ESSENTIALIST BELIEFS ABOUT HOMOSEXUALITY, ATTITUDES TOWARD GAY MEN AND LESBIANS, AND RELIGIOSITY: CHANGE WITHIN A STRUCTURE OF INTERCONNECTED BELIEFS

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

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The present research was designed to incorporate religiosity into a conceptual framework relating essentialist beliefs and attitudes toward gay men and lesbians and to elucidate causal relationships among these variables. Study 1 extended previous research, finding that believing homosexuality to be an immutable and biological trait was associated with more positive attitudes toward gay men and lesbians, while perceiving sexual orientation categories as discrete was associated with more negative attitudes. Religiosity was strongly associated with both essentialist beliefs and attitudes.

Study 2 tested a framing manipulation in which participants read about a civil-rights-style gay rights organization or a gay rights organization dedicated to religious inclusion. Results indicated that, among religious participants, the religious inclusion framing resulted in significantly more positive attitudes than civil rights framing; the religious inclusion frame also resulted in increased immutability beliefs.

Study 3 was designed to detect indirect or delayed change in immutability beliefs by utilizing a two-phase design that added a persuasive article about the essential nature of homosexuality to the design of Study 2. Although the article was successful in changing participant beliefs about the immutability of homosexuality, the results of the
first phase of this study led to a reinterpretation of findings from Study 2. When compared to a control condition, participants in the religious frame condition did not demonstrate attitude change. Instead, participants were counterarguing the civil rights framing of gay rights activism, resulting in more negative attitudes in that condition.

Study 4 improved upon the two-phase design of Study 3 with methodological enhancements and a comparison of only the religious inclusion frame and a control frame. Again, the religious frame did not result in any immediate attitude change. However, the results did show evidence of indirect change, such that the persuasive article regarding the nature of homosexuality was most effective for religious participants who had previously encountered the religious inclusion frame. Moreover, the change in essentialist beliefs resulted in subsequent attitude change. The role of religiosity in moderating the effectiveness of persuasive efforts, the indirect attitude change seen in Study 4, and the broader implications of the current research are discussed.
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CHAPTER 1

INTRODUCTION

Since Gordon Allport’s 1954 classic work *The Nature of Prejudice*, social psychologists have considered the issues of intergroup stereotyping, prejudice, and discrimination among the field’s central and driving concerns. Throughout the decades of research into the individual psychological processes that contribute to beliefs about members of other social groups, social psychologists have always considered their investigations into stereotyping and prejudice to provide a unique insight in society’s continuing struggle with discrimination and intergroup conflict.

Although laypersons are capable of pointing out examples of explicit prejudice in American society (e.g. discrimination in hiring, hate groups, and stereotypical beliefs about minority groups), social psychologists have long held an interest in more subtle aspects of stereotyping and prejudice. From classic studies on the intrusion of racial stereotyping in the accuracy of memory for an interracial confrontation (Allport & Postman, 1947) and the effect of interracial anxiety on the interview success of black job applicants (Word, Zanna, & Cooper, 1974) to contemporary research utilizing implicit measures and neuroscience techniques, social psychologists have systematically catalogued and analyzed the multitude of ways in which stereotyping and prejudice
intrude on social judgments and interactions without the intent or even awareness of those involved.

For quite some time, stereotypes (i.e. prototypic characteristics of group members) and prejudice (i.e. evaluations of group members and the group as a whole) were the only two aspects of group cognition that were studied extensively by social psychologists. More recently, other aspects of group cognition have gained attention, such as perceived variability among group members and the epistemological status of groups qua groups (Yzerbyt, Judd, & Corneille, 2004; Hamilton, 2007). Central concepts in the understanding of group cognition include entitativity, the extent to which groups are perceived as being a coherent entity rather than a loose agglomeration of individuals; agency, the ability of the group to act as a unit and achieve goals; and psychological essentialism, the extent to which a group is perceived as a natural kind with members sharing a deep underlying trait or feature of some kind. Although social psychologists have been aware of group cognition variables for some time (Campbell, 1958), strong interest in some of these variables has only recently emerged, with researchers eager to disentangle the distinct and overlapping influences of these group perception variables on stereotyping, prejudice, and intergroup relations.

Essentialist beliefs involve the perception that members of a category possess certain invariant and inherent characteristics. Research on essentialist beliefs has been generated from perspectives in cognitive psychology suggesting that individuals possess theories about the underlying nature of categories of objects (e.g. minerals, plants and animals, or people; Medin, 1989), rather than categorizing based solely on the basis of
superficial similarities. To a much greater extent than either entitativity or perceived variability, psychological essentialism refers to the fundamental nature or origin of the group. The topic of psychological essentialism and its relationship to intergroup relations is one that social psychologists have been pursuing with increasing interest in recent years (Yzerbyt, Corneille, and Estrada, 2004; Levy, Chiu, and Hong; 2006; Haslam, Bastian, Bain, and Kashima, 2006).

*Essentialist Beliefs about Social Categories*

When people hold essentialist beliefs about social groups, social psychologists say that those groups or categories have become *essentialized*. The members of essentialized social groups are believed to share some inherent underlying characteristic or trait that both distinguishes them from members of other groups and likens them to one another. Perhaps the most commonly and strongly essentialized social category is gender; most people perceive gender as a category with underlying characteristics and features that make persons of the same gender inherently similar to one another. Gender is perceived as being unchangeable, universal, involuntary, discrete, and genetic. In short, gender is thought to be biologically essentialized.

Of interest to psychologists is not the reality of the essential nature of social categories, however, but the extent to which categories are *perceived* as essentialized. Research has demonstrated that social categories vary widely in the extent to which they tend to be essentialized. Within the United States, for instance, it has been found that gender, ethnicity, race, and disability are highly essentialized categories, whereas class, political ideology, and interests are perceived as lacking inherence or essence (Haslam,
Rothschild, and Ernst, 2000). Likewise, the same social category (e.g. social class) that may not be essentialized in a Western social context may be highly essentialized in another (e.g. India).

The variation in essentialist beliefs about social groups is not merely of ‘academic’ interest, however. Psychological essentialism has been demonstrated to have pervasive effects on stereotyping and prejudice. Essentialist beliefs about social groups facilitate the formation and endorsement of stereotypes about a group (Yzerbyt, Corneille, & Estrada, 2001; Bastian & Haslam, 2005). The relationship between psychological essentialism and prejudice has generally demonstrated the same direction of effect; enhancing the salience of essentialist beliefs regarding a particular social category increases ingroup bias and prejudice against outgroups (Keller, 2005).

Other research has found a more complex pattern. Haslam and colleagues (2000) found that essentialist beliefs had a two-factor structure. The first factor, called ‘entitativity’ or ‘reification,’ is the extent to which a social group is perceived as uniform, informative about characteristics of its members, inherent, and exclusive, and this factor was found to be reliably connected to more negative evaluations of social groups. The second factor, ‘natural-kindness’ or ‘immutability,’ (composed of naturalness, discreteness, immutability, stability, and necessity) moderated the effect of the first factor; when levels of immutability were high, entitativity was more strongly related to negative evaluations of social groups. Thus, it seems that different aspects of essentialist beliefs may have distinctive effects on evaluations of social groups. The immutability factor seems to exacerbate the action of the entitativity factor on prejudice.
The origins of and relationships between these two factors are complex, however. Although the immutability factor suggests that individuals may essentialize social groups as a result of perceived biological or in-born essence, this is not the only possible origin of perceiving social groups as having an underlying essence. For instance, individuals who share a common traumatic experience (e.g. rape victims or war veterans) may be perceived as sharing an immutable, stable essence despite the absence of a biological origin for the essence they share.

Although biological origin of a social group may lead naturally to perceiving members of that group as entitativa, groups that lack biological or immutable essence may also be high on this factor. Sports teams, work groups, and other organized social groups capable of coordinated action may be perceived as highly uniform and exclusive despite the lack of any perception of group immutability or naturalness (Brewer, Hong, and Li, 2004). What the findings of Haslam and his colleagues (2000) suggest is that despite their perceived uniformity, such groups are not as likely to face as much prejudice as groups perceived as being both entitative and natural and immutable in nature. However, there may be notable exceptions to this general pattern.

**Perceptions of Homosexuality and Prejudice Against Gay Men and Lesbians**

Recent research has confirmed that there is at least one social category for which many findings about the effects of essentialist beliefs differ from those other of categories: namely, sexual orientation. Haslam and colleagues (2000) found that, whereas different social categories within the same domain (e.g. whites and African-Americans within the domain of race or Lutherans and Methodists within the domain of
religious affiliation) tended to be rated similarly, sexual orientation was a notable exception – homosexuals were perceived as possessing less ‘natural-kindness’ or immutability than heterosexuals, despite being categories within the same domain.

In addition to the variation in essentialist beliefs among the sexual orientation categories, there is evidence that the direction of the influence of essentialist beliefs on prejudice differs in the domain of sexual orientation. In a study that controlled for demographic variables and political orientation, holding beliefs about the biological or genetic nature of a social category was associated with higher levels of prejudice when judging targets that varied on race but the same beliefs were associated with lower levels of prejudice when judging targets that varied on sexual orientation (Jayaratne et al., 2006).

Sexual prejudice (prejudice based on sexual orientation) differs from other forms of prejudice not only in its unique relationship with psychological essentialism, however. Social psychologists have studied prejudice against gay men and lesbians in part because of its prevalence and the extent to which individuals are willing to publicly express prejudicial sentiments regarding sexual orientation. The federal government recorded 1,472 hate crimes against homosexual individuals in 2006, a number surpassing crimes against Jewish individuals, Muslim individuals, and those of Hispanic ethnicity and only outmatched by hate crimes against black individuals (of which over 3,000 were recorded during the same time period; Federal Bureau of Investigation, 2006). In addition, homosexuality easily outstrips gender and race as a disqualifying feature of a potential presidential candidate. A 2007 phone survey found that 94% of Americans said they
would vote for a qualified black person, 88% for a qualified woman, and only 55% for an otherwise qualified homosexual person (Gallup, 2007a).

Part of the reason for the public willingness to express prejudice and discriminate against gay men and lesbians links back to essentialist beliefs. Americans broadly agree on the essential nature of race and gender; these categories are perceived as inborn and unchangeable. However, there is no such consensus for homosexuality; only 42% of Americans believe sexual orientation to be something “a person is born with.” Those who do not think that homosexuality is inborn are far less likely to consider homosexuality an “acceptable alternative lifestyle,” suggesting that essentialist beliefs play a key role in prejudice against gay men and lesbians (Gallup, 2007b).

In order to determine how different aspects of essentialist beliefs contribute to attitudes toward gays and lesbians, Haslam and Levy (2006) conducted a study of the independent effects of three sub-domains of essentialist beliefs: discreteness, similar to the ‘entitativity’ factor in the study described above (Haslam, Rothschild, and Ernst, 2000); immutability, similar to the ‘natural-kindness’ factor from the same study; and universalism, a third factor that Haslam and Levy identified as distinct in essentialist beliefs about sexual orientation. Their studies showed that, whereas discreteness was associated with increased prejudice toward gay men and lesbians in much the same way that it is with other social categories and groups, immutability was associated with decreased prejudice toward gay men and lesbians, even when controlling for political ideology.
The unique relationship between psychological essentialism and attitudes toward homosexuality is associated with the lack of consensus on the origin or nature of homosexuality. Individuals with positive attitudes toward gay men and lesbians are more likely to believe that homosexuality is inborn and immutable, while those individuals who hold more negative attitudes (or see homosexuality as a sin) perceive homosexuality as a choice. The perception of homosexuality as chosen or sinful may be a key justification for individuals who hold negative attitudes, or it may be the origin of negativity. The present program of research is designed to explore these possibilities and, more generally, to expand our understanding of how essentialist beliefs and attitudes toward gay men and lesbians are interrelated.

The Present Research

While the existing research on psychological essentialism and homosexuality provides an excellent starting point for understanding the complexities of the connections between essentialist beliefs and attitudes toward gay men and lesbians, there are a number of questions yet to be addressed in systematic research.

One issue is the role of religion in the relationship between essentialist beliefs and attitudes about homosexuality. In the United States, religion frequently frames and influences the debate about homosexuality. While researchers have been interested for some time in the connections among religious affiliation and religiosity, political ideology, and attitudes about homosexuality, no studies have investigated the role of religious beliefs in the connection between essentialist beliefs and perceptions of
homosexuality. A systematic investigation may provide new insights about of the relationships among these variables. This was the goal of Study 1.

One question that has been largely ignored in the study of essentialist beliefs and attitudes toward homosexuality is the issue of causal direction. Given the deeply-held nature of the beliefs and attitudes at hand, most research has necessarily been correlational in nature; nonetheless, the dominant discourse surrounding the topic is one where essentialist beliefs are assumed to be antecedents of attitudes toward gay men and lesbians. It is frequently assumed by both advocacy organizations and social scientists that the key to changing attitudes about homosexuality lies in changing essentialist beliefs about homosexuality.

However, research on motivated social cognition (e.g. Pilialoha and Brewer, 2006) suggests that individual attitudes or desires can influence the perception of a group’s structure or qualities. Although the dominant explanation – that attitudes toward gay men and lesbians are driven by beliefs about whether or not category membership is involuntary – is plausible, it is also plausible that people change their beliefs about the inherent nature of sexual orientation to match their attitudes. In other words, it is possible that religious individuals who are convinced either of homosexuality’s inherence or voluntary nature derive their attitudes toward gay men and lesbians from this belief, but it is also possible that religious individuals who are predisposed toward either embracing or marginalizing gay men and lesbians alter their essentialist beliefs to justify and bolster the attitudes, desires, and beliefs they already hold.
Studies 2, 3, and 4 were designed to provide insight into the nature of the connections between attitudes and essentialist beliefs and the moderating effects of religiosity on these connections. While the studies varied slightly in design and content, all were designed to test for mutual causal relationships between attitudes and essentialist beliefs.
CHAPTER 2

STUDY 1: RELIGION, ESSENTIALIST BELIEFS, AND ATTITUDES TOWARD GAY MEN AND LESBIANS

Broadly speaking, the goal of Study 1 was to investigate the relationships among variables relating to the perception of and attitudes toward homosexuality – while replicating and extending the methods and findings of Haslam and Levy (2005). Whereas Haslam and Levy’s individual difference predictors of attitudes toward gay men and lesbians consisted solely of ideology-related variables (right-wing authoritarianism, social dominance orientation, and conservatism), Study 1 was designed to investigate the role of religiosity and specific religious beliefs on essentialist beliefs about homosexuality and related attitudes toward gay men and lesbians.

