



Running head: SEX DIFFERENCES IN HOMONEGATIVITY

Inexplicable Sex Differences in Homonegativity:
A Proposed New Paradigm of Implicit Cognitive Systems
Journal of Social Sciences Research
Candice T. Stanfield
Northern Kentucky University
David Hogan and Perilou Goddard, Faculty Advisors
Northern Kentucky University
Harvey J. Ginsburg and Shirley Ogletree, Faculty Advisors
Texas State University

Abstract

Sex differences in self-reported homonegativity is prevalent in past research, yet unexplained. We examined possible factors associated with sex differences in overall homonegativity. Heterosexuals self-reported on scales including variables of differential exposure to homosexuals, disgust sensitivity, and reporting biases. Males consistently expressed more negative attitudes toward homosexuals, especially gay men. Many variables were significantly correlated with overall homonegativity and revealed significant sex differences, however, unconvincingly. Self-report measures may lack validity, not always capturing people's true attitudes. Utilizing a new paradigm of implicit cognitive systems may be more worthwhile in explaining social psychological representations of the abstract cognitive construct of prejudice/stereotyping.

Keywords: homonegativity, homophobia, gender roles, automaticity, implicit social cognition, prejudice, attitudes toward homosexuals, sex differences



Council for Innovative Research

Peer Review Research Publishing System

Journal: Journal of Social Sciences Research

Vol. 9, No.1

jssreditor.cir@gmail.com

www.jssronline.com



Proposed Origins of Homonegativity

Homonegativism was first proposed by Hudson and Ricketts (1980) as a description for any negative attitude toward homosexuality to avoid using the term homophobia. Herek (2000) regarded homophobia as being unscientific in its presumption of motivation, that it represented a form of individual psychopathology rather than a socially reinforced prejudice. There has been some academic debate regarding the two terms as being distinct and separate; however, homonegativity (or homonegativism) and homophobia are used interchangeably in the research literature.

Herek (2003) suggested that some underlying motivations for prejudice against homosexuals may result from unpleasant interactions with homosexual individuals that then become generalized to attitudes toward an entire group. Another factor may derive from sexual discomfort with the respondent's own sexual impulses or gender conformity.

Herek's (1984; 1986) theory of functional attitudes has been particularly influential in understanding the origins of homonegativity and argues that attitudes serve evaluative and expressive functions. The ego-defensive function of an attitude (Herek, 1987) serves to protect the self-esteem whenever a violation of an individual's central value or belief occurs, as a threat to the self, and may be more dependent on how people *feel* (i.e., discomfort and disgust; Meaney & Rye, 2010). As shown in a study of community college students by Franklin (2000), the more an individual's gender-role belief was violated, the higher the rate of homonegativity. Some socializing agents for adolescents' and young adults' attitudes toward homosexuality can be attributed to the influence of parents, media, and peers on one's values (Bonds-Raacke, Cady, Schlegel, Harris, & Firebaugh, 2007; Calzo & Ward, 2009).

Sex Differences

Some social scientists argue that the terms *sex* and *gender* are distinctive. *Sex* often refers to the physiological differences between male and female reproductive anatomy. The term *gender* has been applied to various definitions, such as social or cultural distinctions associated with being male or female, social roles based on the physiological sex of a person, and the personal identification of one's own gender based on an internal awareness (Diamond, 2002; Prince, 2005). For this study, we have chosen to use the terms *sex* and *gender* interchangeably to investigate, based off of past research methodologies, the various factors associated with self-reported attitudes toward homosexuals by self-identified heterosexual males and females.

Consistent evidence of gender differences in self-reported attitudes toward homosexuals and the motivation to control prejudice has been seen in various samples. Regardless of the target's gender, heterosexual males consistently expressed more negative attitudes toward homosexuals than did heterosexual females (Herek, 1988), with the effect being more pronounced for attitudes toward gay men (Ratcliff, Lassiter, Markman & Snyder, 2006; Steffens, 2005). Heterosexual males held less negative attitudes toward lesbians than toward gay men. Both heterosexual males and females tended to express more negative feelings toward homosexual targets of their same gender (Herek, 1988; Meaney & Rye, 2010).

Significant gender differences were found in a sample of college students from three educational institutions in Singapore (Lim, 2002). Female respondents were much more likely than male respondents to report that they would feel comfortable working closely with gay men. Conversely, males reported they would feel more comfortable working closely with a lesbian.

In a study by Chonody, Siebert, and Rutledge (2009) at a university in the American southeast region, the attitudes toward gay men and lesbians were measured in a sample of college students enrolled in a human sexuality course. Males scored significantly higher than females at pretest, indicating a more negative attitude toward gay men and lesbians.

Holland, Matthews and Schott (2013) consistently observed higher levels of tolerance toward the lesbian, gay, bisexual, and transgendered (LGBT) community in female college students. A correlational study involving university students by Meaney and Rye (2010) revealed that ego-defensive functions were significant predictors of homonegativity. Males reported more ego-defensiveness than females, and the researchers found a positive correlation between males' ego-defensiveness and higher levels of negative attitudes toward homosexuals. Meaney and Rye (2010) theorized that young men are still in the process of identity formation, which can be painful, making them susceptible to ego-defensive responses.

Exposure Factors Related to Gender Differences in Homonegativity

Education. One factor that might influence attitudes toward gay men and lesbians is educational exposure (e.g., taking a college-level course in human sexuality or race and gender issues). Studies by Cerny and Polyson (1984) and Serdahely and Ziemba (1984) revealed an increase in positive attitudes toward homosexuals among those who had completed a unit on homosexuality in a human sexuality course. Students enrolled in a Psychology of Homosexuality course left the class with significantly decreased homophobia, regardless of student gender (Wateman, Reid, Garfield, & Hoy, 2001).

The purpose of the study conducted by Chonody et al. (2009) was to determine whether pedagogical techniques in the human sexuality course promoted acceptance and affirmation of homosexuals among students in social work, allied health, and education professions. The pretest respondent scores were moderately negative; scores were significantly lower in negativity at posttest. The posttest scores of males changed the most, resulting in reduced homonegativity.

A college student sample (Teegarden, 2012) revealed that having completed a diversity course (e.g., human sexuality



course or race/gender course) was associated with reduced homonegativity, but only in females. Results revealed male respondents had taken fewer diversity courses than females, possibly resulting in less educational exposure and more negative attitudes toward homosexuals.

Contact Hypothesis. Past experiences with gay men and lesbians (e.g., contact hypothesis) were influential in shaping heterosexual attitudes toward homosexuals (Hans, Kersey, & Kimberly, 2012); 70% of individuals who reported having favorable attitudes attributed their viewpoint, at least in part, to personal interaction. This correlation had also been discussed in the context of Allport's (1954) contact hypothesis and Herek's (1984; 1986) theory of functional attitudes. Allport's (1954) contact hypothesis is regarded as one of the best ways to improve relations among groups that are experiencing conflict (Brown & Hewstone, 2005). The premise of the contact hypothesis is that under appropriate conditions, interpersonal contact between majority and minority group members is one of the most effective ways to reduce prejudice within the majority group toward the minority group (Allport, 1954; Hans et al., 2012).

Regardless of gender, positive experiences with gay men contributed to positive attitudes toward both lesbians and gay men, but especially the latter, while negative experiences with lesbians contributed to unfavorable attitudes toward both homosexual genders, especially lesbians (Hans et al., 2012). Compared to females, males reported they would feel more comfortable if they had learned that their same-sex best friend is gay. Another noteworthy finding (Lim, 2002) is that female respondents reported higher mean scores in response to hypothetically learning that their sibling, regardless of gender, is homosexual.

Disgust Sensitivity

Disgust is a cross-culturally recognized emotion that elicits feelings of nausea and revulsion when individuals are exposed to repulsive stimuli (Ekman, 1970). The Three Domain model of disgust measures disgust sensitivity reactions partitioned into three specific elicitor domains (pathogens, sexuality, and morality; Tybur, Lieberman, & Griskevicius, 2009).

The experience of disgust signals avoidance of the target; however, disgust eliciting stimuli are not limited to inanimate objects (e.g., food) or sense perceptions of smell or taste. Disgust may also be elicited by visual stimuli and associated with people or situations. It is a component of the "behavioral immune system" (Schaller, 2006, pp. 96-97), which encourages individuals to avoid people and situations that could potentially result in bodily contamination (Schaller, 2006; Terrizzi, Shook, & Ventis, 2010). Consequently, disgust may lead to social behaviors such as social exclusion, outgroup avoidance, and outgroup prejudice in the context of disease avoidance (Faulkner, Schaller, Park, & Duncan, 2004). The behavioral immune system may also relate to social value systems (morals), which promote the inclusion or exclusion of others and set norms regarding intergroup relations (Terrizzi et al., 2010).

