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RESEARCH

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The Relationship Between Religious  
Orientation, Right-Wing  
Authoritarianism, and Implicit  
Sexual Prejudice

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The relationship between intrinsic, extrinsic, and quest religious orientations, right-wing authoritarianism (RWA), and implicit and explicit attitudes toward homosexual individuals were examined within a sample of predominantly Protestant college students in the United States. Implicit attitudes were measured with the Implicit Association Test, a computer program that recorded reaction times as participants categorized symbols (of heterosexual and homosexual individuals) and adjectives (good or bad words). Participants displayed fairly negative implicit and explicit attitudes toward homosexual individuals (i.e., sexual prejudice). Intrinsic religious orientation uniquely predicted increased explicit sexual prejudice (when extrinsic, quest, and impression management were statistically controlled), and RWA appeared to mediate this effect. In contrast, the positive relationship between intrinsic religion and implicit sexual prejudice did not disappear when controlling for RWA. Although RWA seemed to be related to self-reports of prejudice, intrinsic religious orientation was uniquely related to automatic negative attitudes toward homosexual individuals.

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Religion seems to be an ideal facilitator of compassion and tolerance in society. Both Jews and Christians are commanded to "love your neighbor as yourself" (Leviticus 19:18; Matthew 22:39, NRSV). Similarly, the Koran instructs believers to "be good to the parents and to the near of kin, the orphans, the needy, the neighbor of (your) kin, the alien neighbor, the companion in a journey, the wayfarer and those whom your right hands possess" (4:36). Buddhism stresses compassion toward all of humanity and all of life, and within Hinduism, compassion is one of the virtues needed to follow the path of righteousness (Rye et al., 2000).

Yet, others have observed that religious beliefs often co-occur with prejudice rather than tolerance. In a classic example, William James (1902) noted that religion in its extreme could turn fanatic, causing its adherents to hate others rather than love their neighbors:

Between his own and Jehovah's enemies, David knew no difference; Catherine of Siena, panting to stop the warfare among Christians, which was the scandal of her epoch, could think of no better method of union among them than a crusade to massacre the Turks; Luther found no word of protest or regret over the atrocious tortures with which the Anabaptist leaders were put to death; and Cromwell praised the Lord for delivering his enemies into his hands for 'execution' (p. 312).

In this study, we extended research on religion and prejudice by utilizing a measure of implicit attitudes toward homosexuality. Specifically, we investigated the relationships between religious orientation, right-wing authoritarianism (RWA), and implicit sexual prejudice, and compared these associations with those found with explicit prejudice.

## RELIGION AND EXPLICIT PREJUDICE

Research has revealed a complex relationship between religion and prejudice (e.g., Batson, Schoenrade, & Ventis, 1993). Individuals who score higher on intrinsic religious orientation, for whom religion is a "master motive" (Allport & Ross, 1967), tend to self-report less prejudice against proscribed groups, but more prejudice against nonproscribed groups such as lesbians and gay men (e.g., Duck & Hunsberger, 1999; McFarland, 1989). Individuals who score higher on extrinsic religious orientation, and thus tend to use religion as a means to self-serving ends (Allport & Ross, 1967), report more prejudice against proscribed groups, but not necessarily against nonproscribed groups (Duck & Hunsberger, 1999; McFarland, 1989). In contrast, individuals who score higher in quest religious orientation and see religion as open-ended and complex (Batson & Schoenrade, 1991) tend to exhibit less prejudice toward both proscribed and non-

proscribed groups (Batson, Eidelman, Higley, & Russell, 2001; Batson, Floyd, Meyer, & Winner, 1999; McFarland, 1989).

## IMPLICIT ATTITUDES AS A MEASURE OF PREJUDICE

Much of the research on religion and prejudice has measured prejudice as explicit, self-reported attitudes. Recent research in prejudice has moved from looking at explicit attitudes to the measurement of implicit attitudes. Greenwald and colleagues have defined implicit attitudes as unconscious, automatic evaluations that influence thoughts, feelings, and behaviors (Greenwald & Banaji, 1995; Greenwald, McGhee, & Schwartz, 1998). For example, Devine (1989) demonstrated that individuals who were subliminally primed with words relating to racial stereotypes of African Americans were more likely to interpret ambiguous behavior as hostile, compared to individuals primed with neutral words. Participants were not able to consciously recall the priming words, but yet their interpretations of a target's behavior were still influenced by their previous priming experience (Devine, 1989). In contrast to self-reported attitudes, implicit attitudes may be less subject to self-presentational concerns (Greenwald et al., 1998).

One measure of implicit attitudes—the Implicit Association Test (IAT; Greenwald et al., 1998)—assesses the strength of automatic associations between concepts using computerized, reaction-timed categorization tasks. In the critical blocks of an IAT, participants are timed as they sort symbols representing a group (e.g., pictures of heterosexual or homosexual individuals) and positive and negative words into two categories (e.g., *gay+good* and *straight+bad*, or *straight+good* and *gay+bad*). It is assumed that people who more quickly associate images representing heterosexual individuals with pleasant words (e.g., *straight+good*) than images representing homosexual individuals with pleasant words (*gay+good*) have an implicit preference for heterosexual individuals. Similarly, people who more quickly associate images representing homosexual individuals with unpleasant words (*gay+bad*) than images representing heterosexual individuals with unpleasant words (*straight+bad*) are also inferred to hold an implicit preference for heterosexual individuals.

