

Post-Critical Belief Scale and Scripture as Predictors of Prejudice

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Recent research has linked the strength of belief (transcendence) dimension of the Post-Critical Belief Scale (PCBS) and exposure to violent Bible verses to greater prejudice toward value-violating outgroups. Effects of exposure to specific Bible verses on attitudes toward outgroup members have not been measured in combination with the PCBS. The current study examined the two dimensions of the PCBS and exposure to scriptural endorsements of prejudice as predictors of prejudice toward value-violating outgroups. The strength of belief dimension of the PCBS was a significant predictor of attitudes toward atheists, gay men, lesbians, Christians, and highly religious people. Conversely, exposure to scriptural endorsements of prejudice toward atheists and gay individuals did not have a significant effect on levels of prejudice. Implications are discussed in terms of intergroup bias and the religious values conflict model.

Keywords: *prejudice, fundamentalism, intergroup bias, religious values.*

INTRODUCTION

According to recent polls, roughly 75 percent of Americans identify as Christian (Gallup poll 2015). Individuals who are judged to violate the values of the religious majority in the United States may face unique challenges, including becoming the target of prejudice (Gervais, Shariff, and Norenzayan 2011; Whitley 2009). Additionally, there may be specific aspects of Christian religious beliefs and practices that contribute to the prejudice that is directed toward such out-group members. Individual differences in religious belief and cognitive processing style, as well as differing hermeneutical orientations toward specific scriptural messages, may influence intergroup attitudes.

Prejudice is a term that has been used to describe favorable or unfavorable feelings toward an individual that are not substantiated by actual experience (Allport 1979). Current conceptualizations of prejudice acknowledge in-group favoritism and out-group derogation as separate but frequently correlated factors that each contributes to a phenomenon known as intergroup bias (Hewstone, Rubin, and Willis 2002). Since the 1960s, psychologists have linked religiosity with prejudice toward multiple groups (Allport 1966). The targets of such prejudice have included ethnic and racial out-groups (see Hall, Matz, and Wood 2010; Klein, Lühr, and Streib 2018 for reviews), as well as value-violating out-groups, such as gay individuals (see Whitley 2009 for a review) and atheists (Gervais et al. 2017; Gervais, Shariff, and Norenzayan 2011). The distinction between prejudice toward ethnic/racial out-groups and prejudice toward value-violating

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out-groups is important for multiple reasons. First, Christians may feel as though biblical scripture justifies or advocates negative attitudes toward value-violating out-groups (Duck and Hunsberger 1999). Second, prejudice toward value-violating out-groups and ethnic/racial groups may be predicted by separate aspects of religiosity (Duriez 2004; Shen et al. 2013).

The Role of Scripture

Often, it has been noted that many Christians endorse humanitarian or egalitarian ideologies that encourage kindness and love toward others. Correspondingly, there are also many Bible verses that appear to encourage such generous ideologies. For example, 1 John 4: 7 says: "Beloved, let us love one another, for love is of God; and everyone who loves is born of God and knows God." The presumably incompatible nature of prejudice and kindness has led many to label the link between religion and prejudice as a paradox. However, this paradox may have an obvious explanation. Due to the difficulty many devoted followers face when attempting to interpret conflicting scriptural messages, it may be challenging for Christians to maintain a love for all of humankind while also accepting the prejudice toward certain out-groups that is endorsed by the Bible.

Prejudice against gay individuals and atheists is explicitly endorsed multiple times in the Bible. References to homosexuality in the Bible begin in Genesis and continue into the New Testament. One of the most explicit examples is Leviticus 18:22, which states "[y]ou shall not lie with a male as with a woman; it is an abomination," and Leviticus 20:13 continues: "If a man lies with a male as with a woman, both of them have committed an abomination; they shall be put to death; their blood is upon them." After reading such passages, it must be acknowledged that it would be difficult to find a more explicit endorsement of violence toward gay men. Concerning prejudice toward atheists, Romans 13, Psalm 14, and Revelations 21 all contain overtly negative messages about those who do not believe in God. In particular, Psalm 14:1 states: "The fool says in his heart, 'There is no God.' They are corrupt, their deeds are vile; there is no one who does good." This passage is explicit in its description of those who do not believe in God and seems to arouse feelings of distrust, similar to the findings of Gervais, Shariff, and Norenzayan (2011) that prejudice toward atheists stems from distrust.

