

The Effect of Religious Priming on Attitudes Toward Lesbians and Gay Men

Corinne Gilad, Florida Atlantic University

Elena V. Stepanova*, The University of Southern Mississippi

ABSTRACT. The current research investigated whether priming students with a religious message affected their attitudes toward lesbians and gay men. Undergraduate students ($N = 145$) were randomly assigned to 1 of 3 conditions: participants in a religious-positive condition were primed with a biblical passage containing a loving message (e.g., “love one another, for love comes from God”), participants in a religious-negative condition were primed with a biblical passage containing an angry message (e.g., “God takes revenge on all who oppose him”), and participants in a control condition were primed with a neutral passage. After reading the priming passage, participants completed questionnaires assessing various measures of religiosity such as religiousness, spirituality, religious affiliation, extrinsic and intrinsic religious orientation, religious fundamentalism, and their attitudes toward lesbians and gay men. Consistent with previous research, religiosity was negatively related to attitudes toward lesbians and gay men ($ps < .01$). Self-identified Christians had more negative attitudes toward lesbians and gay men ($p = .002, \eta_p^2 = .12$) than participants of other religious affiliations. However, there was no effect of the priming manipulation on attitudes toward lesbians and gay men ($p = .88, \eta_p^2 = .009$).

The debate over antigay perspectives has become increasingly divisive in today’s society, and many questions have arisen regarding the underlying factors that lead to the development of negative attitudes toward gay people. Previous research has found that religion can serve as a significant predictor of attitudes toward lesbians and gay men (Adamczyk & Pitt, 2009; Rowatt, LaBouff, Johnson, Froese, & Tsang, 2009; Whitley, 2009). Allport and Ross (1967) described the *grand paradox* of religion, stating that the inner experience of religion both makes for prejudice as well as unmakes prejudice (p. 435). On the one hand, prejudice and bigotry increase because religious groups have a limited composition in terms of class and ethnic membership and pressure toward conformity and involvement in intergroup competition. On the other hand, many religious texts such as those in

Judaism and Christianity emphasize teachings of equality, brotherhood, and compassion (Tsang & Rowatt, 2007). Such contradictory messages from religion render the issue of attitudes toward lesbians and gay men more complex. The present study aimed to examine the effects of exposure to religious messages on self-reported attitudes toward lesbians and gay men by priming participants with biblical passages containing a message of either love or anger.

Religion and Attitudes Toward Lesbians and Gay Men

Research conducted in the United States generally marks religious belief as being a strong predictor of attitudes toward lesbians and gay men (Adamczyk & Pitt, 2009; Rowatt et al., 2009; Rowatt et al., 2006). There is significant variation in the degree to which various religions systematically condemn same-sex

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sexual behavior, with conservative Protestants typically having the least accepting attitudes among religions in the United States (Burdette, Ellison, & Hill, 2005). Conservative Protestants typically adhere by a literal interpretation of the Bible, and thus uphold their traditional beliefs about sexual morality by tending to exhibit more conservative sex-related attitudes (Adamczyk & Pitt, 2009).

A meta-analysis by Whitley (2009) found that perceptions of sexual orientation as controllable, changeable, or as a choice mediate the relationship between religiosity (i.e., the degree to which people are involved in their religions) and negative attitudes toward lesbians and gay men. If people perceive a stigma as being under the control of the stigmatized individual, their attitudes toward that person are typically negative (Whitley & Kite, 2006), and sexual preference is typically portrayed by religious authorities as a matter of choice that is both controllable and changeable (Toulouse, 2002).

However, members of various Christian denominations differ in their attitudes toward gay people. Thus, Christians perceiving their religious group as teaching to accept the sinner but denounce the sin self-reported more tolerant attitudes toward gay people than those perceiving their religious group as teaching otherwise (Myers & Scanzoni, 2005; Veenvliet, 2008; Vilaythong, Lindner, & Nosek, 2010). However, Whitley (2009) also found that most forms of religiosity including fundamentalism, orthodoxy, religious service attendance, self-rated religiosity, and intrinsic orientation were all related to negative attitudes toward lesbians and gay men.