Consistent with ingroup-outgroup research, homosexual persons display more positive implicit attitudes toward homosexual individuals than do heterosexual persons (Banse, Seise, & Zerbe, 2001; Jellison, McConnell, & Gabriel, 2004). In contrast to self-reported attitudes, positive implicit attitudes toward homosexual relative to heterosexual individuals assessed with an IAT are more difficult to fake (Banse et al., 2001, Study 2). Banse and colleagues demonstrated that an IAT measure of attitudes toward gay men and lesbians measured more than just familiarity with homosexuality and reflected personal attitudes rather than

simply knowledge about stereotypes of gay men and lesbians. They also found that implicit and explicit attitudes toward gay men and lesbians were positively correlated but not identical. Similar to results found with self-report attitudes toward gay men and lesbians, heterosexual men tended to have more negative implicit attitudes toward homosexuality than did heterosexual women. Jellison et al. also found a significant positive relationship between implicit and explicit attitudes toward gay men. In addition, they found that for straight men, negative implicit attitudes toward gay men were related to a stronger heterosexual identity and increased support for male gender role norms. Greater motivation to control prejudice against gay men was related to more positive explicit attitudes but was unrelated to implicit attitudes toward gay men.

Researchers have begun to utilize the IAT to explore the relationship between different religious variables and prejudice. For example, Rowatt and Franklin (2004) studied the association between implicit prejudice against African Americans and RWA, social desirability, and various measures of religiousness. White undergraduate students were presented with names that were stereotypically White or Black in the context of the IAT. They found that RWA was positively related to implicit racism, whereas Christian orthodoxy was negatively related to implicit racism when controlling for self-reported religious fundamentalism and social desirability. Intrinsic, extrinsic, and quest religious orientations were not related to implicit racism when controlling for the aforementioned variables. The researchers concluded that the internalization of Christian teachings is related to racial tolerance, whereas a right-wing ideology may lead to racial prejudice.

This line of research has been extended to examine Christian individuals' implicit prejudice toward Muslim persons. Rowatt, Franklin, and Cotton (2005) found that with Christian participants, self-reported positive attitudes toward Christianity, as well as Christian orthodoxy, predicted implicit preference for Christians over Muslims. Other personality variables, such as religious fundamentalism, RWA, and intrinsic, extrinsic, and quest religious orientations did not show an association with implicit attitudes toward Muslims. The researchers concluded that these effects were consistent with social identity theory: Individuals preferred the religious ingroup over a religious outgroup.

### RELIGION AND SEXUAL PREJUDICE

Research on implicit attitudes has yet to examine the relationship between religion and implicit prejudice toward gay men and lesbians. Research on explicit attitudes, however, shows that religiousness is related to increased sexual prejudice. Individuals who attend religious services report more prejudice toward gay men and lesbians, as do those who belong to more conservative religious denominations (Finlay & Walther, 2003; Fisher, Derison, Polley, Cadman, & Johnston,

1994; Herek & Capitanio, 1996). These individuals are also less likely to know someone who is gay or lesbian (Herek & Capitanio, 1996).

Religious orientation is another important variable in the relationship between religiousness and sexual prejudice. Research using both self-report and behavioral measures of prejudice has shown that intrinsic religious orientation is related to increased prejudice against gay men and lesbians (Batson et al., 1999; Duck & Hunsberger, 1999; Fisher et al., 1994; Fulton, Gorsuch, & Maynard, 1999; Herek, 1987; Kirkpatrick, 1993; McFarland, 1989; Wilkinson, 2004). In contrast, extrinsic religious orientation has been found to be unrelated and quest religious orientation negatively related to sexual prejudice (Bassett et al., 2000; Bassett, Kirnan, Hill, & Schultz, 2005; Batson et al., 1999; Fisher et al., 1994; McFarland, 1989).

Sexual prejudice has been characterized as "nonproscribed" within many religious circles (Batson et al., 1993). Current research seems to suggest that for individuals high in intrinsic religious orientation, explicit prejudice against gay men and lesbians is seen as socially desirable (Duck & Hunsberger, 1999).

Given previous research on religious orientation and prejudice, it is possible that the explicit sexual prejudice expressed by intrinsically religious individuals is due to the social desirability of these negative attitudes in certain religious institutions, rather than to the existence of internalized negative attitudes toward gay men and lesbians. If this is the case, individuals high in intrinsic religious orientation may self-report explicit sexual prejudice for self-presentation reasons, even in the absence of internalized negative attitudes. It is also possible, however, that continued exposure to church teachings condemning homosexuality might lead intrinsically religious individuals to form negative evaluations of homosexuality. The IAT can be used to investigate the existence of automatic negative associations toward homosexuality.

### THE ROLE OF RWA IN THE RELATIONSHIP BETWEEN RELIGION AND PREJUDICE

If intrinsic religiousness were related to more than just a motivation to conform to prejudicial norms, but also to an internalized prejudice against gay men and lesbians, what might be the mechanism underlying this prejudice? One possible variable is RWA, which was defined by Altemeyer and Hunsberger (1992) as the combination of conventionalism, authoritarian submission, and aggression. Authoritarian individuals tend to submit to established authority, support traditional values that are endorsed by those authorities, and support aggression against outgroups when that aggression is deemed acceptable by authorities (Whitley & Lee, 2000). This creates an ethnocentrism that is expressed both in prejudice toward outgroups (especially groups that violate traditional values) and a feeling

of self-righteousness toward the ingroup (Altemeyer & Hunsberger, 1992). RWA has been found to be positively correlated with prejudice, including sexual prejudice (Altemeyer & Hunsberger, 1992; Cunningham, Nezlek, & Banaji, 2004; Duck & Hunsberger, 1999; Hunsberger, 1996; Hunsberger, Owusu, & Duck, 1999; Laythe, Finkel, & Kirkpatrick, 2001; Whitley & Lee, 2000; Wilkinson, 2004; Wylie & Forest, 1992).