It is currently unclear what role exposure to specific religious texts plays in the link between religion and prejudice, but extant research indicates that scripture may motivate or justify negative attitudes toward value-violating out-groups among the religious. In previous research, for example, exposure to violent Bible verses was negatively associated with prosocial attitudes toward atheists (Blogowska and Saroglou 2013), and liberal participants who were given false feedback indicating that they were biased against LGBT individuals increased their endorsement of Bible verses that condone prejudice and violence toward gay individuals (Fabros 2015). Despite these findings, it has yet to be determined if, and under what circumstances, exposure to scripture may play a causal role in prejudice toward out-groups.

The Role of Processing Style and Strength of Belief

Much of the literature on religion and prejudice has focused on the role of religious fundamentalism, a term that has been used to describe an orientation toward religion in which there are certain basic religious truths that cannot be questioned (Altemeyer and Hunsberger 1992). Religious fundamentalism has been shown to be associated with prejudice (Hunsberger and Jackson 2005). Religious fundamentalism has also been shown to be related to several cognitive measures such as need for closure (Saroglou 2002) and a relatively low complexity of thought regarding certain existential and moral topics (Hunsberger, Pratt, and Pancer 1994). Hunsberger and colleagues (1996) suggested that the link between religious fundamentalism and prejudice may be, at least in part, due to a rigid cognitive style. Duriez (2003) demonstrated that a rigid, literal interpretation of religious content is associated with close-mindedness. Furthermore, Hill

and colleagues (2010) found that need for cognition partially mediated the relationship between religious fundamentalism and prejudice toward multiple groups. In summary, these findings indicate that cognitive processing style may play an important role in the link between religion and prejudice.

Although strong religious belief and literal processing of religious content have been studied under the umbrella of religious fundamentalism in the past, recent research suggests that this concept should be measured two-dimensionally. Commonly used measures, such as the Religious Fundamentalism Scale (RF) (Altemeyer and Hunsberger 1992) and the Religious Orientation Scale (ROS) (Allport and Ross 1967), do not isolate religious belief from interpretation of religious content. Although some may describe the ROS as a measure with two dimensions, researchers have expressed difficulty identifying exactly what each dimension is measuring (Kirkpatrick and Hood 1990). More recently, the Post-Critical Belief Scale (PCBS) (Hutsebaut 1996) was developed to measure religiosity two-dimensionally with separate factors for strength of belief and cognitive processing style (Wulff 1991, 1997). The Exclusion versus Inclusion of Transcendence factor of the PCBS reflects the degree to which an individual is either spiritual and or religious, or neither spiritual nor religious, and is thus used to measure the strength of religious belief. The Literal versus Symbolic factor reflects whether an individual tends to process religious content literally or symbolically, and is used to measure cognitive processing style (Duriez, Fontaine, and Hutsebaut 2000; Hutsebaut 1996; Wulff 1991, 1997).

When these two dimensions are graphed, typically with Exclusion versus Inclusion of Transcendence along the *y*-axis and Literal versus Symbolic interpretation along the *x*-axis, individuals fall into one of four different quadrants: (1) Symbolic Affirmation, (2) Literal Affirmation, (3) Literal Disaffirmation, or (4) Symbolic Disaffirmation (Wulff 1991, 1997). Symbolic Affirmation refers to the position that the religious realm is real, but religious teachings and texts can be interpreted symbolically in a way that is personally relevant to the individual. Literal Affirmation refers to the literal acceptance of the religious realm and religious texts and teachings, an orientation that may be similar to religious fundamentalism. Literal Disaffirmation refers to the belief that religious texts are neither symbolically nor literally meaningful, a view that is likely to be held by atheists. Symbolic Disaffirmation is the perspective that the objects of the religious realm do not actually exist, but that there may still be some symbolic meaning to some religious content.