Extrinsic Versus Intrinsic Religious Orientation

Allport and Ross (1967) argued that the inner experience of religion is a significant factor in the development of either a tolerant or a prejudiced outlook, and stated that extrinsic and intrinsic motivations characterize two opposing poles of subjective religiosity. People characterized by an extrinsic religious orientation tend to use religion for their own ends as a means to fulfill nonreligious goals and interests (Whitley, 2009). People characterized by an intrinsic religious orientation are said to find their primary motive in religion, and other needs, no matter how strong, are seen as bearing less importance and should be brought into balance with their religious beliefs and doctrines (Allport & Ross, 1967). Individuals with an intrinsic religious orientation profoundly believe their religion's teachings and strive to live their

lives accordingly (Whitley, 2009). Herek (1987) argued that general intrinsic religious orientation does not promote indisputable acceptance of others but rather fosters tolerance only toward specific groups that are accepted by contemporary biblical teachings such as heterosexual peoples.

Religious Fundamentalism

According to Whitley (2009), religious fundamentalism refers to the belief that there is only one set of religious teachings that contain the fundamental and essential truth about humanity. Rowatt et al. (2006) found that a strong belief that a person's religion contains fundamental and inerrant truths moderately correlated with more automatic negative evaluations of gay people. Analogously, the literature review by Hunsberger and Jackson (2005) found positive correlations in 88% of the studies of the relationship between religious fundamentalism and negative attitudes toward gay people.

Other Variables Predicting Antigay Perspectives

Rowatt et al. (2006) found that demographic variables play only a minor role in the prediction of social attitudes toward gay people. Their findings showed that scores on the Attitudes Toward Homosexuality Scale (ATH; Rowatt et al., 2009) became more positive with increased level of education, household income, and political liberalism. Scores on the ATH scale were found to be more negative among Protestants than any other religious affiliation identified, and men in the national sample reported slightly more negative attitudes toward gay people as compared to the reports by women in the sample. Using data from the General Social Survey (Davis, Smith, & Marsden, 1993), Shackelford and Besser (2007) found that respondents who reported less favorable attitudes toward gay people were typically "less educated, older, conservative, religious fundamentalists, and geographically immobile" (p. 112).

Priming Religion

Priming refers to the activation of concepts, goals, or ideas, even without the awareness of the actor, that can influence behavior, cognition, and attitudes (Vilaythong et al., 2010). According to the situated inference model by Loersch and Payne (2011), the separate effects of a prime on judgment, action, and motivation can be produced through the same simple process because the prime makes information accessible in each instance that is then used to answer certain questions

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related to the situation. However, the information made accessible through priming does not necessarily produce a default effect. Rather, the manner in which a perceiver utilizes prime-related information can sharply change the prime's effect, causing a single prime to sometimes result in assimilation, contrast, or no effect at all (Loersch & Payne, 2011).

According to the situated inference model, a prime is most likely to have an effect when people misattribute it to their own natural response to the situation. However, if the prime construct is particularly distinct, the accessible information is less likely to be confused with their own natural response. Furthermore, the likelihood of confusing prime-related content and people's thoughts can also decrease due to awareness or suspicion that the information was made accessible by an external stimulus, causing the people to attribute such thoughts to an alternative source rather than mistaking them with their own natural responses (Loersch & Payne, 2011).

Current empirical research on the effects of religious priming on attitudes toward gay people presents mixed results consistent with the above situational model. Pichon, Boccato, and Saroglou (2007) found that religious concepts by themselves could activate prosocial behavioral schemas in students at a Catholic university. They reported that priming positive religious mental representations activated prosocial concepts. Furthermore, Shariff and Norenzayan (2007) found that the effect of positive religious priming extended to nonreligious people as well. When primed with a God concept, both religious and nonreligious participants allocated more money to anonymous strangers than when neutral or no concepts were implicitly activated.

However, the positive effect of religious priming is not inclusive. Hester (2012) suggested that, because of the complex sources of people's moral beliefs and the potentially contradictory nature of holy texts, religious people might sometimes see congruity and sometimes see conflict between their own beliefs and those of a particular holy book. Therefore, eliciting religious schema may invoke inner conflict if these schemas contradict a person's moral beliefs. Vilaythong et al. (2010) found that priming Golden Rule messages, a core precept of many religions that emphasizes the importance of treating others with compassion, could actually increase prejudice if it comes from an out-group source.

Thus, priming people with religious concepts or schemas can increase social acceptance and reduce certain prejudices but not others, and can also increase prejudice depending on the source. Moreover, most of the studies cited above employed a positive religious prime like the Golden Rule, or mentioning God, and we did not find other studies examining the effect of negative religious priming.