Research suggests that RWA, in comparison to religious orientation, may be a stronger predictor of explicit sexual prejudice. For example, Duck and Hunsberger (1999) found that the relationship between both intrinsic and quest religious orientations and self-reported sexual prejudice weakened when RWA was removed. In contrast, religious proscription and nonproscription failed to show mediation effects similar to those found with RWA. Similarly, Cunningham et al. (2004) found that rigid thought patterns were associated with implicit prejudice, but only through an association with right-wing ideology. Therefore, it is possible that some of the relationship between religious orientation and explicit sexual prejudice is accounted for by RWA. It may not be the intrinsic nature of the motivation underlying some people's religion that causes sexual prejudice, but rather the authoritarian manner in which some people hold their religious beliefs.

## THIS STUDY

Despite its utility in measuring internalized prejudicial attitudes, researchers have yet to use the IAT specifically to investigate the relationship between religious orientation, authoritarianism, and sexual prejudice. This study examines the relationship between intrinsic, extrinsic, and quest religious orientation, RWA, and implicit attitudes toward homosexuality and compares these relationships with explicit attitudes toward homosexuality. Consistent with research on explicit attitudes, we predicted that intrinsic religious orientation would relate negatively and quest would relate positively with implicit attitudes toward homosexuality. In addition, we believed extrinsic religious orientation would be unrelated to implicit attitudes toward homosexuality. Finally, we predicted that these relationships between religious orientation and implicit attitudes would be mediated by RWA.

## METHOD

### Participants

Undergraduate students (103 women; 34 men;  $M$  age = 19.51 years,  $SD$  = 3.23 years) at a moderately-sized private religious university received extra

course credit for their participation. The sample was ethnically diverse (62.5% Caucasian; 14.7% Asian/Pacific Islander; 11.8% African American; 9.5% Hispanic; 1.5% selected another ethnicity); most participants were Protestant (52.2%; 14% Catholic; 25% other; 3.7% Muslim; 2.2% Hindu; 2.2% Buddhist).

### Materials and Procedure

**Self-report measures.** Each participant was asked to complete a number of self-report measures. Religious orientation was assessed using Allport and Ross's (1967) Intrinsic and Extrinsic Religious Orientation Scales and Batson's Quest Scale (Batson & Schoenrade, 1991). Response options for the Intrinsic ( $\alpha = .91$ ) and Extrinsic ( $\alpha = .78$ ) scales ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). Scores on the intrinsic scale were transformed to address a negative skew in its distribution, causing higher scores to indicate less intrinsic religiousness. Response options for the Quest scale ranged from 1 (*very strongly disagree*) to 9 (*very strongly agree*), ( $\alpha = .80$ ).

Participants also completed a modified version of the Right-Wing Authoritarianism Scale (Altemeyer & Hunsberger, 1992;  $\alpha = .89$ ), which measures self-reported authoritarian submission, authoritarian aggression, and conventionalism, ranging from 1 (*very strongly disagree*) to 9 (*very strongly agree*); (e.g., "Our country will be destroyed someday if we do not smash the perversions eating away at our moral fibers and traditional beliefs."). Because we were examining the relationship between religiousness and attitudes toward lesbians and gay men, four items on the RWA Scale that directly mentioned religiousness or homosexuality were removed from analyses.

Social desirability was assessed using the Impression Management subscale of the Balanced Inventory of Desirable Responding (BIDR-IM; Paulhus & Reid, 1991;  $\alpha = .77$ ). This subscale utilizes 20 items, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*; e.g., "I have some pretty awful habits." [reverse-keyed]). After reverse-keying appropriate items, participants received one point for each rating  $\geq 6$  and zero points for each rating  $\leq 5$  ( $\alpha = .75$ ).

Explicit sexual prejudice was assessed using the Attitudes Toward Lesbians and Gay Men Scale—Short Form (ATGL; Herek, 1988; see also Herek, 1994). This scale includes five items that assess attitudes toward gay men (e.g., "I think male homosexuals are disgusting.") and five items that assess attitudes toward lesbians (e.g., "Lesbians just can't fit into our society."). Items were rated on a 7-point scale ranging from 1 (*very strongly disagree*) to 7 (*very strongly agree*), ( $\alpha = .92$ ). Scores on these measures were transformed so that higher scores represent more positive attitudes toward lesbians and gay men. Attitudes toward gay men and lesbians and heterosexual men and women were also assessed using four "feeling thermometer" items that asked participants to rate how warm or cold they felt toward gay men, lesbian women, heterosexual men, and hetero-

sexual women (0 = *coldest feelings*, 5 = *neutral*, 10 = *warmest feelings*). Participants completed additional self-report measures reported in Rowatt et al. (2006).

