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# Assessing The Measurement Invariance of The Modern Homonegativity Scale

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ASSESSING THE MEASUREMENT INVARIANCE OF THE MODERN  
HOMONEGATIVITY SCALE

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By

Daniel H. Romero

2011

## **Dedication**

This thesis is dedicated to my mother Patty Melancon, who has always encouraged me to pursue a higher education, to my father Juan Carlos Romero, my brother Carlos Adrian Romero, Israel Cuevas, Jaime Robles, Richard Melancon, Sandy Cuevas, Sandy Arlette Cuevas, Gabriel Gandara, and Brendan Golucke for all the support in the development of my academic career. In addition, this thesis is dedicated to Dr. Osvaldo Morera and Dr. John Wiebe who have seen me grow in my academic career since I was an undergraduate student.

ASSESSING THE MEASUREMENT INVARIANCE OF THE MODERN  
HOMONEGATIVITY SCALE

by

DANIEL H. ROMERO, B.A.

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## **Abstract**

Lesbians and gay men experience psychological distress due to sexual prejudice. Variables that predict negative attitudes toward gay men and lesbians are masculinity, religious background, conservative political affiliation, lack of contact with gay men and lesbians, age, and the belief that homosexuality is a choice. However, one important variable that has demonstrated inconsistent results is the sex of the person holding the attitude. Many studies have examined and proposed reasons why there are sex differences related to attitudes toward gay men and lesbians, but none has taken into account whether attitude scales measure the same construct equally between males and females. This study included 453 female and 333 male heterosexual college students from a university on the Texas/Mexico border who completed the Modern Homonegativity Scale (MHS), assessing their attitudes toward gay men and lesbians. The measurement invariance of the MHS was examined among groups of heterosexual men and heterosexual women. Findings indicate that the MHS demonstrated full invariance of factor loadings and partial invariance among latent intercepts across all group comparisons. Moreover, heterosexual men compared to heterosexual women held more negative attitudes toward gay men and lesbians at the latent mean level. There were no differences in heterosexual males' attitudes toward gay men and lesbians, and no differences in heterosexual females' attitudes toward gay men and lesbians. This study comprises a partial cross-cultural replication of existing work.

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## **Chapter 1: Introduction**

Research demonstrates that gay males and lesbians may experience numerous stressors, including denying or hiding their homosexual orientation, and being verbally harassed (Norris, 1992). A meta-analysis that included 214,344 heterosexual individuals and 11,971 non-heterosexual individuals (people who identified themselves as gay, lesbian, or bisexual) demonstrated that non-heterosexual individuals were more likely to be at risk for anxiety and depression disorders, and were also at a higher risk of suicidal ideation (King et al., 2008). Gay and bisexual men, particularly, were at a higher risk of suicide attempts. Lesbians and bisexual women were at a higher risk of substance and drug dependence and substance use disorders (King et al., 2008). In addition, in Hispanic culture, gay males often live different lives where they have to separate the “gay world” and “heterosexual world” (Guarnero, 2007), which may be stressful. Being “macho” in the Latino culture is defined as being masculine and being in control, however, gay men may be perceived as lacking masculinity, and therefore are not seen to support family and their community (Alvarez, 1997). In the Latino culture and in the United States, Latino men who assume a receptive role during sexual intercourse are greatly stigmatized, however insertive partners are less stigmatized and often are not identified as having a homosexual orientation at all (Almaguer, 1991; Girman, 2004; Jeffries, 2009). In addition, Latino gay men who are stigmatized experience racism and homonegativity, and are likely to display great levels of psychological distress (Diaz, Ayala, Bein, Henne, & Marin, 2001).

### **1.1 Measures of Homonegativity**

Herek was one of the first researchers to develop a scale that measured attitudes toward lesbians and gay men (ATLG) with valid psychometric properties (Herek, 1984). The ATLG is a 20-item scale consisting two subscales which are attitudes toward gay men (ATG) and attitudes

toward lesbians (ATL) scales (Herek, 1984). An item from the ATG is “I think male homosexuals are disgusting,” and an item from the ATL is “Female homosexuality is a sin.” Herek (1988) found the internal consistency reliability of the ATLG at 0.90, ATL at 0.77, and ATG at 0.89. The ATLG also correlated with the Modern Homonegativity Scale (MHS), demonstrating convergent validity, suggesting that these scales measured the same construct (Rye & Meaney, 2010).

However, the ATLG scale may be considered dated. Over a decade ago, research used the ATLG and demonstrated that homonegativity may be diminishing (Simon, 1995; Simoni, 1996), even while other surveys from that era demonstrated that gay males and lesbians had reported hearing debasing remarks and had to deny their sexual orientation (Norris, 1992). Morrison and Morrison (2002) mention that these inconsistencies may have been at least partly due to “highly reactive” participants who may disguise their actual level of homonegativity when reporting it to others. For example, Morrison and Morrison (2002) mentioned a concern with floor effects, since scores on the Attitudes Toward Lesbians - Short Form (ATL-S) and Attitudes Toward Gay Men - Short Form (ATG-S) fell below the scale mid-point. Due to this discrepancy, the 12-item Modern Homonegativity Scale (MHS) was developed as a more apt approach to measuring modern prejudice toward gay males and lesbians (Morrison & Morrison, 2002). Also, since people’s attitudes toward gay men and lesbians change over time, a modern measure such as the MHS may be a more suitable assessment. Items from the MHS including “Lesbians do not have all the rights they need” or “Gay men still need to protest for equal rights” are modern ways of measuring sexual prejudice since these items focus more on changing the “status quo” (Morrison & Morrison, 2002).

Morrison and Morrison (2002) also discuss that measures considered outdated may not be appropriate to use with college students. For example, they claim that negative modern attitudes toward gay men and lesbians are moving away from traditional and biblical paradigms represented by items such as “Lesbianism is sinful,” from the ATLG. In addition, the MHS-G (which measures negative attitudes toward gay men) and MHS-L (which measures negative attitudes toward lesbians) have higher mean item responses than the Attitudes Toward Lesbians and Gay Men Scale-Short Form (ATLG-S). The reliability of the 12-item MHS-G is good, with an alpha coefficient of .91 for both male and female raters. The alpha coefficient of the MHS-L, which also has 12 items, is .89 for male raters and .85 for female raters (Morrison & Morrison, 2002). Also, there is a correlation between the ATG-S and MHS-G observed scores of .78. In addition there is a correlation between the ATL-S and MHS-L observed scores of .85 (Morrison, Kenny, & Harrington, 2005). Finally, participants’ modern homonegativity level measured by the MHS-L is higher than the outdated homonegativity level assessed by the ATL-S (Morrison & Morrison, 2002). This finding may indicate that items in the ATLG are more confrontational than those in the MHS, so individuals who are assessed by the ATLG are reluctant to endorse a prejudiced item or may leave the item blank (Morrison & Morrison, 2002).

Since past studies have shown that homonegativity correlates with sexism, Morrison and Morrison (2002) further demonstrated the difference between outdated measures of homonegativity and modern measures of prejudice. They performed a study demonstrating a greater correlation between the MHS and the Neosexism Scale (NS, Tougas, Brown, Beaton, & Joly, 1995), which measures modern sexism. The study also compared the MHS to the Attitudes Toward Women Scale (ATWS, Spence, Helmreich, & Stapp, 1973), which measures outdated sexism. The correlation between the MHS and modern sexism was greater than the correlation

between the Homonegativity Scale (HS, Morrison, Parriag, & Morrison, 1999) and modern sexism, presumably because the HS is an outdated measure of homonegativity (Morrison & Morrison, 2002).

Rye and Meaney (2010) compared the MHS, ATLG, and Index of Homophobia in 6 samples having a total of 4,497 participants at two Canadian universities. Out of the 6 samples, everyone completed at least one of the three scales. All questionnaires correlated with one another and measured the same construct, demonstrating external validity and convergent validity. Rye and Meaney (2010) assessed discriminant validity by finding no correlations between scales that measure homonegativity and scales that measure social desirability or belief in a just world, constructs conceptually unrelated to homonegativity. High levels of reliability were found in the MHS-G, MHS-L, and MHS (all 12-item scales), with Cronbach's alpha of .89 to .95 (n= 63 to 546). Cronbach's alphas for the 20-item Index of Homophobia scale were .91 and .93 (n= 218 to 2,822). The ATG (10 items), ATL (10 items), and ATLG (20-items) had Cronbach's alpha ranging from .90 to .95 (n= 60 to 558; Rye & Meaney, 2010). However, the MHS was the only measure of the three with a distribution that did not demonstrate significant skewness. The ATLG and Index of Homophobia showed distributions that were both positively skewed (the ATLG also showed platykurtic kurtosis). In contrast, the MHS demonstrated a normal distribution.