Ingroup members are more likely to have been exposed to the same diseases or pathogens; therefore, they may have the same antibodies and immunity. This strengthens the preference for ingroup members over outgroup members, as outgroup members pose a threat of exposing individuals to foreign diseases or contamination (Schaller & Duncan, 2007). Researchers have further demonstrated that perceived vulnerability to disease is related to negative attitudes toward outgroups, such as the disabled or foreigners (Faulkner et al., 2004; Navarrete & Fessler, 2006; Park, Faulkner, & Schaller, 2003).

Avoidance of extreme outgroups may be partially due to concerns about contracting diseases, specifically in reference to the sexually transmitted diseases HIV and AIDS that had been relatively prevalent among gay men (Fenton & Imrie, 2005). Nussbaum (1999) noted that "homophobic disgust" may involve concerns about bodily products, such as semen, and their potential for disease consequence.

Females systematically score higher than males on scales of disgust sensitivity (Mataix-Cols et al., 2008). According to Druschel and Sherman (1999), the effect size of gender differences in disgust sensitivity was quite strong. In a study conducted by Teegarden (2012) at a Midwestern public university, disgust was significantly linked with homophobia for both heterosexual males and females in the sexual and pathogen domains (but not in the moral domain). It has been suggested that homophobia might be driven by health concerns, or fear of contamination, rather than by moral concern (Nussbaum, 1999; Teegarden, 2012). In the Teegarden (2012) study, after females completed one or more diversity courses (e.g., human sexuality and/or race/gender), a correlation revealed a direct effect on reducing homophobia and an indirect effect by reducing disgust sensitivity. Thus, it is possible that some aspects of disgust sensitivity may help explain the gender differences in homonegativity.

Reporting Bias Factors

Social Desirability Bias. Like most attitude measures, assessments of homonegativity typically rely on self-report (e.g., Price, 1982). One threat to the validity of self-report measures is social desirability response bias (SDRB), which occurs when respondents tend to falsify the self-report of their true attitudes (Saunders, 1991). The social desirability response bias refers to the tendency of individuals to over-report answers of more socially desirable characteristics and behaviors, and under-report undesirable characteristics and behaviors (Zerbe & Paulhus, 1987). With respect to homonegative attitudes, perceptions of social desirability may vary among respondents. Some respondents may believe that reporting negative attitudes toward homosexuals is a socially desirable response, whereas others may believe it to be socially undesirable to report overt attitudes of negativity toward homosexuals. The Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960) will be included in this study to account for the SDRB confound, which could compromise the validity of self-reported attitudes.



Gender differences exist in measures of social desirability response bias. Prior research revealed females typically respond in a more socially desirable fashion than males (Bernardi & Guptill, 2008; Chung & Monroe, 2003). High social desirability can contaminate research findings through false self-reporting; hence, the need for control of social desirability to rule out false self-reporting of attitudes toward homosexuals (Crowne & Marlowe, 1960; Dalton & Ortegren, 2011; Loo & Loewen, 2004).

Motivation to Control Prejudiced Reactions. In addition to social desirability bias, another factor that may help explain gender differences in self-reported homonegativity is the degree to which women and men are motivated to control their outward expressions of prejudice.

Dunton and Fazio (1997) showed that some college students exhibited a high degree of congruence between their self-reported attitudes toward Blacks, as measured by the Modern Racism Scale (McConahay, 1986) and their behavior toward a Black researcher, measured unobtrusively. Such individuals reported either high levels of prejudice and later acted in a relatively cold manner toward the researcher, or they reported low levels of prejudice and later acted in a relatively warm manner. However, many participants exhibited a discrepancy between their self-reported positive attitudes toward Blacks and their later negative behavior toward the Black researcher. Dunton and Fazio (1997) hypothesized that such discrepancies between self-reported attitudes and later behavior may be due to the participants' motivation to control their outward (self-reported) expression of prejudice; their true attitudes are only revealed when the measurement of prejudice is subtle or unobtrusive. Such participants may report more positive attitudes toward Blacks than they truly feel, thus rendering their self-reported attitudes invalid. Dunton and Fazio (1997) developed and validated the Motivation to Control Prejudiced Reactions (MCPR) Scale and demonstrated that high scores on the MCPR Scale were associated with lower self-report scores on the Modern Racism Scale but higher levels of negative behavior with a Black researcher. We predict that a parallel process may influence participants' self-reported homonegativity, and we plan to assess this prediction by revising the MCPR Scale, replacing the term "Black" with "homosexual."

Although they did not use the MCPR Scale in their study, Ratcliff et al. (2006) showed that, compared to males, females expressed higher motivation to respond without prejudice to gay men and lesbians. Thus, it is possible that at least some of the gender differences in homonegativity may be due to females' greater motivation to appear unbiased.

Hypotheses

Significant gender differences in self-reported attitudes toward homosexuals and in motivation to control prejudice have consistently been reported in various studies. Males are more likely to report negative attitudes toward homosexuals (i.e., homonegativity) and report higher levels of prejudice against homosexuals than females are, and we predicted that we would find this same gender difference in our sample. This study explored factors that are associated with gender differences in self-reported attitudes toward gay men and lesbians.

We predicted factors such as exposure and education, disgust sensitivity, and self-reporting biases would make a contribution to gender differences in self-reported attitudes toward gay men and lesbians.

Exposure factors, including knowing gay men or lesbians personally and taking courses in human sexuality or race/gender issues, were predicted to help explain gender differences. We hypothesized that women have more exposure (e.g., they may be more likely than men to take the relevant courses or know homosexuals). We also explored whether, given equal exposure, these factors had a greater influence on females' attitudes than males' attitudes.

We hypothesized that disgust sensitivity, specifically pathogen and sexual disgust, would be associated with gender differences in homonegativity. Gender differences were hypothesized to exist within self-reporting biases, such as social desirability and motivation to control prejudiced reactions. It was also hypothesized that homonegativity would be related to females' greater tendency to respond in socially desirable ways and that females would have a greater motivation to control prejudiced reactions, as had been found in previous research.

Participants

The participants were 274 female and 92 male undergraduate students from a Midwestern public university. Data from 14 participants were eliminated from analyses because the participants either failed the validity check question ($n = 10$; see Measures below), exhibited response set (i.e., by providing too many of the same answer in a row, $n = 3$), or failed to report their gender ($n = 1$). The data of participants who reported sexual orientation other than heterosexual ($n = 19$) were dropped from analyses because the study focused exclusively on attitudes of heterosexual students toward homosexuals. The data from a total of 252 female and 85 male participants were used for analyses. Of those who provided age information (249 females and 82 males), the mean was 20.04 years ($SD = 5.31$). Participant mean credit hours earned was 21.42 ($SD = 33.26$), which is classified as freshman class standing. *T* tests comparing valid versus invalid samples on predictor variables were all nonsignificant; thus, the participants with invalid responses did not appear to vary systematically from the participants with valid responses.

Measures

The initial section of the questionnaire consisted of a consent form (see Appendix A). The second section contained demographic items, such as participants' age, gender, total number of credit hours earned, and sexual orientation. To examine the possible benefit of diversity courses, participants also reported whether or not they had completed college level courses in human sexuality and/or race and gender issues, including the extent to which they enjoyed the course(s).



Of those volunteering answers to the questions, 273 participants reported not having taken either course; 59 participants reported having completed one or both courses (only 10 participants had completed a course in human sexuality; 54 had completed a course focused on race and gender). In addition, we examined the effect of interpersonal contact on homonegativity by asking participants their familiarity with a gay man and familiarity with a lesbian, and the extent to which these interactions were pleasant. Another question asked participants if they have had a gay or bisexual friend and the extent to which these interactions were pleasant, if applicable. The full text of the questions can be found in Appendix B.

The instrument used to measure homonegativity was the Attitudes Toward Lesbians and Gay Men Scale (Herek, 1988), in which participants indicated the extent of their agreement with 20 statements about homosexuals using a 9-point Likert rating with choices ranging from 1 (*strongly disagree*) to 9 (*strongly agree*). The attitudes toward lesbians subscale consisted of 10 items ($\alpha = .85$ in our sample), the attitudes toward gay men subscale consisted of 10 items ($\alpha = .88$), and the combined subscales constituted a measure of overall homonegativity and had excellent internal consistency ($\alpha = .93$). Higher scores reflect a greater degree of negative attitudes, an example of one item targeted toward lesbians is "Lesbians just can't fit into our society." An example of one item targeted toward gay men is "Male homosexuality is a perversion." The full scale can be found in Appendix C.