*IAT.* After the survey, each participant completed a computerized IAT we designed and administered with a Microsoft Windows-based software program (*Inquisit 1.33*; see [www.millisecond.com](http://www.millisecond.com)). Participants were seated at a computer and asked to follow on-screen instructions. Participants were instructed to press the “d” key (on the left of the keyboard) if the pictures, symbols, or word fit into the left category and the “k” key (on the right of the keyboard) if the pictures, symbols, or word fit into the right category. Each participant then practiced categorizing words, pictures, and symbols that appeared on the screen. The following stimulus words were used (*good/pleasant words*: friendly, pleasant, lucky, warmth, cheer, and happy; *bad/unpleasant words*: evil, failure, pain, sinful, agony, and rotten). Three pictures or symbols representing gay men (e.g., ♂♂) and three pictures or symbols representing heterosexual individuals (e.g., ♂♀) were used. Two pictures depicted morphed images of faces side-by-side (man-woman; man-man). Two pictures were realistic drawings of people standing side-by-side (man-woman; man-man). Unlike some related research (e.g., Jellison et al., 2004; Olson, Parsons, Rowatt, Mangu-Ward, & Banaji, 2005), the pictures did not depict people in romantic poses.

A total of seven blocks of trials were conducted with each participant (see Table 1). Blocks 1, 2, 3, 5, and 6 were practice blocks with 25 trials per block. Blocks 4 and 7 were “test” blocks, with 40 trials per block. Reaction times were recorded as participants sorted pictures or words representing the four concepts (gay, straight, good, bad) into just two response categories (e.g., *incongruent condition*: gay+good, straight+bad; *congruent condition*: straight+good,

TABLE 1  
Sequence of Trial Blocks in the Gay-Straight Implicit Association Test (IAT)

	No. of Block Trials	Task Function	Items Assigned to Left-Key Response	Items Assigned to Right-Key Response
1	25	Practice	Gay images	Straight images
2	25	Practice	Pleasant words	Unpleasant words
3	25	Practice	Pleasant + gay	Unpleasant + straight
4	40	Test	Pleasant + gay	Unpleasant + straight
5	25	Practice	Straight images	Gay images
6	25	Practice	Pleasant + straight	Unpleasant + gay
7	40	Test	Pleasant + straight	Unpleasant + gay

*Note.* For half the participants the positions of Blocks 1, 3, and 4 were switched with those of Blocks 5, 6, and 7.

gay+bad). Congruency refers to the relationship between one’s implicit attitude and the IAT condition. For instance, some incongruence exists between implicit dislike for homosexual individuals and the test condition in which one must associate homosexual images with positive words and heterosexual images with negative words. During practice and data-collection blocks, items from each category pair were selected randomly and without replacement. Each stimulus item was displayed until a correct response was made, providing a built-in error penalty. Elapsed time was recorded between the presentation of each stimulus and the correct keyboard response.

The “improved” IAT scoring method was used to compute implicit attitudes toward homosexual relative to heterosexual individuals (i.e., *D<sub>axis</sub>*; see Greenwald, Nosek, & Banaji 2003). This 12-step scoring algorithm uses data from both practice and test blocks, omits slow trials (> 10 s), and omits participants with excessively fast responding (< 300 ms) across more than 10% of trials. A positive value on the IAT variable (see Table 2, #13) indicates stronger association of “good” with “gay” than “bad” with “gay.” A negative value of this implicit attitude (i.e., arithmetic mean < 0) would be evidence of implicit prejudice toward gay men relative to heterosexual individuals. That is, implicit sexual prejudice would exist if participants more quickly associate pictures or symbols of gay individuals with unpleasant terms than pictures or symbols of straight individuals and more slowly associate pictures or symbols of gay individuals with pleasant terms than pictures or symbols of straight individuals.

## RESULTS

### Baseline Levels of Explicit and Implicit Attitudes Toward Homosexual Individuals

Because the religious orientation scales utilized in this study are valid only for individuals with a Christian religious background (Batson et al., 1993), we removed the 10 non-Christian participants from the analyses in the following discussion. Results were similar when these participants were included in the analyses.

As previously reported in Rowatt et al. (2006), participants demonstrated negative attitudes toward homosexual individuals in both explicit and implicit measures. In addition, implicit attitudes were significantly positively correlated with explicit preference for homosexual over heterosexual individuals, which was computed by subtracting the heterosexual thermometer items from the homosexual thermometer items. Descriptive statistics for religious and prejudice measures are presented in Table 2.

TABLE 2  
Descriptive Statistics and Correlations Between Measures of Religious Orientation and Right-Wing Authoritarianism Among College Students

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	M	SD	Alpha
1. Intrinsic RO <sup>a</sup>	—													3.86	.90	.91
2. Extrinsic RO	.61***	—												2.20	.60	.78
3. Quest RO	.23*	.21*	—											4.85	1.23	.80
4. RWA <sup>b</sup>	-.50***	-.30**	-.33***	—										5.61	.95	.89
5. BIDR-IM	-.52***	-.35***	-.22**	.34***	—									.27	.17	.77
6. Sex	-.31***	-.19*	-.17+	.18+	.20*	—								.77	.42	.92
7. Explicit ATGL	.56***	.40***	-.03	-.68***	-.43***	-.16+	—							2.09	1.47	.92
8. Gay Men Therm.	.16+	.01	.06	-.40***	-.21*	-.26**	.56***	—						4.34	3.23	—
9. Lesbian Therm.	.24**	.01	.06	-.40***	-.21*	-.26**	.55***	.77***	—					3.71	3.20	—
10. Gay Therm.	.21*	-.02	.07	-.37***	-.21*	-.14	.59***	.14	.10	.13	—			4.02	3.03	.87
11. Straight Therm.	.01	-.07	-.15+	.10	.09	.03	-.10	-.14	.23**	.22*	-.01	.20*	—	8.76	2.03	.86
12. Therm. Diff.	.18*	.03	.15+	-.39***	-.24**	-.14	.59***	-.18*	—	—	—	—	—	-4.73	3.42	—
13. Implicit ATG	.17+	.06	.09	-.01	-.06	-.08	.19*	—	—	—	—	—	—	-.43	.28	—

