potential moderator of the relationship between experimental condition and implicit bias. Age was selected as a moderator, rather than recruitment source, because of previous literature linking increased age to increased implicit bias towards sexual minorities (Nosek et al., 2007b). Specifically, the post-hoc hypothesis predicted that age would strengthen the relationship between condition and implicit bias score, in that older participants might be more easily influenced by the sexist prime, leading to higher implicit bias scores.

Haye's (2013) statistical macro PROCESS was used to test the post-hoc hypothesis. Consistent with prior analyses, recruitment source was entered into the model as a covariate. Therefore, implicit bias scores were regressed onto age, recruitment source, experimental condition, and an interaction term created to represent the post-hoc moderation hypothesis: condition x age. The model was significant ($F(4, 165) = 2.81$, $p < .05$) and explained 6.4% of the variance in implicit bias scores (see Table 4). Similar to the second hypothesis, experimental condition was the only significant predictor of

implicit bias in the model (β = .13, $p < .05$). The interaction between experimental condition and age was not a significant predictor of implicit bias (β = .001, $p = .70$). To further probe the relationship, separate Pearson correlations were run for participants in each condition. Although age is a significant predictor of implicit bias in the whole sample, it is not significant when you examine participants in the control condition ($N = 76$, $r = .21$, $p = .07$) and experimental condition separately ($N = 94$, $r = .17$, $p = .11$). Contrary to the prediction of the post-hoc hypothesis, this result finds no evidence that age moderates the relationship between condition and implicit bias.

CHAPTER V

DISCUSSION

The present study extends the existent literature on heterosexual men's sexism and sexual prejudice in several ways. Similar to past research using the Sexuality IAT (Nosek et al., 2007b), the majority of the heterosexual men in this sample demonstrated some degree of preference for heterosexual stimuli (N = 149, 87.65%). This result is consistent with other research positing that sexual prejudice in heterosexual men remains pervasive (Herek & McLemore, 2013). Most critically, the current experiment provides evidence beyond self-report data that sexism and sexual prejudice towards gay men are closely related schemas. The results are consistent with theories from gender studies, feminist literature, and social psychology that identify patriarchy as the origin of both sexism and sexual prejudice. In this chapter, the implications of this study for media and prevention and intervention efforts are explored. Finally, limitations and future directions are discussed.

Hypothesis One

Theoretical Implications

Heterosexual men who read a sexist vignette about Claire, in which she was described as an easily offended, ungrateful, dishonest, controlling, man-hating feminist, associated gay men with negative stimuli more easily compared to the control group. Due

to random assignment, the difference in implicit bias scores can only be attributed to the experimental manipulation, or the exposure of the prime. In other words, negative attitudes about gay men became more easily accessible after exposure to a sexist prime. The results of this experiment extend correlation studies of self-reported attitudes that found a positive relationship between sexual prejudice and hostile sexism (e.g., Davies, 2004; Keiller, 2010; Nagoshi et al., 2008; Sakalli, 2002).

According to schema theory, when one schema is activated by a stimulus, this leads to a process of "spreading activation," as other schemas are subsequently activated (Collins & Loftus, 1975). Since exposure to a prime (e.g., the vignette) impacted participants responses a to subsequent stimuli (e.g., the IAT), the results of this experiment provide unique evidence that sexism and sexual prejudice are closely related schemas. Feminist theory describes sexual prejudice and sexism as closely related concepts with similar origins, overlapping meaning, and shared features. According to feminist theory, patriarchy is the origin of both sexual prejudice and sexism. A patriarchal society includes the belief of male superiority, heterosexual superiority, and anti-femininity broadly (Capezza, 2007). Since gay men are often perceived to be feminine (Blashill & Powlishta, 2012), sexual prejudice and sexism similarly focus on anti-femininity. Men and masculinity scholarship also documents the shared features of sexism and sexual prejudice towards gay men. Specifically, Kimmel (1994) notes motivated to distance themselves from femininity *and* from gay men in order to preserve their power and status. Consistent with this perspective, conceptualizations of male role norms include both negative attitudes towards women and gay men (e.g., Male Role Norms Inventory; Levant et al., 2013). Similarly, SDT (Pratto et al., 1994) argues that

sexism and sexual prejudice serve to justify discrimination and prejudice directed at women and sexual minorities. In sum, consistent with several theories, the results of this experiment support the theory that hostile sexism and sexual prejudice are related schemas that share features of anti-femininity and male heterosexual superiority. However, due to the nature of spreading activation, it is impossible to know from the current findings the specific nature of the connection between the sexist stimuli and the IAT stimuli. Alternative explanations for the impact of the prime stimuli on the target are discussed in the limitations section.

Impact of Implicit Bias

The hypothesized connection between sexism and sexual prejudice contributes to our understanding of heterosexual men's bias. It is easy to speculate that the average heterosexual man is exposed to hostile sexism from innumerable sources on a daily basis. Results of the present study suggest that a potential effect of this frequent exposure to hostile sexism cues is "activation" of implicit bias towards gay men. According to priming literature, the activation of a schema may or may not have an impact on cognition and behavior (Loersch & Payne, 2011). Once activated, the negative schema about gay men could be experienced as a "gut" feeling or overlooked. The priming literature suggests that because heterosexual men are likely *unaware* of any connection between exposure to sexism and sexual prejudice, they will likely attribute activated implicit bias to their own beliefs (Molden, 2014). Furthermore, schema theory (Collins & Loftus, 1975) describes how the frequency of schema activation is related to the accessibility of that schema. In other words, the more frequently negative ideas about gay

men are evoked, the more entrenched the bias becomes. Therefore, it is possible that exposure to sexism may serve to reinforce the accessibility of sexual prejudice schemas.

If, as hypothesized, men's implicit sexual prejudice is activated by exposure to sexism, what is the potential impact? The literature on the relationship between and individual's implicit bias towards a group and an individual's behavior towards a member of that group is complex. Loersch and Payne (2011) describe broadly how activated schemas may directly impact subsequent judgments and behavior, especially when an individual is unaware of the prime. For example, Loersch and Payne (2011) describe a series of experiments demonstrating that subtle exposure to positive or negative stimuli consistently impacted subsequent judgements of people (e.g., positive primes were associated with more positive judgments). Theoretically, the schema activation increases the accessibility of information consistent with the schema, which is then used in forming judgments and decisions. According to this framework, any increase in heterosexual men's implicit bias has the potential to impact their thoughts and behaviors.