Specifically, the present study was intended to begin an investigation of the variables that make the relationship between essentialist beliefs and tolerance so different in the case of sexual orientation than in other domains. Given the importance of religion in American society generally and its role in the debate about gay rights, I anticipated that it would play a key role in explaining variation in essentialist beliefs about homosexuality
and in the structure of the relationship between attitudes and essentialist beliefs regarding homosexuality.

Study 1 also added stereotyping as a measured variable in order to assess whether stereotype endorsement is influenced by essentialist beliefs. Previous work on essentialism in the domain of sexual orientation has tended to focus solely on global evaluations or specific attitudes regarding gay men and lesbians (Haslam, Rothschild, and Ernst, 2000; Haslam and Levy, 2005). Given previous research on the role of essentialism in the formation of stereotypes (e.g. Yzerbyt, Corneille, and Estrada, 2001), however, there is every reason to hypothesize that essentialist beliefs may enhance stereotyping of gay men, independent of its relationship to attitudes.

Methods

Design

The study consisted of a series of computer-administered questionnaires, with the order of questions randomized within scales for each participant. The questionnaire assessed the following general constructs:

- Religious identification
- Strength of religious faith and specific religious beliefs
- Political ideology
- Affect toward outgroups
- Political/personal issue attitudes
- Stereotype endorsement
- Essentialist beliefs about homosexuality

**Participants**

Participants were 279 undergraduate students (85 male and 194 female) at The Ohio State University taking an Introduction to Psychology course. These students participated in the study as a partial fulfillment of a course requirement. All students in the course were eligible to participate, recruited via the internet, and responded on individual computers in a laboratory setting with five or fewer other participants.

**Procedure and Materials**

Participants were greeted by the experimenter and seated in front of a computer and told to follow the instructions presented on the screen. The computerized instructions then informed them that they were participating in a study of beliefs regarding social groups, including groups to which they belong.

*Religious Identification and Beliefs.* Participants were first asked to select a religious denomination for themselves by using a branching questionnaire in which “Christian – Not Christian” was the first branch. Of the 279 participants, 219 identified as Christian at this branching. Subsequent questions placed participants into a number of common denominations (with the option of selecting “other” and typing an individually-generated response provided at all times). In addition, Christian participants were asked the extent to which they considered themselves fundamentalist or evangelical.

Following the identification of religious denomination, participants responded to a series of questions regarding their religious beliefs on the following topics: the dominance of the individual’s religious identity in their personal life; belief in an
afterlife; forgiveness as a religious quality; the role of religion in guiding government and leaders; the Santa Clara Strength of Religious Faith scale (Plante & Boccacini, 1997); belief in the essential nature of the individual’s own religious group; and importance of born-again beliefs (see Appendix A for a complete listing of items used in Study 1).

**Political Ideology.** Participants then responded to a one-item measure of political ideology with a 1-7 response scale: very conservative, moderately conservative, slightly conservative, middle of the road, slightly liberal, moderately liberal, and very liberal.

**Tolerance-Related Variables.** Next, participants responded to a set of tolerance-related items. These items included: feeling thermometers for a variety of racial, political, and other groups (including gays and lesbians); questions regarding a wide variety of personal and political issue attitudes, including both race-related attitudes and attitudes about gay men and lesbians; and five items asking about the extent to which participants perceived gay men as higher than straight men on gay-stereotypical positive and negative traits (promiscuous, stylish, artistic, sensitive, and gossipy; see Appendix A for a complete listing of all items).

**Essentialist Beliefs.** Finally, participants completed a 10-item scale intended to measure essentialist beliefs about homosexuality and sexual orientation. The essentialist beliefs scale was derived from the ‘discreteness’ and ‘immutability’ items utilized by Haslam and Levy (2005), and included the following items, to which participants indicated agreement or disagreement on a 5-point Likert scale (the first five items correspond to ‘immutability’ and the latter five to ‘discreteness’; labels are provided for later reference):
- Immut1 - “Sexual orientation is caused by biological factors.”
- Immut2 - “Whether a person is homosexual or heterosexual is pretty much set early on in childhood.”
- Immut3 - “People cannot change their sexual orientation.”
- Immut4 - “Homosexuality and heterosexuality are innate, genetically based tendencies.”
- Immut5 - “Doctors and psychologists can help people change their sexual orientation.” (R)
- Discr1 - “Sexual orientations are categories with clear and sharp boundaries: People are either homosexual or heterosexual.”
- Discr2 - “Homosexual people have a necessary or defining characteristic, without which they would not be homosexual.”
- Discr3 - “Heterosexual and homosexual people are not fundamentally different.” (R)
- Discr4 - “Bisexual people are fooling themselves and should make up their minds.”
- Discr5 - “Knowing that someone is homosexual or heterosexual tells you a lot about them.”

Following the completion of the questionnaire, participants were debriefed and thanked by the experimenter before leaving the laboratory.
Results

Haslam and Levy (2005) found that the items they used to measure essentialist beliefs did not always load onto factors in a manner consistent with their expectations. For this reason, an exploratory factor analysis was conducted to determine whether the scale items utilized in this study could be used to form composite measures of discreteness and immutability.

Factor Analysis

The ten items designed to measure discreteness and immutability were entered into a factor analysis using maximum likelihood extraction and oblimin-rotation to obtain a factor solution. An oblique rotation was used given the previous finding (Haslam & Levy, 2005) that, with respect to beliefs about gays and lesbians, there is a slight negative correlation between discreteness and immutability. Given that the third factor was not interpretable, a two-factor solution was selected that explained 49.7% of cumulative variance (eigenvalues were 3.10 and 1.88 for the two factors). The rotated factor loadings can be seen below in Table 2.1, with the item labels corresponding to those used above:
Table 2.1: Rotated factor loadings for essentialist beliefs items

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<th>Factor 1</th>
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<tr>
<td>immut1</td>
<td>.777</td>
<td>.012</td>
</tr>
<tr>
<td>immut2</td>
<td>.594</td>
<td>.061</td>
</tr>
<tr>
<td>immut3</td>
<td>.700</td>
<td>-.054</td>
</tr>
<tr>
<td>immut4</td>
<td>.852</td>
<td>.010</td>
</tr>
<tr>
<td>immut5R</td>
<td>.479</td>
<td>-.245</td>
</tr>
<tr>
<td>discr1</td>
<td>.083</td>
<td>.556</td>
</tr>
<tr>
<td>discr2</td>
<td>.217</td>
<td>.323</td>
</tr>
<tr>
<td>discr3R</td>
<td>-.110</td>
<td>.462</td>
</tr>
<tr>
<td>discr4</td>
<td>-.116</td>
<td>.497</td>
</tr>
<tr>
<td>discr5</td>
<td>-.096</td>
<td>.544</td>
</tr>
</tbody>
</table>

Extraction Method: Maximum Likelihood.
Rotation Method: Oblimin with Kaiser Normalization.
a Rotation converged in 4 iterations.

Factor analysis of the current study’s data set suggests that the items used to measure discreteness and immutability load onto two distinct factors in a manner consistent with expectations, though the immutability factor seems more coherent and explains more variance than the discreteness factor. Factor loadings tend to be high on one factor and small (less than .1) or negative on the other, suggesting that utilizing these items as scale items to form composite indices of beliefs about the discreteness and immutability of sexual orientation is valid. The correlation coefficient between the two factors was -.11, justifying the use of oblique rotation and consistent with previous findings.

The only exception to the reliability and discreteness of the two factors is item ‘discr2’ - “Homosexual people have a necessary or defining characteristic, without which
they would not be homosexual.” This item may be distinct from others in the discreteness subscale by virtue of its close similarity to general conceptualizations of essentialism (e.g. “the perception that there is some inner essence that defines the group as a category”; Hamilton, 2007) and the possibility of interpreting it in multiple ways. Thus, the fact that it has modest loadings on both factors in this analysis may not be surprising. This item was left out of the composite score for the discreteness scale, but reserved for potential use as a measure of general essentialism.

The 5-item scale measuring immutability and the remaining 4-item scale measuring discreteness were both reasonably reliable given the length of the scales (Cronbach’s $\alpha = .82$ and $.58$ for the immutability and discreteness scales, respectively). Again, the immutability subscale appears to be the more reliable and coherent of the two.

Correlations among Religiosity, Essentialism, Attitudes, and Stereotyping

Self-identified Christians made up a large majority of this sample, and make up the majority of the population of interest in this study. In addition, some religion questions were primarily applicable to Christians (e.g. questions regarding born-again or evangelical beliefs). Accordingly, all additional analyses were conducted using only Christian participants who were citizens of the United States, yielding a sample of 62 male and 155 female participants.

For all scales used in the study, items were used to create composite scores for the variables being studied, reverse-scoring items where appropriate.

Religiosity. As a result of both preliminary examinations of the bivariate relationships among the subscales administered in the study and pre-existing expectations
of which items and scales might be related to one another, two composite religion-related variables were created. A composite measure of religiosity and strength of religious belief was created using responses to the ten questions in the Santa Clara Strength of Religious Belief scale, the four items measuring the extent to which individuals essentialize their religious identities, and the question asked about the extent to which the participant’s religious group membership was his or her dominant group identity (Cronbach’s $\alpha = .95$). Responses to questions about born-again beliefs and the single items measuring fundamentalism and evangelicism were found to be highly correlated and were averaged to create a second composite religion-related predictor (Cronbach’s $\alpha = .78$).

**Attitudes.** Responses to items intended to measure attitudes toward gay men and lesbians were averaged, reverse scoring for negatively worded questions where appropriate. Responses to these items were reliably associated (Cronbach’s $\alpha = .85$). In addition, responses to endorsement of the five stereotype endorsement items were also averaged without regard to valence; responses to these items were also reliable (Cronbach’s $\alpha = .81$).

Table 2.2 summarizes the bivariate relationships among those variables selected for inclusion in further analyses. As might be expected, the strength of religious belief composite and the born-again/fundamentalist composite both predict attitudes toward gay men and lesbians; they also predict both discreteness and immutability subscales of essentialist beliefs, though the correlations with the immutability subscale are particularly strong. This confirms the hypothesis that religiosity is strongly connected to beliefs
about and attitudes toward homosexuality. In addition, the discreteness and immutability essentialism subscales have correlations in opposite directions for all variables except stereotyping, with which both subscales are positively correlated, suggesting that in the domain of sexual orientation stereotypes may indeed differ from attitudes in terms of their relationships with essentialist beliefs.

Interestingly, the current sample replicates the findings in Haslam and Levy’s (2005) previous work showing that discreteness and immutability are negatively correlated with respect to beliefs about homosexuality. This suggests a logical paradox, since both are components of the same theoretical construct of essentialism. A potential explanation for this finding is provided by examining the partial correlation between these two subscales when holding attitudes toward gay men and lesbians constant: the relationship reverses \( r = .14, p < .05 \). This suggests that attitudes are functioning as a suppressor variable, pushing the subscales in opposite directions and obscuring their relationship as subscales of the same theoretical construct.
Table 2.2: Bivariate relationships among variables selected for further analyses

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Political Ideology</td>
<td>1</td>
<td>-.343(**)</td>
<td>-.244(**)</td>
<td>.451(**)</td>
<td>-.039</td>
<td>-.336(**)</td>
<td>.297(**)</td>
</tr>
<tr>
<td>Strength of Religious Belief</td>
<td>-.343(**)</td>
<td>1</td>
<td>.576(**)</td>
<td>-.333(**)</td>
<td>-.095</td>
<td>.192(**)</td>
<td>-.252(**)</td>
</tr>
<tr>
<td>Born-Again / Fundamentalist</td>
<td>-.244(**)</td>
<td>.576(**)</td>
<td>1</td>
<td>-.324(**)</td>
<td>-.109</td>
<td>.140(*)</td>
<td>-.428(**)</td>
</tr>
<tr>
<td>Attitudes Toward G/L</td>
<td>.451(**)</td>
<td>-.333(**)</td>
<td>-.324(**)</td>
<td>1</td>
<td>-.070</td>
<td>-.501(**)</td>
<td>.571(**)</td>
</tr>
<tr>
<td>Stereotype Endorsement</td>
<td>-.039</td>
<td>-.095</td>
<td>-.109</td>
<td>-.070</td>
<td>1</td>
<td>.337(**)</td>
<td>.172(*)</td>
</tr>
<tr>
<td>Discreteness</td>
<td>-.336(**)</td>
<td>.192(**)</td>
<td>.140(*)</td>
<td>-.501(**)</td>
<td>.337(**)</td>
<td>1</td>
<td>-.191(**)</td>
</tr>
<tr>
<td>Immutability</td>
<td>.297(**)</td>
<td>-.252(**)</td>
<td>-.428(**)</td>
<td>.571(**)</td>
<td>.172(*)</td>
<td>-.191(**)</td>
<td>1</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).
The finding that immutability and discreteness beliefs are positively associated when controlling for attitudes toward gay men and lesbians has many potential implications. The finding lends credence to the theoretical construct of essentialism, showing that even though the two factors have divergent relationships with the attitudes that people hold, they are positively associated when controlling for those attitudes. However, this finding also raises questions about the origins and consequences of these essentialist beliefs in the domain of attitudes regarding sexual orientation. In order to better understand the role of these essentialist beliefs in influencing attitudes and stereotyping, regression analyses were undertaken to clarify the role of these beliefs while controlling for the role of demographic and social variables.