Duriez, Fontaine, and Hutsebaut (2000) have demonstrated that the subscales of the PCBS are accurate measures of Wulff's four categories. Using the PCBS, an individual's acceptance of religion, interpretation of religion, and the effects of each can be examined individually and in combination with one another. Although sometimes used for testing differences between individuals in the four distinct quadrants, recent research has used the two dimensions of the PCBS as continuous variables. This has proven to be a useful tool in investigating the relationship between religion and prejudice. The results of such research indicate that, while cognitive processing style predicts prejudice toward ethnic and racial groups, strength of belief may predict prejudice toward value-violating outgroups (Brandt and Van Tongeren 2017; Duriez 2004; Shen et al. 2013).

Present Study

In the present study, we investigated strength of religious belief and processing style (of religious content)—measured using the Post-Critical Belief Scale (PCBS) (Hutsebaut 1996)—as predictors of prejudice toward various outgroups. We chose to focus primarily on anti-gay and anti-atheist prejudice on the basis that both groups have been considered value-violating out-groups of the Christian majority in the United States (Johnson, Rowatt, and LaBouff 2012). Additionally, specific Bible verses endorse prejudicial attitudes toward these two groups. Because these types of prejudice are endorsed in the scripture, the present research will examine the effect of exposure to scripture on individuals' attitudes toward these specific groups. Furthermore, it

stands to reason that exposure to scripture may have different effects for individuals with differing levels of strength of belief and symbolic processing.

The following two hypotheses were made prior to conducting the present study: (1) consistent with previous research, the strength of belief dimension will correspond with greater prejudice toward value-violating outgroups, across experimental conditions, (2a) participants high in the strength of belief dimension who read a biblical passage condoning anti-atheist prejudice will report higher levels of anti-atheist prejudice, particularly to the extent that they endorse a more literal and less symbolic interpretation of the Bible, (2b) participants high in the strength of belief dimension who read a biblical passage condoning anti-gay prejudice will report higher levels of anti-gay prejudice, particularly to the extent that they endorse a more literal and less symbolic interpretation of the Bible.

METHOD

Participants

Participants were U.S. adults ($N = 283$) who completed the study online through Amazon's Mechanical Turk. Ages ranged from 18 to 72 years ($M = 32.36$, $SD = 11.91$). Three participants did not report their age. The sample was 47.7 percent male and 52.3 percent female. The racial background of the sample was 76.7 percent white, 6.7 percent black/African American, 0.7 percent American Indian or Alaskan Native, 10.2 percent Asian, 4.2 percent multiracial, and 1.4 percent other. The religious affiliation of the sample was 44.2 percent neither religious nor spiritual, 18.7 percent Christian—Protestant, 13.4 percent religious or spiritual with no affiliation, 9.5 percent Christian—Catholic, 6.7 percent Christian—other, 2.5 percent Buddhist, 1.8 percent Jewish, 0.7 percent Hindu, 0.4 percent Muslim, and 2.1 percent other. Sample size varies slightly for analyses based on available data for the measures included in each analysis.