Note. RO = religious orientation; RWA = Right-wing Authoritarianism; ATGL = Attitudes Toward Gays and Lesbians; BIDR-IM = Balanced Inventory of Desirable Responding Impression Management subscale. For the SEX variable, 0 = male, 1 = female.  
<sup>a</sup>Correlations for the Intrinsic religious orientation scale are reported using the transformed scale to address negative skew, whereas descriptive statistics for this scale are reported without transformations. Because of this transformation, positive correlations with the transformed Intrinsic scale indicate negative relationships with this scale.  
<sup>b</sup>Correlations for the RWA scale are presented with items related religion or sexual orientation omitted, whereas descriptive statistics for this scale are reported without omitted items.  
<sup>+</sup>  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Bivariate Correlations Between Religious Orientation and Explicit and Implicit Prejudice

*Explicit prejudice.* Correlations revealed that intrinsic religiousness and RWA were related to negative explicit attitudes toward gay men and lesbians. Correlations between study variables are presented in Table 2. Intrinsic religiousness showed significant or marginal negative associations with the ATGL scale scores and feeling thermometer assessments of attitudes both toward gay men and toward lesbians. In contrast, extrinsic religious orientation was related to positive ATGL scores and unrelated to feeling thermometer assessments of attitudes both toward gay men and toward lesbians. Quest religious orientation had no significant relationship to any explicit measures of attitudes toward gay men and lesbians. RWA displayed patterns of correlations similar to and stronger than those found with intrinsic religious orientation, showing highly significant negative correlations with explicit attitudes toward lesbians and gay men. In addition, impression management was negatively related to explicit attitudes, suggesting that it was socially desirable to express prejudice against lesbians and gay men in this population.

*Implicit prejudice.* Correlations between religious variables and implicit attitudes mirrored correlations with explicit attitudes but produced weaker results: Intrinsic religious orientation was marginally negatively correlated with implicit attitudes toward homosexual individuals. The thermometer measures of explicit attitudes also showed significant positive correlations with implicit attitudes. No other variables displayed significant relationships with implicit attitudes. (See Table 2.)

Multiple Regression Analyses

Theorists have suggested that intrinsic, extrinsic, and quest religious orientations are independent of each other (e.g., Batson et al., 1993); therefore, we included the three religious orientations in the regressions to test the unique effects of each orientation. Because previous research has suggested that intrinsic religious orientation may be positively related to social desirability concerns, we also added the BIDR-IM measure of impression management in the regression analyses. In addition, we included participant gender in regression analyses to control for possible gender differences in attitudes toward gay men and lesbians (e.g., Herek, 2000).

*Religious orientation and explicit prejudice.* When we examined self-reported attitudes toward gay men and lesbians (as measured by the ATGL scale), as intrinsic religious orientation decreased, ATGL scores became more

positive ( $\beta = .42, p < .01$ ; higher scores on this transformed intrinsic scale indicated lower levels of intrinsic religiousness and thus a negative relationship between intrinsic religion and explicit attitudes) when extrinsic and quest religious orientations, impression management, and participant gender were simultaneously controlled,  $F(5, 111) = 10.78, p < .01, R^2 = .33$ . Socially desirable responding also marginally predicted ATGL scores in this equation ( $\beta = -.17, p = .07$ ; see Table 3). These findings suggest that intrinsic religious orientation is uniquely related to self-reported prejudiced attitudes toward lesbians and gay men, independent of the social desirability of these negative attitudes.

There is reason to believe, however, that intrinsic religious orientation's relationship to explicit prejudice against lesbians and gay men is driven in part by RWA. Consistent with Baron and Kenny's (1986) steps for establishing mediation, we computed the relationship between intrinsic religiousness and RWA. Intrinsic religion was a significant predictor of RWA ( $\beta = -.42, p < .01$ ),

TABLE 3  
Simultaneous Multiple Regressions of Explicit and Implicit Attitudes Toward Homosexual Individuals on Measures of Intrinsic, Extrinsic, and Quest Religious Orientations, Impression Management and Participant Gender

Variable	B	SE B	$\beta$	$R^2$
Explicit ATGL				.33
Intrinsic RO <sup>a</sup>	3.60	.95	.42***	
Extrinsic RO	.10	.24	.04	
Quest RO	.11	.10	.09	
Sex	.06	.28	.02	
BIDR-IM	-1.39	.75	-.17 <sup>+</sup>	
Implicit ATG				.07
Intrinsic RO <sup>a</sup>	.42	.18	.30*	
Extrinsic RO	-.05	.05	-.13	
Quest RO	.02	.02	.11	
Sex	.00	.05	.00	
BIDR-IM	.09	.14	.07	

Note. B = unstandardized beta.  $\beta$  = standardized regression coefficient. Higher values on the Implicit Association Test measure represented a more positive attitude toward homosexuals. ATGL = Attitudes Toward Gays and Lesbians; BIDR-IM = Balanced Inventory of Desirable Responding Impression Management (i.e., socially desirable responding). For the SEX variable, 0 = male, 1 = female.

<sup>a</sup>Statistics for the Intrinsic religious orientation scale are reported using the transformed scale to address negative skew. Because of this transformation, higher scores on the Intrinsic scale indicate lower levels of intrinsic religiousness.

