

RUNNING HEAD: Two-path model of multiple social attitudes

SOCIAL GROUP, AND MORAL ORIENTATION FACTORS AS MEDIATORS
OF RELIGIOSITY AND MULTIPLE ATTITUDE TARGETS

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SOCIAL GROUP, AND MORAL ORIENTATION FACTORS AS MEDIATORS OF RELIGIOSITY AND MULTIPLE ATTITUDE TARGETS

ABSTRACT

Although there is a tradition of examining generalised discrimination against multiple targets, recent studies have tended to consider race and homosexuality as separate targets without considering their relationship to each other. Recent studies have also argued for a moral dimension in attitudes to homosexuality, but this has not yet been explicitly modelled as an explanation for patterns of social attitudes. In a questionnaire study of practicing Christians (N=143) we examined the relationship of religious orientation and ideology (intrinsic, extrinsic, fundamentalism, orthodoxy, quest) with four attitude targets (Aboriginal Australians, women, homosexual persons, and abortion). Using SEM, we develop a two-factor model, incorporating group and moral orientation factors, which completely mediates the relationships between the religiosity variables and the social attitudes. Religiosity variables exhibit different patterns of correlation with the two factors. The two-factor model provides a useful framework for further exploration of socially and politically contested attitudes.

KEYWORDS: Religious Orientation, Fundamentalism, Attitude to Homosexuality, Social Attitudes

INTRODUCTION

There is a long tradition of exploring the association that religious belief and practice have with a variety of social issues. This question continues to be very relevant in the light of recent public debate, in the USA, Australia, and elsewhere regarding such issues as abortion and gay marriage (e.g., Badgett 2004; Bidstrup 2004; Djupe, Olson, and Gilbert 2006; Ehrich 2006; Naylor 2006; Rosik 2006), as well as ongoing interest in the social impact of racial attitudes. Within the social science of religion it has long been assumed that correlations among various social prejudices point to individual differences as the main explanation for prejudiced attitudes (e.g., Allport 1954; Allport and Ross 1967; Altemeyer and Hunsberger 1992; Kirkpatrick 1993; McFarland 1989). However, a number of researchers have also pointed to differences in the patterns of attitudes toward diverse targets as indications of social-level normative processes at work by showing target specificity, and change over time as the social and political context changes (e.g., Allport 1954; Herek 1987; Gorsuch 1988; Louis, Mavor, and Terry 2003; Pettigrew 1958; Reynolds et al. 2001). A better understanding of both similarities and differences in the patterns of social attitudes is needed to examine the role of these complementary processes.

Research on the impact of religiosity on prejudice has been heavily based on the intrinsic-extrinsic religious orientation distinction (Allport and Ross 1967; Gorsuch and McPherson 1989), the quest orientation (Batson and Schoenrade 1991, 1991; Batson and Ventis 1982; Batson, Shoenrade, and Ventis 1993), fundamentalism (e.g., Altemeyer and Hunsberger 1992; Herek 1987; McFarland 1989), and orthodoxy (e.g., Hunsberger 1989; Kirkpatrick 1993; Laythe et al. 2002). The relationships among these scales and their relationships with social attitudes remain an important domain of research, and although there has been a recent trend away from the use of the intrinsic-extrinsic orientation dimensions due to various methodological and conceptual problems (Kirkpatrick and Hood 1990, 1991; Masters 1991), it is not yet clear that alternative conceptualisations and measurement have emerged. If nothing else, the intrinsic scale remains a measure of religious commitment that provides

continuity with a large existing literature (Gorsuch and McFarland 1972; Gorsuch and McPherson 1989; Donahue 1985; Duck and Hunsberger 1999).

Early reviews of the intrinsic-extrinsic orientation literature supported Allport's contention (1950; 1966; Allport and Ross 1967) that extrinsic religion is associated with prejudice but found that intrinsic religion, rather than being associated with avoidance of prejudice, had only a small negative association with prejudice, or no association with prejudice (Donahue 1985; Gorsuch and Aleshire 1974). By contrast, more ideological, belief-content measures, such as quest, fundamentalism and orthodoxy have been found to be highly predictive of a range of attitudes including racial attitudes, attitudes to women, gay men and lesbians, and communists (Herek 1987; Kirkpatrick 1993; McFarland 1989). This general pattern has also been found with implicit measures of attitudes to race, Christians and Moslems, and homosexuality (Rowatt and Franklin 2004; Rowatt, Franklin, and Cotton 2005; Rowatt et al. 2006), though the strength of the relationships are generally much weaker with implicit measures.