The instrument used to measure the desire to control the appearance of prejudice was the Motivation to Control Prejudiced Reactions Scale, originally authored by Dunton and Fazio (1997). A modified version was used and replaced the term "Blacks" with "homosexuals." The scale consisted of 17 items ($\alpha = .75$) using a 4-point Likert rating with choices ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). The scale included items assessing concerns about appearing prejudiced to others, private concerns with observing oneself having prejudiced thoughts or feelings, personal standards regarding the avoidance of prejudiced and offensive expressions, and efforts to show restraint to avoid disputes. Higher scores reflect a stronger motivation to control prejudiced reactions. The full scale can be found in Appendix D.

To measure disgust sensitivity, we employed the Three Domain Disgust Scale authored by Tybur et al. (2009). The full scale consisted of 21 items and had three disgust elicitor subscales, each containing 7 items: pathogen disgust ($\alpha = .77$), sexual disgust ($\alpha = .84$), and moral disgust ($\alpha = .84$). The response options were presented on a 6-point Likert scale with choices ranging from 0 (*not disgusting at all*) to 6 (*extremely disgusting*). Higher scores reflect a higher level of disgust response. An example of one of the pathogen disgust statements is "Standing close to a person who has body odor." The overall scale had good internal consistency ($\alpha = .83$). The full scale can be found in Appendix E.

The instrument used to measure social desirability response bias was the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960), which consisted of 33 items ($\alpha = .76$). Participants responded to the items by indicating whether a statement like "I am always careful about my manner of dress" is true or false. In addition, to detect participants who were not paying adequate attention, we added a validity item derived from the Disgust Scale-Revised (Haidt, McCauley & Rozin, 1994, modified by Olatunji et al., 2007). Participants who did not answer "True" to the statement, "I would rather eat an apple than a piece of paper," ($n = 10$) were eliminated from the analyses. The full scale can be found in Appendix E.

The last section of the questionnaire consisted of a debriefing form that informs participants that they have finished answering a series of questions concerning attitudes toward homosexuals' roles in society, statements concerning personal attitudes and traits used to measure the participant's need or motivation to control prejudiced reactions toward homosexuals, statements that may or may not have disgusted the participant, and statements concerning the participant's level of social desirability (see Appendix G).

Procedure

Participants completed the series of questionnaires presented on an electronic research database management system for course credit (Sona). Credit was awarded automatically when participants reached the debriefing section.

Results

Independent-samples *t* test assessing differences in overall homonegativity for males and females are presented in Table 1. An independent-samples *t* test was conducted to compare the mean overall homonegativity (attitudes toward gay men and lesbians) of males ($M = 3.58$, $SD = 1.55$) to that of females ($M = 3.21$, $SD = 1.42$). This analysis yielded a significant difference, $t(335) = 2.00$, $p = .046$, and as predicted, males had higher levels of overall homonegativity than females.

Pearson *r* values for the study variables are presented in Table 2. As predicted, overall homonegativity was significantly correlated with most predictor variables. Variables that showed a significant association with overall homonegativity for combined samples of males and females included familiarity with a gay man, quality of interaction with gay man, familiarity with a lesbian, quality of interaction with lesbian, whether participants had a gay or bisexual friend, quality of interaction with gay or bisexual friend, having taken a diversity course, level of sexual disgust sensitivity, and motivation to control prejudiced reactions.

Exposure variables. Correlations between homonegativity and exposure variables for males and females are presented in Table 3. The hypothesis that, compared to females, males tend to have less familiarity with gay men was supported. Moreover, the lack of familiarity with gay men appeared to have a significantly greater association with homonegative attitudes among male versus female participants (Fisher $z = -2.22$, $p = .03$). As predicted, males reported having lower quality interactions with gay men compared to females. However, no difference was found in familiarity with lesbians between males and females. There was also no difference in quality of friendship with lesbians between males



and females.

The hypothesis that males were significantly less likely than females to have a gay or bisexual friend was supported. A chi-square test of independence yielded a significant relationship, $\chi^2(1, N = 307) = 7.17, p = .007$; 67% of males ($n = 57$) versus 87% of females ($n = 219$) reported having had a gay friend. The hypothesis that males tend to have significantly lower quality interactions than females with a gay or bisexual friend was also supported, $t(333) = -3.98, p < .001$, see Table 1.

Results showed males and females did not differ significantly in their likelihood of having taken a human sexuality or race and gender course. A chi-square test of independence was performed to see if gender was associated with having taken a human sexuality course. This analysis failed to yield a significant relationship, $\chi^2(1, N = 334) = 3.28, p = .070$. Whether or not a participant took a human sexuality course was unrelated to gender, and overall rates of course-taking were very low (only 6% of males and 2% of females had taken a human sexuality course). A chi-square test of independence was also performed to see if gender was associated with having taken a race and gender course. This analysis also failed to yield a significant relationship, $\chi^2(1, N = 334) = .78, p = .377$; 13% of males and 17% of females had taken such a course. Whether or not a participant took a race and gender course was unrelated to gender. To get a closer view into whether gender was associated with taking a human sexuality or race and gender course, an additional chi-square test of independence was performed. This analysis also failed to yield a significant relationship, $\chi^2(1, N = 332) = .00, p = .981$; 18% of combined male and female participants had taken one or both type of course. There was a small and statistically significant correlation between homonegativity and taking *either* a human sexuality or a race and gender course in females ($r = .13, p = .037$), but not in males ($r = .07, ns.$).

As Table 3 indicates, overall homonegativity was significantly correlated with multiple exposure variables among both males and females. However, the homonegative-exposure relationship differently impacted male and female participants in only one case (familiarity with gay men).

Disgust variables. As indicated in Table 2, and contrary to predictions, pathogen disgust ($r = -.02, p = .657$) did not correlate significantly with overall homonegativity for males and females combined. Results also showed that moral disgust ($r = .09, p = .111$) did not correlate with overall homonegativity for males and females combined. However, overall homonegativity was significantly correlated with sexual disgust ($r = .19, p < .001$) and total disgust ($r = .14, p = .010$) for males and females combined. Correlations between homonegativity and disgust variables for males and females are presented in Table 4. Overall homonegativity was more strongly correlated with total, sexual, and moral disgust for females than for males, but the difference between the correlations was not significant for any of the disgust variables.

Reporting bias variables. An independent-samples *t* test was conducted to compare the mean social desirability scores of males and females (see Table 1). Though prior research had shown females to respond in a more socially desirable fashion than males, the analysis failed to yield significant gender differences, $t(335) = .32, p = .753$. Contrary to predictions, social desirability did not correlate with overall homonegativity for males and females combined ($r = .08, p = .169$; see Table 2).

An independent-samples *t* test was conducted to compare the mean motivation to control prejudiced reactions score of males and females; the analysis was nonsignificant, $t(335) = -1.39, p = .164$. However, as predicted, motivation to control prejudiced reactions was significantly correlated with overall homonegativity for males and females combined ($r = -.14, p = .009$). The difference between correlations for the reporting bias factors for males versus females was nonsignificant for both social desirability (Fisher $z = 1.44, p = .15$) and motivation to control prejudiced reactions (Fisher $z = -.64, p = .52$; see Table 5).

Discussion

Throughout this study, we examined factors hypothesized to be associated with gender differences in overall homonegativity, including exposure, disgust, and reporting bias variables. The hypothesis that males would have higher levels of overall homonegativity than women was supported. Our predictions that males are significantly less familiar with gay men than females are, and have lower quality interactions with gay men, were supported. Our predictions that males were significantly less likely than females to have a gay or bisexual friend and have lower quality interactions with a gay or bisexual friend than females do were also supported. Predicted gender differences in total pathogen and sexual disgust sensitivity were also supported, and sexual disgust sensitivity was significantly correlated with homonegativity among both male and female participants. However, although pathogen disgust sensitivity differed for males and females, there was no evidence that this variable was significantly related to homonegativity. Furthermore, no disgust variables appeared to have a significant differential impact on homonegativity among males and females.

As predicted, motivation to control prejudiced reactions was significantly and negatively correlated with homonegativity. That is, participants' motivation to control their negative reactions toward gay men and lesbians was indeed associated with lower levels of expressed homonegativity. However, social desirability did not correlate with overall homonegativity for males and females combined. And contrary to predictions, the difference between correlations for the reporting bias factors for males versus females was nonsignificant for both social desirability and motivation to control prejudiced reactions.

Results from several previous studies (Herek, 1988, 1998; Meaney & Rye, 2010; Ratcliff et al., 2006; Steffens, 2005) were replicated, showing that heterosexual males consistently expressed more negative attitudes toward homosexuals than did heterosexual females, with the effect being more pronounced for attitudes toward gay men.