## **1.2 Predictors of Homonegativity**

Many variables are well-established predictors of negative or prejudiced attitudes toward gay men and lesbians. For example, significant correlations have been found between religious beliefs (most frequently Judeo-Christian beliefs), and homonegativism (Herek, 1988; Malcomson, Christopher, Franzen, & Keyes, 2006). In addition these findings have been

replicated in participants of Mexican descent (Herek & Gonzalez-Rivera, 2006). Moreover, research has demonstrated that modern homonegativity is positively correlated with political conservatism in diverse samples (Herek & Gonzalez-Rivera, 2006; Morrison, Kenny, & Harrington, 2005).

Furthermore, many individuals believe that if people are responsible for their own actions, then they should either be praised or punished for their particular choice or behavior. Weiner, Perry, and Magnusson (1988) discuss attributions of controllability, an extension of attribution theory, in which a person is perceived as either controlling or not controlling the self. The theory postulates that people who are seen as responsible for their stigmatized traits will be evaluated negatively compared to those whose stigma was due to an inadvertent event, misfortune or consequence of another person's action. This same concept may be applied to why some individuals are prejudiced towards gay males and lesbians when they believe that sexual orientation is a choice as opposed to believing that homosexuality is beyond an individual's control. Research has demonstrated that the more individuals believed that homosexuality was a choice, the more homonegative they were (Malcomnson et al., 2006). Moreover, those who believed that there is a biological explanation for homosexuality had more positive attitudes toward homosexual individuals' orientation than those who believed that there is a psychological explanation for homosexuality (Landen & Innala, 2002). Not only does religiosity relate to conservative beliefs, but it also relates to the belief that homosexuality is a choice. Malcomnson et al. (2006) found that observant Christians who believed that sexual orientation was a choice had more homonegative attitudes.

According to Zajonc (1978), the Mere Exposure Effect occurs when an individual is repeatedly exposed to a previous novel stimulus and eventually develops a positive affective

response towards the stimulus. In addition, the Contact Hypothesis postulates that there is a reduction of prejudice through contact between groups, which may also result in a positive change of attitude (Allport, 1954). This may be the reason why interacting with or simply knowing a gay male or lesbian predicts a positive attitude toward gay males and lesbians (Herek & Gozalez-Rivera, 2006). Through interaction, heterosexuals may become cognizant of the perspective of a gay male or lesbian. If heterosexual people can relate somehow to a person of a different orientation, then there is a possibility that their attitude will change toward that person with a different orientation.

Age may predict how many gay males and lesbians a heterosexual knows. Landen and Innala (2002) reported that younger individuals are more open to having a gay or lesbian friend, and are also more likely to have a gay or lesbian friend than older individuals. They also reported that younger people compared to older people were more likely to be in favor of same-sex marriage and were more likely to be in favor of gay and lesbian people adopting children. According to Savin-Williams (2005), words that gay teenagers use to explain their sexual orientation have changed drastically over the past 30 years, as has their perception of same-sex relationships. For example, Savin-Williams (2005) postulates that some teenagers may not distinguish between being gay or heterosexual, and may reject any type of gender-related categories. Some teenagers may view gender categories as trivial (Savin-Williams, 2005), which may help explain why younger individuals are less prejudiced toward gay men and lesbians.

### **1.3 Participants' Sex and Prejudice Toward Gay Men**

One predictor of negative attitudes toward gay males and lesbians that has not shown consistent results is the sex of the person holding the attitude. Heterosexual males' attitudes tend to be more negative toward gay men than their attitudes toward lesbians, while heterosexual



women's attitudes toward gay males and lesbians are more similar or consistent (Herek, 1988, 2006; LaMar & Kite, 1998; Vandertsoep & Green, 1988; Whitley, 1988).

Heteronormativity is the view that a heterosexual's experience is the normal human experience, in the sense of being universal, and that it is most ethically accepted (Suter & Daas, 2007). Heteronormativity in males may lead to prejudice toward gay men. For example, Adams, Wright, and Lohr (1996) demonstrated that when heterosexual males were shown gay male erotica, those who reported more prejudice toward gay men showed more physiological sexual arousal than heterosexual men who were not prejudiced despite denying their sexual arousal. Heteronormative males may perceive this as a violation of what they perceive as a normal human experience. Zeichner and Reidy (2009) propose that when a heterosexual male who is highly prejudiced toward gay males is exposed to violations of traditional gender roles, he is likely to experience threat with fear, rage, and reduction of happiness as a reaction. Zeichner and Reidy (2009) suggest that heterosexual males who hold prejudiced attitudes toward gay men are not disgusted by homosexual stimuli, but might be afraid of their own attraction to men. A heterosexual's fear of being aroused by homosexual stimuli may be linked to anger related to aggression, because it may be a threat to an individual's own homosexual urge (West, 1977), which may be linked to more prejudiced attitudes toward gay men. In addition, fear of being attracted to homosexual stimuli may be linked to heteronormativity, since homosexuality is not commonly accepted by heteronormative men.

Barlow, Sakheim, and Beck (1983) propose something different, suggesting that anxiety increases and facilitates sexual arousal. Since anxiety may be related to sexual arousal, Adams et al. (1996) propose that a prejudiced male's arousal to homosexual stimuli is associated with his level of anxiety. This arousal may lead to anger and be linked to prejudice toward gay men.

In addition, Parrot and Zeichner (2005) demonstrated that heterosexual males who viewed male homoerotic images were more likely to display aggression toward gay male confederates than toward heterosexual male confederates. There were no differences in displaying aggression toward gay males and heterosexual confederates when heterosexual participants viewed male-female erotica. This finding may be associated with antigay violence and homonegativity in relation to a heterosexual male's effort to establish his heterosexuality by enforcing traditional gender roles (Herek, 1986).

#### **1.4 Gender Roles of Masculinity and Femininity Related to Male Homonegativity**

According to Myers (2010), gender identity is "our sense of being male or female" (p.6-6). Lytton and Romney (1991) note the social construction of gender identity and postulate that parents may be responsible in constructing a child's sex-stereotypical behavior, for example by emphasizing gender stereotypes such as activities that involve play and household chores. Studies indicate that sex-associated norms are more inflexible for men than women (Herek, 1986; Hort, Fagot, & Leinbach, 1990). In addition, Kite and Whitely (1996) infer that there is a gender belief system that is responsible for sex differences in attitudes toward homosexuality by indicating suitable behaviors for males and females. Fagot and Hagan (1991) discuss how males are stereotypically viewed as assertive and females are viewed as passive. Fagot (1985) also discusses that gender roles for boys are enforced more by parents than are gender roles that pertain to girls. Due to these enforced demands, men may exclude or avoid anything that is construed as feminine (McCreary, 1994). This exclusion and dislike regarding femininity may also be related to negative attitudes toward females. In addition, research has found that gay men may be stereotypically viewed as more feminine than heterosexual males (Herek, 1984). Since

femininity is stereotypically related to being a female or gay male, some heteronormative men may have negative attitudes toward gay men and heterosexual women (Kilianski, 2003).

Kilianski (2003) discusses Social Identity Theory, in which an individual's identification with her or his group (the in-group) creates an awareness of the identity of the self and self-worth of people. The in-group is viewed positively and the out-group, which is the group that has no relationship or identity pertinent to the in-group, is viewed negatively. A heterosexual male who does not show dominance and toughness, but shows feminine behaviors is considered inappropriate and undesirable by some heterosexual men (Kilianski, 2003). Due to the stereotype of gay men being feminine, some heterosexual men are more likely to be prejudiced toward gay men and heterosexual women. Kilianski (2003) found that a masculinized ideal or heteronormative is linked to heterosexual males' negative attitudes toward women and gay men. Keiller (2010) demonstrated that heterosexual men, who scored high (higher scores indicating greater sexism) on the Power Over Women subscale derived from the Conformity to Masculine Norms Inventory (CMNI), also scored high on the Disdain for Homosexuals subscale of the CMNI, indicating that sexism is related to homonegativity. Furthermore, homonegativity is related to having defensive reactions when thinking about gay males, increased sexist views, and hyper-masculinity (Barron, Struckman-Johnson, Quevillon, & Banka, 2008). For some heterosexual men or heteronormative males, deviating from this traditional male role by exhibiting effeminate traits represents a more serious sex-role violation than if a female was to have masculine traits. Since a heteronormative society expects males to shun female characteristics (Kite & Deaux, 1987), heterosexual males may feel pressure to have negative feelings toward gay men (Louderback & Whitely, 1997). Kite and Whitely (1996) suggest that

those who hold more traditional sex-role attitudes are more likely to hold prejudiced attitudes toward gay men and lesbians.