Interestingly, different patterns have been found for racial attitudes and attitudes to gay men and lesbians that suggest that orientations and ideological measures act differently on different types of attitude. Herek (1987) found that the extrinsic scale was significantly related to anti-black prejudice as well as anti-homosexual prejudice. The intrinsic scale was related to anti-homosexual prejudice, but was unrelated to anti-black prejudice. Herek argued that this latter result is due to the ideological position that Christians are intrinsically committed to; that anti-black prejudice is seen as inappropriate, but that anti-homosexual prejudice is still consistent with Christian commitment. An interesting qualification of these results is the fact that when Herek entered the intrinsic-extrinsic religious orientation scales into a hierarchical regression analysis controlling for religious ideology (i.e., fundamentalism), neither of the scales predicted prejudice over and above fundamentalism. Fundamentalist belief largely subsumed the associations of the intrinsic and extrinsic scales with prejudice against gay men and lesbians. This finding further supported Herek's

argument that religious prejudice is ideology specific, rather than associated with an underlying religious personality.

McFarland (1989) and Kirkpatrick (1993) explored this pattern further by extending the range of attitude targets to include attitudes toward women and communists as well as anti-black and anti-homosexual attitudes. They used a composite of these four attitudes to construct a general tendency to discriminate factor. The fundamentalism measures correlated positively with the general tendency to discriminate factor as well as the individual attitudes, indicating more negative views to all four groups. The quest scale generally showed the mirror image effect, with positive views toward all the groups. The intrinsic scale showed positive correlations with discrimination against homosexual persons and communists, but neutral or negative associations with discrimination against blacks and women.

Taken together, these studies suggest two central findings: that the intrinsic measure may be associated with negative attitudes toward socially legitimate targets such as homosexual people and communists, but relatively positive, or at least neutral, attitudes toward proscribed targets such as women and Blacks (Batson, Shoenrade, and Ventis 1993; Duck and Hunsberger 1999); and that fundamentalism is associated with negative views to all these groups (Herek 1987; Kirkpatrick 1993; McFarland 1989). With regard to these targets, the quest scale (when it was included) tended to follow the opposite pattern to fundamentalism, and Christian orthodoxy (when included) tended to show the same pattern as fundamentalism, but more weakly, so these results can be seen as minor variations on the two main patterns.

These patterns require clarification in two main ways. One possible approach is to seek to explore the nature of the overlapping relationships between intrinsic religious orientation, fundamentalism, quest, and orthodoxy, and to include other variables that might help to clarify these relationships (such as right-wing authoritarianism; (Altemeyer 1981, 1988, 1996; Altemeyer and Hunsberger 1992). McFarland (1989) and Kirkpatrick (1993) followed Herek (1987) in examining the patterns after partialling out fundamentalism, and several authors have taken this further through multiple regression (Altemeyer and Hunsberger 1992; Laythe

et al. 2002; Laythe, Finkel, and Kirkpatrick 2001; Wylie and Forest 1992). In the majority of these studies that have focused on the partial effects of the predictors, only two attitude targets have been used; attitudes to blacks (or more broadly cross-racial attitudes), and attitudes to homosexual persons, as these are seen to be representative of these two types of target (proscribed and legitimate; Batson, Shoenrade, and Ventis 1993).

The alternative approach, which we have pursued in this study, is to explore further the relationships among the attitude targets themselves. Recent regression studies (Laythe et al. 2002; Laythe, Finkel, and Kirkpatrick 2001) have analysed the effects of predictors on racial attitudes and homosexual persons separately in spite of the fact that these criterion variables are substantially correlated, leaving some ambiguity in the interpretation. Further work on the structure of the underlying criterion attitudes would, therefore, be a worthwhile and complementary contribution to this domain. With only two targets, however, it is not possible to explore both similarities and differences, and so we took an approach more akin to that followed by McFarland (1989) and Kirkpatrick (1993), incorporating multiple attitude targets.

In focusing our attention on the attitudes targets, we have limited our predictors to direct measures of religious orientation or ideology, and therefore there are two notable omissions; RWA and social desirability. RWA has become a common inclusion in recent studies of religiosity and prejudice because it seems to be a very good predictor, particularly of racial attitudes and homosexuality (e.g., Altemeyer and Hunsberger 1992; Laythe et al. 2002; Laythe, Finkel, and Kirkpatrick 2001). However, RWA is problematic in this context, mainly because it already incorporates items pertaining to homosexuality (see Whitley and Lee 2000), and fundamentalism within the conventionalism component of the construct. This causes both empirical and conceptual problems for a study specifically investigating the relationships between these separate constructs.