Beyond theory, there is empirical evidence that implicit bias towards a group is related to behavior towards a group member. Fazio and colleagues (1995) famously demonstrated this connection in a study about implicit racism, as assessed by the IAT. The authors found the implicit racism scores predicted participant's friendliness, as rated by independent observers, towards the Black experimenter (Fazio et al., 1995). Several publications followed closely on the heels of the first report (for a review, see Dasgupta, 2004). Collectively, these demonstrated that implicit racism scores predict people's subtle behavior toward racial minorities (e.g., eye contact, body posture, speech errors) better than participants' explicit racism. Fazio and colleagues (1995) theorized that implicit bias

is particularly influential on spontaneous behavior (e.g., body language), in contrast with planned and deliberate behavior. Similarly, an unpublished dissertation project (Lemm, 2001), found that heterosexual men's IAT scores were significantly associated with more negative nonverbal behavior towards a gay confederate compared to behavior towards a heterosexual confederate.

It is important to contextualize the association between implicit bias and discriminatory behavior. Research has identified several factors that impact the degree to which implicit bias is associated with behavior change. Specifically, there is evidence that implicit bias is much less likely to predict behavior when people are: (1) aware of the potential for bias, (2) are able to control their behavioral response, and (3) are motivated to avoid discrimination (Dasgupta, 2004). Dasgupta and Rivera (2006) examined the impact of these factors on the relationship between implicit sexual prejudice and discrimination against a sexual minority confederate. Participants completed an IAT to assess their implicit bias towards gay men and self-report measures about behavioral control and egalitarian beliefs. One week later, the same participants were interviewed by a confederate for what they were told was a separate study about the economy. The sexual orientation of the interviewer was manipulated by describing him as a member of a fraternity or the gay student association group. The participant's behavior towards the interviewer was assessed by the confederate, as well as two independent judges. Consistent with prior work, the researchers found that men with stronger implicit bias produced more negative behavior towards the gay confederate. However, there were notable exceptions. Men who endorsed egalitarian beliefs and/or were skilled at

controlling their actions did not treat the gay confederate differently, regardless of their automatic attitudes (Dasgupta & Rivera, 2006).

More research is needed to explore how exposure to sexism (e.g., from media, conversations, etc.) may impact heterosexual men's implicit bias towards gay men. The results of the present study suggest exposure to sexism may activate heterosexual men's implicit bias. If true, the literature on implicit bias suggests a number of potential impacts, although it is evident that the impact of primes on cognition, feelings, and behavior are difficult to predict. First, evidence from priming studies suggest that exposure to hostile sexism may reinforce heterosexual men's implicit bias towards gay men outside of their conscious awareness (Loersch & Payne, 2011). Second, the literature on implicit bias suggests that any increase in heterosexual men's implicit bias could potentially contribute to subsequent negative feelings and judgments towards gay men (Dasgupta & Riviera, 2006; Lemm, 2001). However, it has been documented that this association between implicit bias and behavior is dependent certain conditions (Dasgupta, 2004). In conclusion, the results of this study, in combination with the literature, suggest that exposure to sexism has the potential to impact heterosexual men's feelings towards, and interactions with, gay men. Additional research is needed to understand the extent and nature of the impact of sexist content on heterosexual men's sexual prejudice.

Moderation Hypotheses

Hypothesis Two

The author found no support for the second hypothesis that political orientation would moderate the relationship between experimental condition and IAT scores. In fact, political orientation was not significantly correlated with implicit bias scores in the

present sample. This finding is surprising, considering that the values and policies of American conservatism align with a patriarchal agenda of the superiority of the heterosexual men. The finding is also inconsistent with prior research, which found that people identifying as "conservative" demonstrated significantly more implicit bias on the Sexuality IAT than other political groups (Nosek et al., 2007b). The lack of a significant correlation is also inconsistent with past findings that endorsement of a conservative political ideology is associated with more explicit sexual prejudice (Brown & Henriquez, 2008; Herek, 2009b) and less support for gay civil rights (Brown & Henriquez, 2011). Recently, there has been much flux in the meaning behind political identities, including the meaning of labels like "conservative." For example, it is increasingly common to identify as socially liberal but politically conservative (Pew, 2014). It may be that the relationship between political ideology and sexual prejudice is evolving, and more research is needed to understand how implicit sexual prejudice may vary among political groups.

Post Hoc Hypothesis

Age was significantly correlated with implicit bias scores in the present sample, in that greater age was associated with more implicit sexual prejudice. However, it did not moderate the relationship between experimental condition and implicit bias in a post hoc analysis. Prior literature on the relationship between age and implicit sexual prejudice is mixed. Two studies found that age was not a significant predictor of explicit sexual prejudice (Brown & Henriquez, 2008; Herek, 2009b), or support for gay civil rights when entered into a model with other demographic predictors (Brown & Henriquez, 2011). Interestingly, Nosek and colleagues (2007b) presented data that the youngest (< 10 years

old) and the oldest (> 60 years old) participants were the most biased on the Sexuality IAT, with the least biased participants being middle aged. Considering that society is experiencing a rapid shift in the visibility of sexual minorities and the social acceptability of sexual prejudice, more research is needed to understand the modern relationship between age and implicit sexual prejudice.

Implications for Media

If, as suggested by the present results, exposure to negative attitudes about women evokes negatives attitudes towards gay men, this relationship has implications for media representations of women. The media is a powerful tool in perpetuating, and potentially challenging, patriarchal norms. There is extensive evidence that exposure to negative depictions of minority groups in the media is associated with increased negative affect toward the group (Payne & Dal Cin, 2015). Many researchers argue that many, if not most, depictions of women in the media activate and reinforce existing stereotypes and prejudice. Consistent with this argument, there is evidence that the media's portrayal of gender roles impacts children's and adults self-concept, career aspirations, and attitudes about the gender hierarchy (Ward & Aubrey, 2017). Rudman and Borgida (1995) confirmed that after exposure to sexist commercials, men were more likely to recognize sexist compared to non-sexist words in a word recognition task. This finding indicates that sexist schemas were activated by the commercial, and the men utilized the more accessible information in a subsequent task. The current finding suggests it is possible that sexist media (e.g., commercials, television, song lyrics, advertisements, etc.) may impact viewer's implicit bias towards gay men, in addition to their attitudes about women.