### **1.5 Heterosexual Males are Less Prejudiced Toward Lesbians**

Research demonstrates why heterosexual males have more prejudice toward gay men than toward lesbians. Turnbull and Brown (1977) found that both heterosexual male and heterosexual female respondents had more negative ratings toward homosexual acts compared to heterosexual acts; however, heterosexual males rated female homosexual activity more positively than did heterosexual females. There were also no differences in ratings of male homosexual activity between heterosexual males and heterosexual females. Lesbianism is sometimes presented in pornography aimed at heterosexual male audiences, as a voyeuristic pleasure for heterosexual men. Lesbian objectification viewed as pleasurable by heterosexual men may lead to lower levels of negative attitudes toward lesbians (Louderback & Whitely, 1997). The Playboy subscale of the CMNI consists of items related to promiscuous sexual activity with multiple women having “no strings attached” or any emotional commitment. A man who holds these beliefs may view women and lesbians as objects for transient physical pleasure (Keiller, 2010). In addition, the Playboy subscale of the CMNI was found to be associated with positive attitudes toward lesbians, but not towards gay men (Keiller, 2010).

Louderback and Whitely (1997) demonstrated sex differences in how heterosexual males and heterosexual females perceived same-sex erotica by assessing them using a scale called Perceived Erotic Value of Homosexuality. This scale used 8 items, of which four items measure lesbian sexuality and four items measure gay male sexuality. For example, items include “I find the idea of a woman making love to another woman erotic.” All questions were similar, as the target group or group being evaluated was switched. For example, the question “I have viewed

pornographic materials involving male homosexual acts,” was changed to “I have viewed pornographic materials involving female homosexual acts.” In responding, heterosexual females assigned a similar low amount of erotic value to both gay men and lesbians, whereas heterosexual men assigned high levels of erotic value to lesbians and low levels of erotic value to gay men. This leads to another finding, demonstrating that heterosexual males who erotically valued lesbians had more favorable attitudes toward lesbians. In addition, this study controlled for homosexual erotic value to eliminate the bias that some heterosexual males may have regarding lesbian erotic value (Louderback & Whitely, 1997). Sex role attitudes were also controlled for since heterosexual males, who have high levels of sexism, may have more prejudice toward gay men. When these variables were controlled for, sex differences regarding attitudes toward gay males and lesbians were eliminated (Louderback & Whitely, 1997).

#### **1.6 Men and Women Display more Homonegativity Toward Same-Sex Individuals**

Whitely (1988) explained that reported attitudes toward gay men and lesbians depend upon what questions are used to assess them. He administered items to participants that measured different aspects of negative attitudes toward homosexual individuals. He used the measure Heterosexual Attitudes Toward Homosexuals (HATH, Larsen, Reed, & Hoffman, 1980), which assessed attitudes toward the social roles of homosexual people (without specifying gay men or lesbians) for example, “Homosexuals should not be allowed to work with children.” He also used three subscales taken from the Index of Homophobia (IHP), two which measured attitudes toward gay males and lesbians such as “I would feel comfortable working closely with a homosexual,” and the other was the Personal Response scale (PR, 9 items) which measured personal responses to homosexual advances and feelings such as “If a member of my sex made a sexual advance to me I would feel angry.” Using the PR, Whitley (1998) found that heterosexual

females compared to heterosexual males, rated lesbians more negatively than gay males. In addition, heterosexual males compared to heterosexual females, rated gay men more negatively than lesbians in regard to contact with gay males and lesbians. His finding also demonstrated that both heterosexual men and women felt negatively about being the recipient of same-sex advances. Whitely (1998) infers that heterosexual men and women hold more negative attitudes toward homosexual men and homosexual women of the same sex in regard to contact with gay men and lesbians. So if the item refers to personal contact and/or advances from gay men or lesbians, then the person holding the beliefs has more negative attitudes toward gay men or lesbians of the same sex. This finding changes when participants complete the HATH measuring attitudes related to the social roles of homosexuals. In this case, heterosexual men compared to women had greater homonegativity toward the roles of homosexuals. A problem with this finding may be that the HATH did not specify if the negative attitudes toward the social roles of homosexuals were toward gay men or lesbians.

### **1.7 Discrepancies in Past Work on Homonegativity as a Function of Sex**

Herek (1988) found that both heterosexual men and heterosexual women were more prejudiced toward homosexual individuals of the same sex. Herek and Gonzalez-Rivera (2006), however, reported no differences in heterosexual men's negative attitudes toward gay men and lesbians. However, heterosexual females had less positive attitudes toward lesbians than they did toward gay men. In addition, Morrison and Morrison (2002) found that heterosexual males scored higher on both Modern Homonegativity Scales (MHS-G and MHS-L) measuring negative attitudes toward gay men and lesbians, and heterosexual females scored lower on both the MHS-G and MHS-L. Herek (1988) also demonstrated that heterosexual men were more prejudiced toward both gay males and lesbians compared to heterosexual females, but heterosexual males

were still more negative towards gay males than toward lesbians. This indicates further inconsistencies, since some findings suggest that heterosexual males are more likely to be more prejudiced toward gay men compared to lesbians, and other findings demonstrate that heterosexual males are more prejudiced toward both gay males and lesbians compared to heterosexual females' attitudes toward both gay men and lesbians. In addition, some studies found that heterosexual females had equal prejudice toward gay men and lesbians, but other studies show that heterosexual females have more prejudice toward lesbians. Despite these discrepancies, it is accurate to say that heterosexual males compared to heterosexual females consistently display higher levels of prejudice towards gay males.

### **1.8 Purpose of this Study**

Since predictors of sexual prejudice such as religiosity, political conservatism, belief whether homosexuality is a choice or beyond an individual's control, age, and contact with gay men or lesbians have been consistent in predicting attitudes toward gay men and lesbians in past research, the present study focused on the sex of the participant holding the belief toward gay men and lesbians. In addition, many studies have examined and proposed reasons why there are gender differences pertinent to attitudes toward gay men and lesbians, but none have taken into account whether the scale itself measures the same construct equally between heterosexual males and heterosexual females. In order to do this, a measurement invariance analysis was conducted, which infers whether a set of indicators measure the same construct among different groups (Kline, 2005).

Conducting a measurement invariance study can determine if differences in scores on a measure across different groups are due to differences in the measure or due to differences between groups in the latent variable means (Steenkamp & Baumgartner, 1998). The first step in

documenting measurement invariance is to establish configural invariance, which requires the same pattern of factor loadings across all groups (Horn, McArdle & Mason, 1983). In other words, the items demonstrate the same underlying pattern with the latent variables of interest across all comparison groups. This is the first model, within which more strict and constrained models are later assessed. Once configural invariance is established, weak and strong invariance are assessed. Weak invariance is established by constraining the factor loadings to equality across groups. The assumption is that every item is equally related to a factor across groups. In addition, a more strict step is assessed which is strong invariance, in which factor loadings and latent intercepts are constrained to be equal across groups. If strong invariance holds, one may determine whether males and females differ at the latent mean level. One may also assess strict invariance which constrains factor loadings, unique item variances, and latent intercepts to be equal across groups (Meredith, 1993). Since the MHS is one of the most recent scales that measures modern negative attitudes toward gay men and lesbians at a more subtle level with stringent psychometric properties (Rye and Meaney, 2010), this study focused on the MHS and explored whether this measure was a biased estimator or measured the same construct among different groups. To do so, groups were compared in a pairwise fashion to resolve the mixed findings concerning sex differences and negative attitudes toward lesbians and gay men. The hypotheses were as follows:

### *Hypotheses*

Hypothesis 1: There is strong measurement invariance as a function of rater gender when heterosexual men and heterosexual women evaluate gay men. In addition, heterosexual men compared to heterosexual women are more prejudiced toward gay men at the latent mean level.



Hypothesis 2: There is strong measurement invariance as a function of rater gender when heterosexual men and heterosexual women evaluate lesbians. In addition, heterosexual men compared to heterosexual women are less prejudiced toward lesbians at the latent mean level.

Hypothesis 3: There is strong measurement invariance as a function of rated target (gay men and lesbians), when the raters are heterosexual men. In addition, heterosexual men are more prejudiced toward gay men than lesbians at the latent mean level.

Hypothesis 4: There is strong measurement invariance as a function of rated target (gay men and lesbians), when the raters are heterosexual women. In addition, heterosexual women have similar negative attitudes toward gay men and lesbians.

## **Chapter 2: Method**

### **2.1 Participants**

Participants were 853 introductory psychology students from a university on the Texas/Mexico border who participated in the study as part of a course requirement. Of the 853 students, 789 self-identified as heterosexual, 36 self identified as gay or lesbian, and 26 self identified as bisexual. Bisexuals, lesbians, and gay males were not included in the analysis since the focus was heterosexuals' attitudes toward gay men and lesbians. A total of 789 heterosexual participants were included in this study with ages ranging from 17 to 47, with a mean of 20 years. Participants completed the MHS, on which they randomly assessed gay men as the target group or lesbians as the target group. There were 219 heterosexual women and 169 heterosexual men who assessed the gay men target group. There were 234 heterosexual women and 164 heterosexual men who assessed lesbians as the target group. Of the participants, 79.6% were Mexican American, 6.5 % were of Mexican nationality, 6.7% were Anglo American, 2.5% were African American, 1.8% were Asian American, and 2.8% reported "other."