Consistent with Herek's (2003) and Hans et al.'s (2012) findings, quality of interactions with gay and lesbian individuals had an impact on heterosexuals' attitudes toward homosexuals. Our results show that, relative to females, males tend to have less familiarity and lower quality interactions with gay men and are significantly less likely to have had a gay or bisexual friend.

In Teegarden's (2012) study, participants having taken a diversity course was correlated with lower homonegativity, and the association was greater for females than males. In our results, males and females did not differ significantly in their likelihood of having taken a diversity course. Moreover, although the correlation between course taking and homonegativity was greater for females ($r = .13$) than males ($r = .07$), the difference between the correlations was nonsignificant, and both correlations were positive, rather than negative, as predicted.

Results of previous studies (Druschel & Sherman, 1999; Teegarden, 2012) were partially replicated in that overall homonegativity was significantly correlated with sexual disgust and total disgust for males and females combined. The strongest disgust correlate of homonegativity was sexual disgust, as was also found by Teegarden (2012). However, contrary to findings of previous studies (Nussbaum, 1999; Teegarden, 2012), pathogen disgust did not correlate significantly with overall homonegativity for males and females combined.

Surprisingly, social desirability did not appear to be a significant reporting bias in the current study. Although motivation to control prejudiced reactions was correlated with homonegativity, it did not contribute to the explanation of gender differences.

A possible factor that may help explain the differences between our findings and those of Teegarden's (2012) is that different scales were used to measure overall homonegativity. We used a more contemporary and less overtly negative scale, the Attitudes Toward Lesbians and Gay Men Scale (Herek, 1988), whereas Teegarden (2012) used the Measure of Homophobia Scale (Price, 1982). Another limitation of our study is that most participants were classified as college freshmen and had probably not had the opportunity to take diversity courses that may affect their attitudes toward gay men and lesbians. Future research should strive to include more students who have taken diversity courses.

Though significant sex differences in overall homonegative attitudes of heterosexuals toward homosexuals are apparent both in the current study and past research, little is explained through explicit self-reported measures. A substantial limitation to explaining such sex differences is the lack of implicit measures of automatic biases against homosexuals by heterosexuals. Therefore, we strongly suggest future research utilize a new paradigm of implicit cognitive systems. We suggest that categorical processing of social information, such as prejudice against outgroup members (e.g. homosexuals), may operate automatically. The sequential semantic priming technique (Cameron, Brown-Iannuzzi, & Payne, 2012), for example, has been a reliable methodology in assessing the strength of implicit associations that are not typically reflected in self-reported attitudes. Therefore, as opposed to relying solely on explicit measures of attitudes to explain factors involved in prejudiced biases against homosexuals, future researchers should instead focus on utilizing implicit measures of attitudes.

Few studies have utilized implicit measures to better understand factors associated with overall homonegativity; therefore, much research is left to be completed. For example, Dasgupta (2006) tested whether the relation between automatic prejudice and discriminatory behavior is moderated by two conscious processes: conscious egalitarian beliefs and behavioral control. Automatic attitudes toward gay men, conscious beliefs about gender, behavioral control, and interactions with gay confederates were addressed. When both conscious processes were deactivated, automatic prejudice elicited discriminatory behavior. However, when either of the two processes was activated, behavioral bias was eliminated. Additionally, sex differences in beliefs about gender existed, whereas males tended to be more heterogeneous, and females were mostly egalitarian.

Research by Banse, Seise and Zerbes (2001) compared explicit and implicit measures to study attitudes toward homosexuals. Participants reported more positive attitudes toward homosexuals during explicit tests, while the converse was true during implicit association tests (IATs). Though explicit attitudes were able to be falsified by participants, implicit attitudes were not. The researchers suggested that discrepancies between the two tests (explicit versus implicit) could be due to individual differences in the motivation to control prejudiced behavior, thus providing evidence for the validity of the IAT (Banse et al., 2001).

Though both studies make a strong argument for implicit measures of attitudes toward homosexuals as a more valid method than explicit measures, neither were able to answer our questions about the factors associated with sex differences in attitudes toward homosexuals, thus further research is needed. Utilizing the implicit cognitive paradigm we may finally be able to accurately measure true opinions and reduce self-reporting biases.

In conclusion, this study supported previous research findings concerning gender differences in self-reported attitudes toward homosexuals. However, the study failed to convincingly show that differential exposure, disgust, or reporting biases explain the gender difference in overall homonegativity. As a result, we propose utilizing a new paradigm of implicit cognitive systems. Implicit social cognition provides researchers with a distinctly social psychological representation of what is considered an abstract cognitive construct of prejudice and stereotyping. This could better account for the inexplicable sex differences in functions of heterosexual attitudes toward homosexuals. Thus, people may not be aware of their existing automatic biases. Researching cognitive processes that contribute to automatic biases against homosexuals is a logical next step, as self-report measures may lack validity and do not always capture people's true attitudes toward members of social outgroups.



References

1. Allport, G. (1954). *The nature of prejudice*. Reading, MA: Addison-Wesley.
2. Banse, R., Seise, J. & Zerbis, N. (2001). Implicit attitudes towards homosexuality: Reliability,
3. validity, and controllability of the IAT. *Zeitschrift für Experimentelle Psychologie*, 48, 145-160. doi: 10.1026//0949-3946.48.2.145
4. Bernardi, R. A., & Guptill, S. T. (2008). Social desirability response bias, gender, and factors
5. influencing organizational commitment: An international study. *Journal of Business Ethics*, 81, 797-809. doi: 10.1007/s10551-007-9548-4
6. Bonds-Raacke, J. M., Cady, E. T., Schlegel, R., Harris, R. J., & Firebaugh, L. (2007).
7. Remembering gay/lesbian media characters: Can Ellen and Will improve attitudes toward homosexuals? *Journal of Homosexuality*, 53, 19-34. doi: 10.1300/J082v53n03_03
8. Brown, R., & Hewstone, M. (2005). An integrative theory of intergroup contact. In M. P. Zanna
9. (Ed.), *Advances in experimental social psychology* (Vol. 37, pp. 255–343). San Diego, CA: Elsevier Academic Press.
10. Calzo, J. P., & Ward, L. M. (2009). Contributions of parents, peers, and media to attitudes
11. toward homosexuality: Investigating sex and ethnic differences. *Journal of Homosexuality*, 56, 1101-1116. doi: 10.1080/00918360903279338
12. Cameron, C. D., Brown-Iannuzzi, J. L., & Payne, B. K (2012). Sequential priming measures of
13. implicit social cognition: A meta-analysis of associations with behavior and explicit
14. attitudes. *Personality and Social Psychology Review*, 16, 330-350 doi: 10.1177/1088868312440047
15. Cerny, J. A., & Polysen, J. (1984). Changing homonegative attitudes. *Journal of Social and*
16. *Clinical Psychology*, 2, 366-371. doi: 10.1521/jscp.1984.2.4.366
17. Chonody, J. M., Siebert, D. C., & Rutledge, S. E. (2009). College students' attitudes toward gays
18. and lesbians. *Journal of Education for Social Work*, 45, 499-512. doi: 10.5175/JSWE.2009.200800002
19. Chung, J., & Monroe, G. S. (2003). Exploring social desirability bias. *Journal of Business*
20. *Ethics*, 44, 291-302. doi: 10.1023/A:1023648703356
21. Crowne, D. P., & Marlowe, D. (1960). A new scale of social desirability independent of
22. psychopathology. *Journal of Consulting Psychology*, 24, 349-354. doi: 10.1037/h0047358
23. Dalton, D., & Ortegren, M. (2011). Gender differences in ethics research: The importance of
24. controlling for social desirability response bias. *Journal of Business Ethics*, 103, 73-93. doi: 10.1007/s10551-011-0843-8
25. Dasgupta, N. (2006). From automatic antigay prejudice to behavior: The moderating role of
26. conscious beliefs about gender and behavioral control. *Journal of Personality and Social Psychology*, 91, 268-280. doi: 10.1037/0022-3514.91.2.268
27. Diamond, M. (2002). Sex and gender are different: Sexual identity and gender identity are
28. different. *Clinical Child Psychology and Psychiatry*, 7, 320-334. doi: 10.1177/1359104502007003002
29. Druschel, B. A., & Sherman, M. F. (1999). Disgust sensitivity as a function of the Big Five and
30. gender. *Personality and Individual Differences*, 26, 739-748. doi: 10.1016/S0191-8869(98)00196-2
31. Dunton, B. C., & Fazio, R. H. (1997). An individual difference measure of motivation to control
32. prejudiced reactions. *Personality and Social Psychology Bulletin*, 23, 316-326.
33. doi: 10.1177/0146167297233009
34. Ekman, P. (1970). Universal facial expressions of emotion. *California Mental Health Research*
35. *Digest*, 8, 151-158.
36. Faulkner, J., Schaller, M., Park, J., & Duncan, L. (2004). Evolved disease-avoidance
37. mechanisms and contemporary xenophobic attitudes. *Group Processes and Intergroup Relations*, 7, 333-353.