Historically, it was assumed media had a uniform impact on all viewers (Valkenburg & Peter, 2013). Modern theories describe media effects as conditional, depending on a variety of moderators and mediators. For example, the nature or intensity of media's impact may depend on gender, age, overall media use, identity, self-concept, temperament, or the viewer's peer group. Certain people may be more susceptible to a specific media effect, or a media effect may only occur when the viewer is experiencing a specific cognitive or emotional state during consumption (Valkenburg & Peter, 2013). The results of the present study suggest that media portraying women as easily offended, ungrateful, dishonest, controlling, man-hating feminists may influence heterosexual men's implicit bias towards gay men. However, more research is needed to identify under what specific conditions this effect may occur, including identifying potential moderators and mediators of the effect. There is evidence that entertainment media has the power to influence sexual prejudice through the positive depictions of sexual minorities (Bartos, Berger, & Hegarty, 2014; Miller & Lewallen, 2015), and future research should explore if positive portrayals of women have a similar impact on men's sexual prejudice.

Implications for Interventions

The goal of social justice research is to utilize findings to advocate for societal and institutional changes to benefit oppressed groups (Ratts et al., 2016). Interventions that reduce heterosexual men's sexual prejudice attitudes have the potential to prevent the discrimination, harassment, and violence experienced by gay men (Herek, 2009a). Therefore, it is important to discuss the implications of the present findings for efforts to reduce sexual prejudice. If attitudes towards women and gay men are closely related schemas, it is possible to extrapolate potential implications for the design of effective

interventions. In addition, the potential for a single intervention to address both prejudice towards women and gay men is discussed.

Sexual Prejudice Reduction

Sexual prejudice interventions are diverse in their approach to prejudice reduction. Bartos and colleagues (2014) conducted a comprehensive literature review and meta-analysis examining the effectiveness of sexual prejudice interventions on changing attitudes and/or behavior. Despite a growing body of literature (see Worthen, 2013) supporting the hypothesis that heterosexual men's attitudes towards gay men are distinct from heterosexual men's attitudes towards sexual minority women or heterosexual women's sexual prejudice, only 5% of the prejudice reduction studies identified in the meta-analysis exclusively targeted men (Bartos et al., 2014). In one study that did target heterosexual men specifically, the researchers found that an intervention highlighting biological *differences* between heterosexual and gay men significantly reduced men's reported sexual prejudice compared to an intervention that highlighted *similarities* between the two groups (Falomir-Pichastor & Mugny, 2009). The authors theorized that the intervention reduced prejudice because of heterosexual men's unique desire to differentiate themselves from gay men. The overall lack of attention to gender in prejudice interventions is disappointing, since the literature overwhelming argues that the nature and intensity of sexual prejudice is considerably different in heterosexual men, compared to heterosexual women.

In their review of the literature, Bartos and colleagues (2014) identified 14 different approaches to prejudice reduction interventions, including; education, inter-group contact, cooperative learning, peer debate, use of media, and cognitive training.

The meta-analysis concluded that contact interventions, in which heterosexual individuals spend time getting to know sexual minority individuals, and educational interventions, in which education about sexual minority people is provided, were most effective at reducing participant's sexual prejudice. The comprehensive review, which included over 100 studies of prejudice interventions, did not identify gender roles, attitudes towards women, or sexism as relevant constructs for intervention (Bartos et al., 2014). Considering the substantial literature documenting the relationship between gender attitudes and sexual prejudice (Worthen, 2013), as well as the results of this experimental priming study, researchers and advocates who design sexual prejudice interventions might consider addressing negative attitudes towards women.

Concrete recommendations about the design of effective sexual prejudice interventions is beyond the scope of the present study. Feminist scholars have long argued the relationship between sexual prejudice and sexism must be recognized and eliminated in order to achieve equality for women and sexual minorities (Brabeck & Brabeck, 2012; Murphy, 2006). Barron (2008) noted that interventions to reduce prejudice against gay men will likely require cognitive restructuring of beliefs about gender. The present study supports the perspective that addressing and challenging anti-feminine and anti-woman attitudes may be an effective way to reduce sexual prejudice.

Incidental Sexual Prejudice Reduction

Consistent with feminist theory, the present findings support the hypothesis that attitudes about women and gay men have similar origins in patriarchal ideas of heterosexual male superiority. If the two prejudices share origins, it seems possible that interventions designed to reduce sexism may potentially reduce bias towards gay men.

The literature on interventions to reduce sexism is relatively scarce. Most interventions have focused on challenging stereotypes with educational materials or raising awareness about women's experiences of sexism (Becker, Zawadzki, & Shields, 2014). In one innovative intervention, researchers created an experiential simulation game designed to raise awareness about the harms of sexism in the workplace. The investigators found that participants who played the game were more likely to recognize sexism as harmful and more likely to indicate interest in discussing sexism compared to a control condition did not include experiential learning (Cundiff, Zawadzki, Danube, & Shields, 2014). Similarly, other investigators found that verbal role playing and a reflection exercise significantly decreased participants' explicit sexism compared to a control group (Kilmartin et al., 2015). In sum, there is evidence that brief interventions can impact explicit attitudes about sexism. As discussed in this manuscript, sexism includes a variety of constructs including: traditional gender roles, hostile sexism, modern sexism, and ambivalent sexism. Sexism reduction interventions may address one, or many, of these facets of sexism. Future research might explore if, and how, interventions that successfully reduce sexism also impact sexual prejudice.

Two Birds, One Stone

Murphy (2006) called for advocates of women's rights and sexual minority rights to unite their efforts to challenge societal oppression. Murphy's call to action is very relevant to the current findings, which suggest that negative attitudes towards women and negative attitudes towards gay men are overlapping schemas. While designing an intervention is outside the scope of the present study, it is easy to speculate about the potential for a single intervention to effectively reduce *both* sexual prejudice and sexism.

Interestingly, anti-sexism and anti-sexual prejudice interventions often use similar strategies, including focusing on social norms and invoking empathy for the oppressed group. Therefore, simple modifications to existing interventions may allow for the design of interventions targeting both prejudices.