### **2.2 Measures**

A demographic variable questionnaire was administered. Participants were asked to indicate their sexual orientation, their sex, their belief that homosexuality is a choice or beyond an individual's control, how active they are in their religion (on a 5-point scaling, ranging from "very active" to "not active"), whether they have a gay male or lesbian friend, their ethnicity, income, age, and their political affiliation (as either liberal, moderate, or conservative) and political party (Republican, Democratic, Independent).

The Modern Homonegativity Scale (MHS; Morrison & Morrison, 2002) is a 12-item scale to measure prejudice toward gay males and lesbians. Scores on the MHS range from 12 to

60, with higher scores indicating greater homonegativity. Items in the MHS were reverse-coded as appropriate before analyzing the data. Psychometric characteristics of the measure were described above.

Several other measures were also administered to participants and are beyond the scope of this project. The Family Attitude Scale (Ramirez & Carrasco, 1996) is a 30-item scale that measures attitudes toward an individual's family. The Attitudes Toward Lesbians and Gay Men (ATLG) scale (Herek, 1984) is a 20-item scale to measures attitudes toward gay males and lesbians. The Marlow Crowne Social Desirability Scale (Crowne & Marlowe, 1960) is a 33-item scale that measures peoples' idea to portray themselves as similar to society's norms and standards, and to find social desirability biases.

### **2.3 Procedures**

A course requirement in Introduction to Psychology classes was either to participate in research or complete an alternate option if students chose not to participate in the research studies. In this study, all questionnaires were randomly assigned to male and female participants enrolled in the introductory psychology classes. Through random assignment, each student had an equal chance of receiving either the MHS-L or MHS-G. Participants were oriented to the study and completed an informed consent form. The following scales and questionnaires were administered in the following order: demographic questionnaire, the Family Attitude Scale, ATLG, Marlowe Crowne Social Desirability Scale, and the MHS-L or MHS-G. The time to complete this study was approximately 30 to 45 minutes. Students signed up for the study and agreed to meet at available times as provided by the research assistant (RA). These data were collected in groups ranging in size of 2 to 20, and the students had to meet in the Psychology Building at a reserved room provided by the RA and the Psychology Department. All

participants were treated in accordance with ethical standards set forth by the American Psychological Association and the University of Texas at El Paso. All participants were given the opportunity to ask questions about the study, and were allowed to discontinue the study at any time with no penalty. After administration of the questionnaires, participants were debriefed and informed that they were assessing modern prejudice toward gay men and lesbians. Participants were asked not to write their names on the questionnaires to assure anonymity. Instead they were asked to provide their student ID number on a separate paper to assure they were given course credit for attending the study.

#### **2.4 Missing Data**

NORM is a computer program that imputes data using an expectation-maximization (EM) algorithm, which follows an iterative process until approximations converge on maximum likelihood estimates. Using NORM, final estimates were rounded to the nearest observed value. Of the 166 heterosexual men who evaluated gay men, 162 provided complete data, and 4 separate items had one missing response each. Of the 215 heterosexual women evaluating gay men, 213 provided complete data and four items had one missing response each (one participant failed to answer 3 of the 12 items). Of the 163 heterosexual men evaluating lesbians, 160 provided complete data and one item had two missing responses. One other item had one missing response. Of the 234 heterosexual women evaluating lesbians, 229 provided complete data and two items had two missing responses. Three other items had one missing response (one participant failed to answer 3 out of the 12 items).

## Chapter 3: Results

### 3.1 Descriptive Statistics

Data describing the sample characteristics are summarized in Table 1. In reporting attitudes toward gay men and lesbians, heterosexual males ( $M = 37.77$ ,  $SD = 9.25$ ) obtained higher scores than heterosexual females ( $M = 32.93$ ,  $SD = 9.01$ ) on the MHS-G,  $t(379) = 5.146$ ,  $p < .05$ . Heterosexual males ( $M = 36.31$ ,  $SD = 8.76$ ) also obtained higher scores than heterosexual females ( $M = 33.48$ ,  $SD = 8.81$ ) on the MHS-L,  $t(395) = 3.157$ ,  $p < .05$ .

### 3.2 Reliability

Cronbach's alpha estimate of internal consistency for the MHS-G was .878 and .879 for heterosexual men and heterosexual women, respectively. In addition, Cronbach's alpha estimate of internal consistency for the MHS-L was .851 and .880 for heterosexual men and heterosexual women, respectively.

### 3.3 Assessment of Model Fit

As this project involved the assessment of different forms of measurement invariance, the investigation of model fit was a critical component. To help determine model fit, the model's Satorra-Bentler scaled chi-square statistic and its associated degrees of freedom were reported. The Satorra-Bentler scaled chi-square statistic accounts for non-normality by scaling the value of the chi-square statistic and reporting more precise standard errors.

As these models will never perfectly describe the data (MacCallum, 2003), model fit indices were used to evaluate the models. An absolute fit index tests whether the model-implied variances and covariances perfectly match the observed variance and covariances. An example of such an absolute index is the standardized root mean square residual (SRMR), which should be close to 0.08 or smaller for the model to adequately describe the data (Hu & Bentler, 1999).

A parsimonious fit index allows that enhanced model fit with an absolute index could be the function of model complexity and the addition of model parameters. Thus, a parsimonious index incorporates a penalty for the addition of irrelevant model parameters. The root mean square error of approximation (RMSEA) is an example of a parsimonious index and should be close to 0.06 or less to indicate an adequate fitting model.

A comparative fit index compares a model to a baseline model like the null model, which assumes the items have no relationship to the latent trait. The Comparative Fit Index (CFI) is another example of a parsimonious fit index, and should be close to 0.90 or higher to be indicative of adequate fit (Hu & Bentler, 1999).

While the SRMR, CFI and RMSEA were reported, it is also true that the configural, weak, and strong invariance models are nested models. To compare the parsimony of these nested models, differences between the CFI index (Cheung & Rensvold, 2001) and the differences in RMSEA were examined. Based on these simulation studies, differences between nested models in magnitude greater than or equal to 0.01 on the CFI or differences in magnitude between nested models greater than or equal to 0.015 on the RMSEA statistic would be indicative of differences in model parsimony.

### **3.4 Assessment of Group Differences at the Latent Variable Level**

The forms of measurement invariance were sequentially examined to determine whether the strong factorial invariance model was the most parsimonious model. If the strong invariance model was the most parsimonious, latent mean differences were examined across the two comparison groups. As the proposal calls for a maximum of 4 group comparisons, statistical significance was determined if the groups differ on the latent level at the  $0.05/4 = 0.0125$  level of

statistical significance. In addition, Cohen's  $d$  was reported to quantify the magnitude of the group differences at the latent variable level.

### **3.5 Power Analysis**

For the power analysis to determine necessary sample size for the sets of measurement invariance, the  $\alpha$  level was set at .05, and  $\beta$  was set at .20. The power analysis was based on a test of "not close fit" (MacCallum, Browne, & Sugawara, 1996). In a test of "close fit," it is customary to set  $R_o = .05$ , where  $R_o$  is the hypothesized value of the population value for the root mean square error of approximation (RMSEA) under the null hypothesis. The alternative hypothesis specifies that the population value of the RMSEA statistic equals .08. Using Preacher and Coffman's (2006) software, it was determined that a minimum necessary sample of 294 participants across both groups would be needed to test the configural invariance model. As required sample size decreases with increases in model complexity (MacCallum et al., 1996), other forms of measurement invariance will require fewer participants. Since the smallest of our two groups combine to have a sample size of 333 individuals, it was determined that there was adequate sample size to test models of configural invariance. The single common factor model was estimated for all groups prior to testing the various forms of variance.

### **3.6 Modifications Established For Configural Invariance Across All groups**

After examining all the residuals, model fit was improved when the correlated errors of items 7 and 8 were estimated across all group comparisons when conducting a configurally invariant model. Item 7 states "Gay men should stop shoving their lifestyles down other people's throats," and item 8 states "If gay men want to be treated like everyone else, then they need to stop making such a fuss about their sexuality/culture," and error terms of these items were allowed to correlate since the items are not particularly subtle. However, a limitation of

freeing correlated errors is that model fit may be enhanced due to capitalizing on chance characteristics of the data (MacCallum, 1986). This means that correlated error terms may not reflect the exact description of the underlying factor structure, and thus, may not be able to be generalized across other studies.

### **3.7 Fit Indices for Heterosexual Men and Heterosexual Women Evaluating Gay Men**

The evaluation of the configural invariance model for heterosexual men and heterosexual women rating gay men and lesbians showed a RMSEA statistic equal to .074 (90% CI: .061, .088). However, NNFI exceeded .95, the CFI was greater than .95, and SRMR equaled .072 (See Table 1). The configural model was deemed acceptable.