Procedures and Measures

All participants first completed an 18-item version of the Post-Critical Belief Scale (Duriez, Soenens, and Hutsebaut 2005), which contains four subscales. Participants responded to each statement on a seven-point Likert scale (1 = *completely opposed*; 7 = *completely in agreement*). The Second Naïveté subscale contains four items such as “Despite the injustices caused by Christianity, Christ’s message remains valuable” and did not show high reliability ($\alpha = .63$). The Orthodoxy subscale contains five items such as “I think that Bible stories should be taken literally, as they are written” and did show good reliability ($\alpha = .85$). The External Critique subscale contains five items such as “Faith turns out to be an illusion when one is confronted with the harshness of life” and also showed good reliability ($\alpha = .89$). The Relativism subscale contains four items such as “God grows together with the history of humanity and therefore is changeable” and this subscale showed acceptable reliability ($\alpha = .71$). Poorer reliability for the Second Naïveté and External Critique subscales was likely due to the low number of items. The strength of belief dimension can be created by subtracting the sum of External Critique and Relativism from the sum of Orthodoxy and Second Naïveté. The symbolic versus literal dimension can be created by subtracting the sum of Orthodoxy and External Critique from the sum of Relativism and Second Naïveté. After adding and subtracting the appropriate subscales, each dimension is scaled from -12 to 12 . The symbolic versus literal dimension of the PCBS has been used as a measure of cognitive rigidity specific to the domain of religion (Shen et al. 2013) and Martos, Thege, and Steger (2010) found that the symbolic versus literal dimension correlated with the openness factor of the Big Five Questionnaire (BFQ) (Caprara et al. 1993) ($r = .26$,

$p < .001$), but the strength of belief dimension of the PCBS did not correlate with the openness factor of the BFQ ($r = .05, p > .05$).

Participants were randomly assigned to one of three conditions. Participants in the first experimental condition ($n = 93$) were asked to read a Bible verse endorsing prejudice toward gay individuals (Leviticus, 20:13, King James Version). Participants in the second experimental condition ($n = 93$) were asked to read a Bible verse endorsing prejudice toward atheists (Psalm, 14:1, King James Version). To ensure that participants read the passages, participants in both experimental conditions were required to write a brief description of the passage. Participants in a third, control condition ($n = 97$) were not given a Bible verse to read and were asked to briefly write about their favorite foods.

Participants were given the seven-item Negative Attitudes Toward Atheists Scale (NATA) (Gervais 2011), which is intended to measure explicit negative attitudes toward atheists. The scale contains items such as “I would be uncomfortable with an atheist teaching my child,” as well as reverse-scored items, such as “I strongly believe that church and state should be kept separate.” Participants responded to each statement on a seven-point Likert scale (1 = *strongly disagree*; 7 = *strongly agree*) and the items showed good reliability ($\alpha = .93$).

Participants’ attitudes toward gay individuals were measured using the 12-item Attitudes Toward Homosexuals Scale (ATH) (Altemeyer and Hunsberger 1992). The scale contains items such as “Homosexuals should be locked up to protect society,” as well as reverse-scored items, such as “If two homosexuals want to get married, the law should let them.” Participants responded to each statement on a seven-point Likert scale (1 = *strongly disagree*; 7 = *strongly agree*) and the items showed high reliability ($\alpha = .95$).

Favorability of one’s attitude toward various groups was measured using thermometer items. Participants were given the following instructions: “Please indicate how warm and favorable versus cold and unfavorable you feel toward each of the following groups (–5 = *cold/unfavorable*, 0 = *neutral*, +5 = *warm/favorable*).” The list of groups included atheists, gay men, lesbians, Christians, and highly religious people. These groups were included to obtain general favorability ratings of value-violating out-groups, as well as religious in-groups. For Christian participants, Christians and highly religious people may represent meaningful in-groups, whereas atheists may be considered an out-group. For nonreligious participants, atheists may be considered an in-group and Christians and highly religious people may be considered out-groups. The results of the analyses on thermometer ratings for atheists, gay men, lesbians, Christians, and highly religious people are reported below.

After completing the previous measures, participants were asked to provide some basic demographic information (e.g., age, gender, and religious affiliation). Upon completion of the study, participants’ MTurk accounts were credited \$0.30 for their participation.

RESULTS

Participants’ brief description of the Bible verse they read indicated that all participants in the experimental conditions correctly recalled the verse that they were given. The religious demographics of participants from each of the two experimental groups and the control group were compared to ensure that religious categories were similarly distributed among the groups. The anti-atheist condition ($n = 93$) contained 34 Christians, 40 not religious nor spiritual, 14 religious but unaffiliated, and 4 others. The anti-gay condition ($n = 93$) was made up of 30 Christians, 43 not religious nor spiritual, 13 religious but unaffiliated, and 7 others. The control group ($n = 97$) consisted of 35 Christians, 42 neither religious nor spiritual, 11 religious but unaffiliated, and 8 others. The three groups thus appeared to be comparable with respect to religious affiliation and contained similar numbers of religious and nonreligious individuals. In keeping with past studies (Shen et al. 2013), religious individuals with affiliations other than Christianity were not excluded from the analyses.