doi: 10.1177/1368430204046142

38. Fenton, K. A., & Imrie, J. (2005). Increasing rates of sexually transmitted diseases in
39. homosexual men in Western Europe and the United States: Why? *Infectious Disease Clinics of North America*, 19, 311-331. doi: 10.1016/j.idc.2005.04.004
40. Franklin, K. (2000). Antigay behaviors among young adults: Prevalence, patterns, and
41. motivators in a noncriminal population. *Journal of Interpersonal Violence*, 15, 339-362.
42. doi: 10.1177/088626000015004001
43. Haidt, J., McCauley, C., & Rozin, P. (1994). Individual differences in sensitivity to disgust: A
44. scale sampling seven domains of disgust elicitors. *Personality and Individual Differences*, 16, 701-713. doi: 10.1016/0191-8869(94)90212-7
45. Hans, J. D., Kersey, M., & Kimberly, C. (2012). Self-perceived origins of attitudes toward
46. homosexuality, *Journal of Homosexuality*, 59, 4-17. doi: 10.1080/00918369.2012.638547
47. Herek, G. M. (1984). Beyond "homophobia": A social psychological perspective on attitudes
48. toward lesbians and gay men. *Journal of Homosexuality*, 10, 1-21. doi: 10.1300/J082v10n01_01
49. Herek, G. M. (1986). The instrumentality of attitudes: Toward a neofunctional theory. *Journal of*
50. *Social Issues*, 42, 99-114. doi: 10.1111/j.1540-4560.1986.tb00227.x
51. Herek, G. M. (1987). Can functions be measured? A new perspective on the functional approach
52. to attitudes. *Social Psychology Quarterly*, 50, 285-303. doi: 10.2307/2786814
53. Herek, G. M. (1988). Heterosexual's attitude toward lesbians and gay men: Correlates and
54. gender differences. *Journal of Sex Research*, 25, 451-477. doi: 10.1080/00224498809551476
55. Herek, G. M. (2000). The psychology of sexual prejudice. *Current Directions in Psychological*
56. *Science*, 9, 19-22. doi: 10.1111/1467-8721.00051
57. Herek, G. M. (2003). The psychology of sexual prejudice. In L. D. Garnets & C. C. Kimmel
58. (Eds.), *Psychological perspectives on lesbian, gay and bisexual experiences* (pp. 157-164). New York: Columbia University Press.
59. Holland, L., Matthews, T. L., & Schott, M. R. (2013). "That's so gay!" Exploring college
60. students' attitudes toward the LGBT population. *Journal of Homosexuality*, 60, 575-595.
61. doi: 10.1080/00918369.2013.760321
62. Hudson, W. W., & Ricketts, W. A. (1980). A strategy for the measurement of homophobia.
63. *Journal of Homosexuality*, 5, 317-372. doi: 10.1300/J082v05n04_02
64. Lim, V. K. G. (2002). Gender differences and attitudes towards homosexuality. *Journal of*
65. *Homosexuality*, 43, 85-97. doi: 10.1300/J082v43n01_05
66. Loo, R., & Loewen, P. (2004). Confirmatory factor analyses of scores from full and short
67. versions of Marlowe-Crowne Social Desirability Scale. *Journal of Applied Social Psychology*, 34, 2343-2352. doi: 10.1111/j.1559-1816.2004.tb01980.x
68. Mataix-Cols, D., An, S. K., Lawrence, N. S., Caseras, X., Speckens, A., Giampietro, V.,
69. Brammer, M. J., & Phillips, M. L. (2008). Individual differences in disgust sensitivity modulate neural responses to aversive/disgusting stimuli. *European Journal of Neuroscience*, 27, 3050-3058. doi: 10.1111/j.1460-9568.2008.06311.x
70. McConahay, J. B. (1986). Modern racism, ambivalence, and the Modern Racism Scale. In J. F.
71. Dovidio & S. L. Gaertner (Eds.), *Prejudice, discrimination, and racism* (pp. 91-125). Orlando, FL: Academic Press.
72. Meaney, G. J., & Rye, B. J. (2010). Gendered egos: Attitude functions and gender as predictors
73. of homonegativity. *Journal of Homosexuality*, 57, 1274-1302. doi: 10.1080/00918369.2010.517074
74. Navarrete, C. D., & Fessler, D. M. (2006). Disease avoidance and ethnocentrism: The effects



75. of disease vulnerability and disgust sensitivity on intergroup attitudes. *Evolution and Human Behavior*, 27, 270-282. doi: 10.1016/j.evolhumbehav.2005.12.001
76. Nussbaum, M. C. (1999). "Secret sewers of vice": Disgust, bodies, and the law. In S. A. Bandes
77. (Ed.), *The passions of law* (pp. 19-62). New York: New York University Press.
78. Olatunji, B. O., Williams, N. L., Tolin, D. F., Abramowitz, J. S., Sawchuck, C. N., Lohr, J. M.,
79. Elwood, L. S. (2007). The disgust scale: Item analysis, factor structure, and suggestions for refinement. *Psychological Assessment*, 19, 281-297. doi: 10.1037/1040-3590.19.3.281
80. Park, J. H., Faulkner, J., & Schaller, M. (2003). Evolved disease-avoidance processes and
81. contemporary anti-social behavior: Prejudicial attitudes and avoidance of people with physical disabilities, *Journal of Nonverbal Behavior*, 27, 65-87. doi: 10.1023/A:1023910408854
82. Price, J. (1982). High school students' attitudes toward homosexuality. *Journal of School*
83. *Health*, 52, 469-474. doi: 10.1111/j.1746-1561.1982.tb04016.x
84. Prince, V. (2005). Sex vs. gender. *International Journal of Transgenderism*, 8, 29-32. doi:
85. 10.1300/J485v08n04_05
86. Ratcliff, J. J., Lassiter, G. D., Markman, K. D., & Snyder, C. J. (2006). Gender differences in
87. attitudes toward gay men and lesbians: The role of motivation to respond without prejudice. *Personality and Social Psychology Bulletin*, 32, 1325-1338. doi: 10.1177/0146167206290213
88. Saunders, D. G. (1991). Procedures for adjusting self-reports of violence for social desirability
89. bias. *Journal of Interpersonal Violence*, 6, 336-344. doi: 10.1177/088626091006003006
90. Schaller, M. (2006). Parasites, behavioral defenses, and the social psychological mechanisms
91. through which cultures are evoked. *Psychological Inquiry*, 17, 96-101. doi: 10.1207/s15327965pli1702_2
92. Schaller, M., & Duncan, L. A. (2007). The behavioral immune system: Its evolution and social
93. psychological implications. In Forgas, Haselton, & von Hippel (Eds.), *Evolution and*
94. *the social mind: Evolutionary psychology and social cognitions* (pp. 293-307). New
95. York: Psychology Press.
96. Serdahely, W. J., & Ziemba, G. J. (1984). Changing homophobic attitudes through college
97. sexuality education. *Journal of Homosexuality*, 10, 109-116. doi: 10.1300/J082v10n01_08
98. Steffens, M. C. (2005). Implicit and explicit attitudes towards lesbians and gay men. *Journal of Homosexuality*, 49, 39-66. doi: 10.1300/J082v49n02_03
99. Teegarden, E. (2012). *The impact of diversity courses, interpersonal contact and disgust*
100. *sensitivity on homophobia in college students*. Unpublished manuscript, Northern Kentucky University, Highland Heights, KY.
101. Terrizzi, J. A., Jr., Shook, N. J., & Ventis, L. (2010). Disgust: A predictor of social conservatism and prejudicial attitudes toward homosexuals. *Journal of Personality and Individual Differences*, 49, 587-592. doi: 10.1016/j.paid.2010.05.024
102. Tybur, J. M., Lieberman, D., & Griskevicius, V. (2009). Microbes, mating, and morality:
103. Individual differences in three functional domains of disgust. *Journal of Personality and Social Psychology*, 97, 103-122. doi: 10.1037/a0015474
104. Waterman, A. D., Reid, J. D., Garfield, L. D., & Hoy, S. J. (2001). From curiosity to care:
105. Heterosexual student interest in sexual diversity courses. *Teaching of Psychology*, 28, 21-26. doi: 10.1207/S15328023TOP2801_05
106. Zerbe, W. J., & Paulhus, D. L. (1987). Socially desirable responding in organizational behavior:
107. A reconception. *Academy of Management Journal*, 12, 250-264. doi: 10.2307/258533