Regression Analyses

Two simultaneous regressions were performed for each of the two main ‘outcome’ variables, attitudes toward gay men and lesbians and stereotyping of gay men. For both of these outcome variables, hierarchical regression analyses were conducted: the first step utilizing demographic variables (gender, political ideology, strength of religious belief, and born-again/fundamentalist beliefs) as predictors, and the second step adding both scales of essentialist beliefs to the analysis. The results are summarized in Table 2.3.
<table>
<thead>
<tr>
<th>Outcome Variable</th>
<th>Regression 1</th>
<th>β</th>
<th>Sig.</th>
<th>Regression 2</th>
<th>β</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitudes Toward Gay Men and Lesbians</td>
<td>Gender¹</td>
<td>0.32</td>
<td>p &lt; .001</td>
<td>Gender</td>
<td>0.20</td>
<td>p &lt; .001</td>
</tr>
<tr>
<td></td>
<td>Political Ideology</td>
<td>0.37</td>
<td>p &lt; .001</td>
<td>Political Ideology</td>
<td>0.19</td>
<td>p &lt; .001</td>
</tr>
<tr>
<td></td>
<td>Strength of Religion</td>
<td>-0.17</td>
<td>p &lt; .05</td>
<td>Strength of Religion</td>
<td>-0.15</td>
<td>p &lt; .05</td>
</tr>
<tr>
<td></td>
<td>Born-Again/Fund.</td>
<td>-0.15</td>
<td>p &lt; .05</td>
<td>Born-Again/Fund.</td>
<td>0.01</td>
<td>p = ns</td>
</tr>
<tr>
<td></td>
<td>Discreteness</td>
<td></td>
<td></td>
<td>Discreteness</td>
<td>-0.31</td>
<td>p &lt; .001</td>
</tr>
<tr>
<td></td>
<td>Immutability</td>
<td></td>
<td></td>
<td>Immutability</td>
<td>0.39</td>
<td>p &lt; .001</td>
</tr>
<tr>
<td>Stereotyping of Gay Men</td>
<td>Gender</td>
<td>-0.10</td>
<td>p = ns</td>
<td>Gender</td>
<td>-0.08</td>
<td>p = ns</td>
</tr>
<tr>
<td></td>
<td>Political Ideology</td>
<td>-0.09</td>
<td>p = ns</td>
<td>Political Ideology</td>
<td>-0.04</td>
<td>p = ns</td>
</tr>
<tr>
<td></td>
<td>Strength of Religion</td>
<td>-0.05</td>
<td>p = ns</td>
<td>Strength of Religion</td>
<td>-0.09</td>
<td>p = ns</td>
</tr>
<tr>
<td></td>
<td>Born-Again/Fund.</td>
<td>-0.09</td>
<td>p = ns</td>
<td>Born-Again/Fund.</td>
<td>0.00</td>
<td>p = ns</td>
</tr>
<tr>
<td></td>
<td>Discreteness</td>
<td></td>
<td></td>
<td>Discreteness</td>
<td>0.39</td>
<td>p &lt; .01</td>
</tr>
<tr>
<td></td>
<td>Immutability</td>
<td></td>
<td></td>
<td>Immutability</td>
<td>0.26</td>
<td>p &lt; .01</td>
</tr>
</tbody>
</table>

Table 2.3 - Summary of study 1 regression analyses

¹ Consistent with previous findings, gender was associated with attitudes toward gay men and lesbians in this sample, with women endorsing more positive attitudes. However, no interactions between gender and other variables were observed, so gender was entered in regressions as a control variable but will play no further role in analyses.
The results of these analyses clearly demonstrate the extent to which essentialist beliefs about homosexuality are a proximal factor in influencing attitudes and perceptions of gay men and lesbians. At no point are demographic variables independent predictors of endorsement of stereotypes about gay men. Both factors of psychological essentialism predict stereotyping (in the same direction), with essentialist beliefs being associated with greater stereotyping.

Likewise, both discreteness and immutability beliefs predict attitudes toward gay men and lesbians, replicating previous research demonstrating that discreteness beliefs are associated with more negative attitudes, while immutability beliefs are associated with more positive attitudes in the case of attitudes toward gay men and lesbians. While previous research has shown that discreteness-type beliefs are generally associated with more negative attitudes toward various social groups (Haslam, Rothschild, & Ernst, 2000), the positive relationship between immutability beliefs and attitudes toward gay men and lesbians is unique.

With respect to the attitude measures, all of the demographic variables are significant predictors of attitudes toward gay men and lesbians, independent of essentialist beliefs. However, the composite variable representing born-again beliefs, fundamentalism, and evangelicism no longer predicts attitudes ($\beta = .01, p = \text{ns}$) after essentialist beliefs are added to the regression, suggesting complete mediation of the relationship between these specific religious beliefs and attitudes toward gay men and lesbians. A series of regressions to establish mediation effects demonstrate that
immutability beliefs in particular² mediate the relationship between born-again/fundamentalist beliefs and attitudes toward gay men and lesbians, with immutability beliefs making the influence of born-again/fundamentalist beliefs on attitudes toward gay men and lesbians non-significant (Sobel test: $Z = -5.41, p < .001$).

However, in light of the possibility that essentialist beliefs may also be influenced by attitudes, a test of reverse mediation was conducted. Results show that attitudes are a partial mediator of the relationship between born-again/fundamentalist beliefs and immutability beliefs (Sobel test: $Z = -2.12, p < .05$). While attitudes do not completely mediate the relationship between born-again/fundamentalist beliefs and immutability beliefs regarding homosexuality, this finding does suggest that causation between these variables is bidirectional.

Discussion

Study 1 replicates previous studies demonstrating the strength of the relationship between essentialist beliefs about homosexuality and attitudes about gay men and lesbians. However, it extends previous research in several notable ways.

One finding of the current work that has not been previously demonstrated is the relationship between essentialist beliefs about homosexuality and the tendency of individuals to endorse stereotypes about gay men. Of particular interest is the fact that, whereas discreteness beliefs are associated with more negative attitudes and immutability beliefs with more positive attitudes, both discreteness and immutability beliefs predict

² Responses to the discreteness subscale were not a mediator of the relationship between either of the religiosity variables and attitudes toward gay men and lesbians.
greater levels of stereotype endorsement. This suggests that increased stereotyping may be a side-effect of the efforts of gay rights campaigners to convince the public of the biological and immutable nature of sexual orientation.

Another novel set of findings from the current study concerns the connections between religious beliefs and attitudes toward and stereotypes about homosexuality. The current research demonstrates that, as expected, religious beliefs are generally associated with more negative attitudes toward gay men and lesbians. In addition, in this data set the relationship is mediated by immutability beliefs about homosexuality, suggesting the possibility that the conservative religious opinion that homosexuality is voluntary and changeable may be strongly related to attitudes held by religious individuals; however, a reverse mediation showed that the relationship between religion and essentialist beliefs was also partially mediated by attitudes.

What seems clear from these correlational data is the strongly interconnected nature of religiosity and religious beliefs, essentialist beliefs about the nature of homosexuality (particularly immutability beliefs), and attitudes toward gay men and lesbians. Although it remains a distinct possibility that religious beliefs directly influence essentialist beliefs, which in turn determine attitudes, other possibilities exist. For instance, it is possible that people use their essentialist beliefs about sexual orientation to justify attitudes they already possess; it may be that these attitudes are gained in religious environments, or merely reinforced in them. Likewise, essentialist beliefs about homosexuality are likely to be an important part of religious discussion and doctrine regarding attitudes toward gay men and lesbians; whether one believes homosexuality to
be an inherent feature or a chosen lifestyle has significant implications for the
categorization of homosexual behavior as sinful.

The next step in the program of research is to answer questions about the structure
of relationships among people’s religious beliefs, their beliefs about the essential and
especially the immutable nature of homosexuality, and their attitudes regarding gay men
and lesbians. My findings indicate the possibility of a tightly knit set of connections
among these three variables (see Figure 1). If this is the case, weakening or undermining
one link in this set of relationships should have consequences on the other aspects of the
belief system. The possibility that a change in attitudes might directly influence
immutability beliefs (rather than vice versa) was deemed the more counterintuitive
implication of the mutual causal relationships between the two variables. Study 2 was an
experiment designed to test this causal connection.
Figure 2.1: Graphical representation of interconnected structure of religiosity, immutability beliefs, and attitudes
CHAPTER 3

STUDY 2: THE EFFECT OF A MANIPULATION OF ATTITUDES ON ESSENTIALIST BELIEFS

Study 1 was successful in revealing the strength of the relationships among religious beliefs, essentialist beliefs regarding homosexuality, and attitudes toward gay men and lesbians; however, the correlational design of Study 1 greatly limited the ability to draw conclusions about the direction of causal links among these three variables. The goal of Study 2 was to test the influence of a change in individual attitudes toward gay men and lesbians on subsequent essentialist beliefs.

The model developed in the previous chapter indicates that religious beliefs are strongly connected to both essentialist beliefs about homosexuality and attitudes toward gay men and lesbians, which are in turn related strongly to one another. The current study is designed to test the hypothesis that altering individually-held attitudes may change essentialist beliefs. An experimental manipulation was created to influence attitudes and determine whether a change in attitudes would lead directly to a change in essentialist beliefs. Given the finding that religious beliefs are strongly related to attitudes and essentialist beliefs about homosexuality, a manipulation was devised that would utilize religion as a frame with which to influence attitudes about homosexuality
without the use of a direct persuasive attempt. Participants would read a description of a gay rights organization whose activities were based not on a demand for equal rights, but instead on religious fellowship with the larger community. It was expected that this framing of gay rights as religious inclusion would more effectively reach more conservative or religious participants than would an appeal to civil equality (an argument that participants may have previously encountered and dismissed), with the result of a general increase in positivity toward gay men and lesbians. It was further hypothesized that the more positive attitudes toward gay men and lesbians would be followed by an increase in expressed belief in immutability regarding homosexuality.

Methods

Design

The study was an experiment with two conditions varying the framing of gay rights issues. Participants first completed pre-test measures of individual difference variables, randomly received one of two framing manipulations, and then responded to dependent variable measures relating to attitudes toward and beliefs about homosexuality.

Participants

Participants were 128 undergraduate students (55 male and 73 female) at The Ohio State University taking an Introduction to Psychology course. These students participated in the experiment as a partial fulfillment of a course requirement. All students in the course were eligible to participate, recruited via the internet, and
responded on individual computers in a laboratory setting with five or fewer other participants.

*Procedure and Materials*

Participants were greeted by the experimenter and seated in front of a computer and told to follow the instructions presented on the screen. The computerized instructions then informed them that they were participating in a study of personal philosophy, beliefs, and current events and social issues.

The first measures that participants completed included the same one-item measure of political ideology used in Study 1, as well as those items regarding religious beliefs and religiosity that were used in Study 1 to create composite measures of strength of religious belief (14 items; Cronbach’s alpha = .97) and born-again/fundamentalist beliefs (5 items; Cronbach’s alpha = .80). The questions about religious beliefs and practice were randomly presented along with a selection of items designed to make the set of questions appear more general (e.g. “Taking all things together, I would say that I am a happy person.”) (See Appendix B for a full listing of items used in Study 2.) An additional composite of all religious beliefs was created using items from both the strength of religious belief and born-again/fundamentalist belief scales for use in some analyses (19 items; Cronbach’s alpha = .95).

Following pre-test measures, participants were told that they were going to read a paragraph about a current social or political issue, after which they would be asked questions related to that issue. They were then told that the paragraph they had been assigned was about a “recently-formed political organization.”
Participants in the ‘civil frame’ condition read the following:

The gay rights organization Unconditional Equality was formed in the 1990's to more specifically address the issue of equal treatment of gays and lesbians. Unconditional Equality's members believe strongly that the United States is a country founded on civil rights, and that those rights should be extended to all Americans. Unconditional Equality's projects include outreach programs designed to open dialogues with lawmakers about the ways in which gay and lesbian rights can be reconciled with the law, community events open to all emphasizing the desire for freedom that all people share, and targeted public service announcements emphasizing the common identity of gay and straight people as Americans.

Participants in the ‘religious frame’ condition read the following, designed to be highly comparable to the civil frame condition in structure but appealing to religious inclusion rather than civil rights and equality:

The gay rights organization Universal Fellowship was formed in the 1990's to more specifically address the issue of religious inclusion of gays and lesbians. Universal Fellowship's members believe strongly that the United States is a country founded on religious values, and that all Americans should be included in the same moral community. Universal Fellowship's projects include outreach programs designed to open dialogues with clergy about the ways in which gay and lesbian rights can be reconciled with religious doctrine, community events open to all emphasizing the journey of faith that all people share, and targeted public service announcements emphasizing the common identity of gay and straight people as God's children.

Participants then completed dependent variable measures:

- The 10 items measuring discreteness and immutability beliefs used in Study 1
- Items previously used in Study 1 to tap political attitudes toward gay men and lesbians (e.g. “Hate crime laws should be amended to protect gays and lesbians.”)
- Items tapping personal attitudes toward gay men and lesbians (e.g. “I would upset if I learned my son or daughter were gay.”), including some new items not used in Study 1
• Stereotype endorsement items used in Study 1 (with the addition of a single trait, ‘neurotic,’ to create even numbers of positive and negative stereotypic traits).

Following completion of the DVs (see Appendix B for a complete listing of items used), participants were asked if they identified as gay, lesbian, or bisexual. They were then debriefed and thanked by the experimenter.

Results

As in Study 1, analyses were conducted using data only from Christian participants in order to allow for more precise analysis of the effect of the religious framing manipulation, yielding a sample of 85 participants (37 men and 48 women).

Attitude Change. An independent sample t-test revealed a marginally significant effect of the framing manipulation on attitudes toward gays and lesbians (civil frame condition M = 3.19, religious frame condition M = 3.53; t = 1.80, p = .075) such that participants who read about a gay rights organization with a message of religious inclusion showed more positive attitudes toward gay men and lesbians than those who read the description of a civil-rights organization. This effect occurred for both policy-related attitude items and personal attitude items, so analyses were conducted on a composite that included both types of items. This marginally significant effect was qualified, however, by a significant interaction between religiosity (using the overall composite of all religion items) and experimental condition when predicting attitudes toward gay men and lesbians (F = 4.23, p < .05). The source of this interaction effect becomes clear when attitudes toward gay men and lesbians are graphed by experimental condition and levels of religiosity in Figure 3.1.

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Participants in the religious frame condition showed more positive attitudes toward gay men and lesbians; however, this effect largely occurs among religious participants (condition effect $p < .05$ for participants a standard deviation above the mean in religiosity) while the frame has no effect among less religious participants (condition effect $p = ns$ for participants a standard deviation below the mean in religiosity). As one might expect based on results from Study 1, participants lower in religiosity show generally positive attitudes (above the scale midpoint) toward gay men and lesbians regardless of condition.