The weak invariance model was assessed by constraining the factor loadings to be equal across groups. Table 1 shows RMSEA only worsened by .001, but CFI equaled .966 and NNFI was greater than .95 (See Table 1). A change that exceeds .01 in the CFI statistic is indicative of worsening of model fit (Cheung & Rensvold, 2001). Given the fit indices and a CFI difference of .004, the weak invariant model provided an adequate description of the data. Testing the strong invariance model constrained factor loadings and latent intercepts to be equal across groups. Table 1 shows that the RMSEA statistic for the strong invariant model equaled .085 and SRMR exceeded .10. After examining the modification indices of the latent intercepts, the model fit could be improved if the following intercepts were allowed to differ across groups: items 8, 9, and 11. In other words, partial strong invariance model was evaluated, as some intercepts differed across gender. The partial strong invariance model showed that RMSEA, CFI, and NNFI improved to indicate satisfactory model fit (See Table 1).



Differences between heterosexual men and heterosexual women evaluating gay men were finally estimated at the latent mean level. The difference at the latent mean level across groups equaled  $-.308$  ( $SE = .069$ ,  $t = -4.47$  Cohen's  $d = .53$ ) indicating that heterosexual men compared to heterosexual women had greater negative attitudes toward gay men of over half a standard deviation.

### **3.8 Fit Indices for Heterosexual Men and Heterosexual Women Evaluating Lesbians**

The evaluation of the configural invariance model for heterosexual men and heterosexual women rating lesbians showed an RMSEA statistic equal to  $.079$  (90% CI:  $.065$ ,  $.092$ ), NNFI exceeded  $.95$ , CFI was greater than  $.95$ , and SRMR was equal to  $.073$  (see Table 2). The configural model was considered acceptable.

The weak invariance model had an improved RMSEA statistic equal to  $.074$  (90% CI:  $.061$ ,  $.087$ ), a CFI statistic greater than  $.95$ , an NNFI greater than  $.95$ , and an SRMR equal to  $.077$  (See Table 2). Since the CFI's differences between the configural and weak invariance models did not exceed  $.01$ , the weak invariant model provides an adequate description of the data. The strong invariant model showed a RMSEA equal  $.084$  (90% CI:  $.072$ ,  $.096$ ), the CFI was less than  $.95$ , the NNFI was less than  $.95$ , and the SRMR was equal to  $.101$  (See Table 2). After examining the modification indices of the latent intercepts, model fit could be improved if the following intercepts were allowed to differ across groups: items 5, 11, and 12. In other words, the partial strong invariant model showed an improved RMSEA, SRMR, NNFI exceeding  $.95$ , and a CFI greater than  $.95$  indicating a good model fit (See Table 2).

Differences between heterosexual men and heterosexual women rating lesbians were estimated at the latent mean level. The difference in the latent mean across groups equaled  $-.093$

(SE = .042,  $t = -2.23$ , Cohen's  $d = .26$ ) indicating that heterosexual men compared to heterosexual women had more negative attitudes toward lesbians by a quarter of a standard deviation.

### **3.9 Fit Indices for Heterosexual Men Evaluating Gay Men and Lesbians**

The evaluation of the configural invariance model for heterosexual men rating gay men and another group of heterosexual men rating lesbians showed RMSEA statistic equal to .078 (90% CI: .062, .093), the NNFI exceeded .95, the CFI was greater than .95, and the SRMR was less than .08 (See Table 3). The configural invariant model was deemed acceptable.

The weak invariance model had an RMSEA equal to .079 (90% CI: .064, .094) and a CFI equal to .957. The CFI difference between the configural and weak invariant models did not exceed .01, and the NNFI was greater than .95, indicating an adequate model fit. (See Table 3). Furthermore, since the strong invariant model did not converge, fit indices were not provided. Modification fit indices of the latent intercepts were examined and intercepts were allowed to differ for items 2, 7, and 8. The partial strong invariant model had a CFI equal to .95 and RMSEA equal to .082 (90% CI: .068, .096) (See Table 3).

Differences between heterosexual men rating gay men and another group of men rating lesbians were also estimated at the latent mean level. The difference in the latent mean level across target groups equaled .024 (SE = .058,  $t = .421$ , Cohen's  $d = .05$ ) indicating heterosexual men had similar negative attitudes towards gay men and lesbians.

### 3.10 Fit Indices for Heterosexual Women Evaluating Gay Men and Lesbians

The evaluation of the configural invariance model for heterosexual women rating gay men and lesbians showed an RMSEA statistic equal to .076 (90% CI: .064, .089), an NNFI exceeding .95, a CFI greater than .95, and an SRMR less than .08 (See Table 4). The configural model was deemed acceptable.

The weak invariance model had an improved RMSEA equal to .072 (90% CI: .059, .084), an NNFI greater than .95, and a CFI equal to .96, which indicates adequate fit. The strong invariant model showed RMSEA equal to .084 (90% CI: .073, .096), and SRMR equal to .106 (Table 4). After examining the modification indices of latent intercepts, model fit could be improved if the following intercepts were allowed to differ across groups: items 9 and 6. The evaluation of the partial strong invariant model showed an RMSEA equal to .076 (90% CI: .064, .087), an NNFI exceeding .95, and an improved CFI greater than .95, indicating adequate fit (See Table 4).

At the latent mean level, differences between heterosexual women evaluating lesbians and another group of heterosexual women evaluating gay men were also estimated. The difference in the latent mean level across target groups was equal to .002 (SE = .044,  $t = .054$ , Cohen's  $d = .0047$ ), indicating that heterosexual women did not differ on their negative attitudes toward gay men and lesbians.

## Chapter 4: Discussion

### 4.1 Latent Mean Differences and Similarities

Predictors of homonegativity have been established, however, there is little attention devoted to discrepancies in homonegativity as a function of the observer's sex. The patterns of the study's results were highly similar to that found by Morrison and Morrison (2002). For example, in rating gay men, while this study demonstrated somewhat lower homonegativity overall (heterosexual men from this study averaged 37.77,  $SD = 9.25$ , rather than previously reported heterosexual men's average of 41.9,  $SD = 9.1$ , and heterosexual women from this study averaged 32.93,  $SD = 9.01$  versus previously reported heterosexual women's average of 37.3,  $SD = 10.1$ ), heterosexual men had greater latent mean scores than women. The same was true of attitudes toward lesbians. While this study demonstrated overall lower levels of homonegativity on the MHS-L, (heterosexual men from this study had an average of 36.31,  $SD = 8.76$ , compared to previously reported heterosexual men's average of 42.8,  $SD = 9.7$ , and heterosexual women from this study had an average of 33.48  $SD = 8.81$ , versus previously reported heterosexual women's average of 38.8,  $SD = 8.5$ ), heterosexual men had higher latent mean scores than heterosexual women. This finding contradicts earlier research which indicates that heterosexual men compared to heterosexual women would be less prejudiced toward lesbians (Louderback & Whitely, 1997). Using the ATLG, Herek (1984) also demonstrated that heterosexual men compared to heterosexual women had more negative attitudes toward gay men, but less prejudice toward lesbians. As the ATLG is not as subtle as the MHS, the discrepancy in research may be a result of the measure used.

At the latent mean level, there were no differences between evaluators of gay men and lesbians when the raters were heterosexual men. However, it was predicted that heterosexual

men would have more homonegativity toward gay men and less prejudice toward lesbians, since some past research has shown heterosexual men to be more prejudiced toward gay men (Herek, 1988, 2006; LaMar & Kite, 1998; Vandertsoep & Green, 1988; Whitley, 1988) and less prejudiced toward lesbians (Louderback & Whitely, 1997; Keiller, 2010). As prior studies did not use the MHS, the contradictory finding may be a result of the measure used. For example, Herek (1988) demonstrated that heterosexual men had more negative attitudes toward gay men than lesbians when using the ATLG, which measures the traditional, biblical, and anachronistic ethical beliefs of homonegativity. The MHS measures modern attitudes toward gay men and lesbians such as the social and political roles. Both of these scales measure disparate aspects of homonegativity, which may postulate different results regarding heterosexual men's attitude toward gay men and lesbians. Lastly, at the latent mean level, there were no differences between gay men and lesbians when the raters were heterosexual women, which support previous findings of Morrison and Morrison (2002).