The Current Study

The current research investigated whether priming people with loving versus angry biblical passages affected their attitudes toward lesbians and gay men. Participants were randomly assigned to one of three priming conditions: a positive (loving) biblical passage, a negative (angry) biblical passage, or a neutral passage. Following the priming passage, participants completed questionnaires assessing various measures of religiosity, extrinsic and intrinsic religious orientation, and their attitudes toward lesbians and gay men. The study hypothesized that priming people with a religious passage containing an angry message promoting fear would increase their negative attitudes toward lesbians and gay men and that priming with a religious passage containing a loving message promoting compassion would increase their positive attitudes toward gay people compared to a control message.

The study further hypothesized that those identifying themselves as non-Christian would be affected the most by the loving biblical passage, and those identified as Christians would be affected the least. Although findings from prior research have been less unequivocal, the assumption was that those identifying themselves as Christians would be in conflict, and non-Christian people would benefit from the positive effect shown by Shariff and Norenzayan (2007).

We also expected to find the most negative attitudes toward lesbians and gay men from participants identifying themselves as Christians, and especially so after priming them with the angry biblical passage. Additionally, because previous research has found that people with high scores on self-reported religiosity, intrinsic religious orientation, and religious fundamentalism demonstrated more negative attitudes toward gay people (Hunsberger & Jackson, 2005; Rowatt et al., 2009; Rowatt et al., 2006), the present study hypothesized that participants with greater degrees of religiosity, intrinsic religious orientation, and religious fundamentalism were likely to exhibit more negative attitudes toward gay people, and especially so when

primed with an angry biblical passage.

Method

Participants

On the basis of previous religious priming research (Pichon et al., 2007; Shariff & Norenzayan, 2007), we aimed to recruit at least 135 participants (45 per priming condition) for the present study. A total of 145 undergraduate students (82 women, 63 men; $M_{\text{age}} = 19.57$ years, $SD_{\text{age}} = 2.41$ years) from a midsize state university were recruited and received class credit for participating in the study. Most participants reported their religious affiliation as Catholic ($n = 53$, 36.6%), other Christian affiliations ($n = 44$, 30.3%), and Protestant ($n = 14$, 9.7%), with a small number of participants reporting other religious affiliations or nonreligious affiliation (i.e., 0.7% Muslims, 4.1% Jews, 0.7% Buddhists, 0.7% Mormons, 6.9% Agnostics, 8.3% Atheists, 0% Hindus, 2.1% other). The sample was ethnically diverse (69.7% European American, 4.8% African American, 20.7% Hispanic, 2.1% Asian, 1.4% Native American, 1.4% selected another ethnicity).

Materials and Procedure

All participants were treated in accord with APA ethical guidelines. Participants were randomly assigned to one of three priming conditions: one group was primed with a biblical passage containing a loving message (“love one another, for love comes from God . . .” John 4:7–16, New Living Translation), another group was primed with a biblical passage containing an angry message (“God takes revenge on all who oppose him . . .” Nahum 1:2–8, New Living Translation), and the third group served as the control group and was primed with a neutral passage about the Southern Sierra which contained no emotionally charged or religious information (National Park Service, 2012). Participants were also asked to complete a set of questionnaire measures assessing various aspects of religiosity, attitudes toward lesbians and gay men, and demographic information.

Religiosity. Each participant was asked to complete the following self-reported measures. First, they chose a religious affiliation from a list of options. For religiousness, participants responded to the question “How religious are you?” on a 7-point Likert-type scale from 1 (*not religious at all*) to 7 (*extremely religious*). For spirituality, participants responded to the question “How spiritual are you?” on a 7-point Likert-type scale from 1 (*not spiritual at all*) to 7 (*extremely spiritual*). For extrinsic versus

intrinsic religious orientation, responses were measured using the 14-item Intrinsic/Extrinsic-Revised (I/E-R) Scale developed by Gorsuch and McPherson (1989) as a revision to the scale originally developed by Allport and Ross (1967). Items on the scale measure both intrinsic and extrinsic orientation as well as two categories of extrinsicness—personal and social—measured on a 7-point Likert-type scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The I/E-R Scale is confirmed to have acceptable levels of reliability; specifically, the Intrinsic subscale, I-R (.83) and extrinsic subscale, E-R (.65) both have accepted levels of reliability (see Gorsuch & McPherson, 1989). The validity of the scale has been supported in previous research (Gorsuch & McPherson, 1989; Tiliopoulos, Bikker, Coxon, & Hawkin, 2007).