*Essentialist Beliefs.* While no effect of the manipulation was found for results on the discreteness subscale of essentialist beliefs, a significant interaction emerged for
immutability beliefs regarding homosexuality (F = 4.28, p < .05) that mirrored the interaction found in attitudes toward gay men and lesbians. As seen in Figure 3.2, religious participants in the religious frame condition tended to endorse immutability beliefs to a greater extent than religious participants in the civil frame condition (condition effect F = 6.03, p < .05), while no significant effect of condition emerged for participants a standard deviation below the sample mean in religiosity (F = 1.55, p = ns). This pattern of results would seem to confirm the study hypothesis; the religious frame condition not only appears to ameliorate the negative attitudes of religious participants toward gay men and lesbians, but this change in attitudes is accompanied by a change in immutability beliefs regarding the nature of homosexuality.

Figure 3.2 - Frame x religiosity interaction effect on immutability beliefs
Discussion

One way of interpreting the effectiveness of the framing manipulation is to say that it largely eliminated the negative influence of religiosity on attitudes toward gay men and lesbians. Among those high in religiosity, the manipulation showed a clear positive influence on attitudes, while among those low in religiosity, no effect was seen. This effect can also be observed by examining the correlation between religiosity and attitudes toward gay men and lesbians separately by framing manipulation condition: for those in the civil frame condition, religiosity is significantly related to more negative attitudes ($r = -.43, p < .01$), while for those in the religious frame condition, the relationship disappears ($r = -.01, p = \text{ns}; z$-test for difference between correlations marginally significant at $Z = 1.85, p < .10$). The same pattern is found for immutability beliefs, with religiosity significantly correlated with immutability beliefs in the civil rights frame condition ($r = -.40, p < .05$) and a nonsignificant but reversed relationship in the religious inclusion frame condition ($r = .14, p = .42; z$-test for difference between correlations significant at $Z = 2.38, p < .05$).

Though the current study successfully demonstrated that a change in attitudes toward gay men and lesbians can be immediately accompanied by a change in essentialist beliefs regarding homosexuality, the mechanism and limits of this relationship are still unclear. The mechanism of change is left uncertain due to the highly proximal placement of the items measuring attitudes and essentialist beliefs. The attitudes measure was immediately followed by the essentialist belief subscales; it is unclear whether the change in immutability beliefs would persist if separated from the attitude measures. One
possible result of separating attitude and essentialism measures is that it would allow for a test of a slightly different hypothesis: that changes in attitudes could instead result in a weakening effect on related beliefs, whereby individuals are more likely to change their essentialist beliefs when confronted. If a change in attitudes has weakened the overall structure of beliefs and attitudes (see Figure 2.1), a possibility suggested by the condition differences in the relationships between religiosity and attitudes and essentialist beliefs found in the present study, a two-phase study would allow for the investigation of indirect or delayed consequences of attitude change. Study 3 was designed to investigate this possibility.
CHAPTER 4

STUDY 3: A TWO-PHASE TEST OF A STRENGTH HYPOTHESIS

The framing manipulation used in Study 2 successfully influenced attitudes toward gay men and lesbians, and this immediate change in attitudes was accompanied by an immediate change in essentialist beliefs. However, while Study 2 may have lent support to the hypothesis that attitudes toward gay men and lesbians and essentialist beliefs regarding sexuality are so tightly linked that changing one will result in a change in the other, its results do not allow for detailed elaboration of the limitations of or mechanisms involved in this relationship. Based on the model presented in Chapter 2, a change in one aspect of the tightly-woven structure of attitudes and beliefs relating to the topic of homosexuality should result in a weakening effect on the other aspects of the belief/attitude structure. Thus, making attitudes toward gays and lesbians more positive should both weaken the link between religiosity and attitudes and undermine one basis of resistance to immutability beliefs. Undermining a belief can either be reflected in immediate change in position or in making the belief more susceptible to influence from later persuasive attempts. Thus, the hypothesis tested in Study 3 is that a change in attitudes toward gays and lesbians results in change in essentialist beliefs via a change in the strength of resistance to immutability beliefs.

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Of the broad features that make up attitude strength (resistance to change, stability over time, influence on information processing, and prediction of behavior; Petty & Krosnick, 1995) resistance to change was selected for examination in the current study. It is hypothesized that a change in attitudes toward gay men and lesbians will result in a weakening of essentialist beliefs regarding homosexuality, leaving those beliefs more susceptible to change via a persuasive message. Study 3 is a two-phase experiment designed to test this hypothesis, in which participants’ attitudes toward gay men and lesbians are manipulated using the same framing manipulation used in Study 2, after which participants are exposed to a message designed to promote an essentialist view of sexual orientation. Those participants whose attitudes are changed during the first phase should more strongly endorse essentialist beliefs about homosexuality following the persuasive attempt in the second phase of the experiment.

Study 3 also improved the design of Study 2 by adding a true control condition. In Study 2 it was assumed that the civil frame was similar to arguments participants may have previously experienced and thus would not produce attitude change. No stimulus irrelevant to the topic of homosexuality and gay rights was provided in Study 2. In order to ascertain the direction of the attitude change seen in Study 2, Study 3 included such a control condition. If participants in the religious frame condition prove to be more influenced by the persuasive message regarding the essential nature of homosexuality than participants in both the civil frame condition and the true control condition, it will provide support for the theory that attitude change inspired by a religious inclusion framing undermines the strength of essentialist beliefs.
Methods

Design

Study 3 consisted of a 3x2 between-subjects design. The framing manipulation phase consisted of three conditions: the two conditions utilized in Study 2 (a religious framing and a civil framing of gay rights activism) and a control condition in which participants read about a health advocacy organization. A measure of attitudes toward gay men and lesbians was administered following the first manipulation.

The second phase consisted of two conditions: participants either read a CNN.com article about recent research supporting a view of homosexuality as essential in nature or a BBC.com article about the genetic and environmental factors that contribute to obesity (as a control condition; see Appendix C for both articles as they appeared in the study). The measure of essentialist beliefs about homosexuality used in the previous studies followed the second manipulation.

Participants

Participants were 178 undergraduate students (55 men, 123 women) at The Ohio State University taking an Introduction to Psychology course. These students participated in the experiment as a partial fulfillment of a course requirement. Prescreening was used to selectively recruit participants who scored high in religiosity – the primary target group for the manipulations in this study. Religious participants were selectively recruited to ensure proper sample sizes within conditions for that demographic group, since they are the most suited to testing the study hypothesis using the manipulation tested in Study 2. To bolster sample size, some participants who had not
completed the prescreening were also recruited from the general Research Experience Program participant pool.

Procedure and Materials

As in previous studies, participants completed all experimental materials on computers in a laboratory setting. Participants were told that they were participating in a study of people’s personal beliefs relating to current issues and events, including issues such as the environment, health, sexuality, and foreign policy.

The study consisted of five discrete steps in which measures were administered and manipulations were presented in the following order:

- Pre-test measures of religiosity and ideology used in Studies 1 and 2, along with branching questionnaire to establish religious identity/denomination (see Appendix D)
- Manipulation of gay rights activism framing used in Study 2, with a control condition in which participants read about a health advocacy organization (see Appendix C)
- Items measuring attitudes toward gay men and lesbians used in Study 2, including distracter items relating to health and other issues to bolster the study’s cover story (see Appendix D)
- Manipulation of a pro-essentialist point of view regarding homosexuality with a control condition regarding the biological factors in obesity (see Appendix C)
• Measures of essentialist beliefs about homosexuality used in Studies 1 and 2 (Haslam & Levy, 2005), as well as several items regarding attitudes toward gay men and lesbians and distracter items (see Appendix D)

Results

Given the religious nature of the framing manipulation and the cultural specificity of the attitudes being studied, only the 153 participants (46 men, 107 women) who identified as Christian in the branching religious identification questionnaire were included in further analyses.

The first dependent measures to be administered following the framing manipulation were items measuring attitudes toward gay men and lesbians; the means by condition for the 3 framing conditions (religious inclusion, civil rights, and unrelated health control) are shown in Figure 4.1.
Results of the framing manipulation on attitudes toward gay men and lesbians replicate the finding from Study 2 showing that attitudes were generally more positive in the religious frame condition ($M = 3.22$) than in the civil frame condition ($M = 3.00$), though the difference in this study is not significant ($t = 1.20, p = .23$). However, the inclusion of an unrelated control condition ($M = 3.21$) leads to a new interpretation of the Study 2 findings. From the present data, it appears that rather than the religious frame condition yielding more positive attitudes than baseline, the civil frame condition is actually producing more negative attitudes. Though none of the three frames in this study produced attitudes that are significantly different from the other frames ($F = .841, p = .43$), it appears the direction of the effect of the framing manipulation in Study 2 was in fact opposite to the initial interpretation of the data from that study.
Though I had expected that the civil frame would represent a previously-encountered and generally unremarkable stimulus for participants, the results of the current study indicate that, in fact, participants were counter-arguing the theme or message of the civil framing manipulation. Since the message represented an argument for gay rights that matches the dominant civil rights tone of the larger gay right movement, it is likely that participants had encountered it and, when disagreeing, become inoculated to it (McGuire, 1961).

Despite the failure of the framing manipulation to produce a direct change in attitudes, a 3 x 2 analysis of variance was conducted to examine the possibility of an indirect effect of the attitude manipulation on the effectiveness of the essentialism manipulation. No interaction between framing condition and essentialism manipulation condition was found for responses to either the immutability subscale (F = .446, p > .6) or the discreteness subscale (F = .796, p > .4). Figure 4.2 shows the cell means of immutability beliefs for the full 3x2 design; a main effect of article condition was the only significant effect to emerge, F = 5.12, p < .05.
Figure 4.2: Immutability beliefs by frame and article conditions

Across framing conditions, participants who read the pro-essentialist CNN article endorsed immutability beliefs about homosexuality (M = 3.24) more than those participants who read the control BBC article (M = 2.95).

Discussion

The current study failed to demonstrate that attitude change would indirectly affect essentialist beliefs by reducing the strength of those beliefs and thus making them more susceptible to persuasive change. It did, however, provide vital information that was lacking prior to the study.

Study 3 demonstrated that the previous finding showing the religious framing manipulation to be an effective manipulation of attitudes was not correct – that, in fact, the religious framing manipulation made no difference on attitudes when compared to a
true control. However, in light of the fact that the civil rights frame was counter-argued by participants, resulting in more negative attitudes, the fact that a novel, religious inclusion approach to gay rights activism was not similarly rejected by participants is significant in itself. It suggests that there are ways of broaching the topic of gay rights (or at least gay inclusion) with religious participants that do not result in a backlash the way that a civil rights frame does.

In addition, Study 3 tested for the first time the effectiveness of information about the essential nature of homosexuality as a method of persuading religious participants to reconsider their beliefs about immutability. A real-world news article was effective in influencing the extent to which participants believe homosexuality to be immutable and biological in nature, relative to an unrelated control. This raises an interesting experimental possibility, given the intention of this program of research to elucidate the causal links between attitudes and essentialist beliefs in this domain. Given that this manipulation of essentialist beliefs has been shown to be effective, it is possible that it could result in a subsequent change in attitudes. This possibility could not be investigated in the present study because attitudes had been assessed only prior to the belief manipulation and not again afterwards.

Given the failure of the framing manipulation to achieve a meaningful initial change in attitudes in the current study, the mechanisms connecting attitudes and beliefs in the domain of homosexuality are still unclear. Study 4 was designed to improve upon the design of Study 3 by taking steps to assure that participants are fully attending to the information presented in the framing manipulation and also by adding attitudes measures
following an essentialism manipulation, allowing for the testing of indirect or delayed effects of attitude change on essentialist beliefs and of essentialist beliefs on attitude change.
CHAPTER 5

STUDY 4: A REFINED TEST OF INDIRECT OR DELAYED EFFECTS OF ATTITUDE CHANGE

Although Study 3 was unsuccessful in detecting indirect or delayed effects of attitude change on essentialist beliefs regarding homosexuality, it nonetheless provided new opportunities for refining and expanding the investigation of these phenomena. The finding that a news article endorsing an essentialist point of view regarding sexual orientation is effective at persuading participants to endorse immutability beliefs about homosexuality opens the possibility of testing for causal effects in the direction opposite that examined in Studies 2 and 3. In other words, Study 4 is designed to determine whether a change in essentialist beliefs is followed by a change in attitudes, as would be predicted by the close relationship between attitudes and beliefs in this domain.

In addition to testing this possible causal relationship, Study 4 also refines the methods used in Study 3 in an improved attempt to observe indirect or delayed effects of attitude change on essentialist beliefs. The present study refines the manner in which the initial framing manipulation of attitudes is presented, while also introducing checks on the comprehension of the framing materials. It also assesses attitudes toward gay men
and lesbians at two time points in the experiment: time 1, following the framing manipulation but preceding the essentialism persuasive message; and time 2, following the essentialism persuasion. The hypothesis is that although the framing manipulation may not directly influence attitudes (in keeping with the findings of Study 3), it may weaken related essentialist beliefs and thus result in heightened acceptance of the essentialist message of the article that follows. In turn, changes in the acceptance of essentialist beliefs may have an effect on Time 2 attitudes.

Methods

Design

Study 4 consists of a 2x2 between-subjects design. The framing manipulation phase previously implemented in Studies 2 and 3 was changed to include only the religious inclusion framing condition and the health advocacy control condition. Following the framing manipulation, a subset of items measuring attitudes toward gay men and lesbians was administered to participants.

The second independent variable is the manipulation of persuasive messages received by participants, identical to those used in Study 3; participants read either a CNN.com article supporting an essentialist perspective on the nature of homosexuality or a BBC.com article supporting a genetic explanation for obesity. Participants then completed the essentialism subscales used in all previous studies, as well as an additional subset of items measuring attitudes regarding gay men and lesbians.
Participants

Participants were 198 undergraduate students (78 men, 120 women) at The Ohio State University taking an Introduction to Psychology course. These students participated in the experiment as a partial fulfillment of a course requirement. Prescreening was used (as in Study 3) to selectively recruit participants who scored high in religiosity in order to increase the possible effectiveness of the religious inclusion manipulation. Recruitment from the general Research Experience Program participant pool was also used to bolster participant numbers.