Social conventions can impact on social attitudes in two broadly conceptualised ways; a person developing attitudes that are congruent with the norms of socially important groups

(including society at large), or a tendency toward compliance with social conventions, measured as a personality trait (social desirability). The former kind of social influence is central to this study, through the idea that the response to attitude targets is ideology specific and that some targets are considered legitimate or not. Although there is some evidence that social desirability, in the personality sense, does correlate with intrinsic religiosity, there has been little evidence that it actually mediates the relationship with prejudice. Gorsuch (1988) argues strongly against social desirability, in this sense, as a useful explanatory mechanism, pointing to larger scale social change factors as much more important. Given limited space in the questionnaire, and the concerns we have raised above, we decided to exclude both RWA and social desirability measures to focus instead on the underlying structure of the attitude targets.

An important advantage of the McFarland (1989) and Kirkpatrick (1993) studies was that they explicitly modelled the idea of an underlying construct of general discrimination, and then considered the effect of the religiosity variables on this general factor as well as on the individual targets. In doing so, they effectively explored the extent to which the general discrimination factor mediated the relationships between the religiosity variables and the attitude variables. However, in both cases, the modelling process was restricted to the use of first- and second-order partial correlation analysis. Structural equation modelling (SEM) has several advantages over partial correlation analysis in developing this approach further: formal tests of the fit of alternative models are available; multiple latent variables can be modelled explicitly; and patterns of residual correlations can be explicitly assumed to be zero, removing the need to interpret large tables of small residuals that may not be meaningful. So one of our goals for this study was to follow the approach of McFarland and Kirkpatrick, but to model the data more explicitly with SEM.

A recent example of this method in action (Cunningham, Nezlek, and Banaji 2004) explored the higher-level structure of attitudes falling under the umbrella of ethnocentrism. They found support for a common factor structure underlying attitudes to various disadvantaged groups

(Jews, the poor, foreigners, homosexual people) measured explicitly, and implicitly using the IAT. The explicit and implicit measures fell on different factors, but the factors represented parallel groupings of the same targets. This suggests that the difference in these factors relates to the method of measurement, but that the underlying structure of implicit and explicit measures may be similar.

We followed McFarland (1989), Kirkpatrick (1993) and Cunningham et al., (2004) in modelling a common factor underlying the attitudes toward several social groups. However, subsequent studies have suggested a particular explanation for the differences between the attitudes toward groups like blacks and women relative to attitudes to gay men and lesbians; namely that the latter have a moral component not attached to the other attitudes. Researchers have distinguished several possible dimensions of attitudes toward homosexual people, but two dimensions are consistently included; attitudes toward gay men and lesbians as a minority group (also called a civil rights dimension), and a moral dimension (Fulton, Gorsuch, and Maynard 1999; Gorsuch 1993; Green 2005; Kite and Whitley 1996; LaMar and Kite 1998; Veenliet and Hunsberger 2003; Wilkinson 2004). Although conceptually distinct, these dimensions tend to be highly correlated and hard to distinguish empirically, leading some researchers to argue that attitudes to homosexuality operates as a single dimension (e.g., Herek 1984). While it may be difficult to distinguish these dimensions within a single attitude domain, it may be possible to identify a moral dimension as a higher-order cluster of attitudes to behaviors subject to moral judgement, in the same sense that attitudes toward various minority groups share something in common.

It is possible that, given the similar pattern of responses for attitudes to homosexual persons and communists, that attitudes toward communists might also have had two components: attitudes to communists as a group, and attitudes to the morality of communism itself. In combination with attitudes to homosexuality it is possible, that a second latent variable could be modelled based on the four groups included in the McFarland (1989) and Kirkpatrick (1993) studies. However, there are two good reasons for replacing the attitudes to

communists component in the model. First, the current political climate does not support the inclusion of communists as a meaningful target of discriminatory attitudes. More importantly, a clear indicator of the moral dimension of judgement is preferable to two compound indicators. We considered attitude to the morality of abortion to be an appropriate addition, being an issue of ongoing public moral debate. In addition to this change, given that the study was conducted in Australia, the appropriate racial minority of political significance is Aboriginal Australians. Thus, the four target attitudes in this study were attitudes to Aboriginal Australians, women, gay men and lesbians, and abortion.