Social Norms. Sexual prejudice and sexism interventions both utilize social norm manipulation to reduce prejudice. Solomon Asch's (1965) seminal "line" studies famously demonstrated that group pressure has profound effects on participants' conformity to judgments (even when incorrect). Similar to any other judgment, there is evidence that prejudice is influenced by the perception of norms. Therefore, interventions may use peer groups and/or experts to communicate that tolerance or women or sexual minorities is the norm. For example, Kilmartin et al. (2008) asked men to report their sexist attitudes in addition to what they perceived the "average" man's sexist attitudes to be. Interestingly, participants often over-estimate the sexist attitudes of others. Following the completion of the survey, participants were randomly assigned to be in an intervention or control condition. Participants in the intervention condition were provided with information about the inaccuracy of their perceptions about sexism as well as information about perceptual errors and norms. At a three week follow up, participants in the intervention condition reported significantly less sexism than participants in the control condition (Kilmartin et al., 2008). In sum, learning that sexism is less prevalent than they perceived was associated with a decrease in men's endorsement of sexism.

Social norm interventions have also been used in sexual prejudice reduction interventions. According to Bartos et al. (2014), four studies found that manipulating social norms significantly impacted sexually prejudiced behavior. According to the meta-

analysis, the overall effect size on behavioral outcomes was moderate. In one study, participants were instructed to read a blog about heterosexual privilege, as well as the comments. The investigators manipulated the comments to be either overwhelming positive and accepting or primarily negative and challenging (Bahns & Branscombe, 2011). After reading the blog and comments, participants were asked to write their own comment. Participants exposed to the positive comments were significantly less likely than their counterparts to write negative comments about gay men. In conclusion, there is evidence that social norm interventions in which tolerant attitudes towards gay men *and* women are portrayed as prevalent may be an effective strategy in the design of a single intervention.

Empathy. A second area of potential overlap in sexual prejudice and reduction strategies is a focus on cultivating empathy for the oppressed groups. Hillman and Martin (2002) created an exercise named Alien-Nation, in which participants were told to imagine living on a planet where all forms of sexuality are forbidden. Participants who completed the exercise demonstrated a larger reduction in explicit sexual prejudice (using pre and post test scores) compared to participants who attended a lecture about sexual prejudice. Hodson, Choma, and Costello (2009) replicated these results, controlling for individual differences in explicit prejudice. Similarly, Becker and Swim (2011) found that asking male participants to identify which emotions a woman might have felt in response to a sexist incident was critical in reducing men's sexist attitudes. Specifically, the investigators found that educating men about the prevalence of sexism did not impact their sexist attitudes compared to a control group. However, when an intervention included invoking empathy *and* education about prevalence, men's mean explicit sexist

attitudes were significantly lower than the education only group (Becker & Swim, 2011). Therefore, invoking empathy for women *and* gay men may be an effective element in the design of a single intervention.

Modifications. It is possible to imagine how current interventions could be modified to address both sexism and sexual prejudice. Researchers have used educational materials about the genetic etiology of sexual orientation to reduce sexual prejudice (Frias-Navarro, Monterde-i-Bort, Pascual-Soler, & Badenes-Ribera, 2015) and information about the prevalence of harm caused by sexism to reduce sexism (Becker & Swim, 2012). It follows that educational materials confronting negative stereotypes about women and gay men could be used to reduce both sexual prejudice and sexism (Bartos et al. 2014). In addition, a traditional contact intervention, an evidence-based intervention that increases contact between heterosexual and non-heterosexual people through a video or panel, could easily be modified to address sexism as well. For example, the non-heterosexual panel participants might include discussion of experiences or themes or anti-femininity and sexism.

Limitations

This study extends the current literature on the relationship between hostile sexism and sexual prejudice in a number of ways. However, there are a number of potential limitations in the design of the present study, including concerns about the sample and methodological limitations.

Sample Characteristics

The goal of sampling methodology is to represent the population from which the data is drawn (Mathy et al., 2002). Clearly, researchers should evaluate their sampling

methods in order to accurately describe the generalizability of findings. There are two limits to the generalizability of the present findings. First, the sample is self-selected. Participants chose to participate in a study about judicial attitudes for extra credit or an opportunity to win a gift card. Fortunately, participants were not aware that they were participating in a study about prejudice, which means potential interest in the topic did not affect the sample. Second, participants were recruited from two specific sources, a university sample and Craigslist. Although supplementing with Internet samples improves the generalizability of traditional university samples (Alto et al., 2018), it remains possible that certain unknown characteristics either recruitment source impacted the results. For example, in the present study, the source of recruitment was significantly related to age, in that the Craigslist sample was generally older than the university sample.

Alternative Explanation

The experimental priming design in the present study allows researchers to isolate exposure to the prime (i.e. the sexist vignette) as the source of the change in implicit bias scores. However, the underlying mechanisms of the prime's effect on the stimulus cannot be known (Molden, 2014). The conclusion of the present study is that the impact of the vignette on implicit bias is due to the overlapping features of sexism and sexual prejudice. After reading about Claire's negative attributes and behavior, it is assumed that thoughts about male superiority and anti-femininity were more accessible, which led to the subsequent activation of prejudicial thoughts towards gay men. At outlined extensively above, this conclusion is consistent with theories about patriarchy and

prejudice. However, It is important to consider alternative explanations for the impact of the vignette on IAT scores.

The most compelling alternative hypothesis is that the sexist vignette activated general ideas about prejudice which contributed to increased bias towards gay men. From this perspective, the shared meaning of sexism and sexual prejudice stems from their shared features as prejudicial attitudes, rather than from their shared features in patriarchy. Investigators have consistently found that people who are prejudiced towards one group are more likely to be prejudiced towards other groups (Akrami, Ekehammer, & Bergh, 2011; Allport, 1954; Altemeyer, 1996). This tendency towards prejudice has been called "generalized prejudice", and has been attributed to differences in personality and specific group memberships (e.g. conservative Christianity). The social psychologist Bob Altemeyer famously called people with authoritarian personalities "equal opportunity bigots" (1996, p. 24). It seems plausible that when exposed to prejudicial material, participants (especially participants high in authoritarianism) would exhibit more implicit bias towards gay men. If this explanation is true, then the impact of the prime on implicit bias was not unique to sexual prejudice and may also have occurred using measures of implicit racism. In addition, it is possible that irrelevant details in the experimental vignette may have activated an unrelated schema which subsequently activated the negative attitudes towards gay men. For example, perhaps the fact that Claire is suing her company for discrimination activated schemas about morality that contributed to the subsequent increases in implicit bias. Future research can help clarify the nature of the relationship between the prime and target stimuli.