Procedure and Materials

As in previous studies, participants completed all experimental materials on computers in a laboratory setting. Participants were told that they were participating in a study of people’s personal beliefs relating to current issues and events, including issues such as the environment, health, sexuality, and foreign policy. Unlike in previous studies, participants were led at the beginning of the experiment to believe that the computer was randomly assigning them to questions focusing on only two of the possible issues due to time constraints. All participants were told that they had been randomly assigned to read materials and respond to items regarding the topics of health and sexuality. In addition, response times for all items were recorded and three comprehension questions were added following the framing manipulation in order to ensure that participants were attending to and comprehending the materials.
Participants completed measures and manipulations in the following sequence:

- Measures of religiosity and ideology used in Study 3, along with branching questionnaire to establish religious identity/denomination (see Appendix E)
- Manipulation of gay rights activism framing used previously, limited to either the religious inclusion frame or the health advocacy control condition, followed by three simple comprehension questions (see Appendix F)
- Attitudes measure Time 1: Six items measuring attitudes toward gay men and lesbians used in Study 2 plus two novel items, interspersed with items measuring anti-fat prejudice (Crandall, 1994) distracter items relating to health advocacy to bolster the study’s cover story (see Appendix E)
- Manipulation of a pro-essentialist point of view regarding homosexuality or a control condition regarding the biological factors in obesity (see Appendix F)
- Measures of essentialist beliefs about homosexuality used in all previous studies (Haslam & Levy, 2005) and distracter items relating to obesity
- Attitudes measure Time 2: Remaining items measuring attitudes toward gay men and lesbians including some novel items (see Appendix E)

The separation of attitude items between Time 1 and Time 2 was accomplished through the addition of several personal attitude items (e.g. “I would feel uncomfortable if my best friend came out to me as gay or lesbian.”) to the items used in Study 3, followed by the division of the resulting fifteen attitude items into two sets. One item
(“Homosexuality is a sin.”) was repeated at Time 1 and at Time 2, though it was always presented as the last item to which participants responded at Time 2.

Results

As in the previous studies, only data from Christian participants were utilized in analyses, leaving a sample size of 165 (64 men, 101 women). In addition, 2 respondents whose response times were consistently quicker than other participants (1.3 and 1.8 seconds per item, compared to 5.5 seconds on average for other participants) were dropped from analyses, though this made no appreciable difference to analyses. Of the remaining 163 participants, 148 (91%) correctly identified the nature of the activist group featured in the framing manipulation they encountered, indicating that the vast majority of participants were attending to the information in the framing manipulation.

Time 1 Attitude Change

The Time 1 attitudes measure (Cronbach’s alpha = .84) was the first dependent measure completed by participants and the only set completed following the framing manipulation but before the essentialism persuasion article. Attitude responses were analyzed in a simple t-test comparison between the two conditions. Figure 5.1 presents the condition results graphically. Means in both conditions were just above the midpoint of the scale (M = 3.10 in the religious inclusion condition and M = 3.11 in the control condition) with no effect of framing condition found (t = .112, p = .91), consistent with the results from Study 3 demonstrating that the religious frame condition does not differ from an unrelated control condition in its immediate effect on attitudes.
Figure 5.1: Time 1 attitudes toward gay men and lesbians by framing condition

**Time 2 Measures**

Although a null effect of the framing manipulation on immediate attitude change is consistent with the results of Study 3, it was hypothesized that some indirect or delayed change would be observed on essentialist beliefs or on Time 2 attitudes. Accordingly, 2x2 analyses of variance were conducted on composite scores for both immutability beliefs and attitudes toward gay men and lesbians at Time 2 (Cronbach’s alpha = .86).

Analysis of variance of immutability beliefs at Time 2 showed a significant main effect for article condition such that participants who read the essentialist CNN article were more likely to endorse immutability beliefs (M = 3.42) than those who read the BBC control article (M = 3.08; F = 5.10, p < .05), replicating the finding from Study 3 that the essentialism article significantly increased participant endorsement of
immutability beliefs regarding homosexuality. However, this effect is qualified by a marginally significant interaction between framing condition and article condition (F = 3.55, p = .06). The cell means seen in Figure 5.2 make the origin of this interaction effect clear; participants who received the religious inclusion framing manipulation and read the CNN essentialism article had significantly higher endorsement of immutability beliefs (M = 3.64) than did participants in the other three conditions (M = 3.12; F = 9.55, p < .01). Participants who previously encountered the religious inclusion framing of gay rights activism do seem to be more receptive to the arguments contained in the gay essentialism article, and change their essentialist beliefs as a result.

Figure 5.2: Immutability beliefs at time 2 by framing condition and article condition
In addition, marginally significant effects mirroring those found for immutability beliefs occur for attitudes at Time 2. Figure 5.3 shows the cell means for the Time 2 attitude items. The effect of article on attitudes occurs in the same direction as the findings for immutability beliefs, with participants in the essentialist article condition endorsing more positive attitudes toward gay men and lesbians (M = 3.24) than participants who read the control article (M = 3.01; F = 2.4, p = .12). This effect is qualified by a marginally significant interaction with framing condition (F = 2.28, p = .13) mirroring the findings for immutability beliefs, such that participants who read a religious inclusion framing of gay rights and read a persuasive article about the essentialist nature of homosexuality showed more positive attitudes toward gay men and lesbians (M = 3.37) than participants in the other three conditions (M = 3.05; F = 3.56, p = .06).¹

¹ The repetition of the item "Homosexuality is a sin." allowed for an analysis of change over time in agreement with this item. In particular, participants in the religious inclusion frame were expected to show a decrease in their agreement to the item after reading the persuasive article positing homosexuality as natural and immutable. The change in agreement with this item between Time 1 and Time 2 was calculated (M = -.018 across all participants, with negative values indicating a decrease in endorsement of the item), and the mean change in the two article conditions was compared for participants in the religious framing condition. While the comparison is not statistically significant (t = .678, p = .50), endorsement of the sin item decreases slightly among participants who read the gay essence article (M = -.116) but increases negligibly among participants who read the obesity article (M = .024). The direction of change in the gay essence condition is consistent with the idea that belief in the immutability of homosexuality is tied to being able to regard it as a sin. Also consistent with this idea is the negative correlation (r = -.52, p < .001) between immutability beliefs and ratings on the sin item at Time 2.
For exploratory purposes, analyses of anti-fat attitudes measured at Time 1 (Crandall, 1984) and obesity immutability items measured at Time 2 (see Appendix E for a listing) allow for a test of the relationship between anti-fat attitudes and acceptance of a persuasive message arguing that obesity is immutable in nature. While the obesity essence article did produce marginally more immutability beliefs regarding obesity ($t = 1.74$, $p = .08$) and there was a correlation between more negative anti-fat attitudes as measured at Time 1 and weaker obesity immutability beliefs measured at Time 2 ($r = -$...
.18, p < .05), there was no interaction between Time 1 attitudes and persuasive article condition (F = 1.13, p = ns), suggesting that prior attitudes toward overweight persons did not alter the effectiveness of the obesity essence article in changing participant beliefs about the immutable nature of obesity. However, the absence of both an attitude manipulation prior to the attitudes measure and Time 2 measures of anti-fat attitudes makes a true parallel analysis impossible.

Discussion

The results of the current study again demonstrate the effectiveness of using a persuasive article to change essentialist beliefs, although in the present study this manipulation was effective primarily for participants who had previously been exposed to a religious inclusion framing of gay rights activism. Given that the religious inclusion framing did not create any initial change in attitudes, this indicates some indirect or delayed change in beliefs as a result of the combined influence of the two manipulations. This effect was not observed in Study 3; it is possible that the methodological changes designed to enhance the believability and effectiveness of the initial framing manipulation were successful in improving participant comprehension and processing of the manipulation.

In addition, the present study found a novel effect; the interaction between the framing manipulation and the persuasive article had an effect on attitudes measured at a second time frame following the measure of essentialist beliefs, providing additional evidence for the interconnectedness of attitudes and beliefs in this domain.
The results of the current study are consistent with several possible explanations. The strength hypothesis proposed in Study 3, that the framing manipulation might result in weaker essentialist beliefs more susceptible to change, is not inconsistent with the present data. However, at least one other possible explanation of the results exists that may shed light on the conditions under which these effects are more or less likely to occur.

The results of the present study parallel those found in research on the attitudinal influence of minority group members (see Wood, Lundgren, Ouellette, Busceme, & Blackstone, 1994, for a review). Minority influence research has consistently shown that minority group members tend to exert indirect influence on target group members’ attitudes. In other words, when people encounter a persuasive message from a group member who disagrees with most other group members (making them a minority in this paradigm), the targets of such persuasive messages are unlikely to be directly persuaded. For instance, the Catholic Church officially opposes both abortion and the use of contraception; when confronted by other Catholics who promoted greater leniency allowing abortions, Catholic participants do not change their attitudes toward abortion based on this minority viewpoint. They do, however, change their attitudes on a related issue, that of contraception (Perez & Mugny, 1987).

Additional research has shown indirect minority influence effects even when the two attitudes are not logically connected. Minority influence effects have been obtained with issues for which responses are highly correlated but for which no logical connection exists, such as gun control and a ban on gays in the military (Alvaro & Crano, 1997).
appears that indirect influence can occur for attitudes or beliefs that are merely correlated
and therefore stored nearby one another in memory, regardless of whether they are
directly or logically related.

Given the finding in the present program of research that attitudes and essentialist
beliefs are in fact strongly related to one another, it is possible that an indirect attitude
change explanation utilizing the minority influence framework could serve as an
explanation for the current results. The nature of the gay rights framing manipulation is
particularly important for this explanation. The religious inclusion frame strongly
establishes a common religious identity between straight and gay people and emphasizes
their common membership in “the same moral community.” Without this common
ingroup framing, it is likely that participants construe gay men and lesbians as outgroup
members and thus are less accepting of the arguments for the essential nature of sexual
orientation they encounter later in the experiment.

One reason for preferring an indirect minority influence explanation to a simpler
strength explanation for this data set is that the minority influence explanation offers a
wider variety of testable hypotheses regarding the boundary conditions of the current
findings. Minority influence phenomena require a common group membership between
the target of the persuasive message and the individual or group presenting the minority
point of view; shared religious identity seems to provide that. Minority influence effects
are also more likely to occur if the issue or position being championed by the minority
source is clearly related to the overall group beliefs or standards (Crano & Chen, 1998);
given the centrality of religious argument and beliefs to the debate over homosexuality in American society, this requirement would seem to be filled in the current experiment.

Indirect attitude change as an explanation for the current results is also bolstered by the Time 2 change in attitudes regarding homosexuality; indirect minority influence not only creates immediate change in attitudes or beliefs relating to the persuasive message, but over time may create an additional change in the target attitude itself (Crano & Chen, 1998). The finding that Time 2 attitudes moved in line with essentialist beliefs only for participants who previously encountered the religious inclusion manipulation may be evidence for just such an effect.

Future research should investigate the parallels between the results of the present study and the findings of the minority influence literature. In particular, experiments could clarify whether the results of the current study are better explained by an attitude strength effect or via minority influence phenomena, and thus shed additional light on the relationships among the variables studied in this program of research.
CHAPTER 6

GENERAL DISCUSSION AND IMPLICATIONS

Over the course of the current program of research the variables being investigated remained constant, but the manner in which I conceptualized the relationships among them has changed. Study 1 replicated and extended previous research by confirming the strong interconnections among religiosity, essentialist beliefs, and attitudes toward gay men and lesbians. Given the limited correlational nature of Study 1, however, subsequent studies were conducted to shed some light on the direction and nature of the interrelationships among these variables.

The initial experimental study was designed to determine whether a change in attitudes could result in a subsequent change in essentialist beliefs regarding the nature of homosexuality. The results of Study 2 seemed to confirm this hypothesis; a manipulation of gay rights framing (as either religious inclusion or a civil rights issue) produced immediate differences in attitudes and essentialist beliefs, especially among religious participants.

However, when Study 3 was conducted to examine the mechanism and durability of the changes observed in Study 2 by separating measures of attitudes and essentialist
beliefs and adding a second experimental manipulation, results suggested a new interpretation of the results of Study 2. Study 3 included a true control condition, in which participants read about a health advocacy organization with no connection to issues or controversies surrounding homosexuality. Attitudes toward gay men and lesbians in this condition matched those in the religious inclusion framing condition, while those in the civil rights framing condition were lower, indicating that participants reacted to the civil rights discourse by counterarguing.

The results of Study 3 led to a reinterpretation of the results of Study 2. In particular, it appears that the religious inclusion frame, while not resulting in more negative attitudes, did not actually make existing attitudes more positive. Since it appears that the change in attitudes actually occurred in the civil rights framing condition, the change in essentialist beliefs found in the previous study may also have been a result of reactance and counterarguing.

However, the inclusion of a persuasive manipulation of essentialist beliefs in Study 3 did prove fruitful; across framing conditions, participants who read an article describing sexual orientation as set early in life, biological in origin, and unchanging were more likely to endorse immutability beliefs about homosexuality. Given that this manipulation was successful in changing essentialist beliefs, Study 4 was designed to determine whether a change in essentialist beliefs would be followed by a change in attitudes.

The two-phase design of Study 4 also tested for indirect effects of the previously-used framing manipulation; the results indicated that the essentialism persuasion was
most effective for participants who had been exposed previously to the religious inclusion framing of gay rights. In addition, this change in essentialist beliefs was accompanied by a change in attitudes – but only after the change in essentialist beliefs had occurred.

As a whole, the program of research obtained several novel findings with importance for both future research and gay rights campaigners. Study 1 not only replicated previous research on the nature of the relationship between attitudes and essentialist beliefs, but showed that religiosity and religious beliefs are at least as connected with these variables as is political ideology. It also raised an important question about the effectiveness of the gay rights campaigning strategy of arguing that sexual orientation is biological in nature by showing that immutability beliefs about homosexuality, while indeed associated with more positive attitudes, were also related to an increase in stereotyping of gay men.