For religious fundamentalism, responses were measured using the 12-item Revised Religious Fundamentalism Scale (RFS) developed by Altemeyer and Hunsberger (2004). Participants completed the scale using a 7-point Likert-type scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The scale has acceptable reliability (.92) and construct validity, as demonstrated by Altemeyer and Hunsberger.

Attitudes toward lesbians and gay men. Each participant was asked to complete the following self-report measures. For attitudes toward gay people, responses were measured using the ATH, a 7-point Likert-type scale from 1 (*very strongly disagree*) to 7 (*very strongly agree*) assessing four items: (a) homosexuals should be allowed to marry, (b) homosexuals should be allowed civil unions, (c) people choose to be homosexuals, and (d) people are born either homosexual or heterosexual (Rowatt et al., 2009). Rowatt et al. originally summed the first two items to create a variable “against gay marriage/civil unions” (Cronbach’s $\alpha = .86$) and the last two items to create a variable “people choose to be homosexuals” (Cronbach’s $\alpha = .78$). Because both variables loaded highly on one single dimension, the authors summed all four items to create an aggregate measure, and we employed the same approach. Notably, this scale correlated positively with various measures of racial prejudice (Rowatt et al., 2009).

Responses were also measured using the Attitudes Toward Lesbians and Gay Men (ATLGM) Scale-Short Form developed by Herek (1988). Five items assess attitudes toward gay men, and five items assess attitudes toward lesbians. Sample items include statements such as “lesbians just can’t fit into our society” and “homosexual

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behavior between two men is just plain wrong” with responses ranging from 1 (*very strongly disagree*) to 7 (*very strongly agree*). The ATLMG was shown to have a high degree of internal consistency (.90) and validity as reported by Herek (1988).

Lastly, participants completed four feeling thermometer items designed to assess how “warm” or “cold” participants felt toward four groups: (a) heterosexual men, (b) heterosexual women, (c) gay men, and (d) lesbian women, measured on a 10-point Likert-type scale ranging from 0 (*coldest feelings*), 5 (*neutral*), and 10 (*warmest feelings*; Rowatt et al., 2006).

Prior to conducting the study, approval was given by the Florida Atlantic University institutional review board (# S2013-02). Participants completed the study in a designated testing room with up to six individuals participating in the study during each session. Experimenters obtained informed consent, gave the appropriate instructions, and answered questions during each testing session. Participants were randomly assigned to one of three conditions: one group read a biblical passage containing a loving message, another group read a biblical passage containing an angry message, and the third group served as the control group and read a neutral passage of no biblical relation. All three passages were printed on paper with the identification letter A, B, or C on the back and were counterbalanced prior to the beginning of the experiment. The first participant received Passage A, the second, Passage B, the third, passage C, and then the order was repeated. Priming passages always preceded the questionnaires. Participants were shown the priming passages for 5 min or until they finished reading.

After being primed with the passages, participants completed paper questionnaires. Each questionnaire packet first assessed several demographic variables (sex, ethnicity, age) and religious affiliation. The questionnaires were then counterbalanced by creating two versions of the survey: one with measures of religiosity first and attitudes toward gay people second, and vice versa. Participants completed measures of religiosity and attitudes toward gay people. Participants were then debriefed and dismissed.

Results

Our primary dependent variables of interest were scores on the ATH Scale, the ATLMG Scale, and the feeling thermometer scores for gay men (feeling thermometer Item c) and lesbian women (feeling

thermometer Item d). Higher scores on the original ATLMG Scale indicate more negative attitudes toward lesbians and gay men. Because higher scores on the ATH Scale and feeling thermometers indicate more positive attitudes toward gay people, we recoded the ATLMG scale, so that higher scores signify more positive attitudes. To measure the relationship between respondents’ religious affiliation and attitudes toward gay people, religious affiliation was recoded from the original responses (i.e., Catholic, Protestant, other Christian affiliation, and Mormon) into “Christians” ($n = 108$) and “non-Christians” ($n = 30$). Additionally, we computed separate scores for the intrinsic and extrinsic religious orientations based on the I/E-R Scale (Gorsuch & McPherson, 1989). All multi-items scales had satisfactory levels of reliability in this study, as measured by Cronbach’s Alpha (α), as follows: the I/E-R (.87); Intrinsic subscale (I-R) of I/E- (.90); Extrinsic subscale (E-R) of I/E-R, (.63); RFS (.93); ATH (.78); and ATLMG (.92).