Table 1: Correlation matrix

Measure	1	2	3	4	5	6	7	8	9	<i>SD</i>	<i>M</i>
Anti-atheist Bible verse	.00	-.03	.07	.12	-.09	.07	-.09	.11	-.10		
Anti-gay Bible verse	-.03	-.15*	-.04	.08	-.03	-.03	-.08	.01	-.07		
1. Strength of belief										4.24	-1.66
2. Processing style	.20**									2.78	2.44
3. NATA	.83**	.07								1.71	2.56
4. ATH	.60**	-.14*	.70**							1.35	2.08
5. Atheists	-.47**	-.07	-.58**	-.49**						2.71	1.61
6. Christians	.45**	.23**	.42**	.20**	.07					2.87	1.37
7. Gay men	-.28**	.09	-.39**	-.67**	.65**	.18**				2.78	1.50
8. Highly religious people	.54**	.19**	.54**	.30**	-.07	.81**	.09			3.20	-.08
9. Lesbians	-.29**	.08	-.39**	-.58**	.68**	.17**	.87**	.08		2.64	1.73

*Correlation is significant at the .05 level (two-tailed). ** Correlation is significant at the .01 level (two-tailed).

Note: This table shows bivariate correlations between variables, with means and standard deviations, in the full sample ($N = 283$). For strength of belief, higher scores indicate stronger religious belief. For processing style, higher scores indicate greater symbolic processing and lower scores indicate greater literal processing. For NATA and ATH, higher scores indicate higher levels of prejudice. For the thermometer items (atheists, Christians, gay men, highly religious people, and lesbians), higher scores indicate more favorable attitudes toward a group. Experimental condition variables ($ns = 190$) are coded 0 = control and 1 = experimental condition.

Following Shen et al. (2013), two scores—one for the strength of belief subscale and one for the symbolic versus literal processing style subscale—were created from participants' responses on the PCBS. Higher scores for strength of belief reflected greater religiosity—that is, stronger religious or spiritual beliefs. Higher scores for processing style reflected a greater tendency to interpret the Bible symbolically rather than literally. Consistent with previous research (Shen et al. 2013), the subscales were positively correlated ($r = .20, p < .01$); however, the relatively small effect size supports the existence of two distinct dimensions. Table 1 shows the relationship between variables within this study.

Hypothesis 1: Strength of Belief

Hypothesis 1 proposed that strength of belief would significantly predict greater prejudice toward value-violating out-groups. To test this, a series of multiple regression models were run in which strength of belief was entered as the key predictor of each dependent measure assessing anti-atheist prejudice, anti-gay prejudice, and attitudes toward Christians and highly religious people. To control for bivariate correlations that emerged, literal versus symbolic processing style, age, and gender (0 = male, 1 = female) were included as covariates in all models. Bonferroni corrections were used to account for the multiple dependent measures for each type of prejudice.

Anti-Atheist Prejudice

In the model predicting NATA scores, significant unique effects emerged for strength of belief, processing style, and age. Specifically, participants with a higher strength of belief ($b = 0.34, SE = 0.01, t(270) = 25.06, p < .001$), lesser tendency to interpret the Bible symbolically

($b = -0.07$, $SE = 0.02$, $t(270) = -3.20$, $p = .002$), and older participants ($b = 0.02$, $SE = 0.11$, $t(270) = 1.88$, $p < .001$) reported more negative attitudes toward atheists. Although only marginally significant ($b = 0.21$, $SE = 0.01$, $t(270) = 4.36$, $p = .062$), women reported more negative attitudes toward atheists than men. In the model predicting thermometer ratings of one's attitude toward atheists, higher strength of belief corresponded with less favorable attitudes toward atheists ($b = -0.31$, $SE = 0.04$, $t(274) = -8.73$, $p < .001$). No other effects were significant. In sum, strength of belief significantly predicted anti-atheist prejudice. Importantly, this effect was significant at the Bonferroni-adjusted α level of $p < .025$, given the two dependent measures.