The Relationship(s) Between Beliefs and Attitudes

Perhaps the most important contribution of the current program of research, however, is the finding that the relationship between attitudes and essentialist beliefs can be bidirectional. A change in attitudes or beliefs can, under the right conditions, cause a change in the other. This may not be surprising, given the strong association between these two variables. As demonstrated in previous research on minority influence effects, attitude change can occur for issues that are related in memory without any logical connection between them (e.g. gun control and gays in the military; Alvaro & Crano, 1997); this suggests that a change in one construct may cause a change in the other even without any conscious consideration. However, it is likely that for the issue of attitudes
and beliefs regarding homosexuality, most individuals are aware that the two constructs are connected.

The role of religiosity and religious beliefs in influencing attitudes toward and beliefs about homosexuality is a key question addressed by this program of research. In particular, the effectiveness of a religious inclusion framing of gay rights activism was expected to be greater for individuals who are religious. Although it appeared that countearguing in the civil rights framing condition was driving most of the effect of the original framing manipulation, it is worth noting that countearguing did not occur in the religious inclusion condition. Despite the gay rights focus of the fictitious organization, it appears that a Christian superordinate group identity may have eliminated the countearguing that occurred in the civil rights framing condition.

In addition to eliminating countearguing, the religious inclusion framing of gay rights activism may have paved the way for subsequent or indirect attitude change. The present research has shown strong interconnections among religiosity, essentialist beliefs, and attitudes toward gay men and lesbians. These beliefs are mutually reinforcing, and weakening or changing one may lead to a change in the others (as demonstrated in Studies 2 and 4). Weakening this belief structure may result in an ‘unfreezing’ effect (Kruglanski & Freund, 1983), such that individuals who are high in need for closure (Kruglanski & Weber, 1996) are then more likely to reassess the other beliefs in the system than they would otherwise be. Previous research has found that highly religious individuals (who were preferentially recruited and analyzed in the current research) tend to be high in need for closure (Saroglou, 2002) Since individuals high in need for closure
tend to hold beliefs in a ‘frozen’ state, they may be highly resistant to persuasive attempts, resulting in the counterarguing observed in the current research. However, the more unexpected value and group-based religious inclusion framing of gay rights may have generated less counterarguing, rendering a group that is usually highly resistant to persuasive attempts more receptive.

While general need for closure may be an important factor in understanding the structure of sexual prejudice, the connection between attitudes and essentialist beliefs is tied perhaps even more strongly to religious beliefs in American society. While many people see a logical connection between the questions of whether sexual orientation is a choice and whether the government should protect gay men and lesbians from discrimination, the issue of biological origin and immutability is even more salient for individuals who are religious. Within a religious context, the issue of sin is central to the question of how gay men and lesbians should be treated. If homosexual behavior or homosexuality per se is a choice and therefore a sin, it is logical that gay men and lesbians should be judged harshly. If, however, one believes that homosexuality is inborn, immutable, and not a choice, then it would not be logical to judge it as unnatural or sinful. In fact, there are many “welcoming” congregations in the United States, either as part of a larger church or functioning as an independent congregation, and it is reasonable to assume that on average the members of these churches have significantly more positive attitudes toward gay men and lesbians than individuals from churches that do not welcome gay and lesbian congregants. Thus, the connection between Christian religiosity and anti-gay attitudes hinges on the premise that homosexuality is a matter of
free will and sin. This is a case where essentializing a social category has acquired theological implications.

**Broader Implications**

The centrality of religion to contemporary American attitudes regarding homosexuality and the results of the current program of research suggest that different approaches to gay rights campaigning may be more or less effective depending on the target of the persuasive attempt. In particular, Studies 2 and 3 both show that religious participants reject and counterargue a civil rights framing of gay rights, whereas less religious participants do not. This may be a result of having previously encountered such arguments, or it may be that religious individuals have different moral worldviews and thus are less persuaded by arguments revolving around the values of fairness and harm. Contemporary research on morality suggests that, although conservatives do value fairness, the dimensions of ingroup loyalty, religious purity, and respect for authority are more important bases of moral judgment for conservative individuals than for liberal individuals (Haidt & Graham, 2007). If so, it may be that conservative (and, by association, religious) targets of gay rights activism would be more effectively reached by framing that utilizes one or more of these other dimensions of morality. The religious inclusion framing utilized in the present research, by virtue of emphasizing inclusion in a religious ingroup, may be a good example of a possible alternative to civil rights frames that rely strongly on the more “liberal” moral dimensions of equity and harm.

Although contemporary gay rights organizations and gay and lesbian individuals have chosen to focus their efforts to create attitude change by promulgating the idea that
homosexuality is inborn and not a choice, the present research suggests that this may come at a price. The results of Study 1 suggest that individuals who believe that homosexuality is immutable in nature are more likely to endorse stereotypes about gay men. Although the present program of research did not address this issue experimentally, this finding nonetheless raises the question of whether the increasing prevalence of an immutable view of homosexuality may be accompanied by some negative consequences. Further, results from Studies 2 and 3 suggest that persuasive arguments aimed at changing immutability beliefs can be effectively resisted if they are embedded in a civil rights frame (as is most often the case). The religious foundation of the attitude itself may first have to be undermined before further persuasion can have any impact.

Perhaps more importantly, however, the assumption of a biological basis or inborn origin of homosexuality may not result in universal acceptance of gay men and lesbians. Certainly most people would classify race as immutable and inborn, and racial divisions remain some of the most potent in American society. Even if people accept a biological origin of homosexuality, this may simply lead those with negative attitudes to adopt a view of homosexuality as a disease, rather than a normal variation within the population. Especially among very religious individuals, people may believe it possible for prayer or spiritual intervention to change sexual orientation, as they do now. The more general point to be made here is that the connection between a specific belief (immutability) and an attitude (rejection of homosexuality) needs to be considered in the context of the larger system of values and social institutions in which it is embedded.
Unless the belief is changed within that context, beliefs about the origins of sexual orientation may be irrelevant to negative attitudes regarding homosexuality.

**Future Directions**

The current program of research is limited in several important ways. Like most laboratory research, it was limited in participation to college-aged, university-enrolled individuals. The differences between college student populations and the broader population that have been perceived as problematic or limiting for social psychology research, such as uncrystallized and unintegrated attitudes (Sears, 1986), do seem to be a possible weakness given the centrality of attitudes and attitude structure to the current research. The relationships between attitudes and beliefs about homosexuality may differ in samples of older adults; additional studies on correlates of attitudes toward gay men and lesbians would benefit from drawing a wider sample from the general population.

In addition, the current work occurred within single sessions in a laboratory, and thus is unable to address issues of long-term attitude and belief change. While college students are probably an ideal population to draw from for a study of attitude change over the course of several years, the current research was not designed with this goal in mind. However, longitudinal research on this topic would allow for both greater external validity and a better understanding of the variables that moderate attitude and belief change.

Another limitation that could be addressed in future work is the range of ideology and religious belief measures utilized in the present research. While the relationship between political orientation and attitudes toward gays and lesbians has been replicated
numerous times (e.g. with a simple liberal-conservative measure in the current study and with Right-Wing Authoritarianism in Haslam & Levy, 2005), the exact nature and origin of this powerful relationship has not been investigated in the social psychological literature. An emerging consensus that political judgments and political ideology are connected to value judgments (Henry & Reyna, 2007), variable moral standards (Haidt & Graham, 2007), and a wide array of dispositional variables (Jost, 2006) suggests that political beliefs have complicated origins, but much existing work on attitudes toward gays and lesbians conceptualizes ideology as a simple liberal-conservative dimension. Some aspects of political ideology may interact with religious and essentialist beliefs in theoretically and practically important ways and future research could benefit from a more complex conceptualization.

Lastly, the current research focuses solely on explicitly-endorsed attitudes and beliefs. The willingness of many participants to openly express reservations or outright prejudice regarding homosexuality makes sexual prejudice a fruitful area of study, but a focus on explicit stereotyping and prejudice may miss insights that could be gained from a study of implicit or subtle sexual prejudice. It is likely that many individuals who outwardly express positive attitudes toward gay men and lesbian are influenced nonetheless by private or unconscious stereotypic knowledge and cultural norms.

Conclusion

Although this program of research has expanded existing research on attitudes toward gay men and lesbians in significant ways, the immediately preceding section outlines some of the limitations of existing research. As sexual prejudice becomes less
accepted in American society, social psychologists have a unique opportunity to study the complex and interconnected effects of essentialist beliefs, political ideology, and religious beliefs on changing social norms and personal beliefs and attitudes. Social psychologists also have a rich knowledge of the ways in which subtle or implicit bias toward a social group or class can be as powerful an influence as explicit, old-fashioned prejudice. Dissemination of this knowledge and its application to sexual prejudice may be an important way in which the field can contribute to combating prejudice in contemporary society.
BIBLIOGRAPHY


APPENDIX A

STUDY 1 MEASURES

Santa Clara Strength of Religious Faith Questionnaire (Plante & Boccacini, 1997)

1. My religious faith is extremely important to me.
2. I pray daily.
3. I look to my faith as a source of inspiration.
4. I look to my faith as providing meaning and purpose in my life.
5. I consider myself active in my faith or church.
6. My faith is an important part of who I am as a person.
7. My relationship with the Higher Power is extremely important to me.
8. I enjoy being around others who share my faith.
9. I look to my faith as a source of comfort.
10. My faith impacts many of my decisions

Questions regarding an afterlife, forgiveness, and theocratic beliefs

1. Sacrificing worldly happiness may be necessary to attain lasting redemption in the afterlife.
2. I believe that part of me will continue on after I die.
3. My eternal fate takes precedence over my temporary desires.
4. To err is human; to forgive, divine.

5. Forgiveness is central to my beliefs about morality and religion.

6. Though forgiveness may be difficult, it is worth striving for.

7. Government leaders should possess strong moral and religious values.

8. Religious teachings and values form the basis of any valid government.

9. Religion and the state should be kept absolutely separate.

**Items regarding essential nature of religious identity (including born-again items)**

1. I will always be a member of my religion.

2. Knowing that I am a member of my religious group tells others something about who I am.

3. Members of my religion all share something fundamental.

4. Religion changes who you are at a fundamental level.

5. Being born again is an important part of my religious beliefs.

6. I consider myself to have been born again.

7. Religion changes who you are at a fundamental level.

**Implicit Theory Questionnaire (Dweck, Hong, Chiu, 1993)**

1. Someone’s personality is something about them that they can’t change very much.

2. A person can do things to get people to like them, but they can’t change their real personality.

3. Everyone has a certain personality, and it is something they can’t do much about.

4. A person can change the way they act, but they can’t change their real personality.
Miscellaneous policy-related items (distracter items)

1. The University should only fund organizations and activities that appeal to the majority of students, not activities that only appeal to small groups in the student population.

2. Increasing the number of racial and ethnic minorities at the University benefits our community educationally and socially.

3. The University should provide for the needs of minority populations (e.g. religious and racial minorities) when designing and funding University services.

4. I think that marriage between two people from different religious backgrounds should be discouraged.

5. It is better for a country if different racial and ethnic groups adapt and blend into the larger society.

6. The war on terror may require that some civil liberties be restricted.

7. I would be happy if I found out that a member of my family were dating someone of a different racial group.

8. Discrimination against blacks is no longer a problem in the United States.

9. Over the past few years, blacks have gotten less than they deserved.

10. Corruption in Washington is such a serious problem that drastic measures should be taken to correct it.

11. The Iraq War was a mistake.

12. I trust conservative politicians more than liberal politicians to make principled decisions.

13. Uncontrolled immigration threatens the American way of life.
Essentialist beliefs about gays/lesbians scale (Haslam & Levy, 2005)

1. Sexual orientations are categories with clear and sharp boundaries: People are either homosexual or heterosexual.

2. Homosexual people have a necessary or defining characteristic, without which they would not be homosexual.

3. Heterosexual and homosexual people are not fundamentally different. (R)

4. Bisexual people are fooling themselves and should make up their minds.

5. Knowing that someone is homosexual or heterosexual tells you a lot about them.

6. Sexual orientation is caused by biological factors.

7. Whether a person is homosexual or heterosexual is pretty much set early on in childhood.

8. People cannot change their sexual orientation.

9. Homosexuality and heterosexuality are innate, genetically based tendencies.

10. Doctors and psychologist scan help people change their sexual orientation. (R)

Items for measuring attitudes toward gay men and lesbians

1. The University should provide benefits (such as ability to buy insurance, family housing) for long-term same-sex couples similar to those it provides for married couples.

2. Gays and lesbians should have the same rights as everyone else.

3. Gay marriage is going too far and should not be legally permitted.

4. Hate crime laws should be amended to protect gays and lesbians.

5. It should be illegal to discriminate against gays and lesbians in the workplace.

6. State laws regarding private, consenting homosexual behavior should be eliminated.
7. Homosexual couples should be allowed to adopt children the same as heterosexual couples.

8. I would not be too upset if I learned my son or daughter were gay.

9. Homosexual behavior is just plain wrong.

**Stereotype endorsement items**

1. Compared to straight men, gay men are more promiscuous.

2. Compared to straight men, gay men are more sensitive.

3. Compared to straight men, gay men are more artistic.

4. Compared to straight men, gay men are more stylish.

5. Compared to straight men, gay men are more gossipy.
APPENDIX B

STUDY 2 MEASURES

Santa Clara Strength of Religious Faith Questionnaire (Plante & Boccacini, 1997)

1. My religious faith is extremely important to me.
2. I pray daily.
3. I look to my faith as a source of inspiration.
4. I look to my faith as providing meaning and purpose in my life.
5. I consider myself active in my faith or church.
6. My faith is an important part of who I am as a person.
7. My relationship with the Higher Power is extremely important to me.
8. I enjoy being around others who share my faith.
9. I look to my faith as a source of comfort.
10. My faith impacts many of my decisions

Items regarding essential nature of religious identity (including born-again items)

1. I will always be a member of my religion.
2. Knowing that I am a member of my religious group tells others something about who I am.
3. Members of my religion all share something fundamental.
4. Religion changes who you are at a fundamental level.
5. Being born again is an important part of my religious beliefs.