Methodological Limitations

Although the validity and reliability of the IAT has been rigorously evaluated, there are a number of critiques of the task as a measure of prejudice. First, despite improvements in scoring algorithms, the IATs reliance on response latencies invites opportunities for measurement error (Goodall, 2011). Second, although there is certainly less opportunity to manipulate the results compared to explicit measures, the IAT is susceptible to "faking." There is evidence found that prior experience increases participant's ability to influence scores (Steffens, 2004), and there is evidence that motivated participants can influence their IAT scores (De Houwer, Beckers, & Moors, 2007). Finally, the IAT is often criticized as reflecting an individual's exposure to societal associations, rather than a measure of their own implicit attitudes (Karpinski & Hilton, 2001). In this case, the present finding could be interpreted as exposure to sexism activating heterosexual men's schemas for *societal* prejudice towards gay men, rather than their schema of *personal* sexual prejudice. In addition to the general critiques of IATs broadly, there are specific concerns about the stimuli used in the Sexuality IAT. The Sexuality IAT uses abstract images such as wedding cake toppers and stick figures to represent heterosexual and gay stimuli. The stimuli may evoke a variety of reactions about sexual behavior, same-sex couples, or policy issues, depending on the individual. Therefore, it is difficult to identify the specific facet of sexual prejudice that is being assessed by the task (Herek & McLemore, 2013).

Future Directions

As discussed above, the current findings have important implications for feminist advocacy and anti-prejudice work. In order to best inform these efforts, future research is

recommended to further probe the relationship between sexism and sexual prejudice. The most pressing concern is the need to replicate the findings of the present study in a different sample. Replication is particularly important considering the current discussion of the replicability crisis (Pashler & Wagenmakers, 2012). Priming studies in particular have been criticized for failure to replicate specific findings (Molden, 2014). In addition to concerns about replication, there is much we do not know about the necessary conditions for a sexist prime to active implicit sexual prejudice. If investigators are interested in expanding on the present findings, they may consider extending the current project in the following ways.

First, it is critically important to investigate if this finding is specific to implicit sexual prejudice towards gay men, or evidence of a broader "generalized prejudice" effect. While the present study focuses on negative attitudes towards gay men, it is possible that exposure to sexist prime materials is related to sexual prejudice broadly, and would also impact negative attitudes towards other sexual minority men and women. Alternatively, sexist primes may activate schemas related to a variety of prejudicial attitudes (see Altemeyer, 1996). Future research may replicate the current methodology with other measures of implicit bias, for example implicit bias against sexual minority women or implicit racism (e.g. Black-White IAT). If exposure to the sexist vignette significantly impacts implicit racism scores, then this will provide evidence that the prime stimuli in the current study activated a variety of prejudicial attitudes, not just sexual prejudice.

Second, it is important to explore if the present findings are generalizable to other populations. Future investigators may consider replicating the study with women and

sexual minorities. Social dominance theory posits that heterosexual men's attitudes about women and sexual minorities are a product of men's relatively dominant position in the societal hierarchy (Pratto et al., 1994). Considering their experiences of patriarchal oppression, it follows that women and sexual minorities may have different patterns of schema activation when exposed to sexist prime material. However, although women and sexual minorities are oppressed groups, they are also entrenched in a patriarchal society. There is evidence that women and sexual minorities internalize prejudicial messages inherent in sexism and sexual prejudice (Herek, 1009b). Therefore, it is possible that this finding will be replicated for women and sexual minorities.

Third, it is important to explore how other variables may influence the impact of the prime on implicit bias scores. The strength of the association between sexism and sexual prejudice likely depends on individual differences in attitudes and/or demographic characteristics. The present study did not find evidence that age or conservative political ideology were associated with differences in implicit biases. However, there are a number of other relevant constructs that may influence participant's internalization of negative attitudes towards women and gay men. In his review of sexual prejudice literature, Herek (2009) identified fundamentalist religious values and interpersonal contact with sexual minorities as consistent predictors of sexual prejudice. Individual differences in social dominance orientation and authoritarianism may also influence heterosexual men's responses to sexist prime material (Pratto et al., 1994).

Lastly, future investigators should explore the impact of different prime materials on implicit bias. The prime material in the present study was designed to evoke hostile sexism, and therefore tapped into very specific negative stereotypes about women. It is

unknown if prime materials related to other sexist constructs (e.g., traditional gender roles towards women, benevolent sexism) will impact men's implicit bias scores similarly. It would also be interesting to invert the design of the current study, and test if men exposed to homophobic prime stimuli show similar increases in their implicit bias towards women. Examining the impact of different prime materials on men's implicit bias will help investigators understand the complex relationship between sexism and sexual prejudice, and identify the shared "features" responsible for the current findings. As discussed above, the present findings have large reaching implications for media. Therefore, it is important that future research examine how more realistic sexist media (e.g., commercials, advertisements, television storylines) may influence heterosexual men's implicit sexual prejudice in similar or unique ways.

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Table 1

Classification of D-scores

Classification	Experimental (N = 94)	Control (N = 76)
Strong Preference for Gay	0 (0%)	1 (<1%)
Moderate Preference for Gay	0 (0%)	0 (0%)
Slight Preference for Gay	2 (2.13%)	5 (6.58%)
No Preference	4 (4.26%)	6 (7.89%)
Slight Preference for Heterosexual	11 (11.70%)	6 (7.89%)
Moderate Preference for Heterosexual	19 (20.21%)	20 (26.31%)
Strong Preference for Heterosexual	58 (61.70%)	38 (50%)

Note: Classifications were determined using the cutoff's designated by Greenwald, Nosek, & Banaji (2003).

Table 2

Demographic Characteristics for Experimental Conditions

Variable	Sexist (N = 94) *n* (%)	Control (N = 76) *n* (%)	Statistic	*p*
Recruitment				
Craigslist	42 (45%)	32 (42%)		
University	52 (55%)	44 (58%)	$\chi^2(1) = 0.11$	.74
Racial/Ethnic Identity				
European American/White	67 (71%)	52 (68%)		
African American/Black	8 (9%)	7 (9%)		
Asian-American	11 (12%)	5 (7%)		
Latino- American	3 (3%)	2 (3%)		
American Indian/Indigenous	0 (0%)	1 (1%)		
Middle Eastern	1 (1%)	1 (1%)		
Other/Multiracial	4 (4%)	8 (11%)	$\chi^2(6) = 5.38$	.61
Religion				
Agnostic	15 (16%)	8 (11%)		
Atheist	6 (6%)	3 (4%)		
Buddhist	2 (2%)	2 (3%)		
Christian	49 (52%)	42 (55%)		
Jewish	4 (4%)	4 (5%)		
	Mean (SD)	*Mean (SD)*	$F_{(1, 168)}$	
Age	30.06 (16.04)	31.55 (17.57)	.33	.57
Socio-Economic Status	2.98 (.90)	2.86 (.96)	.74	.39
Education	3.19 (.99)	3.07 (.97)	.69	.41
Political Orientation	4.00 (1.47)	4.00 (1.32)	.00	1.00
Previous IAT Experience	1.33 (.63)	1.26 (.53)	.55	.46

Note: Percentages may not equal 100 due to rounding.