<sup>+</sup> $p < .10$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

with extrinsic, quest, social desirability, and participant sex entered as covariates,  $F(5, 110) = 8.81, p < .01, R^2 = .29$ . When RWA and intrinsic religious orientation were then regressed onto explicit ATGL scores along with the other covariates, the relationship between intrinsic religiousness and ATGL scores became much weaker and nonsignificant ( $\beta = -.13, p = .18$ ),  $F(6, 107) = 22.27, p < .01, R^2 = .56$ . In this equation, impression management was also marginally negatively related to ATGL scores ( $\beta = -.14, p = .07$ , see Table 4). A Sobel test indicated that RWA mediated the relationship between intrinsic religious orientation and explicit ATGL scores,  $z = 3.30, p < .01$ .

To further investigate the underlying structural relationships between these variables, regression structure coefficients were also computed (i.e., bivariate  $r_{yx}/R$ ; see Courville & Thompson, 2001). The structure coefficients for the

TABLE 4  
Simultaneous Multiple Regressions of Explicit and Implicit Attitudes Toward Homosexual Individuals on Measures of Intrinsic, Extrinsic, and Quest Religious Orientations, Right-Wing Authoritarianism, Impression Management, and Participant Gender

Variable	B	SE B	$\beta$	$R^2$
Explicit ATGL				.56
Intrinsic RO <sup>a</sup>	1.12	.84	.13	
Extrinsic RO	.22	.20	.09	
Quest RO	-.08	.08	-.07	
RWA	-1.00	.13	-.59***	
Sex	.18	.23	.05	
BIDR-IM	-1.20	.65	-.14 <sup>+</sup>	
Implicit ATG				.08
Intrinsic RO <sup>a</sup>	.53	.20	.37**	
Extrinsic RO	-.06	.05	-.16	
Quest RO	.03	.02	.13	
RWA	.02	.03	.09	
Sex	.00	.06	-.00	
BIDR-IM	.13	.15	.10	

Note. Higher values on the Implicit Association Test measure represented a more positive attitude toward homosexuals. B = unstandardized beta;  $\beta$  = standardized regression coefficient; ATGL = Attitudes Toward Gays and Lesbians; RWA = Right-wing authoritarianism; BIDR-IM = Balanced Inventory of Desirable Responding Impression Management (i.e., socially desirable responding). For the SEX variable, 0 = male, 1 = female.

<sup>a</sup>Statistics for the Intrinsic religious orientation scale are reported using the transformed scale to address negative skew. Because of this transformation, higher scores on the Intrinsic scale indicate lower levels of intrinsic religiousness.

<sup>+</sup> $p < .10$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

relationship between explicit prejudice and the other variables were as follows: intrinsic religiousness ( $r_s = .75$ ; higher scores on this transformed intrinsic scale indicated lower levels of intrinsic religiousness and thus a negative relationship between intrinsic religion and explicit attitudes), extrinsic religiousness ( $r_s = .54$ ), quest religiousness ( $r_s = -.04$ ), RWA ( $r_s = -.91$ ), sex ( $r_s = -.21$ ), and BIDR-IM ( $r_s = -.58$ ). Thus, standardized beta weights and regression structure coefficients both indicated that RWA was the strongest predictor of explicit prejudice in this regression model. The most notable difference was that the structure coefficients indicated that extrinsic religiousness<sup>1</sup> had a stronger relationship with positive explicit attitudes toward gay men and lesbians than was evident from the standardized beta weights.

*Religious orientation and implicit prejudice.* Intrinsic religious orientation was negatively related to implicit attitudes toward homosexual individuals, ( $\beta = .30$ ,  $p < .05$ ; higher scores on this transformed intrinsic scale indicated lower levels of intrinsic religiousness and thus a negative relationship between intrinsic religion and implicit attitudes) when extrinsic and quest religious orientations, impression management, and participant gender were controlled,  $F(5, 113) = 1.61$ ,  $p = .16$ ,  $R^2 = .07$  (see Table 3). No other variables made significant, unique contributions in this equation. These results suggest that intrinsic religious orientation is also uniquely related to increased implicit sexual prejudice.

Contrary to predictions, RWA did not mediate the relationship between intrinsic religious orientation and implicit prejudice. RWA was not significantly related to implicit prejudice when controlling for intrinsic, extrinsic, quest, social desirability and sex ( $\beta = .09$ ,  $p = .44$ ,  $F[6, 109] = 1.54$ ,  $p = .17$ ,  $R^2 = .08$ ). Therefore, RWA did not meet the criteria for mediation between intrinsic religiousness and implicit prejudice (Baron & Kenny, 1986). In this equation, intrinsic religiousness was still significantly negatively associated with implicit attitudes ( $\beta = .37$ ,  $p < .01$ , see Table 4). No other variables made significant unique contributions to this equation.

The structure coefficients for the relationship between implicit prejudice and the other variables were as follows: intrinsic religiousness ( $r_s = .61$ ; higher scores on this transformed intrinsic scale indicated lower levels of intrinsic religiousness and thus a negative relationship between intrinsic religion and implicit attitudes), extrinsic religiousness ( $r_s = .21$ ), quest religiousness ( $r_s = .32$ ), RWA ( $r_s = -.04$ ), sex ( $r_s = -.29$ ), and BIDR-IM ( $r_s = -.21$ ). Consistent with the interpretation from the standardized beta weights, these structure coefficients

indicated that intrinsic religiousness had a strong relationship to implicit sexual prejudice, and RWA was essentially unrelated to implicit sexual prejudice. The regression structure coefficients also revealed that the other variables in the equation were predictors of implicit prejudice to a certain extent. Quest, and to a lesser degree extrinsic religiousness, seemed to predict more positive implicit attitudes toward homosexual individuals relative to heterosexual individuals, whereas sex and social desirability predicted more negative implicit attitudes.