6. I consider myself to have been born again.

7. Religion changes who you are at a fundamental level.

**Miscellaneous belief items (distracter items)**

1. Generally speaking, most people can be trusted.

2. Most people will take advantage of you if they get a chance.

3. Taking all things together, I would say that I am a happy person.

4. Regardless of the qualities and faults of one's parents, one must always love and respect them.

5. I would give out part of my income if I were certain that the money would be used to prevent environmental pollution.

6. I think all people have free will and control over their lives.

7. I make a lot of effort to live up to what my friends expect.

**Essentialist beliefs about gays/lesbians scale (Haslam & Levy, 2005)**

1. Sexual orientations are categories with clear and sharp boundaries: People are either homosexual or heterosexual.

2. Homosexual people have a necessary or defining characteristic, without which they would not be homosexual.

3. Heterosexual and homosexual people are not fundamentally different. (R)

4. Bisexual people are fooling themselves and should make up their minds.

5. Knowing that someone is homosexual or heterosexual tells you a lot about them.

6. Sexual orientation is caused by biological factors.
7. Whether a person is homosexual or heterosexual is pretty much set early on in childhood.

8. People cannot change their sexual orientation.

9. Homosexuality and heterosexuality are innate, genetically based tendencies.

10. Doctors and psychologists can help people change their sexual orientation. (R)

**Miscellaneous policy-related items (distracter items)**

1. The University should only fund organizations and activities that appeal to the majority of students, not activities that only appeal to small groups in the student population.

2. Increasing the number of racial and ethnic minorities at the University benefits our community educationally and socially.

3. The University should provide for the needs of minority populations (e.g., religious and racial minorities) when designing and funding University services.

4. I think that marriage between two people from different religious backgrounds should be discouraged.

5. It is better for a country if different racial and ethnic groups adapt and blend into the larger society.

6. The war on terror may require that some civil liberties be restricted.

7. I would be happy if I found out that a member of my family were dating someone of a different racial group.

8. Discrimination against blacks is no longer a problem in the United States.

9. Over the past few years, blacks have gotten less than they deserved.

10. I trust conservative politicians more than liberal politicians to make principled decisions.
**Items for measuring attitudes toward gay men and lesbians**

1. The University should provide benefits (such as ability to buy insurance, family housing) for long-term same-sex couples similar to those it provides for married couples.

2. Gays and lesbians should have the same rights as everyone else.

3. Gay marriage is going too far and should not be legally permitted.

4. Hate crime laws should be amended to protect gays and lesbians.

5. It should be legal to discriminate against gays and lesbians in the workplace.

6. State laws regarding private, consenting homosexual behavior should be eliminated.

7. Homosexual couples should be allowed to adopt children the same as heterosexual couples.

8. I would be upset if I learned my son or daughter were gay.

9. Homosexual behavior is unnatural.

10. Homosexuality is a sin.

11. I feel equally as comfortable being around gay men and lesbians as I do around straight people.

12. I actively attempt to cultivate friendships with gay men and lesbians.

**Stereotype endorsement items**

1. Compared to straight men, gay men are more promiscuous.

2. Compared to straight men, gay men are more sensitive.

3. Compared to straight men, gay men are more artistic.

4. Compared to straight men, gay men are more stylish.

5. Compared to straight men, gay men are more gossipy.

6. Compared to straight men, gay men are more neurotic.
APPENDIX C

STUDY 3 MANIPULATIONS

Framing Manipulations

Civil Rights Frame

The gay rights organization Unconditional Equality was formed in the 1990's to more specifically address the issue of equal treatment of gays and lesbians. Unconditional Equality's members believe strongly that the United States is a country founded on civil rights, and that those rights should be extended to all Americans.

Unconditional Equality's projects include outreach programs designed to open dialogues with lawmakers about the ways in which gay and lesbian rights can be reconciled with the law, community events open to all emphasizing the desire for freedom that all people share, and targeted public service announcements emphasizing the common identity of gay and straight people as Americans.

Religious Inclusion Frame

The gay rights organization Universal Fellowship was formed in the 1990's to more specifically address the issue of religious inclusion of gays and lesbians. Universal Fellowship's members believe strongly that the United States is a country founded on religious values, and that all Americans should be included in the same moral community.
Universal Fellowship's projects include outreach programs designed to open dialogues with clergy about the ways in which gay and lesbian rights can be reconciled with religious doctrine, community events open to all emphasizing the journey of faith that all people share, and targeted public service announcements emphasizing the common identity of gay and straight people as God's children.

_Control (Health Advocacy) Frame_

The Center for Science in the Public Interest has been an advocate for nutrition and health, food safety, alcohol policy, and sound science since 1971. Its award-winning newsletter, Nutrition Action Healthletter, with some 900,000 subscribers in the United States and Canada, is the largest-circulation health newsletter in North America.

CSPI's accomplishments include leading the efforts to win passage of laws that require Nutrition Facts on packaged foods (and, later, to include trans fat on those labels), define the term "organic" for foods, and put warning notices on alcoholic beverages. CSPI also conducted studies on the nutritional quality of restaurant meals and movie theater popcorn, helped to increase funding for the government's food safety inspections and nutrition and physical activity programs, and spurred new policies in some cities and states to remove soda and junk foods from schools.

(information and wording taken from the Center for Science in the Public Interest’s public “About CSPI” website at http://www.cspinet.org/about/index.html)
Essentialism Persuasive Articles

(Images are shown as they were displayed to participants, though slightly smaller. The first article was split into two images, while the latter was split into three images; images were displayed one per screen, one at a time.)
Step by step, researcher looks for sexuality clues

- Researcher thinks sexual orientation may be reflected in the way a person walks.
- Consistencies in characteristics show orientation is inborn, expert says.
- Similar research focuses on speech, hair growth patterns.

By Elizabeth Cohen
CNN

ATLANTA, Georgia (CNN) — Can you tell whether someone's gay just by the way he or she walks?

David Sylva wants to know. He straps bright red lights to people's bodies and videotapes them walking in the dark. He then shows the videotape to observers (who won't be biased by clothing or hairstyles since the walker is in the dark) and asks them to guess the walker's sexual orientation.

Sylva's observations focus on the physical characteristics of the individual's stride, such as the closeness of the knees.

Why does Sylva, a graduate student at Northwestern University, care so much about how gay people walk? Because he's one of a growing number of researchers who think sexual orientation may be as basic as how you walk, something inborn that you don't choose.

His premise reflects a growing belief among Americans, according to a new CNN/Opinion Research Corporation poll. For the first time a majority of respondents -- about 56 percent -- said they don't believe a person can change his or her sexual orientation. In a similar poll in 2001, 45 percent said orientation couldn't change. In 1998, 39 percent held that belief. The sampling error for Wednesday's results is plus or minus 4.5 percentage points.

A growing number of psychologists and geneticists are working on the "nature versus nurture" question – a question that's set off a highly charged political debate about whether people choose their sexuality, or whether gender is determined by their DNA.

Take Richard Lippa, a professor of psychology at California State University at Fullerton. His studies show that gay people are twice as likely to be left-handed. He also collects photos of hair whirls – those circular swirls you see atop a man's head. He says about 10 percent of the general population have whirls that rotate counter-clockwise, but about 20 percent of gay men have counter-clockwise whirls.

Lippa acknowledges that studying hair patterns sounds strange: "It sounds a little like the Twilight Zone or voodoo science," he says. But to Lippa, a link between sexual orientation and something that's clearly known (like handedness or the way hair grows) speaks volumes. His theory: "You can't choose your sex, and you can't choose your sexuality, either."

If you're born with either a clockwise or a counter-clockwise hair whirl, it's fixed, it's biologically determined. No one's going to argue that your hair whirl is influenced by learning or culture," he says.

Lippa says his next step is to see whether there are specific genes that control sexual orientation.

While many people say that being gay is a choice, and that gay people can change their sexual orientation, that makes Devuld Rieger laugh: "Ask a bunch of straight guys if they could switch to being gay and they would tell you, 'Are you kidding me?'" says Rieger, a lecturer in psychology at Northwestern University. "No, the other way around doesn't work either."

In his research, Rieger shows videotapes of men and women talking about the weather. Observers have been able to predict with great accuracy whether the person talking is gay or straight. "Even within seconds, people are pretty good at figuring out who's gay and who's not," he says. Like Sylvia with his illuminated walkers, Rieger thinks his research points to genetics, and not choice, as the source of sexual orientation.

"It doesn't seem to be the social environment; it doesn't seem to be the parents or peers that make you gay," he says. "It seems to be something that comes from within."

Elizabeth Cohen is a correspondent with CNN Medical News. Senior producer Jennifer Pellet, associate producer Sabrina Rice and intern Rachel Zolotowitz contributed to this report.
Clear obesity gene link 'found'

Scientists say they have identified the clearest genetic link to obesity yet.

They found people with two copies of a "fat" version of a gene had a 70% higher risk of obesity than those with none, and weighed 8kg (18lb) more.

The work at Science by the Peninsula Medical School and Oxford University studied data from about 40,000 people.

The findings suggest that although improving lifestyle is key to reducing obesity, some people may find it harder to lose weight because of their genes.

Half of white Europeans carry one copy of the variant and one in six has two copies, experts estimate.

The authors say their work, funded by the Wellcome Trust, could improve understanding of obesity and eventually help prevent it, as well as illness it is linked to.

"The typical message has been that if you are overweight it is due to sloth and gluttony and it is your fault",

Professor Andrew Hattersley

Send us your comments
The authors say their work, funded by the Wellcome Trust, could improve understanding of obesity and eventually help prevent it, as well as the illness it is linked to.

**Genome differences**

Obesity is associated with an increased risk of type two diabetes, and the investigators first identified the FTO gene when looking for differences between the genomes of people with type two diabetes and people without diabetes.

People with type two diabetes were more likely to have a particular variant of the FTO gene, which was also shown to be linked to increased body weight.

The variant making people fatter differed from the other version of the FTO gene by a single mutation in the DNA sequence.

The team then looked at other studies involving 40,000 people searching for this FTO mutation, and confirmed that it was associated with body weight.

People carrying one copy of the “fat” FTO variant had a 30% increased risk of being obese compared to a person with no copies of that variant.

Those carrying two copies of the variant had a 70% increased risk of being obese, and were on average 3kg (6.6lb) heavier than a similar person with no copies.

Sarah Colyer (pictured left) has no copies of the variant of FTO, while Rebecca Beddout (pictured right) has two copies.

**fault**

Professor Andrew Hattersley

Send us your comments

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I've always got a fridge

Robert's Fieldhouse
The team then looked at other studies involving 40,000 people searching for this FTO mutation, and confirmed that it was associated with body weight.

People carrying one copy of the "fat" FTO variant had a 33% increased risk of being obese compared to a person with no copies of the variant.

Those carrying two copies of the variant had a 70% increased risk of being obese, and were on average 3kg (6.5lbs) heavier than a similar person with no copies.

Professor Andrew Hattersley of the Peninsula Medical School said this could explain why two people can seem to eat the same things and do the same amount of exercise yet one may struggle to lose weight more than the other.

He said: "The typical message has been that if you are overweight it is due to excess food and lack of exercise, but it is possible that people are born different and that is a genetic component."

And he said although a 3kg difference in weight sounds relatively small, it is enough to make a big change in the risk of obesity.

Sarah Collyer (pictured left) has no copies of the variant of FTO, while Rebecca Endacott (pictured right) has two copies.

"I've always got a fridge full of chocolate or cakes and people ask how I can eat all that and still stay slim," Sarah Collyer said.

"I've never been able to get off that last bit of weight, I've always been a bit heavier no matter what I eat," Rebecca Endacott said.

Both took part in the study.
APPENDIX D

STUDY 3 MEASURES

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Items regarding essential nature of religious identity (including born-again items)

1. I will always be a member of my religion.

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4. Religion changes who you are at a fundamental level.
5. Being born again is an important part of my religious beliefs.
6. I consider myself to have been born again.
7. Religion changes who you are at a fundamental level.

Miscellaneous belief items (distracter items)
1. Generally speaking, most people can be trusted.
2. Most people will take advantage of you if they get a chance.
3. Taking all things together, I would say that I am a happy person.
4. Regardless of the qualities and faults of one's parents, one must always love and respect them.
5. I would give out part of my income if I were certain that the money would be used to prevent environmental pollution.
6. I think all people have free will and control over their lives.
7. I make a lot of effort to live up to what my friends expect.

Miscellaneous policy-related items (distracter items)
1. The University should only fund organizations and activities that appeal to the majority of students, not activities that only appeal to small groups in the student population.
2. Increasing the number of racial and ethnic minorities at the University benefits our community educationally and socially.
3. The University should provide for the needs of minority populations (e.g. religious and racial minorities) when designing and funding University services.
4. I think that marriage between two people from different religious backgrounds should be discouraged.
5. It is better for a country if different racial and ethnic groups adapt and blend into the larger society.

6. The war on terror may require that some civil liberties be restricted.

7. I would be happy if I found out that a member of my family were dating someone of a different racial group.

8. Discrimination against blacks is no longer a problem in the United States.

9. Over the past few years, blacks have gotten less than they deserved.

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**Items for measuring attitudes toward gay men and lesbians**

1. The University should provide benefits (such as ability to buy insurance, family housing) for long-term same-sex couples similar to those it provides for married couples.

2. Gays and lesbians should have the same rights as everyone else.

3. Gay marriage is going too far and should not be legally permitted.

4. Hate crime laws should be amended to protect gays and lesbians.

5. It should be legal to discriminate against gays and lesbians in the workplace.

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10. Homosexuality is a sin.
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**Essentialist beliefs about gays/lesbians scale (Haslam & Levy, 2005)**

1. Sexual orientations are categories with clear and sharp boundaries: People are either homosexual or heterosexual.

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3. Heterosexual and homosexual people are not fundamentally different. (R)

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6. Sexual orientation is caused by biological factors.

7. Whether a person is homosexual or heterosexual is pretty much set early on in childhood.

8. People cannot change their sexual orientation.

9. Homosexuality and heterosexuality are innate, genetically based tendencies.

10. Doctors and psychologists can help people change their sexual orientation. (R)

**Obesity essence items (distracter items)**

1. People are rarely "a little" overweight, they're usually either really overweight or normal weight.

2. Obese people choose to be obese with their behaviors and lifestyle.

3. I think gaining and losing weight is something that most people can do if they put their mind to it.
4. Overweight people tend to have overweight friends.
5. People who are overweight tend to be similar in their habits and hobbies.
6. Obesity is caused by biological factors.
7. People's weight is something that is set early on in their life.
8. People can't change how heavy they are.
9. People who are obese could lose weight if they tried.
10. Medical help is sometimes necessary to help people lose weight.