Anti-Gay Prejudice

In the model predicting ATH scores, significant unique effects emerged for all predictors. Participants with a higher strength of belief ($b = 0.20$, $SE = 0.02$, $t(266) = 13.55$, $p < .001$), lesser tendency to interpret the Bible symbolically ($b = -0.14$, $SE = 0.02$, $t(266) = -6.10$, $p < .001$), older participants ($b = 0.02$, $SE = 0.01$, $t(266) = 3.75$, $p < .001$), and men ($b = -0.34$, $SE = 0.12$, $t(266) = -2.81$, $p = .005$) reported more negative attitudes toward gay individuals. In the model predicting thermometer ratings of one's attitude toward gay men, higher strength of belief ($b = -0.18$, $SE = 0.04$, $t(274) = -4.72$, $p < .001$), lesser tendency to interpret the Bible symbolically ($b = 0.15$, $SE = 0.06$, $t(274) = 2.45$, $p = .015$), and being older ($b = -0.03$, $SE = 0.01$, $t(274) = -2.15$, $p = .033$) corresponded with less favorable attitudes toward gay men. In the model predicting thermometer ratings of one's attitude toward lesbians, higher strength of belief ($b = -0.18$, $SE = 0.04$, $t(275) = -4.80$, $p < .001$), a lesser tendency to interpret the Bible symbolically ($b = 0.14$, $SE = 0.06$, $t(275) = 2.53$, $p = .012$), and being older ($b = -0.03$, $SE = 0.01$, $t(275) = -2.10$, $p = .037$) corresponded with less favorable attitudes toward lesbians. In sum, strength of belief predicted anti-gay prejudice at the Bonferroni-adjusted α level of $p < .017$, given the three dependent measures.

Christians and Highly Religious People

In the model predicting thermometer ratings of one's attitude toward Christians, lower strength of belief ($b = 0.29$, $SE = 0.04$, $t(274) = 7.73$, $p < .001$) and a lesser tendency to interpret the Bible symbolically ($b = 0.15$, $SE = 0.06$, $t(274) = 2.45$, $p = .005$) corresponded with less favorable attitudes toward Christians. In the model predicting thermometer ratings of one's attitude toward highly religious people, lower strength of belief ($b = 0.39$, $SE = 0.04$, $t(273) = 9.94$, $p < .001$) and a lesser tendency to interpret the Bible symbolically ($b = 0.11$, $SE = 0.06$, $t(273) = 1.87$, $p = .063$) corresponded with less favorable attitudes toward highly religious people. In sum, strength of belief predicted prejudice at the Bonferroni-adjusted α level of $p < .025$, given the two dependent measures.

Hypothesis 2: Exposure to Scripture

Hypotheses 2a and 2b proposed a three-way interaction between strength of belief, processing style, and exposure to a Bible verse endorsing prejudice toward the relevant value-violating group. Separate regression analyses were performed using Model 3 of PROCESS (Hayes 2013) in which strength of belief (standardized), processing style (standardized), and experimental condition¹

¹For Hypothesis 2a, experimental condition was coded: control = 0, anti-atheist condition = 1, with participants in the anti-gay condition excluded. For Hypothesis 2b, experimental condition was coded: control = 0, anti-gay condition = 1, with participants in the anti-atheist condition excluded. Excluding participants exposed to the nonrelevant Bible verse was done to avoid the possibility that reading a Bible verse about any value-violating out-group might influence levels of prejudice.

were entered as predictors of anti-atheist and anti-gay prejudice, respectively, along with the appropriate interaction terms and age (mean centered) and gender as covariates.