Taking these various interpretations into account, it seems that the relationship between intrinsic religious orientation and implicit sexual prejudice is stronger than the relationship between RWA and implicit sexual prejudice. Furthermore, the relationship between intrinsic religiousness and implicit sexual prejudice is not mediated by RWA.

## DISCUSSION

Intrinsic religiousness seems to be uniquely related to implicit sexual prejudice, whereas quest and extrinsic religious orientations are related to more positive implicit attitudes toward homosexual individuals. Contrary to hypotheses, intrinsic religious orientation made a unique contribution in predicting implicit sexual prejudice, even after controlling for RWA along with other covariates. Intrinsic religious orientation was also uniquely associated with explicit sexual prejudice when controlling for other religious and impression management variables, and this effect seemed largely to be mediated by RWA attitudes. Thus, RWA seems to drive the self-report of prejudice against gay men and lesbians, but intrinsic religious orientation is related to automatic negative judgments toward homosexual individuals compared to heterosexual individuals. Although extrinsic and quest religious orientations did not make unique contributions to either explicit or implicit attitudes toward lesbians and gay men, regression structure coefficients indicated that extrinsic and quest religiousness were related to more positive implicit attitudes toward homosexual individuals, and extrinsic religiousness was also related to positive explicit attitudes.

The unique association between intrinsic religiousness and implicit sexual prejudice suggests that, rather than being an artifact of social desirability, prejudice against homosexual individuals has an internalized, implicit component in intrinsic religion, at least among the Christian religious population utilized in this study. Furthermore, these implicit negative attitudes are not simply due to the authoritarian manner in which an intrinsically religious person might hold his or her beliefs, but is something specific to intrinsic, devout religiousness. It may be that because intrinsic religiousness is related to greater involvement with religious institutions, individuals high in intrinsic religiousness have inter-

<sup>1</sup>We thank an anonymous reviewer for pointing out the different relationship between extrinsic religious orientation and explicit sexual prejudice revealed by examining regression structure coefficients.

nalized any teachings by their churches that may condemn homosexuality (Duck & Hunsberger, 1999). In contrast, quest and extrinsic religious orientations are related to independence from religious doctrine (Batson et al., 1993; Burris, Jackson, Tarpley, & Smith, 1996); therefore, it is not surprising that quest and extrinsic religious orientations were related to more positive implicit attitudes toward homosexual individuals. It is important to note that because of the correlational nature of this data, it is difficult to make strong causal inferences about these relationships. It is also possible that individuals who show explicit and implicit sexual prejudice are more likely to believe in their religion in a committed manner consistent with the intrinsic religious orientation.

Why would RWA be related to explicit but not implicit sexual prejudice, whereas intrinsic religious orientation is related to both? One apparent distinction between intrinsic religious orientation and RWA is that the former is a religious variable, and the latter is not. Although RWA and religious variables such as fundamentalism may mutually support each other (Altemeyer, 1988), authoritarianism is a separate construct from religiousness. In turn, sexual prejudice may have a specifically religious component for some individuals, leading to a different relationship between sexual prejudice and religiousness, compared to the relationship between sexual prejudice and authoritarianism. Because some religious institutions may subtly or even strongly support sexual prejudice, it is possible that intrinsically religious individuals may have had more exposure to arguments that encourage sexual prejudice, compared to individuals who may be authoritarian but not necessarily intrinsically religious. This might lead to greater internalization of sexual prejudice in individuals with an intrinsic religious orientation, leading these individuals to have more implicit as well as explicit sexual prejudice.

Another distinction between RWA and intrinsic religiousness is that the construct of authoritarianism contains a component of authoritarian conventionalism that is not necessarily present in intrinsic religious orientation. Although conventionalism may be correlated with intrinsic religious orientation (Kahoe, 1977), it is not part of the definition of intrinsic religious orientation. The conventionalism component of RWA may play a role in the relationship between RWA and explicit sexual prejudice. Individuals high in RWA may express more sexual prejudice in response to conventional religious and societal norms condemning homosexuality. For example, Oyamoto, Borgida, and Fisher (2006) found that personal egalitarian attitudes moderated the relationship between RWA and negative attitudes toward immigrants, but not toward gay men and lesbians. They speculated that the conventionalism component of RWA was responsible for variation in the relationships between RWA and attitudes toward both immigration and sexual prejudice. Oyamoto et al. noted that modern-day society still unambiguously disapproves of homosexuality, leading conventional individuals such as high authoritarians to clearly express sexual prejudice, but that societal

norms contain both positive and negative views on immigrants, leaving room for authoritarian individuals to take into account egalitarian values in their attitudes toward immigrants. McFarland, Ageyev, and Abalagina-Paap (1992) found that the relationship between authoritarianism and attitudes toward communism in Russian participants varied in reaction to historical changes in the status of communism in Russian society. Furthermore, they found that authoritarianism in Russian participants was correlated with positive attitudes toward social equality and negative attitudes toward individualism, whereas authoritarianism in American participants was correlated with exactly the reverse. Thus, it seems that because of the conventionalism associated with authoritarianism, the relationship between authoritarianism and endorsement of a particular ideology may change when that ideology is no longer endorsed by the authorities in power. This may provide another explanation as to why the explicit sexual prejudice that authoritarian individuals express may not show a counterpart in implicit sexual prejudice. Rather than specifically internalizing sexual prejudice, authoritarian individuals may have only internalized general conventionalism. This conventionalism will lead them to change their attitudes toward various outgroups, depending on the societal consensus about these outgroups. Further research is needed to uncover how different variables may contribute to the relationship between RWA, intrinsic religiousness, and different forms of sexual prejudice.