**Health-related attitude items (distracter items)**

1. People's lifestyle is the biggest contributor to their overall health.
2. The government should do more to regulate what people eat and drink for the sake of their health.
3. I trust doctors to give me good advice about how to be generally healthy.
4. Between dieting and exercise, I find exercise to be the easier path.
5. Corporations make people less healthy by making products that contribute to weight gain or nutritional problems.
6. Warning labels on cigarettes and alcohol should be made stronger and more visible.
7. Restaurants and other food vendors should be required to put nutritional information on packaging or menus.
Framing Manipulations

Civil Rights Frame

The gay rights organization Unconditional Equality was formed in the 1990's to more specifically address the issue of equal treatment of gays and lesbians. Unconditional Equality's members believe strongly that the United States is a country founded on civil rights, and that those rights should be extended to all Americans.

Unconditional Equality's projects include outreach programs designed to open dialogues with lawmakers about the ways in which gay and lesbian rights can be reconciled with the law, community events open to all emphasizing the desire for freedom that all people share, and targeted public service announcements emphasizing the common identity of gay and straight people as Americans.

Comprehension Check Questions:

Which of these best describes Universal Fellowship?

- an organization devoted to the religious inclusion of gays and lesbians
- an organization that acts in the political arena for gay rights
- an organization that works to keep the Episcopal Church from splitting
- an organization devoted to providing better funding for graduate students
Which of these is not an activity that Universal Fellowship pursues?

- working with clergy
- lobbying lawmakers
- public service announcements
- community events

In which decade was Universal Fellowship founded?

- 1960's
- 1970's
- 1980's
- 1990's
- 2000's

**Control (Health Advocacy) Frame**

The Center for Science in the Public Interest has been an advocate for nutrition and health, food safety, alcohol policy, and sound science since 1971. Its award-winning newsletter, Nutrition Action Healthletter, with some 900,000 subscribers in the United States and Canada, is the largest-circulation health newsletter in North America.

CSPI's accomplishments include leading the efforts to win passage of laws that require Nutrition Facts on packaged foods (and, later, to include trans fat on those labels), define the term "organic" for foods, and put warning notices on alcoholic beverages. CSPI also conducted studies on the nutritional quality of restaurant meals and movie theater popcorn, helped to increase funding for the government's food safety inspections and nutrition and physical activity programs, and spurred new policies in some cities and states to remove soda and junk foods from schools.
Comprehension Check Questions:

Which of these best describes the Center for Science in the Public Interest?

- an organization devoted to providing people with nutrition and health information
- an organization devoted to increasing science funding
- an organization that works with scientists to improve their research
- an organization that works with companies to improve their products

In which decade was the Center for Science in the Public Interest founded?

- 1960's
- 1970's
- 1980's
- 1990's
- 2000's

Which of following was not one of the achievements of the Center for Science in the Public Interest?

- helping remove junk food from schools
- leading efforts to require Nutrition Facts on food
- studying nutritional content of restaurant food
- helping create new diets for people to follow
- putting warning labels on alcoholic beverages
Essentialism Persuasive Articles

(Images are shown as they were displayed to participants, though slightly smaller. The first article was split into two images, while the latter what split into three images; images were displayed one per screen, one at a time.)
Step by step, researcher looks for sexuality clues

- **Storl Highlights:**
- Researcher thinks sexual orientation may be reflected in the way a person walks.
- Consistencies in characteristics show orientation is inborn, expert says.
- Similar research focuses on speech, hair growth patterns.

By Elizabeth Cohen

CNN

ATLANTA, Georgia (CNN) — Can you tell whether someone’s gay just by the way he or she walks?

David Slyka wants to know. He straps bright red lights to people’s bodies and videotapes them walking in the dark. He then shows the videotape to observers (who won’t be biased by clothing or hairstyles since the walker is in the dark) and asks them to guess the walker’s sexual orientation.

Slyka’s observations focus on the physical characteristics of the individual’s stride, such as the closeness of the knees.

Why does Slyka, a graduate student at Northwestern University, care so much about how gay people walk? Because he’s one of a growing number of researchers who think sexual orientation may be as basic as how you walk; something inborn that you don’t choose.

His research reflects a growing belief among Americans, according to a new CNN/Opinion Research Corporation poll. For the first time, a majority of respondents — about 58 percent — said they don’t believe a person can change his or her sexual orientation. In a similar poll in 2001, 45 percent said orientation couldn’t change. In 1998, 39 percent held that belief. The sampling error for Wednesday’s results is plus or minus 4.6 percentage points.

Sources: www.cnn.com
A growing number of psychologists and geneticists are working on the “nature versus nurture” question—a question that’s set off a highly charged political debate about whether people choose their sexuality, or whether gyness is determined by their DNA.

Take Richard Lippa, a professor of psychology at California State University at Fullerton. His studies show that gay people are twice as likely to be left-handed. He also collects photos of hair whirls—those circular swirls you see atop a man’s head. He says about 10 percent of the general population have whirls that rotate counter-clockwise, but about 20 percent of gay men have counterclockwise whirls.

Lippa acknowledges that studying hair patterns sounds strange: “It sounds a little like the Twilight Zone or vortex science,” he says. But to Lippa, a link between sexual orientation and something that’s clearly linked (like handedness or the way hair grows) speaks volumes. His theory: You can’t choose-your-whirl, and you can’t choose your sexuality, either.

“You’re born with either a clockwise or a counter-clockwise hair whirl. It’s fixed, it’s biologically determined. No one’s going to argue that your hair-whirl is influenced by learning or culture,” he says.

Lippa says his next step is see whether there are specific genes that control sexual orientation.

While some people say that being gay is a choice, and that gay people can change their sexual orientation, that makes Derick Rieger laugh. “Ask a bunch of straight guys if they could switch to being gay and they would tell you, ‘Are you kidding me?’” says Rieger, a lecturer in psychology at Northwestern University. “So the other way around doesn’t work either.”

In his research, Rieger shows videotapes of men and women talking about the weather. Observers have been able to predict with great accuracy whether the person talking is gay or straight. “Even within seconds, people are pretty good at figuring out who’s gay and who’s not,” he says.

Like Sylvia with his illuminated walkways, Rieger thinks his research points to genetics, and not choice, as the source of sexual orientation.

“It doesn’t seem to be the social environment, it doesn’t seem to be the parents or peers that make you gay,” he says. “It seems to be something that comes from within.”

Elizabeth Cohen is a correspondent with CNN Medical News. Senior producer Jennifer Piller, associate producer Sabina Rice, and intern Rachel Zadrozny contributed to this report.
COBObesity essence Article

Last Updated Thursday, 12 April 2007, 18:10 GMT 19:10 UK

Clear obesity gene link 'found'

Scientists say they have identified the clearest genetic link to obesity yet.

They found people with two copies of a "fat" version of a gene had a 70% higher risk of obesity than those with none, and weighed 28kg (62lb) more.

The work in Science by the Peninsula Medical School and Oxford University studied data from about 40,000 people.

The findings suggest that although improving lifestyle is key to reducing obesity, some people may find it harder to lose weight because of their genes.

"The typical message has been that if you are overweight it is due to sloth and gluttony and it is your fault"

Professor Andrew Hattersley

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One man talks about his struggle with obesity

VOTE
Is the obesity gene an excuse for being fat?

Yes
No
Not sure

Results are indicative and may not reflect public opinion.

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The authors say their work, funded by the Wellcome Trust, could improve understanding of obesity and eventually help prevent it, as well as an illness it is linked to.

**Genome differences:**

Obesity is associated with an increased risk of type two diabetes, and the investigators first identified the FTO gene when looking for differences between the genomes of people with type two diabetes and people without diabetes.

People with type two diabetes were more likely to have a particular variant of the FTO gene, which was also shown to be linked to increased body weight.

The variant making people fatter differed from the other version of the FTO gene by a single mutation in the DNA sequence.

The team then looked at other studies involving 40,000 people searching for this FTO mutation, and confirmed that it was associated with body weight.

People carrying one copy of the "fat" FTO variant had a 30% increased risk of being obese compared to a person with no copies of that version.

Those carrying two copies of the variant had a 70% increased risk of being obese, and were on average 2kg (4.4lbs) heavier than a similar person with no copies.

Sarah Collier (pictured left) has no copies of the variant of FTO, while Rebecca Berdott (pictured right) has two copies.

"I've always got a fridge

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He said: "The typical message has been that if you are overweight it is due to sloth and gluttony and it is your fault."

"This work is suggesting that there is also a genetic component."

And he said although a 3kg difference in weight sounds relatively small, it is enough to make a big change in the risk of obesity.

Sarah Collyer (pictured left) has no copies of the variant of FTO, while Rebecca Endicot (pictured right) has two copies.

"I've always got a fridge full of chocolate or cakes and people ask how I can eat all that and still stay slim," Sarah Collyer said.

"I've never been able to get off that last bit of weight, I've always been a bit heavier no matter what I eat," Rebecca Endicot said. Both took part in the study.

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APPENDIX F

STUDY 4 MEASURES

Santa Clara Strength of Religious Faith Questionnaire (Plante & Boccacini, 1997)

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8. I enjoy being around others who share my faith.

9. I look to my faith as a source of comfort.

10. My faith impacts many of my decisions

Items regarding essential nature of religious identity (including born-again items)

1. I will always be a member of my religion.

2. Knowing that I am a member of my religious group tells others something about who I am.

3. Members of my religion all share something fundamental.

4. Religion changes who you are at a fundamental level.
5. Being born again is an important part of my religious beliefs.

6. I consider myself to have been born again.

7. Religion changes who you are at a fundamental level.

**Miscellaneous belief items (distracter items)**

1. Generally speaking, most people can be trusted.

2. Most people will take advantage of you if they get a chance.

3. Taking all things together, I would say that I am a happy person.

4. Regardless of the qualities and faults of one's parents, one must always love and respect them.

5. I would give out part of my income if I were certain that the money would be used to prevent environmental pollution.

6. I think all people have free will and control over their lives.

7. I make a lot of effort to live up to what my friends expect.

**Miscellaneous policy-related items (distracter items)**

1. The University should only fund organizations and activities that appeal to the majority of students, not activities that only appeal to small groups in the student population.

2. Increasing the number of racial and ethnic minorities at the University benefits our community educationally and socially.

3. The University should provide for the needs of minority populations (e.g. religious and racial minorities) when designing and funding University services.

4. I think that marriage between two people from different religious backgrounds should be discouraged.
5. It is better for a country if different racial and ethnic groups adapt and blend into the larger society.

6. The war on terror may require that some civil liberties be restricted.

7. I would be happy if I found out that a member of my family were dating someone of a different racial group.

8. Discrimination against blacks is no longer a problem in the United States.

9. Over the past few years, blacks have gotten less than they deserved.

10. I trust conservative politicians more than liberal politicians to make principled decisions.

**Items for measuring attitudes toward gay men and lesbians, Time 1**

1. Gays and lesbians should have the same rights as everyone else.

2. Gay marriage is going too far and should not be legally permitted.

3. Hate crime laws should be amended to protect gays and lesbians.

4. I would be upset if I learned my son or daughter were gay.

5. Homosexuality is a sin.

6. I actively attempt to cultivate friendships with gay men and lesbians.

7. State laws regarding private, consenting homosexual behavior should be eliminated.

8. I would feel uncomfortable if my best friend came out to me as gay or lesbian.

**Items for measuring attitudes toward gay men and lesbians, Time 2**

1. It should be legal to discriminate against gays and lesbians in the workplace.

2. Homosexual couples should be allowed to adopt children the same as heterosexual couples.
3. The University should provide benefits (such as ability to buy insurance, family housing) for long-term same-sex couples similar to those it provides for married couples.

4. Homosexual behavior is unnatural.

5. The ban on gays in the military should be lifted.

6. I feel equally as comfortable being around gay men and lesbians as I do around straight people.

7. Homosexuality is a sin. (repeated item)

**Essentialist beliefs about gays/lesbians scale (Haslam & Levy, 2005)**

1. Sexual orientations are categories with clear and sharp boundaries: People are either homosexual or heterosexual.

2. Homosexual people have a necessary or defining characteristic, without which they would not be homosexual.

3. Heterosexual and homosexual people are not fundamentally different. (R)

4. Bisexual people are fooling themselves and should make up their minds.

5. Knowing that someone is homosexual or heterosexual tells you a lot about them.

6. Sexual orientation is caused by biological factors.

7. Whether a person is homosexual or heterosexual is pretty much set early on in childhood.

8. People cannot change their sexual orientation.

9. Homosexuality and heterosexuality are innate, genetically based tendencies.

10. Doctors and psychologist scan help people change their sexual orientation. (R)
**Obesity essence items**

1. People are rarely "a little" overweight, they're usually either really overweight or normal weight.

2. Obese people choose to be obese with their behaviors and lifestyle.

3. I think gaining and losing weight is something that most people can do if they put their mind to it.

4. Overweight people tend to have overweight friends.

5. People who are overweight tend to be similar in their habits and hobbies.

6. Obesity is caused by biological factors.

7. People's weight is something that is set early on in their life.

8. People can't change how heavy they are.

9. People who are obese could lose weight if they tried.

10. Medical help is sometimes necessary to help people lose weight.

**Health-related attitude items (distracter items)**

1. People's lifestyle is the biggest contributor to their overall health.

2. I trust doctors to give me good advice about how to be generally healthy.

3. Corporations make people less healthy by making products that contribute to weight gain or nutritional problems.

4. Warning labels on cigarettes and alcohol should be made stronger and more visible.

**Anti-fat Attitudes Scale (selected items; Crandall, 1994)**

1. I have a hard time taking fat people too seriously.

2. I tend to think that people who are overweight are a little untrustworthy.

3. I don't have many friends who are fat.
4. I really don't like fat people much.

5. Fat people make me feel somewhat uncomfortable.