Table 1 reports descriptive statistics and correlations for all continuous religiosity and attitudinal measures employed. All measures of attitudes toward gay people (the ATLMG, ATH, and the feeling thermometers for gay men and lesbian women) were highly intercorrelated. Additionally, all measures of religiosity (e.g., religiousness, spirituality, religious fundamentalism, intrinsic and extrinsic religious orientation) were highly intercorrelated. Each religiosity measure was negatively related to each measure assessing attitudes toward gay people; the higher participants scored on each of the religiosity measures, the more negative attitudes they held toward gay men and lesbians. All of these correlations were significant with one exception (a correlation between extrinsic religious orientation and feeling thermometer for gay men did not reach significance). These findings were consistent with the hypothesis that participants with greater degrees of self-reported religiosity, intrinsic religious orientation, and religious fundamentalism would be more likely to exhibit negative attitudes toward gay people.

Priming Manipulation

A 2 (religious affiliation) \times 3 (priming condition) Multivariate Analysis of Variance (MANOVA) with the ATH, ATLMG, and the feeling thermometer scores as dependent variables found no significant main effect for the priming condition on attitudes toward gay people, Roy’s largest root = .009, $F(4, 130) = 0.29$, $p = .88$, $\eta_p^2 = .009$. Unlike our original

prediction that priming people with a religious passage would affect their attitudes, our priming manipulation had no effect on attitudes toward gay people. There was also no significant interaction effect of priming condition and self-reported Christianity on attitudes toward gay people, Roy's largest root = .04, $F(8, 260) = 0.83$, $p = .57$, $\eta_p^2 = .03$; this result was inconsistent with our hypothesis that those identifying themselves as non-Christians would be affected the most, and those identifying themselves as Christians would be affected the least, by the loving biblical passage.¹

Our prediction that the most negative attitudes toward lesbians and gay men would be exhibited by participants identifying themselves as Christians was partially confirmed. A significant main effect for attitudes toward gay people was found for Christianity, Roy's largest root = .14, $F(4, 129) = 4.50$, $p = .002$, $\eta_p^2 = .12$. Univariate testing indicated that this effect was significant for three out of four dependent variables: ATH, $F(1, 132) = 12.44$, $p = .001$, $\eta_p^2 = .086$; ATLGM, $F(1, 132) = 13.12$, $p < .001$, $\eta_p^2 = .09$; and the feeling thermometer for lesbian women, $F(1, 132) = 9.47$, $p = .003$, $\eta_p^2 = .067$. Specifically, non-Christians reported more positive attitudes toward gay people as measured by the ATH ($M = 22.37$, $SD = 4.80$) than did Christians ($M = 17.74$, $SD = 6.21$). Non-Christians had more positive attitudes toward lesbians and gay men as measured by the ATLGM ($M = 60.67$, $SD = 10.59$) than did Christians ($M = 49.94$, $SD = 14.39$). Non-Christians had more positive attitudes toward lesbian women ($M = 5.73$, $SD = 1.26$) than did Christians ($M = 4.72$, $SD = 1.58$) as measured by the feeling thermometer. For all analyses employing MANOVAs, Box's M values were always associated with nonsignificant p values.

Because all measures of religiosity were highly correlated, we tested moderating effects for each of these measures (religiousness, spirituality, religious fundamentalism, intrinsic and extrinsic religious

¹We tested whether ethnicity or sex could explain our lack of effects for priming manipulation. First, we ran a parallel set of analyses with sex. Sex did not interact with priming condition. Therefore, it cannot explain our null finding for priming manipulation. Some of the groups such as African Americans, Asians, Native American, or other had very low representation, $n \leq 7$, so it was not possible to test for ethnic differences with such low counts. Our two largest groups were European Americans ($n = 101$) and Hispanics ($n = 30$). When only these two groups were included in a 2 (ethnicity) \times 3 (priming condition) MANOVA, ethnicity did not interact with priming condition. We did not interpret a MANOVA with three factors (ethnicity, priming condition, and religious affiliation) because some of the cells for Hispanics had very low counts (1–3 participants).