#### **4.2 Differences in Latent Intercepts**

While the contradicting findings seem to be associated with the measure used, it is important to point out that a formal measurement invariant analysis was carried out. In all comparisons, invariance of the factor loadings was supported and partial invariance of the intercepts was also supported. Heterosexual men compared to heterosexual women had greater intercepts for items 8 (“If gay men want to be treated like everyone else, then they need to stop making such a fuss about their sexuality/culture”) and 9 (“Gay men who are ‘out of the closet’ should be admired for their courage” – reverse coded) when rating gay men. The content in these items include social aspects of being gay, which is similar to what Whitely (1988) found, where heterosexual men compared to heterosexual women displayed more homonegativity

toward the social roles of gay men. However, heterosexual women had a greater intercept than heterosexual men on item 11 (“In today’s economic times, tax dollars shouldn’t be used to support gay male organizations”) when rating gay men, which involves political and money issues related to gay men. This may be a sex issue rather than a homonegative issue. For example, heterosexual women compared to heterosexual men may have less prejudice towards gay men regarding social issues (Morrison & Morrison, 2002), and traditional and ethical issues (Herek, 1988, Morrison & Morrison, 2002), but may be less favorably disposed when approaching the “zero-sum” issue of distribution of taxpayer dollars between sexes.

Furthermore, heterosexual men compared to heterosexual women had higher intercepts for items 5 (“Celebrations such as ‘Gay Pride Day’ are ridiculous because they assume that an individual’s sexual orientation should constitute a source of pride”), 11 (“In today’s tough economic times, tax dollars shouldn’t be used to support lesbian organizations”), and 12 (“Lesbians have become far too confrontational in their demand for equal rights”) when rating lesbians. These items involve lesbians’ political and social issues. This means that not only did heterosexual men compared to heterosexual women have greater homonegativity toward lesbians, but they also had greater intercepts on 3 items. Heterosexual men who evaluated gay men had higher intercepts than another group of heterosexual men who evaluated lesbians for items 2 (“Gay men/Lesbians seem to focus on the ways in which they differ from heterosexuals, and ignore the ways in which they are the same”), 7 (“Gay men/Lesbians should stop shoving their lifestyles down other people’s throats”), and 8 (“If gay men/lesbians want to be treated like everyone else, then they need to stop making such a fuss about their sexuality/culture”), and items 7 and 8 aren’t as subtle as the other items that are included in the MHS. This means that heterosexual men may not only have greater levels of homonegativity than heterosexual women,

but they may be more willing to express these attitudes in blatant and judgmental terms. This may also explain why heterosexual men report greater homonegativity toward gay men than lesbians when using the ATLG, since items in that particular scale are not as subtle. Heterosexual women evaluating lesbians started off at a higher intercept than heterosexual women evaluating gay men for items 6 (“Gay men/Lesbians still need to protest for equal rights” – reverse scored) and 9 (“Gay men/Lesbians who are ‘out of the closet’ should be admired for their courage” – reverse scored). This means that heterosexual women had more prejudice toward lesbians than gay men when endorsing these items, which involves the social and political aspects of homonegativity.

### **4.3 Limitations and Future Directions**

Limitations of the demographic questionnaire regarding self-identification and self-reported behavior should be addressed. For example, participants were asked to identify themselves exclusively homosexual, heterosexual or bisexual. Drucker (2010) posits that human sexuality is better represented as a continuous scale (e.g., 0-6) rather than a dichotomy or categorical scale. The Kinsey scale was developed to eliminate dichotomization and categorization of sexual identity in order to reduce sexual identity-based harassment and thus promote equal rights (Drucker, 2010). However, since the present study made use of existing data, the analysis was limited to a categorical scale (Heterosexual, Homosexual, Bisexual). It is possible that a categorical measure of sexual orientation might be confounded with homonegativity to some extent, such that a male who self-identifies as “Exclusively heterosexual” may report greater homonegativity than a person who identifies himself as “Predominantly heterosexual, but more than incidentally homosexual.” Another limitation was that counterbalancing was not used, since the scales were given in the same order to all

participants. Participants may have been primed with the more confrontational items included in the ATLG prior to endorsing items on the MHS-G and MHS-L. This may have induced participants to express different levels of homonegativity when rating the more subtle items included in the MHS-G and MHS-L. In addition, fatigue effects may have occurred since the MHS-L and MHS-G were given to participants at the end of the study.

There is another limitation, in that there was not an adequate sample size to analyze gay men's attitudes toward gay men and lesbians, and lesbians' attitudes toward gay men and lesbians. Future research might consider whether gay men are more prejudiced toward lesbians versus gay men, and if lesbians would be more prejudiced toward gay men versus lesbians. In addition, sample characteristics may limit the generalizability of our findings. Future studies should replicate this work on another population with a wider age range since past research demonstrates that on average, older individuals display greater homonegativity than younger individuals (Landen & Innala, 2002).

As discussed earlier, this study demonstrates that heterosexual males, on average, report higher levels of homonegativity toward gay men than toward lesbians when endorsing the most judgmental items of the MHS. Using the ATLG, Herek (1988) also found that heterosexual men have greater levels of homonegativity toward gay men than toward lesbians. Since items in the ATLG are known to be judgmental (Morrison & Morrison, 2002), this shows consistency in the way that heterosexual men respond on such items. This response pattern may reflect a "protective sexism" in which heterosexual males are more comfortable in endorsing confrontational language toward their male peers who identify as gay than they are in doing so toward females who identify as lesbian. It is important to acknowledge these findings, since heterosexual men may continue to have high levels of modern homonegativity when endorsing



judgmental items and this may contribute to the numerous stressors experienced by gay men (Norris, 1992). Future research should focus on why some male heterosexual college students continue to endorse items that are confrontational, since Savin-Williams (2005) postulates that teenagers are becoming less prejudiced toward gay men and lesbians.

#### **4.4 Conclusions**

Finally, using the MHS on a Hispanic sample produced similar results as did Morrison and Morrison (2002). For example, heterosexual men compared to heterosexual women were more prejudiced toward gay men and lesbians. Moreover, heterosexual men compared to heterosexual women had higher levels of prejudice toward lesbians. These findings constitute an important partial cross-cultural replication of existing work.

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Table 1. *Characteristics of Participants*

Characteristic	n (%)
Sex	
Female	456 (57.8)
Male	333 (42.2)
Age	
17-20	602 (76.3)
21-30	165 (21.1)
31-40	13 (1.7)
42-50	6 (.7)
Political affiliation	
Liberal	269 (34.1)
Conservative	164 (20.8)
Moderate	349 (44.2)
Sexual orientation etiology belief	
Choice	447 (56.7)
Beyond an individual's control	288 (36.5)
Contact	
Has a gay male friend	655 (83)
Does not have a gay male friend	134 (17)
Has a lesbian friend	568 (72)
Does not have a lesbian friend	221 (28)
Ethnicity	
Mexican-American	628 (79.6)
Mexican	51 (6.5)
Anglo-American	53 (6.7)
African-American	20 (2.5)
Asian-American	14 (1.8)
Other	22 (2.8)
Political Party	
Republican	148 (18.8)
Democrat	337 (42.7)
Independent	31 (3.9)
None	179 (22.7)
Cannot vote in the USA	88 (11.2)
Religious activity	
Very active	91 (11.5)
Moderately active	183 (23.2)
Somewhat active	211 (26.7)
Minimally active	161 (20.4)
Not active	141 (17.9)

Table 2.

*Fit Indices for Heterosexual Men and Heterosexual Women Evaluating Gay Men*

Model	$\chi^2$	df	RMSEA (90% CI)	CFI	NNFI	SRMR
1	218.12	106	.074 (.061, .088)	.970	.962	.072
2	240.84	117	.075 (.061, .088)	.966	.962	.099
3	307.18	129	.085 (.073, .097)	.952	.950	.103
4	280.99	126	.081 (.068, .093)	.958	.956	.098
5	252.22	125	.073 (.060, .086)	.965	.964	.099
Model Comparison			$\Delta$ RMSEA	$\Delta$ CFI	$\Delta$ NNFI	$\Delta$ SRMR
Model 1 – Model 2			-.001	.004	0	-.027
Model 2 – Model 3			-.01	.014	.012	-.004
Model 3 – Model 4			.004	-.006	-.006	.005

Note:

Model 1 refers to the configural invariant factor model

Model 2 refers to the weak invariant factor model

Model 3 refers to the strong invariant factor model

Model 4 refers to the partial strong invariant factor model

Model 5 allows the latent mean to be estimated

Table 3.

*Fit Indices for Heterosexual Women and Heterosexual Men Evaluating Lesbians*

Model	$\chi^2$	df	RMSEA (90% CI)	CFI	NNFI	SRMR
1	235.63	106	.079 (.065, .092)	.963	.954	.073
2	243.98	117	.074 (.061, .087)	.964	.960	.077
3	310.51	129	.084 (.072, .096)	.949	.947	.101
4	277.81	126	.078 (.065, .091)	.957	.955	.091
5	254.63	125	.072 (.060, .085)	.963	.961	.076

  

Model Comparison	$\Delta$ RMSEA	$\Delta$ CFI	$\Delta$ NNFI	$\Delta$ SRMR
Model 1 – Model 2	.005	-.001	-.006	-.004
Model 2 – Model 3	-.01	.015	.013	-.024
Model 3 – Model 4	.006	-.008	-.008	.01

Note:

Model 1 refers to the configural invariant factor model

Model 2 refers to the weak invariant factor model

Model 3 refers to the strong invariant factor model

Model 4 refers to the partial strong invariant factor model

Model 5 allows the latent mean to be estimated

Table 4.