Table 3

Hypothesis 2: Regression with Political Affiliation as Moderator

DV	IV	Adjusted R^2	*B*	*F*	*df*
IBS	Constant	.08	2.71	2.81*	5, 164
	Politics		- .03		
	Condition		.12*		
	Recruitment		-.10		
	Age		.002		
	Politics x Condition		.02		

Note: $N = 170$, IBS = Implicit Bias Scores, $*p < .05$

Table 4

Post Hoc Hypothesis: Regression with Age as Moderator

DV	IV	Adjusted R^2	*B*	*F*	*df*
IBS	Constant	.06	2.74	2.81*	5, 164
	Condition		.13*		
	Recruitment		-.07		
	Age		.002		
	Age x Condition		.001		

Note: $N = 170$, IBS = Implicit Bias Scores, $*p < .05$

Figure 1. Procedure Summary

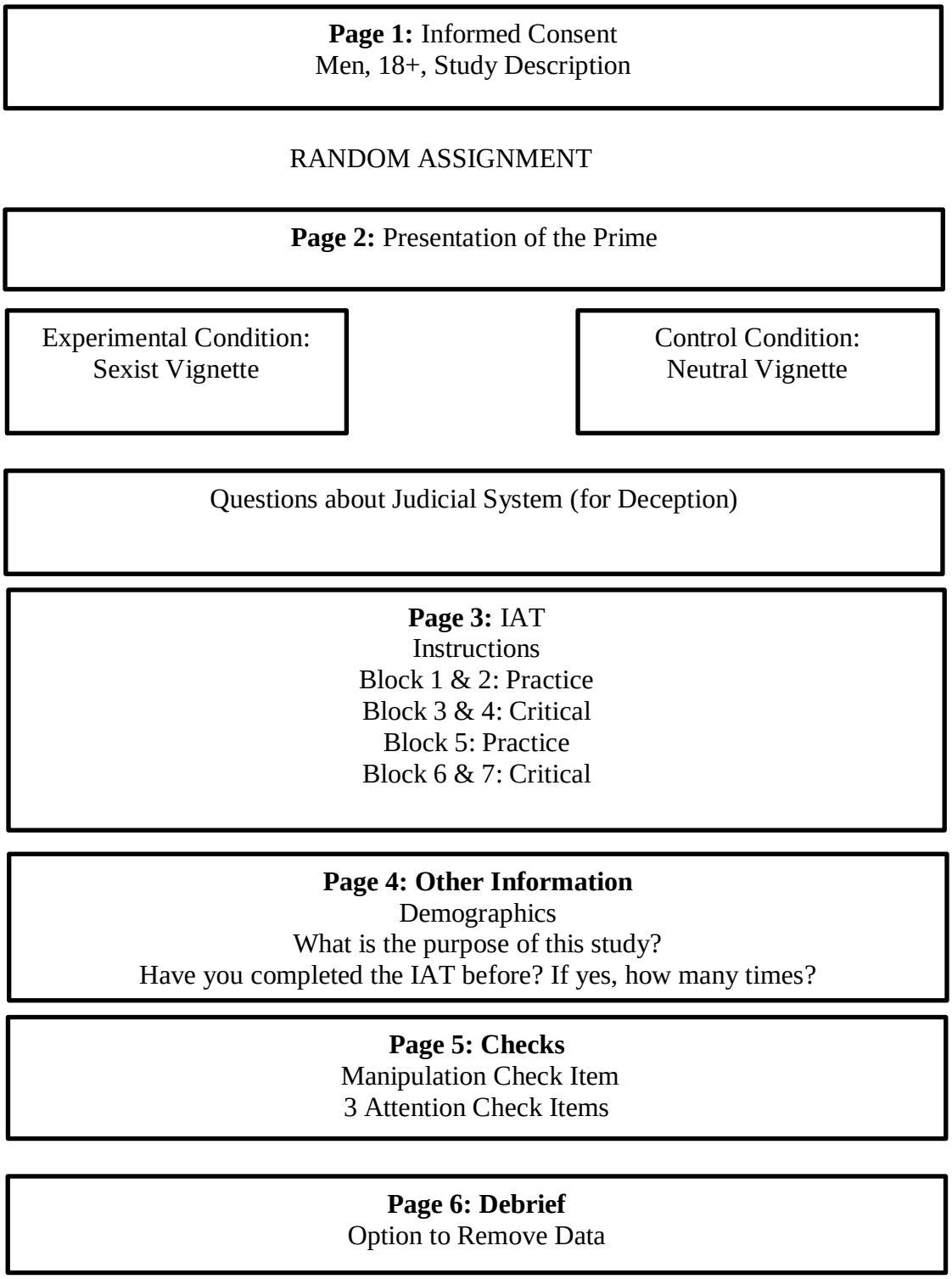


Figure 2: IAT Screen

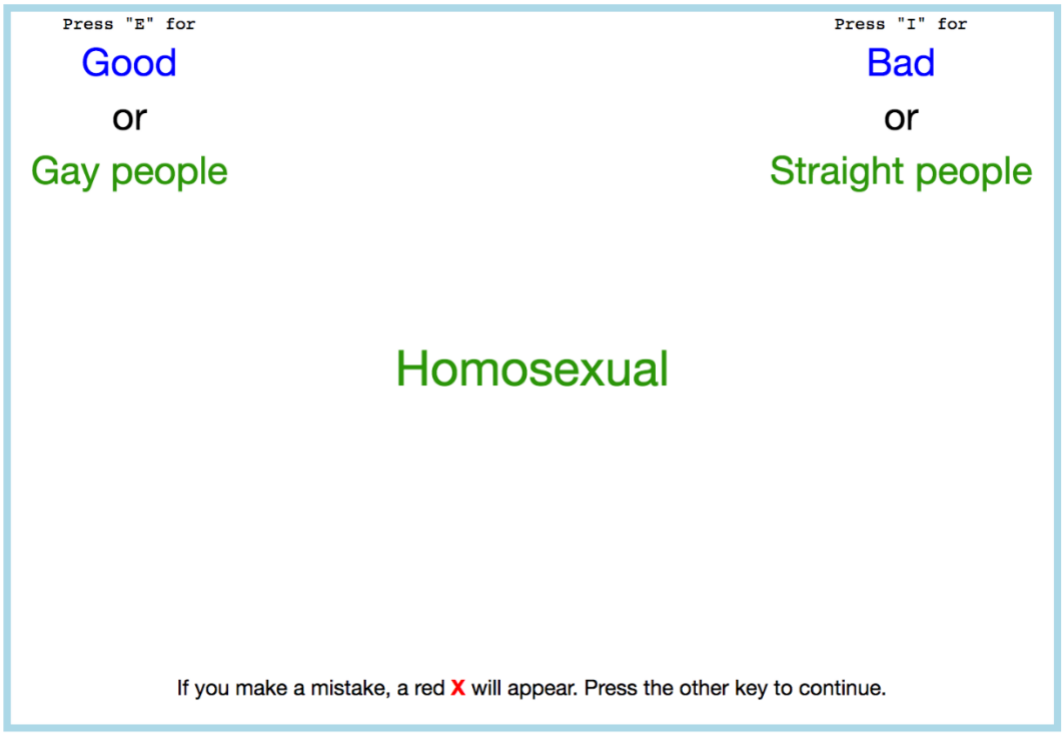
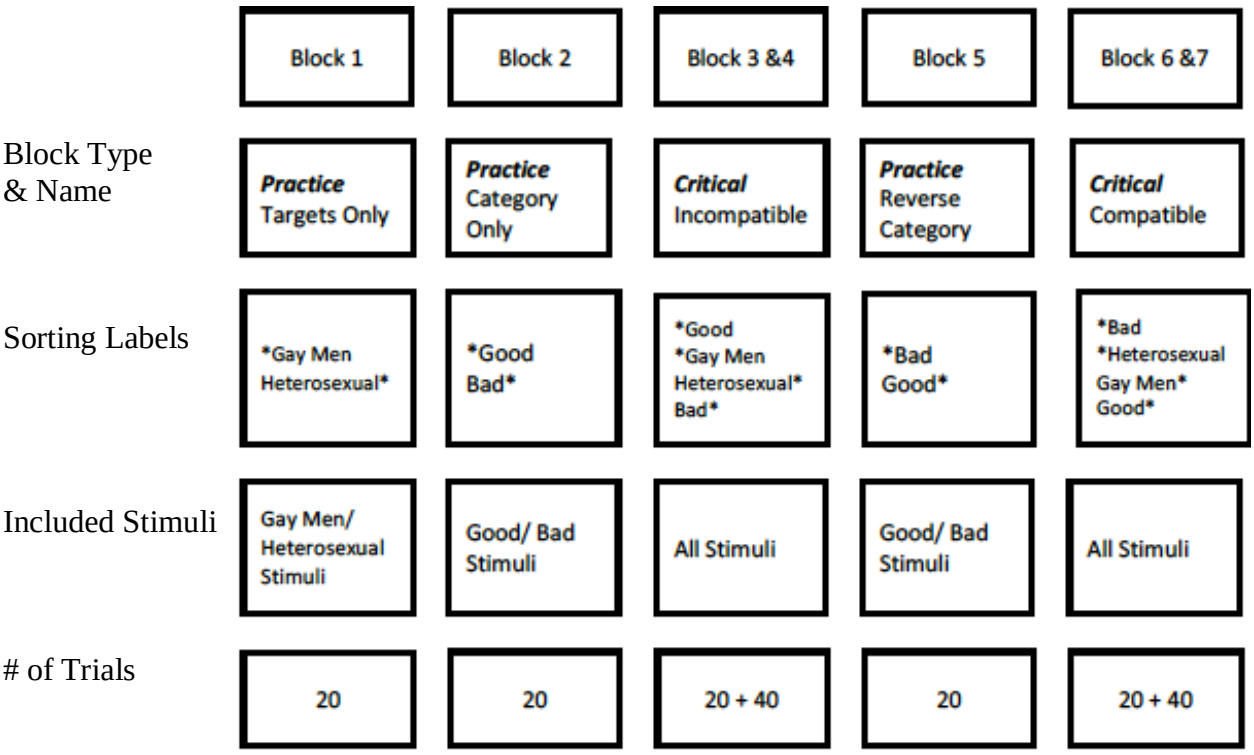


Figure 3: IAT Blocks



Note. Schematic of the adapted Sexuality IAT. Stars indicate left / right hand assignments. In this example, the incompatible blocks appear first (Blocks 3 & 4) and the compatible blocks appears second (Blocks 6 & 7); however, it could occur in either order. Similarly, the subsequent designation of "left" and "right" to categories is counterbalanced. Block 1, 2, and 5 are for practice only and are not used to calculate D-scores.

Figure 4: Effect of Condition on Implicit Bias

Note: Sexist Condition (*N* = 94), Control Condition (*N* =76). Implicit bias score range from 0 - 4. Error bars represent one standard error.

APPENDICES

APPENDIX A: VIGNETTES

Sexist Vignette:

Claire and Kyle have been married for 10 years. They have two young daughters, aged 8 and 5. They filed for divorce last year. Claire and Kyle both want full custody. Currently, a judge is evaluating who should have custody of the children.

When they first met, Claire was a tease, pretending to be available one minute and refusing Kyle's advances in the next. Before they got married, Claire was fun to be around but after he committed to her, she kept Kyle on a tight leash. When Claire was pregnant, Kyle worked extra shifts to make money, but Claire never appreciated his sacrifices. Claire often yells at Kyle for spending time with his friends rather than with her and the kids. Ever since Claire became a feminist, she made unreasonable demands of Kyle. When Claire transitioned into a new job in finance, they began to fight more frequently. Claire is easily offended and is always exaggerating about problems in her workplace. Kyle is often frustrated because Claire is always asking for special treatment and extra privileges just because she is a woman. For example, when she was passed over for a promotion because she wasn't as qualified as her male colleague, she wanted to sue her company for discrimination. Claire doesn't think that any men should be in leadership positions, and she only wants the promotion so she can have power over the men in her office. Kyle tries to be reasonable with Claire, but she always interprets his innocent remarks as sexist. Kyle and Claire often fight in front of their children. No matter what Kyle does, it is never enough for Claire.