orientation) in the following analyses. To test the moderating effect of religiosity, we conducted a series of simultaneous multiple regressions on each of the dependent variables (the ATLGM, ATH, and the feeling thermometers for gay men and lesbian women). We entered priming condition as a categorical predictor and one religiosity measure at a time as a continuous predictor. The interaction of priming condition and each religiosity measure was examined by including their product in the model. All religiosity measures were centered. No significant interactions involving any of the religiosity measures and priming condition emerged. No significant interactions involving the religiosity measures emerged when non-Christians were either excluded from or included in the analyses. When we included non-Christians only in the analyses above, no significant interactions involving the religiosity measures and priming condition emerged as well.²

Discussion

Christians, as compared to non-Christians, reported more negative attitudes toward lesbians and gay men, and all religiosity measures we employed were negatively related to attitudes toward lesbians and gay men. However, there was no significant effect of the priming manipulation on any group. The lack of significant effect of the loving biblical message was consistent with the study by Vilaythong et al. (2010), which found no effect of the Golden Rule passage attributed to Jesus on Christians. The explanation provided by the authors was intriguing, suggesting that Christians are inundated by daily messages regarding their beliefs, and therefore an experimental treatment of one more passage had little effect.

The lack of effect of the angry biblical passage could be due to the explanation provided above or to such primes being extreme. In accordance with the situated inference model, the primes being

²We also tested differences in religiosity for Christians versus non-Christians. A significant main effect for religiosity measures was found for Christianity, Roy's largest root = .67, $F(5, 135) = 18.13$, $p < .001$, $\eta_p^2 = .40$. This effect was significant for all religiosity measures: religiosity, spirituality, religious fundamentalism, extrinsic and intrinsic orientation, all $F_s(1, 139) \geq 30.40$, $p_s < .001$, $\eta_s^2 \geq .18$. Christians were more religious ($M = 4.61$, $SD = 1.27$) than non-Christians ($M = 2.30$, $SD = 1.51$), more spiritual ($M = 4.85$, $SD = 1.38$) than non-Christians ($M = 3.07$, $SD = 2.13$), higher on religious fundamentalism ($M = 48.95$, $SD = 15.60$) than non-Christians ($M = 25.17$, $SD = 10.95$), higher on extrinsic orientation ($M = 20.70$, $SD = 5.67$) than non-Christians ($M = 12.80$, $SD = 6.97$) and higher on intrinsic orientation ($M = 34.72$, $SD = 10.07$) than non-Christians ($M = 22.97$, $SD = 5.16$).

extreme could have prevented participants from confusing the information with their own natural responses and from assimilating their judgments to the prime. Moreover, because the biblical passages were presented in paper form, it is possible that such a method contributed to people being aware that the information was made accessible by an outside source and consequently made them less likely to misattribute it to their own thoughts (Loersch & Payne, 2011).

Our participants were young millennials born from 1981 to 2000 (Keeter & Taylor, 2009) who usually exhibit the most positive attitudes toward gay people (Pew Research Center, 2013). The Pew survey suggested that the most important reason for the positive attitudinal change has been first-hand acquaintance with someone who is gay, which has long been supported by the *contact hypothesis* (for review, see Tausch & Hewstone, 2010). However, it can be speculated that religious communities would be less likely to afford open contact with gay people in their immediate environment, and therefore religious individuals may have fewer opportunities to change their attitudes.

Consistent with previous research, religiousness, religious fundamentalism, and intrinsic religious orientation were negatively related to attitudes toward lesbians and gay men. Additionally, self-reported levels of spirituality, and extrinsic religious orientation were negatively related to attitudes toward lesbians and gay men. The findings

of significant positive correlations between all religiosity measures suggested that they may tap into an underlying core aspect of religiosity driving negative attitudes toward gay and lesbian individuals.

Our study was not without limitations. One possible limitation of this study was in the choice of the negative passage. We opted against the use of passages that are more negative and explicitly antigay because we wanted the prime to be more subtle and rouse less suspicion of the purpose of the study. The passage chosen as the negative prime was intended to instill the idea that God can be wrathful when opposed, and therefore condemnation of nonheterosexuality should be upheld. It is possible that the angry biblical passage might have not been negative enough.

Another limitation was that the religion options did not distinguish between the various denominations of Christians, and therefore the study ended up with a single large group labeled as Christians. Mitigating this limitation was the statistical analysis by intrinsic and extrinsic religious orientation, fundamentalism, religiousness, and spirituality that allowed us to parse out specific beliefs among a variable group of people grouped under the same label.