Table 1
Independent-sample *t* Tests Comparing Males and Females on Criterion and Predictor Variables

Criterion and Predictor Variables	Males Mean Score (Standard Deviation)	Females Mean Score (Standard Deviation)	<i>t</i>	<i>p</i> (two-tailed)
Overall homonegativity ^a	3.58 (1.55)	3.21 (1.42)	2.00	.046
Attitudes toward gay men ^a	3.91 (1.71)	3.33 (1.56)	2.88	.004
Attitudes toward lesbians ^a	3.25 (1.48)	3.09 (1.40)	.86	.391
Familiarity with a gay man ^b	2.77 (1.03)	3.05 (1.03)	-2.17	.030
Familiarity with a lesbian ^b	2.57 (1.19)	2.69 (1.04)	-.85	.397
Quality of interaction with gay man ^c	2.83 (1.12)	3.44 (.97)	-4.74	<.001
Quality of interaction with lesbian ^c	2.51 (1.61)	2.78 (1.41)	-1.44	.150
Have a gay or bisexual friend ^d	1.49 (.78)	1.81 (.52)	-4.20	<.001
Quality of friendship with gay/bisexual ^c	2.60 (1.59)	3.26 (1.20)	-3.98	<.001
Total disgust ^e	3.50 (.78)	4.22 (.74)	-7.53	<.001
Pathogen disgust ^e	3.83 (.99)	4.18 (1.01)	-2.79	.006
Sexual disgust ^e	2.63 (1.32)	4.15 (1.20)	-9.81	<.001
Moral disgust ^e	4.05 (1.13)	4.32 (1.07)	-1.97	.050
Motivation to control prejudiced reactions ^f	2.59 (.26)	2.63 (.23)	-1.39	.164
Social desirability ^g	15.77 (5.36)	15.57 (4.87)	.32	.753

^a Responses ranged from 1 (*strongly disagree*) to 9 (*strongly agree*); higher means indicate more negative attitudes. Means were created after reverse-scoring specific items.

^b Responses ranged from 1 (*very unfamiliar*) to 4 (*very familiar*); higher means indicate more familiarity.



- ° Responses ranged from 1 (*very unpleasant*) to 4 (*very pleasant*); higher means indicate more pleasant interactions.
- ª Responses ranged from 0 (*no*) to 1 (*yes*).
- « Responses ranged from 0 (*not disgusting at all*) to 6 (*extremely disgusting*); higher means indicate higher level of disgust response.
- « Responses ranged from 1 (*strongly disagree*) to 4 (*strongly agree*); higher means indicate stronger desire to control the appearance of prejudiced reactions. Means were created after reverse-scoring specific items.
- ª Responses are either "True" or "False." Numbers represent total scores, not means.

Table 2
Pearson Correlations between Overall Homonegativity and Predictor Variables

Predictors	Homonegativity	<i>n</i>	<i>p</i>
Familiarity with a gay man ^a	-.29	332	<.001
Familiarity with a lesbian ^a	-.29	333	<.001
Quality of interaction with gay man ^b	-.49	317	<.001
Quality of interaction with lesbian ^b	-.42	274	<.001
Have a gay or bisexual friend ^c	-.23	337	<.001
Quality of friendship with gay/bisexual ^b	-.34	296	<.001
Had a diversity course ^d	.12	332	.034
Total disgust ^e	.14	337	.010
Pathogen disgust ^e	-.02	337	.657
Sexual disgust ^e	.19	337	<.001
Moral disgust ^e	.09	337	.111
Motivation to control prejudiced reactions ^f	-.14	337	.009
Social desirability ^g	.08	337	.169

Note. In the statistical analyses, the diversity course variable includes human sexuality or race and gender course; having completed no course was coded 0 and having completed one or both courses was coded 1.

- ^a Higher scores indicate greater familiarity.
- ^b Higher scores indicate more pleasant interactions.
- ^c Coded as 0 = no, 1 = yes.
- ^d Coded as 0 = neither course completed, 1 = one or both courses completed.
- ^e Higher scores indicate higher sensitivity to disgust elicitors.
- ^f Higher scores indicate higher motivation to control prejudiced reactions.
- ^g Higher scores indicate higher need to reflect socially desirable responses.

Table 3
Correlations between Homonegativity and Exposure Variables for Males and Females

Predictors	Male <i>r</i>	Female <i>r</i>	<i>z</i>	<i>p</i>
------------	---------------	-----------------	----------	----------



Familiarity with gay man ^a	-.48***	-.23***	-2.22	.03
	(81)		(251)	
Familiarity with lesbian ^a	-.42***	-.25***	-1.49	.14
	(82)		(251)	
Quality of interaction with gay man ^b	-.57***	-.46***	-1.12	.26
	(75)		(242)	
Quality of interaction with lesbian ^b	-.34**		-.45***	.88
	(61)		(213)	.38
Have a gay or bisexual friend ^c	-.15		-.25***	.82
	(85)		(252)	.41
Quality of friendship with gay/bisexual ^b	-.42***	-.30***	-.96	.34
	(64)		(232)	
Had a diversity course ^d	.07		.13*	-.47
	(84)		(248)	.64

Note. In the statistical analyses, the diversity course variable includes human sexuality or race and gender course and was coded as 0 = neither course completed, 1 = one or both courses completed.

^a Higher scores indicate greater familiarity.

^b Higher scores indicate more pleasant interactions.

^c Responses were coded as 1 = no, 2 = yes.

^d Responses were coded as 0 = no, 1 = yes.

* $p < .05$

** $p < .01$

*** $p \leq .001$

Table 4
Correlations between Homonegativity and Disgust Variables for Males and Females

Predictors	Male <i>r</i>	Female <i>r</i>	<i>z</i>	<i>p</i>
Total disgust ^a	.09 (85)	.24*** (252)	-1.21	.23
Pathogen disgust ^a	-.12 (85)	.03 (252)	-1.18	.24
Sexual disgust ^a	.24* (85)	.29*** (252)	-.42	.67
Moral disgust ^a	.01 (85)	.13* (252)	-.95	.34

^a Higher scores indicate higher levels of disgust.

* $p < .05$

** $p < .01$

*** $p \leq .001$



Table 5
Correlations between Homonegativity and Reporting Bias Variables for Males and Females

Predictors	Male <i>r</i>	Female <i>r</i>	<i>z</i>	<i>p</i>
Social desirability	.20 (85)	.02 (252)	1.44	.15
Motivation to control prejudiced reactions	-.19 (85)	-.11 (252)	-.64	.52

Appendix A

Research Participation Informed Consent

Principal Investigator: Candice T. Stanfield (stanfieldc2@nku.edu)

NKU Faculty Advisor: Perilou Goddard, Ph.D. (goddard@nku.edu), 859-572-5463

Department: Psychological Science

Title of Project: Gender and Self-Reported Attitudes

This study is designed to investigate gender differences in self-reported attitudes toward homosexuals. A full description of the research and results will be provided at the completion of the study. If you agree to participate in this study, you will complete several questionnaires that are relevant to the research topic. The expected length of time to participate is 30 minutes or less.

We do not anticipate that there are any serious risks associated with your participation. You may experience some minor distress associated with the content of some questions, but we expect that such distress, if any, will be temporary and mild. Please make sure you are in a private setting when you complete the questionnaires so other people are not looking at your responses. You will earn 2 Sona research credits for participating.

Please be aware that this study is ANONYMOUS. Not even the researchers involved in this study will be able to match your responses with your name. Demographic questions (e.g. age, gender, sexual orientation) cannot be used to identify you as an individual. The faculty advisor (Dr. Perilou Goddard) will keep an electronic copy of the data file stored in a secure location. Your participation in this research is entirely voluntary. You may change your mind and withdraw at any time without penalty.

If you have any questions, comments, or concerns regarding this project, feel free to contact the principal investigator, Candice T. Stanfield (contact information above), or the faculty advisor, Dr. Perilou Goddard (contact information above). If you have any questions about your rights as a research participant, please contact the chair of the Institutional Review Board (Philip J. Moberg, Ph.D., 859-572-1913, mobergp1@nku.edu).

Thank you for your participation.

Please choose one of the following options:

- a. I consent to participate.
- b. I do not consent to participate.

Appendix B

Demographic Questionnaire

Instructions: Please respond to the questions as accurately as you can. Your data will be of greatest usefulness if you answer all of the questions.