*Fit Indices for Heterosexual Men Evaluating Gay Men and Lesbians*

Model	$\chi^2$	df	RMSEA (90% CI)	CFI	NNFI	SRMR
1	210.19	106	.078 (.062, .093)	.963	.954	.073
2	237.56	117	.079 (.064, .094)	.957	.951	.099
3						
4	265.86	126	.082 (.068, .096)	.950	.948	.102
5	251.74	125	.079 (.064, .092)	.955	.952	.099
Model Comparison			$\Delta$ RMSEA	$\Delta$ CFI	$\Delta$ NNFI	$\Delta$ SRMR
Model 1 – Model 2			-.001	.006	.003	-.026
Model 2 – Model 3						
Model 2 – Model 4			-.003	.007	.003	-.003

Note:

Model 1 refers to the configural invariant factor model

Model 2 refers to the weak invariant factor model

Model 3 refers to the strong invariant factor model

Model 4 refers to the partial strong invariant factor model

Model 5 allows the latent mean to be estimated

Table 5.

*Fit Indices for Heterosexual Women Evaluating Gay Men and Lesbians*

Model	$\chi^2$	df	RMSEA (90% CI)	CFI	NNFI	SRMR
1	243.13	106	.076 (.064, .089)	.969	.961	.065
2	250.52	117	.072 (.059, .084)	.970	.966	.069
3	333.89	129	.084 (.073, .096)	.954	.953	.106
4	289.84	127	.076 (.064, .087)	.963	.962	.088
5	268.35	126	.071 (.059, .083)	.968	.966	.069
Model Comparison			$\Delta$ RMSEA	$\Delta$ CFI	$\Delta$ NNFI	$\Delta$ SRMR
Model 1 – Model 2			.004	-.001	-.005	-.004
Model 2 – Model 3			-.012	.016	.013	-.037
Model 3 – Model 4			.008	-.009	-.009	.018

Note:

Model 1 refers to the configural invariant factor model

Model 2 refers to the weak invariant factor model

Model 3 refers to the strong invariant factor model

Model 4 refers to the partial strong invariant factor model

Model 5 allows the latent mean to be estimated

Table 6.

*Intercepts that were Allowed to Differ Between Heterosexual Men and Heterosexual Women  
Evaluating Gay Men*

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Items	Heterosexual Men Rating	Heterosexual Women
	Gay Men	Rating Gay Men
Item 8: If gay men want to be treated like everyone else, then they need to stop making such a fuss about their sexuality/culture.	3.470	3.312
Item 9: Gay men who are “out of the closet” should be admired for their courage.	2.703	2.436
Item 11: In today’s tough economic times, tax dollars shouldn’t be used to support gay male organizations.	2.843	3.302

Table 7.

*Intercepts that were Allowed to Differ Between Heterosexual Women and Heterosexual Men  
Evaluating Lesbians*

---

Items	Heterosexual Women Rating Lesbians	Heterosexual Men Rating Lesbians
Item 5: Celebrations such as “Gay Pride Day” are ridiculous because they assume that an individual’s sexual orientation should constitute a source of pride.	2.650	2.939
Item 11: In today’s tough economic times, tax dollars shouldn’t be used to support lesbian organizations.	2.975	3.209
Item 12: Lesbians have become far too confrontational in their demand for equal rights.	2.816	2.988

Table 8.

*Intercepts that were Allowed to Differ Between Gay Men and Lesbians when the Evaluators are Heterosexual Men*

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Items	Heterosexual Men Rating	
	Gay men	Lesbians
Item 2: Gay men seem to focus on the ways in which they differ from heterosexuals, and ignore the ways in which they are the same.	3.368	3.054
Item 7: Gay men should stop shoving their lifestyles down other people's throats.	3.584	3.244
Item 8: If gay men want to be treated like everyone else, then they need to stop making such a fuss about their sexuality/culture.	3.712	3.364



Table 9.

*Intercepts that were Allowed to Differ Between Gay Men and Lesbians when the Evaluators are Heterosexual Women*

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Items	Heterosexual Women Rating Gay Men	Heterosexual Women Rating Lesbians
Item 6: Lesbians still need to protest for equal rights.	2.266	2.499
Item 9: Lesbians who are “out of the closet” should be admired for their courage.	2.304	2.635

## Appendix

### Demographic Variables Questionnaire

Please choose or write the answer that best describes you.

1. Your sex:     Female         Male

2. Politically, I identify myself as :

Liberal         Conservative         Moderate

3. With which sexual orientation do you most identify?

Homosexuality         Heterosexuality         Bisexuality

4. Do you believe homosexuality is: a personal choice or beyond an individual's control

5. Have you ever had a friend who is a gay man? (circle one)        Yes        No

5b. If yes, how many gay men do you know? \_\_\_\_\_

6. Have you ever had a friend who is a lesbian? (circle one)        Yes        No

6b. If yes, how many lesbians do you know? \_\_\_\_\_

7. I am        right    or        left    (circle one)    handed.

8. Ethnically, I identify myself as \_\_\_\_\_. (for example, Latino)

9. For which U.S.A. political party, do you vote for the most?

Republican     Democratic     Independent     none     cannot vote in the USA

**10.** How active are you in religion?

Very active    Moderately active    Somewhat active    Minimally active  

Not active

**11.** While growing up, what was the combined income of your parent(s) or guardian(s) in your household in dollars?

<15,000    15,000-29,999    30,000-44,999    45,000-59,999    60,000-74,999    >75,000

**12.** Generally, I feel my friends feel the same way I do about most issues. With the previous statement, I :

Strongly Disagree    Disagree    Agree    Strongly Agree

**13.** I feel most comfortable speaking \_\_\_\_\_ (for example, German).

**14.** Your age: \_\_\_\_\_

**15.** How many generation has your family been in the U.S.A.? (ie if your parents moved to the USA you are first generation, if your grandparents moved to the USA you are second generation American)

First    Second    Third    more than third

## Family Attitude Scale

Below is a list of beliefs that people have regarding the family. Read each statement below and decide how strongly you agree or disagree with each statement by using the below scale. For example, if you strongly agree with a statement you would write 4. If you strongly disagree with a statement, you would write 1.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Strongly</b>	<b>Disagree</b>	<b>Agree</b>	<b>Strongly</b>
<b>Disagree</b>			<b>Agree</b>

1. \_\_\_\_ Parents always know what's best for a child.
2. \_\_\_\_ A husband should do some of the cooking and house cleaning.
3. \_\_\_\_ For a child the mother should be the most loved person in existence.
4. \_\_\_\_ People who are older tend to be wiser than younger people.
5. \_\_\_\_ Girls should not be allowed to play with toys such as soldiers and footballs.
6. \_\_\_\_ Children should be taught to question the orders of parents and other authority figures.
7. \_\_\_\_ It is more important to respect the father than to love him.
8. \_\_\_\_ Boys should not be allowed to play with toys like dolls and tea sets.
9. \_\_\_\_ Men tend to be just as emotional as women.

10. \_\_\_ It does not do any good to try to change the future, because the future is in the hands of God.
11. \_\_\_ It is all right for a girl to date a boy, even if her parents disapprove of him.
12. \_\_\_ It is all right for a wife to have a job outside the home.
13. \_\_\_ Uncles, aunts, cousins, and other relatives should always be considered to be more important than friends.
14. \_\_\_ We must live for today; who knows what tomorrow may bring.
15. \_\_\_ Young people get rebellious ideas, but as they grow older and wiser, they give them up.
16. \_\_\_ A person should take care of his/her parents when they are old.
17. \_\_\_ Parents should recognize that a teenage girl needs to be protected more than a teenage boy.
18. \_\_\_ All adults should be respected.
19. \_\_\_ The father should be considered to have the most authority.
20. \_\_\_ A child should not obey his parents if he/she believe that they are wrong.
21. \_\_\_ It is more important to enjoy the present than to worry about the future.
22. \_\_\_ The best time in a child's life is when they are completely dependent on their parents.
23. \_\_\_ The teachings of religion are the best guide for living a good moral life.
24. \_\_\_ We attain our goals only if it is the will of God that we do so.

25. \_\_\_ A child should be taught to be ambitious.
26. \_\_\_ Fathers should always be respected regardless of any personal problems they might have.
27. \_\_\_ A husband should take over some of the household chores and child rearing duties if his wife wants to develop her career interests.
28. \_\_\_ A teenage boy needs to be protected just as much as a teenage girl.
29. \_\_\_ Being born into the right family is as important for achieving success as is hard work.
30. \_\_\_ A person should be satisfied with what he/she is without always wanting to achieve more.

### Attitudes Toward Lesbians and Gay Men Scale (ATLG)

Read each statement below and decide how strongly you agree or disagree with each statement by using the below scale. For example, if you strongly agree with a statement you would write 9. If you strongly disagree with a statement, you would write 1.