#### Directions for Future Research

One area of controversy in research on religion and prejudice is the extent to which individuals of different religious orientations can still "love the sinner" while "hating the sin." This line of research raises the possibility that much of the hostility that certain religious individuals may feel toward gay men and lesbians is not because of outgroup status per se, but is a reaction to a perceived clash of values between a homosexual orientation and particular religious beliefs (Batson et al., 1999). Research has found that some religious individuals do make a distinction between homosexual orientation and homosexual behavior (Bassett, van Niekelen-Kuyper et al., 2005), with some religious individuals self-reporting positive attitudes toward gay and lesbian Christian individuals who abstain from sexual activity. Further, research has found that individuals who make this outgroup-behavior distinction also show different behaviors toward institutions that support homosexual individuals or behavior (Bassett et al., 2000; Bassett, Kirnan et al., 2005). When looking specifically at the relationship between intrinsic religiousness and this distinction between an outgroup and value-violating behavior, behavioral studies suggest that intrinsic (and extrinsic) religious orientation is associated with a rejection of both the homosexual individual and behavior that promotes homosexuality (Batson et al., 1999), whereas some self-report and role-playing studies suggest that at least some intrinsically

religious individuals can make a distinction between the two (Bassett et al., 2001; Fulton et al., 1999). Other self-report studies have not found correlations between intrinsic religiousness and outgroup-behavior distinctions in sexual prejudice (Bassett et al., 2000; Bassett, Kirnan et al., 2005). In contrast, behavioral research on the quest religious orientation has provided evidence both in support (Batson et al., 2001) and against (Goldfried & Miner, 2002) a relationship between quest religious orientation and a differentiation between an outgroup member and that individual's value-violating behavior. Although the stimuli in this study were not designed to differentiate between attitudes toward homosexual behavior and attitudes toward gay men and lesbians as individuals, the assessment of implicit prejudice does have the potential to provide additional information on this issue. For example, in future research individuals' attitudes toward celibate gay persons and noncelibate gay persons could be assessed on an implicit level. If intrinsic religious orientation is related to tolerating individuals but not their value-violating behaviors, this religious orientation should be related to more favorable implicit attitudes toward celibate gay individuals.

#### Societal Implications of Negative Implicit Attitudes

One important reason for the study of prejudice is that negative attitudes and emotions associated with prejudice often have behavioral ramifications. Research has demonstrated that explicit prejudice against gay men and lesbians is related to less helping of both gay individuals and gay-friendly institutions (Bassett, Kirnan, 2000, 2005; Batson et al., 1999). Implicit prejudices have also been shown to manifest themselves in behavior (Chugh, 2004; Florack, Scarabis, & Bless, 2001; Rudman & Glick, 2001). For instance, Neumann, Hulslenbeck, and Seibt (2004) found that implicit attitudes toward individuals with AIDS were related to approach and avoidance behaviors. Research by McConnell and Leibold (2001) showed that negative implicit racial attitudes predicted poorer social interactions with White and Black experimenters. Similarly, Ziegert and Hanges (2005) found that implicit racial prejudice, in combination with a climate of racial bias, predicted discrimination in the context of hiring. Research on implicit sexual prejudice has also found that implicit attitudes toward homosexual individuals predict more negative nonverbal behavior toward individuals believed to be gay, but only in people with low self-reported egalitarian attitudes and low behavioral control (Dasgupta & Rivera, 2006). Negative implicit attitudes therefore have the potential to impact many aspects of an individual's behavior and seem diametrically opposed to religious tenets of justice and compassion.

The knowledge that some religious variables such as intrinsic religiousness may be related to implicit, automatic negative attitudes toward homosexual individuals can be an important tool in the amelioration of prejudice. Although intrinsically religious individuals may have negative implicit attitudes toward

homosexuality, these individuals are also the religious followers who should be most committed to religion's message of love and compassion. Even though negative implicit prejudice may be an automatic reaction of an intrinsically religious person to homosexual individuals, perhaps knowledge of this reaction may motivate the individual to correct for these implicit prejudices on a more conscious level (Dasgupta & Rivera, 2006; Devine, 1989) and help religion to move in the direction of "unmaking" prejudice (Allport, 1966).

#### ACKNOWLEDGMENTS

The views expressed in this article are those of the authors and do not necessarily reflect the views of Baylor University. We would like to express our appreciation to Jessica Kelly, Brooke LaMartina, Michelle McCullers, April McKinley, Kimberly Reeves and Maricela Rábago for data-collection assistance.

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## RESEARCH

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# The Rasch Scaling of Mystical Experiences: Construct Validity and Correlates of the Mystical Experience Scale (MES)

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Based on the data from 778 respondents, it was shown that mystical experiences as addressed by Thalbourne's (1991) Mystical Experiences Scale are Rasch scalable, and an unbiased set of 19 items was identified that yields intensity measures at an interval level of measurement. Construct validity was established by demonstrating that the Rasch dimension has unambiguous semantics that agrees with Thalbourne's (2002) definition of mystical experiences. Specifically, the lowest intensity levels refer to general experiences of happiness and experiences that are difficult to interpret, intermediate levels are characterized by experiences of love for humanity, and the highest levels refer to having special wisdom and powers of discernment. On average, older respondents (age 19 or older) reported more intense

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