1. Indicate your gender:
 - a) Female
 - b) Male
 - c) I decline to answer the question
2. Indicate your age: _____
 - a) I decline to answer the question
3. Indicate your sexual orientation (check one line only):



- a) Heterosexual _____
- b) Homosexual _____
- c) Bisexual _____
- d) I decline to answer the question _____

4. How many credit hours have you earned (not including this semester)? _____

- a) I decline to answer the question

5. Have you completed a college-level course in human sexuality?

- a) Yes, completed
- b) Currently taking course
- c) No, not completed
- d) I decline to answer the question

6. Please rate how enjoyable the human sexuality course was:

- a) Not very enjoyable
- b) Somewhat enjoyable
- c) Enjoyable
- d) Very enjoyable
- e) Doesn't apply (never had a course in human sexuality)
- f) I decline to answer the question

7. Have you completed a college-level course in race and gender issues?

- a) Yes, completed
- b) Currently taking course
- c) No, not completed
- d) I decline to answer the question

8. Please rate how enjoyable the race and gender course was:

- a) Not very enjoyable
- b) Somewhat enjoyable
- c) Enjoyable
- d) Very enjoyable
- e) Doesn't apply (never had a course in race and gender)
- f) I decline to answer the question

9. In general, how familiar are you with at least one gay man (Check one)?

- a) Very unfamiliar
- b) Somewhat unfamiliar
- c) Somewhat familiar
- d) Very familiar
- e) I decline to answer the question

10. In general, how would you rate the quality of your general interactions with gay men (Check one)?

- a) Very unpleasant
- b) Somewhat unpleasant
- c) Somewhat pleasant
- d) Very pleasant
- e) Never had an interaction with a gay man that I know of



- f) I decline to answer the question
11. In general, how familiar are you with at least one lesbian (Check one)?
- a) Very unfamiliar
 - b) Somewhat unfamiliar
 - c) Somewhat familiar
 - d) Very familiar
 - e) I decline to answer the question
12. In general, how would you rate the quality of your general interactions with lesbians (Check one)?
- a) Very unpleasant
 - b) Somewhat unpleasant
 - c) Somewhat pleasant
 - d) Very pleasant
 - e) Never had an interaction with a lesbian that I know of
 - f) I decline to answer the question
13. Have you ever had a friend who was gay or bisexual?
- a) Yes
 - b) No
 - c) Not that I know of
 - d) I decline to answer the question
14. In general, how would you rate the quality of your general interactions with a friend who was gay or bisexual (Check one)?
- a) Very unpleasant
 - b) Somewhat unpleasant
 - c) Somewhat pleasant
 - d) Very pleasant
 - e) Never had an interaction with a gay or bisexual person that I know of
 - f) I decline to answer the question
15. How accepting are you of same-sex marriage?
- a) Very accepting
 - b) Somewhat accepting
 - c) Somewhat unaccepting
 - d) Very unaccepting
 - e) I decline to answer the question

Appendix C

Attitudes Toward Lesbians and Gay Men Scale

Herek, G. M. (1988). Heterosexual's attitude toward lesbians and gay men: Correlates and sex differences. *Journal of Sex Research*, 25, 451-477.

Instructions: Please indicate which option most closely represents your true opinion. Please do not leave any statements unanswered.

- 1. Lesbians just can't fit in our society.
1-Strongly Disagree 2 3 4 5 6 7 8 9-Strongly Agree
- 2. **(REV)** A woman's homosexuality should *not* be a cause for job discrimination in any situation.
1-Strongly Disagree 2 3 4 5 6 7 8 9-Strongly Agree



3. Female homosexuality is detrimental to society because it breaks down the natural divisions between the sexes.
1-Strongly Disagree 2 3 4 5 6 7 8 9-Strongly Agree
4. **(REV)** State laws regulating private, consenting lesbian behavior should be loosened.
1-Strongly Disagree 2 3 4 5 6 7 8 9-Strongly Agree
5. Female homosexuality is a sin.
1-Strongly Disagree 2 3 4 5 6 7 8 9-Strongly Agree
6. The growing number of lesbians indicates a decline in American morals.
1-Strongly Disagree 2 3 4 5 6 7 8 9-Strongly Agree
7. **(REV)** Female homosexuality in itself is no problem, but what society makes of it can be a problem.
1-Strongly Disagree 2 3 4 5 6 7 8 9-Strongly Agree
8. Female homosexuality is a threat to many of our basic social institutions.
1-Strongly Disagree 2 3 4 5 6 7 8 9-Strongly Agree
9. Female homosexuality is an inferior form of sexuality.
1-Strongly Disagree 2 3 4 5 6 7 8 9-Strongly Agree
10. Lesbians are sick.
1-Strongly Disagree 2 3 4 5 6 7 8 9-Strongly Agree
11. **(REV)** Male homosexual couples should be allowed to adopt children the same as heterosexual couples.
1-Strongly Disagree 2 3 4 5 6 7 8 9-Strongly Agree
12. I think male homosexuals are disgusting.
1-Strongly Disagree 2 3 4 5 6 7 8 9-Strongly Agree
13. Male homosexuals should *not* be allowed to teach school.
1-Strongly Disagree 2 3 4 5 6 7 8 9-Strongly Agree
14. Male homosexuality is a perversion.
1-Strongly Disagree 2 3 4 5 6 7 8 9-Strongly Agree
15. **(REV)** Just in other species, male homosexuality is a natural expression of sexuality in human men.
1-Strongly Disagree 2 3 4 5 6 7 8 9-Strongly Agree
16. If a man has homosexual feelings, he should do everything he can to overcome them.
1-Strongly Disagree 2 3 4 5 6 7 8 9-Strongly Agree
17. **(REV)** I would *not* be too upset if I learned that my son were a homosexual.
1-Strongly Disagree 2 3 4 5 6 7 8 9-Strongly Agree
18. Homosexual behavior between two men is just plain wrong.
1-Strongly Disagree 2 3 4 5 6 7 8 9-Strongly Agree
19. The idea of male homosexual marriages seems ridiculous to me.
1-Strongly Disagree 2 3 4 5 6 7 8 9-Strongly Agree
20. **(REV)** Male homosexuality is merely a different kind of lifestyle that should *not* be condemned.
1-Strongly Disagree 2 3 4 5 6 7 8 9-Strongly Agree

Items 1-10 are targeted toward lesbians.

Items 11-20 are targeted toward gay men.



Note: (REV) = Reverse scored. Some scale items were reverse-scored.

Appendix D

Motivation to Control Prejudiced Reactions Scale - Revised

Dunton, B. C., & Fazio, R. H. (1997). An individual difference measure of motivation to control prejudiced reactions. *Personality and Social Psychology Bulletin*, 23, 316-326.

Instructions: Listed below are a number of statements concerning personal attitudes and traits. Please read each item and indicate which option most closely represents your true opinion. Please do not leave any statements unanswered.

1. In today's society it is important that one not be perceived as prejudiced in any manner.
1-Strongly Disagree 2-Disagree 3-Agree 4-Strongly Agree
2. (REV) I always express my thoughts and feelings, regardless of how controversial they might be.
1-Strongly Disagree 2-Disagree 3-Agree 4-Strongly Agree
3. I get angry with myself when I have a thought or feeling that might be considered prejudiced.
1-Strongly Disagree 2-Disagree 3-Agree 4-Strongly Agree
4. If I were participating in a class discussion and a homosexual student expressed an opinion with which I disagreed, I would be hesitant to express my own viewpoint.
1-Strongly Disagree 2-Disagree 3-Agree 4-Strongly Agree
5. (REV) Going through life worrying about whether you might offend someone is just more trouble than it's worth.
1-Strongly Disagree 2-Disagree 3-Agree 4-Strongly Agree
6. It's important to me that other people not think I'm prejudiced.
1-Strongly Disagree 2-Disagree 3-Agree 4-Strongly Agree
7. I feel it's important to behave according to society's standards.
1-Strongly Disagree 2-Disagree 3-Agree 4-Strongly Agree
8. (REV) I'm careful not to offend my friends, but I don't worry about offending people I don't know or don't like.
1-Strongly Disagree 2-Disagree 3-Agree 4-Strongly Agree
9. (REV) I think that it is important to speak one's mind rather than to worry about offending someone.
1-Strongly Disagree 2-Disagree 3-Agree 4-Strongly Agree
10. It is never acceptable to express one's prejudices.
1-Strongly Disagree 2-Disagree 3-Agree 4-Strongly Agree
11. I feel guilty when I have a negative thought or feelings about a homosexual person.
1-Strongly Disagree 2-Disagree 3-Agree 4-Strongly Agree
12. When speaking to a homosexual person, it's important to me that he/she not think I'm prejudiced.
1-Strongly Disagree 2-Disagree 3-Agree 4-Strongly Agree
13. It bothers me a great deal when I think I've offended someone, so I'm always careful to consider other people's feelings.
1-Strongly Disagree 2-Disagree 3-Agree 4-Strongly Agree
14. If I have a prejudiced thought or feeling, I keep it to myself.
1-Strongly Disagree 2-Disagree 3-Agree 4-Strongly Agree
15. I would never tell jokes that might offend others.
1-Strongly Disagree 2-Disagree 3-Agree 4-Strongly Agree
16. (REV) I'm not afraid to tell others what I think, even when I know they disagree with me.
1-Strongly Disagree 2-Disagree 3-Agree 4-Strongly Agree
17. (REV) If someone who made me uncomfortable sat next to me on a bus, I would not hesitate to move to another seat.