Anti-Atheist Prejudice

In the model predicting NATA scores, main effects for strength of belief and processing style emerged, such that stronger religious beliefs ($b = 1.40$, $SE = 0.10$, $t(172) = 13.81$, $p < .001$) and a greater tendency to interpret the Bible symbolically as opposed to literally ($b = -0.22$, $SE = 0.09$, $t(172) = -2.44$, $p = .016$) predicted lower anti-atheist prejudice. A marginally significant three-way interaction among strength of belief, processing style, and experimental condition was found ($b = 0.30$, $SE = 0.17$, $t(172) = 1.75$, $p = .081$). This effect was not, however, consistent with our hypothesis. Rather, it stemmed from a difference in the sign of the regression coefficient for the two-way interaction between strength of belief and processing style in the control versus anti-atheist Bible verse conditions. At neither level of the grouping variable reflecting experimental condition did the two-way interaction approach significance ($ps > .20$), rendering this effect largely uninterpretable. In the model predicting thermometer ratings of one's attitude toward atheists, strength of belief was the only significant predictor, with higher strength of belief corresponding with less favorable attitudes toward atheists ($b = -1.35$, $SE = 0.28$, $t(176) = -4.78$, $p < .001$).

Anti-Gay Prejudice

In the model predicting ATH scores, significant main effects for strength of belief ($b = 7.35$, $SE = 1.26$, $t(171) = 5.84$, $p < .001$) and processing style ($b = -5.04$, $SE = 1.14$, $t(171) = -4.41$, $p < .001$) emerged that were qualified by a two-way interaction between strength of belief and experimental condition ($b = 3.77$, $SE = 1.79$, $t(171) = 2.10$, $p = .037$) that did not achieve statistical significance at the Bonferroni-adjusted α level given the three dependent measures assessing anti-gay prejudice. In the remaining models, a lesser tendency to interpret the Bible symbolically corresponded with less favorable attitudes toward gay men ($b = 0.56$, $SE = 0.26$, $t(178) = 2.19$, $p = .03$) and lesbians ($b = 0.53$, $SE = 0.24$, $t(178) = 2.18$, $p = .031$), and older participants reported less favorable attitudes toward lesbians than younger participants ($b = -0.04$, $SE = 0.02$, $t(178) = -2.13$, $p = .034$); however, none of these effects were statistically significant at the Bonferroni-adjusted α level of $p < .017$. No other effects emerged.

DISCUSSION

The link between religiosity and prejudice is an ongoing topic of scientific investigation. Religious belief is complex and there is no consensus on the particular aspects of religiosity involved in shaping attitudes toward different categories of out-groups. We tested a set of hypotheses regarding the influence of individual differences (strength of belief and cognitive processing style) and exposure to religious texts on prejudice toward value-violating out-groups. This presented an opportunity to build on the results of recent studies, as well as a chance to learn more about how individuals respond differently to exposure to scripture.

The Two Dimensions of Religiosity

With Hypothesis 1, we proposed that the strength of belief dimension of the PCBS would predict prejudice toward value-violating out-groups. In support of this prediction, across conditions, higher strength of belief was a significant predictor of less favorable attitudes toward value-violating out-groups and more favorable attitudes toward Christians and highly religious people. A less symbolic and thus more literal processing style of the Bible also predicted less favorable attitudes toward Christians, gay men, and lesbians. However, strength of belief emerged as a

stronger predictor of attitudes toward value-violating out-groups and religious in-group members than processing style in all analyses.

These results are congruent with Shen et al. (2013), who found that the strength of belief dimension of the PCBS is most strongly associated with prejudice toward value-violating out-groups. However, the current study demonstrates that the strength of belief dimension is also a predictor of attitudes toward Christians and highly religious people. These findings suggest that intergroup bias between religious and nonreligious individuals is characterized not only by the derogation of value-violating out-groups, but also by favoritism toward religious in-group members.