Control Vignette:

Claire and Kyle have been married for 10 years. They have two young daughters, aged 8 and 5. They filed for divorce last year. Claire and Kyle both want full custody. Currently, a judge is evaluating who should have custody of the children.

When they first met, Claire and Kyle enjoyed each other’s company. Before they got married, they went on dates but once they had children they stopped spending as much time together. When Claire became pregnant, they were both excited to start a family. They began to fight over little things when the kids were small. They both get frustrated about sharing parenting and housework duties. Both of them found it difficult to communicate when they were upset. When Claire transitioned into a new job in finance, they began to fight more frequently. Claire had new friends at work that Kyle didn't know. She is often frustrated about problems in her workplace. She tries to talk to Kyle about them but he doesn’t understand. Claire was recently passed over for a promotion, which led to even more stress. They tried to work it out for the sake of the kids, but all they do is fight. Claire and Kyle often fight in front of the children.

APPENDIX B: POST VIGNETTE QUESTIONS

Please answer the following questions based on what you know from the vignette. (*1* = Agree, *2* = Neither Agree nor Disagree, *3* = Strongly Disagree)

1. Kyle and Claire should try to work things out.
2. This would be a very difficult case for a judge to decide.
3. The judge shouldn't get involved in custody issues.
4. Claire and Kyle know what is best for their children.

5. If you were the judge, what would you do? (open ended question)

APPENDIX C: DEMOGRAPHICS

1. What is your gender identity (select all that apply)?
Man
Woman
Trans*
Other: _____

2. What is your Race/Ethnicity (select all that apply)?
White/European American
Black/African American
Asian or Asian American
Latino(a)/Hispanic
American Indian
Pacific Islander/Inuit
Middle Eastern
Other: _____

3. What is your age (in years)?
_____

4. How do you describe your sexual orientation?
Lesbian/Homosexual
Bisexual
Straight/Heterosexual
Other: _____

5. What is your socioeconomic status?
Lower Class/Working Poor
Lower Middle Class
Middle Class
Upper Middle Class
Upper Class

6. What is your religious affiliation?
Agnostic
Atheist
Buddhist
Christian
Jewish
Muslim
Pagan
None
Other: _____

7. How did you hear about this study?

Craigslist
University of Akron Psychology Class
Other: _____

8. What is your highest Level of Education:
Some High school
GED/High school Diploma
Some college
College Degree
Some graduate school
Graduate School Degree

9. Which statement best describes your political beliefs?
1 – Extremely conservative
2 – Moderately conservative
3 – Somewhat conservative
4 – Moderate
5 – Somewhat liberal
6 – Moderately liberal
7 – Extremely liberal

10. What is the purpose of this study? (Open ended text answer)
11. The cognitive ability sorting task you completed is called an "Implicit Attitude Test", to the best of your knowledge, how many have you completed prior to today?

APPENDIX D: CHECK QUESTIONS

Study Manipulation Check:
Does Claire's behavior remind you of negative stereotypes about women?

Thinking back on what you read before the cognitive ability task, answer the following:

Attention Checks:

How many children do Claire and her husband have?

A. 1
B. 2
C. 3
D. 4
E. I don't know

What is Claire's husband's name?

A. Kyle (Correct answer)
B. Dan
C. Robert
D. Matt
E. I don't know

Does Claire work outside of the home?

A. Yes, full time
B. Yes, part time
C. No
D. I don't know

APPENDIX E: EDUCATIONAL DEBRIEF

This study is called "The Relationship between Sexism and Sexual Prejudice towards Gay Men: An Experimental Priming Study." This data is being collected by Kathleen Alto, MA for the purposes of her dissertation under the supervision of Dr. Ronald Levant with the approval of the University of Akron Institutional Review Board. Thank you for taking the time to complete this experiment. The purpose of the study was to understand the impact of sexism on prejudice towards gay men. Half of you read a story that portrayed Claire in a very sexist manner and half of you read a story that portrayed Claire in a very neutral matter. The sorting task is called an IAT and it is one way of telling how biased an individual person is towards gay men based on your reaction time. We are interested to see if there are differences in bias depending on which story you read. If you would like to know more about IATs you can visit ProjectImplicit.com.

You were deceived about the purpose of the study because we didn't want you to know what the study was about. If you knew the purpose of the study, it might have influenced your answers. You have the right to withdraw consent and ask for your results to be removed. If you would like to do so, please select "Remove Data" below. If you have questions or concerns, please contact the investigator directly at kmd136@zips.uakron.eedu.

APPENDIX F: PILOT STUDY QUESTIONS

In this story, does Claire appear to….. (Mark Yes or No for each questions)

….interpret innocent remarks or acts as being sexist?
…. Be easily offended.
…..fail to appreciate fully all that Kyle does for her?
….seek to gain power by getting control over men?
….exaggerate problems she has at work?
…..gets a man to commit to her and then put him on a tight leash?
….seeking special favors under the guise of asking for "equality"?
…. act like a feminist who wants women to have more power than men?
….complain about being discriminated against after losing in a fair competition?
…..teasing men by seeming sexually available and then refusing advances?
….. make unreasonable demands of men?

APPENDIX G: IAT STIMULI

"Good" Stimuli:

Cheerful, Celebrate, Lovely, Beautiful, Delightful, Friendship, Happy, Pleasing

"Bad" Stimuli:

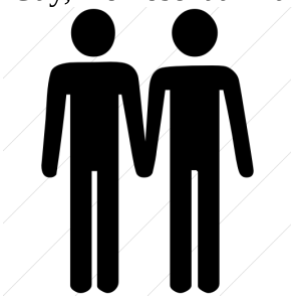
Disgust, Detest, Bothersome, Disaster, Horrific, Failure, Nasty, Yucky

"Heterosexual" Stimuli:

Stimuli: Straight, Straight Men[1], Heterosexual, Heterosexual Men[1]


"Gay Men"[2] Stimuli:

Gay, Homosexual man[3], Gay Husband[4]




[5]

1. In original version, "people" instead of "men" was used
2. In original version, "homosexual" instead of "Gay Men" was used
3. In original version, "homosexual" instead of "homosexual man" was used
4. In the original version, "lesbian women" instead of "gay husband" was used
5. In the original version, pictures of lesbian couples were also included