1-Strongly Disagree 2-Disagree 3-Agree 4-Strongly Agree

Note: (REV) = Reverse scored. Some scale items were reverse-scored so that higher numbers would reflect a stronger motivation to control prejudice. For example, if numbers 3 and 4 were chosen by a participant, they would be changed (reverse scored) to numbers 1 and 2, respectively.

Concerned about appearing prejudiced to others: Items 1, 6, 12, 14

Private concern with observing oneself having prejudiced thoughts or feelings: Items 3, 11

Personal standard regarding the avoidance of prejudiced and offensive expressions: Items 10, 13, 15

Restraint to avoid dispute: Items 2, 4, 9, 16

Higher scores reflect a stronger motivation to control prejudice.

Appendix E

Measure of Disgust Sensitivity with the Three Domain Disgust Scale

Tybur, J. M, Lieberman, D., & Griskevicius, V. (2009). Microbes, Mating, and Morality: Individual Differences in Three Functional Domains of Disgust. *Journal of Personality and Social Psychology*, 97(1), 103-122.

Instructions: *The following items describe a variety of concepts. Please rate how disgusting you find the concepts described in the items, where 0 means that you do not find the concept disgusting at all, and 6 means that you find the concept extremely disgusting. Please do not leave any statements unanswered.*

	0-not at all disgusting						6-extremely disgusting						
1. Shoplifting a candy bar from a convenience store	0	1	2	3	4	5	6						
2. Hearing two strangers having sex	0	1	2	3	4	5	6						
3. Stepping on dog poop	0	1	2	3	4	5	6						
4. Stealing from a neighbor	0	1	2	3	4	5	6						
5. Performing oral sex	0	1	2	3	4	5	6						
6. Sitting next to someone who has red sores on their arm	0	1	2	3	4	5	6						
7. A student cheating to get good grades	0	1	2	3	4	5	6						
8. Watching a pornographic video	0	1	2	3	4	5	6						
9. Shaking hands with a stranger who has sweaty palms	0	1	2	3	4	5	6						
10. Deceiving a friend	0	1	2	3	4	5	6						
11. Finding out that someone you don't like has sexual fantasies about you	0	1	2	3	4	5	6						
12. Seeing some mold on old leftovers in your refrigerator	0	1	2	3	4	5	6						
13. Forging someone's signature on a legal document	0	1	2	3	4	5	6						
14. Bringing someone you just met back to your room to have sex	0	1	2	3	4	5	6						
15. Standing close to a person who has body odor	0	1	2	3	4	5	6						
16. Cutting to the front of a line to purchase the last few tickets to a show	0	1	2	3	4	5	6						
17. A stranger of the opposite sex intentionally rubbing your thigh in an elevator	0	1	2	3	4	5	6						
18. Seeing a cockroach run across the floor	0	1	2	3	4	5	6						
19. Intentionally lying during a business transaction	0	1	2	3	4	5	6						
20. Having anal sex with someone of the opposite sex	0	1	2	3	4	5	6						
21. Accidentally touching a person's bloody cut	0	1	2	3	4	5	6						



Pathogen items

3, 6, 9, 12, 15, 18, 21

Sexual items

2, 5, 8, 11, 14, 17, 20

Moral items

1, 4, 7, 10, 13, 16, 19

Higher scores indicate a higher level of disgust elicited.

Appendix F

Marlowe-Crowne Social Desirability Scale (long version)

Crowne, D. P. & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology, 24*(4), 349-354.

Instructions: Listed below are a number of statements concerning personal attitudes and traits. Read each item and indicate whether the statement is true (T) or false (F) as it pertains to you. Please do not leave any statements unanswered.

- | | | |
|---|---|----------------------------------------------------------------------------------------------------------------------|
| T | F | 1. Before I vote, I thoroughly investigate the qualifications of all of the candidates. |
| T | F | 2. I never hesitate to go out of my way to help someone in trouble. |
| T | F | 3. It is sometimes hard for me to go on with my work if I am not encouraged. |
| T | F | 4. I have never intensely disliked someone. |
| T | F | 5. On occasion, I have had doubts about my ability to succeed in life. |
| T | F | 6. I sometimes feel resentful when I don't get my way. |
| T | F | 7. I am always careful about my manner of dress. |
| T | F | 8. My table manners at home are as good as when I eat out in a restaurant. |
| T | F | 9. If I could get into a movie without paying and be sure I was not seen, I would probably do it. |
| T | F | 10. On a few occasions, I have given up doing something because I thought too little of my ability. |
| T | F | 11. I like to gossip at times. |
| T | F | 12. There have been times when I felt like rebelling against people in authority even though I knew they were right. |
| T | F | 13. No matter who I'm talking to, I'm always a good listener. |
| T | F | 14. I can remember "playing sick" to get out of something. |
| T | F | 15. There have been occasions when I took advantage of someone. |
| T | F | 16. I'm always willing to admit it when I make a mistake. |
| T | F | 17. I always try to practice what I preach. |
| T | F | 18. I don't find it particularly difficult to get along with loudmouthed, obnoxious people. |
| T | F | 19. I sometimes try to get even rather than forgive and forget. |
| T | F | 20. When I don't know something, I don't mind admitting it. |
| T | F | 21. I am always courteous, even to people who are disagreeable. |
| T | F | 22. At times I have really insisted on having things done my way. |
| T | F | 23. There have been occasions when I felt like smashing things. |



- T F 24. I would never think of letting someone else be punished for my wrongdoings.
- T F 25. I never resent being asked to return a favor.
- T F 26. I have never been irked when people express ideas very different from my own.
- T F 27. I never make a long trip without checking the safety of my car.
- T F 28. There have been times when I was quite jealous of the good fortune of others.
- T F 29. I have almost never felt the urge to tell someone off.
- T F 30. I am sometimes irritated by people who ask favors of me.
- T F 31. I have never felt that I was punished without cause.
- T F 32. I sometimes think when people have a misfortune, they only got what they deserved.
- T F 33. I have never deliberately said something that hurt someone's feeling.
- T F 34. **(Validity Check)** I would rather eat an apple than a piece of paper.

SCORE KEY 28F

(HIGH SD CHOICE) 29T

1T 30F

2T 31T

3F 32F

4T 33T

5F

6F

7T

8T

9F

10F

11F

12F

13T

14F

15F

16T

17T

18T

19F

20T

21T

22F

23F

24T

25T

26T

27T



LOW (0-8)

AVERAGE (9-19)

HIGH (20-33)

Appendix G

Debriefing

The “Gender and Self-Reported Attitudes” Research Study

Thank you for participating in the “Gender and Self-Reported Attitudes” research study, designed by NKU psychological science major Candice T. Stanfield. You answered a series of questions concerning attitudes toward homosexuals’ roles in society, statements concerning personal attitudes and traits used to measure your need or motivation to control prejudiced reactions toward homosexuals, statements that may or may not have disgusted you, and statements concerning your level of social desirability. We are investigating gender differences in self-reported attitudes toward homosexuals.

All questionnaire responses are completely anonymous; therefore, we have no way of connecting any responses with any identifying information about you.

If participating in this study raised any concerns for you about prejudiced reactions, or other issues, please consider contacting the NKU Office of Health, Counseling, and Prevention Services (<http://hcp.nku.edu/>), 859-572-5650. They provide help to NKU students and are also able to refer students to community agencies, if the student so desires.

If you have any questions or concerns about your participation, or if you would like to find out the results of the study when they become available, please contact the faculty advisor for the study, Dr. Perilou Goddard, who may be reached in the Department of Psychological Science at 859-572-5463, goddard@nku.edu.

Thank you very much for your help with this study. We sincerely appreciate your time and effort.