According to the religious values conflict model (Brandt and Van Tongeren 2017), individuals, both religious and nonreligious, are prejudiced toward others with dissimilar religious values. The current study provides further support for such a model. Individuals with relatively stronger religious beliefs reported greater prejudice toward groups that violate the values of the religious in-group, whereas those with weaker religious beliefs reported greater prejudice toward the highly religious.

Exposure to Scripture

Religious scripture can be a powerful tool for transmitting religious beliefs and shaping cultural values. The impact of scripture on individuals with different levels of belief and different cognitive styles is an important area of investigation. For Hypothesis 2, we predicted significant three-way interactions between PCBS scales and experimental conditions in which participants read passages from scripture. However, reading Bible verses that endorse prejudice toward gay individuals or atheists did not significantly impact attitudes toward those groups. This result is in contrast with prior research that found that exposure to violent Bible verses caused religious fundamentalists to decrease prosocial attitudes toward and willingness to help out-groups such as atheists (Blogowska and Saroglou 2013).

One possible explanation for the current finding is that the variance in prejudice predicted by the PCBS was too large for exposure to Bible verses to cause any additionally significant increase in prejudice. Further research can test for this possibility. It is also possible that differences in prejudice between conditions could have been better detected using implicit measures or willingness to help measures, like those used by Blogowska and Saroglou (2013).

Limitations and Future Research

Although the prejudice and intergroup bias found in the current study is consistent with other findings within the existing literature, there are several limitations of the current study that should be considered. First, the present research was limited due to a low number of participants high in both strength of belief and literal processing style, as indicated by the two dimensions measured by the PCBS. Future research may benefit from a greater number of fundamentalist participants. Additionally, exposing participants to prosocial Bible verses, similar to Blogowska and Saroglou (2013), in combination with the PCBS may help determine how literal interpretations interact with a broader range of scriptural messages.

Furthermore, it is important to note the relatively larger proportion of participants who reported being neither spiritual nor religious compared to the general U.S. population. This warrants mention in light of concerns that have been raised more recently about the generalizability of the PCBS (Krysinska et al. 2014) outside of its region of origin and within nonreligious populations. That is, because the PCBS was originally developed for use in the traditionally Roman Catholic region of Western Europe, additional research that sheds light on the scale and its underlying constructs within more secularized regions and populations would be especially informative.

Finally, the design of the study may have also created demand characteristics such that participants in each experimental condition may have inferred that the hypotheses pertained to anti-atheist or anti-gay attitudes, depending on the scripture that they read. In the absence of support for the hypothesized priming effects, however, this seems relatively unlikely. In short, differences in anti-atheist and anti-gay attitudes were reliably predicted by differences in participants' strength of belief but not by experimental condition. An interesting possibility is that socially desirable responding may have played a role in our inability to detect any priming effects. Reading a Bible verse condoning anti-atheist or anti-gay prejudice may have cued participants in to the purpose of the study, leading participants in the experimental conditions to alter their responses to appear less prejudiced. Future research using implicit measures of anti-atheist and anti-gay attitudes would help rule out the possibility of demand characteristics and social desirability effects.

CONCLUSION

Using the PCBS, it has been demonstrated that two dimensions of religiosity predict different types of prejudice (Brandt and Van Tongeren 2017; Duriez 2004; Duriez, Appel, and Hutsebaut 2003; Shen et al. 2013). The results of this study, in combination with the results of other recent studies, such as Shen et al. (2013) and Brandt and Van Tongeren (2017), further demonstrate the utility of a multidimensional measure of religiosity and the ability of the strength of belief dimension of religiosity to predict intergroup bias and prejudice toward value-violating out-groups. The current findings support an intergroup bias approach to prejudice, as well as the religious values conflict model (Brandt and Van Tongeren 2017). The causal role of exposure to Bible verses in prejudice toward out-groups was not supported using the current procedure. The findings point to the strength of an individual's religious (dis)belief, and associated values, in shaping perceptions of others with similar versus dissimilar beliefs and values. This information should be interpreted with an awareness that the real-life consequences of bias may differ between members of majority groups and individuals belonging to minority groups.

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