Additionally, we administered all the questionnaire measures (assessing attitudes toward gay men and lesbians and religious beliefs) after the priming manipulation. Questionnaire measures assessing religious affiliations and attitudes were administered after the priming manipulation due to logistical limitations (e.g., we could not administer these measures prior to the experimental session). Ideally, these measures should have been administered in a separate lab or online session prior to the study. We checked whether our priming manipulation affected any of the religiosity measures. The only measure that was marginally affected by the priming manipulation was spirituality, $F(2, 142) = 3.07, p = .05, \eta_p^2 = .04$. Participants in the angry passage condition rated themselves as more spiritual ($M = 4.92, SD = 1.35$) than those in the loving ($M = 4.12, SD = 1.98$) or neutral ($M = 4.29, SD = 1.79$) conditions. Perhaps participants in the angry passage condition experienced fear or construed their level of spirituality as a buffer to a wrathful God. However, absence of priming effects in other measures, as well as marginal significance of spirituality effect, suggested that overall priming manipulation did not affect participants' responses on religiosity measures.

Our sample was composed of primarily

TABLE 1

Intercorrelations, Means, Standard Deviations, and Range of Measures Assessing Attitudes Toward Gay People and Religiosity

Measure	1	2	3	4	5	6	7	8	9	M	SD	Range
1. Attitudes Toward Lesbians and Gay Men	1.00									52.38	14.21	16–70
2. Attitudes Toward Homosexuality	.77**	1.00								18.73	6.12	4–28
3. Feeling Thermometer for Gay Men	.54**	.51**	1.00							4.86	1.73	1–7
4. Feeling Thermometer for Lesbian Women	.58**	.52**	.78**	1.00						4.95	1.57	1–7
5. Religiosity	-.54**	-.44**	-.26**	-.38**	1.00					4.09	1.65	1–7
6. Spirituality	-.43**	-.30**	-.19*	-.27**	.75**	1.00				4.41	1.75	1–7
7. Religious Fundamentalism	-.67**	-.61**	-.30**	-.41**	.72**	.56**	1.00			43.68	17.88	12–83
8. Intrinsic Religious Orientation	-.65**	-.58**	-.21*	-.37**	.77**	.60**	.82**	1.00		32.12	10.48	13–54
9. Extrinsic Religious Orientation	-.31**	-.28**	-.16	-.22**	.64**	.47**	.58**	.56**	1.00	18.86	6.84	6–32

* $p < .05$. ** $p < .01$.

European American, young college students. Generalizability of our findings was limited. We suspect that our findings might have been different with a sample of older participants or more ethnically diverse participants. More research is needed with participants of various ethnic backgrounds and age groups.

Future research should also attempt to replicate our findings with different priming manipulations and dependent measures that target other social groups (e.g., various ethnic groups, women, and interracial couples). Our experiment relied upon lexical priming, and most of the past literature has employed lexical priming as well. Using pictorial stimuli as primes or a different priming task with lexical stimuli (e.g., a lexical decision task with religious words as primes, see Johnson, Rowatt, & LaBouff, 2010) will be the next step in exploring effects and mechanism of religious priming and attitudes toward various social groups. Analogously, although we relied on explicit attitudinal measures as our main dependent variables, perhaps using more subtle (Johnson et al., 2010) or implicit measures of attitudes such as the Implicit Association Test (Greenwald, McGhee, & Schwartz, 1998) might produce different results.

Negative (angry) or positive (loving) priming using biblical religious passages did not have a significant effect on participants' attitudes toward lesbians and gay men. Although participants in the present study were young millennials who, in surveys, have exhibited the most acceptance toward gay people (Pew Research Center, 2013), religious affiliation, religiousness, spirituality, intrinsic and extrinsic religious orientation, and religious fundamentalism proved more important in characterizing attitudes toward gay men and lesbians. Our findings have important implications for public discourse in a debate between religious freedom advocates and those defending civil rights of gay men and lesbians. Although fleeting exposure to religious messages does not have an impact on attitudes toward gay and lesbian groups, religiosity is a strong predictor of biases against gay and lesbian populations.

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Author Note. Corinne Gilad, Department of Psychology, Florida Atlantic University; Elena V. Stepanova, Department of Psychology, The University of Southern Mississippi.

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Correspondence concerning this article should be addressed to Elena Stepanova, Department of Psychology, The University of Southern Mississippi, Owings-McQuagge Hall, 118 College Drive, #5025, Hattiesburg, MS 39406. E-mail: Elena.Stepanova@USM.edu

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