Strongly Disagree                      Neutral                                      Strongly Agree

1      2      3      4      5      6      7      8      9

1. \_\_\_\_ Lesbians just can't fit into our society.
2. \_\_\_\_ A woman's homosexuality should not be a cause for job discrimination in any situation.
3. \_\_\_\_ Female homosexuality is detrimental to society because it breaks down the natural divisions between the sexes
4. \_\_\_\_ State laws regulating private, consenting lesbian behavior should be loosened.
5. \_\_\_\_ Female homosexuality is a sin.
6. \_\_\_\_ The growing number of lesbians indicates a decline in American morals.
7. \_\_\_\_ Female homosexuality in itself is no problem, but what society makes of it can be a problem.
8. \_\_\_\_ Female homosexuality is a threat to many of our basic social institutions.
9. \_\_\_\_ Female homosexuality is an inferior form of sexuality.
10. \_\_\_\_ Lesbians are sick.

11. \_\_\_ Male homosexual couples should be allowed to adopt children the same as a heterosexual couple.
12. \_\_\_ I think male homosexuals are disgusting.
13. \_\_\_ Male homosexuals should be allowed to teach school.
14. \_\_\_ Male homosexuality is a perversion.
15. \_\_\_ Just as in other species, male homosexuality is a natural expression of sexuality in human men.
16. \_\_\_ If a man has homosexual feelings, he should do everything he can to overcome them.
17. \_\_\_ I would not be too upset if I learned that my son was a homosexual.
18. \_\_\_ Homosexual behavior between two men is just plain wrong.
19. \_\_\_ The idea of male homosexual marriage seems ridiculous to me.
20. \_\_\_ Male homosexuality is merely a different kind of lifestyle that should not be condemned.



### Marlow Crowne Social Desirability Scale

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is "True" or "False" for you personally.

1	Before voting I thoroughly investigate the qualifications of all the candidates.	True	False
2	I never hesitate to go out of my way to help someone in trouble.	True	False
3	It is sometimes hard for me to go on with my work if I am not encouraged.	True	False
4	I have never intensely disliked anyone.	True	False
5	On occasion I have had doubts about my ability to succeed in life.	True	False
6	I sometimes feel resentful when I don't get my way.	True	False
7	I am always careful about my manner of dress.	True	False
8	My table manners at home are as good as when I eat out in a restaurant.	True	False
9	If I could get into a movie without paying and be sure I was not seen, I would probably do it.	True	False
10	On a few occasions, I have given up doing something because I thought too little of my ability.	True	False
11	I like to gossip at times.	True	False
12	There have been times when I felt like rebelling against people in authority even though I knew they were right.	True	False
13	No matter who I'm talking to, I'm always a good listener.	True	False
14	I can't remember "playing sick" to get out of something.	True	False
	There have been occasions when I took advantage of	True	False

15	someone.		
16	I'm always willing to admit it when I make a mistake.	True	False
17	I always try to practice what I preach.	True	False
18	I don't find it particularly difficult to get along with loud mouthed, obnoxious people.	True	False
19	I sometimes try to get even, rather than forgive and forget.	True	False
20	When I don't know something I don't at all mind admitting it.	True	False
21	I am always courteous, even to people who are disagreeable.	True	False
22	At times I have really insisted on having things my own way.	True	False
23	There have been occasions when I felt like smashing things.	True	False
24	I would never think of letting someone else be punished for my wrongdoings.	True	False
25	I never resent being asked to return a favor.	True	False
26	I have never felt annoyed when people expressed ideas very different from my own.	True	False
27	I never make a long trip without checking the safety of my car.	True	False
28	There have been times when I was quite jealous of the good fortune of others.	True	False
29	I have almost never felt the urge to tell someone off.	True	False
30	I am sometimes irritated by people who ask favors of me.	True	False

31	I have never felt that I was punished without cause.	True	False
32	I sometimes think when people have a misfortune they only got what they deserved.	True	False
33	I have never deliberately said something that hurt someone's feelings.	True	False

### Modern Homonegativity Scale (MHS-L)

Read each statement below and decide how strongly you agree or disagree with each statement by using the below scale. For example, if you strongly agree with a statement you would write 5. If you strongly disagree with a statement, you would write 1.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Strongly</b>	<b>Disagree</b>	<b>Don't</b>	<b>Agree</b>	<b>Strongly</b>
<b>Disagree</b>		<b>Know</b>		<b>Agree</b>

1. \_\_\_\_ Many lesbians use their sexual orientation so they can obtain special privileges.
2. \_\_\_\_ Lesbians seem to focus on the ways in which they differ from heterosexuals, and ignore the ways in which they are the same.
3. \_\_\_\_ Lesbians do not have all the rights they need.
4. \_\_\_\_ The notion of universities providing students with undergraduate degrees in Gay and Lesbian Studies is ridiculous.
5. \_\_\_\_ Celebrations such as "Gay Pride Day" are ridiculous because they assume that an individual's sexual orientation should constitute a source of pride.
6. \_\_\_\_ Lesbians still need to protest for equal rights.
7. \_\_\_\_ Lesbians should stop shoving their lifestyles down other people's throats.

8. \_\_\_\_ If lesbians want to be treated like everyone else, then they need to stop making such a fuss about their sexuality/ culture.
9. \_\_\_\_ Lesbians who are “out of the closet” should be admired for their courage.
10. \_\_\_\_ Lesbians should stop complaining about the way they are treated in society, and simply get on with their lives.
11. \_\_\_\_ In today’s tough economic times, tax dollars shouldn’t be used to support lesbian organizations.
12. \_\_\_\_ Lesbians have become far too confrontational in their demand for equal rights.

### Modern Homonegativity Scale (MHS-G)

Read each statement below and decide how strongly you agree or disagree with each statement by using the below scale. For example, if you strongly agree with a statement you would write 5. If you strongly disagree with a statement, you would write 1.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Strongly</b>	<b>Disagree</b>	<b>Don't</b>	<b>Agree</b>	<b>Strongly</b>
<b>Disagree</b>		<b>Know</b>		<b>Agree</b>

1. \_\_\_\_ Many gay men use their sexual orientation so they can obtain special privileges.
2. \_\_\_\_ Gay men seem to focus on the ways in which they differ from heterosexuals, and ignore the ways in which they are the same.
3. \_\_\_\_ Gay men do not have all the rights they need.
4. \_\_\_\_ The notion of universities providing students with undergraduate degrees in Gay and Lesbian Studies is ridiculous.
5. \_\_\_\_ Celebrations such as "Gay Pride Day" are ridiculous because they assume that an individual's sexual orientation should constitute a source of pride.
6. \_\_\_\_ Gay men still need to protest for equal rights.
7. \_\_\_\_ Gay men should stop shoving their lifestyles down other people's throats.

8. \_\_\_\_ If gay men want to be treated like everyone else, then they need to stop making such a fuss about their sexuality/ culture.
9. \_\_\_\_ Gay men who are “out of the closet” should be admired for their courage.
10. \_\_\_\_ Gay men should stop complaining about the way they are treated in society, and simply get on with their lives.
11. \_\_\_\_ In today’s tough economic times, tax dollars shouldn’t be used to support gay male organizations.
12. \_\_\_\_ Gay men have become far too confrontational in their demand for equal rights.

## **Curriculum Vitae**

Daniel Hugo Romero Castillo was born in El Paso, Texas, United States of America. He is the second son of Juan Carlos Romero and Patty Melancon. Daniel graduated from Montwood High School and obtained his bachelor's in liberal arts in Psychology at the University of Texas at El Paso. As an undergraduate, Daniel worked on his honors thesis under his mentors Dr. Osvaldo Morera and Dr. Colby Stoeber. As part of the Summer Research Opportunity Program (SROP) at the University of Utah, he conducted research pertinent to how veterans' Posttraumatic Stress Disorder (PTSD) affected their spouse. Daniel began his master's degree in Clinical Psychology at the University of Texas at El Paso in 2008 working under Dr. John Wiebe and Dr. Osvaldo Morera. He began his practicum at the University Counseling Center (UCC), where he learned techniques to demonstrate empathy and theory regarding Cognitive Behavioral Therapy (CBT) while working with clients. He started another practicum at the Veterans Administration (VA) and worked with professionals from almost all areas of mental health at the VA, working with homeless veterans, shadowing practitioners in general mental health, sitting in group therapy and substance abuse/dependence sessions, assessing patients with PTSD using the Posttraumatic Stress Disorder Checklist (PCL) in primary care, and administering neuropsychological tests with patients who had Traumatic Brain Injury (TBI). Daniel also worked at the Juvenile Detention Department and conducted research to demonstrate what predictors were responsible for juveniles' recidivism crime rates. He will attend a doctoral program in Counseling Psychology at the University of North Texas matriculating in the fall of 2011.