On the basis of previous findings and arguments, we based our main expectations on the conceptual distinction between proscribed and legitimate attitude targets, with the latter being framed in terms of moral choices, particularly with respect to religious beliefs. We expected that we would find that attitudes to Aboriginal Australians, women, and gay men and lesbians would form a factor representing symbolic attitudes to minority or low-status groups.

Considered in isolation, this factor would not completely mediate the relationship between religiosity variables and social targets, but would require different patterns of residual relationships for attitudes to Aboriginal Australians and women versus attitudes to gay men and lesbians, reflecting the possibility of an additional moral component to attitudes to gay men and lesbians. Further, we expected that when attitudes to abortion were included a second factor would emerge, indicated by attitudes to homosexual persons and attitudes to abortion. To the extent that the residual relationships between religiosity variables and attitudes to homosexual persons are framed as a moral issue, we expect that this second factor would account for them, such that a two-factor model would completely mediate the relationship between religiosity variables and all the target attitudes.

METHOD

Participants and Procedure

A total of 163 members of a mainstream Christian denomination in Australia took part in the study. They were church members, surveyed in youth group or congregational settings from a variety of city, regional and rural locations and young adults surveyed at a denominational young adult camp. Data from twenty respondents were unusable because they did not complete all the central measures used in this study, leaving 143 participants (82 Female, 58 Male). The sample included 96 participants from youth and young adult groups with an average age of 20.8; and 47 general congregation members with an average age of 53.4.

Materials

The scales used in this analysis were part of a larger questionnaire constructed in cooperation with church officials investigating aspects of the experience of youth and young adults in the church. We were able to include an “attitudes to social issues” instrument containing measures of attitudes to homosexuality, Aboriginal Australians, women, and abortion, as well as a “religious belief” instrument containing measures of religious orientation, fundamentalism, quest, and orthodoxy.

Attitude Measures

The measure of attitudes to homosexuality was a 10-item scale. Five items were drawn from Herek’s (1987) ATLG scale (e.g., “If a man has homosexual feelings, he should do everything he can to overcome them.”). Three of these items referred to gay men and two referred to lesbians. An additional five items were selected from the modern homonegativity scale (Cox 1998), based on the modern racism scale (McConahay, Hardee, and Batts 1981). An example item was “Homosexuals should not push themselves where they are not wanted.” All of the homonegativity items referred to “homosexuals” or “homosexual persons” as the attitude target.

Attitudes toward Aboriginal Australians were measured with a 6-item scale modified from the modern racism scale. An example item was “Aboriginal Australians are getting too demanding in their push for equal rights.” Attitudes to women were measured with 11 items (e.g., “It is as important for a man to help advance his wife's career as it is for a woman to advance her husband's.”). Two items measuring symbolic attitudes to abortion were also included in this study (e.g., “Abortion is a personal moral choice for a women, not a decision society should make on her behalf.”).

Religiosity Measures

The orthodoxy measure consisted of 5 items from the short form of the Christian orthodoxy scale (Hunsberger 1989). An example item was “I believe one must accept Jesus Christ as Lord and Saviour to be saved from sin”. The Gorsuch and McPherson (1989) version of the religious orientation scale included 14 items measuring intrinsic orientation (e.g., “I try hard to live all my life according to my religious beliefs”), extrinsic-personal orientation (e.g., “I pray mainly to gain relief and protection”) and extrinsic-social orientation (e.g., “I go to church mainly because I enjoy seeing people I know there”).

There have been several versions of the quest and fundamentalism scales in use in previous relevant research. In the case of quest, different versions of the scale were used by McFarland (1989), Batson and Shoenrade (1991) and Altemeyer and Hunsberger (1992), but the latter version incorporates many of the items from the other scales. Therefore, for the current study, quest was measured with 11 items from Altemeyer and Hunsberger (1992) that are also representative of other versions. An example item was “Religious doubt allows us to learn”.

In the case of fundamentalism, several distinctive versions exist. Recent studies (e.g., Laythe et al. 2002; Laythe, Finkel, and Kirkpatrick 2001) have made use of the Altemeyer and Hunsberger (1992) scale that emphasises specific belief content, for example, “God has given mankind a complete, unailing guide to happiness and salvation, which must be totally followed”. McFarland (1989) used a different set of items that incorporates an element of

concern for the boundaries of acceptable belief, (e.g., “It is very important for true Christians to believe that the bible is the infallible word of God”), and these items were also used by Kirkpatrick (1993). Both of these approaches have been suggested as important elements of the fundamentalism construct (Kellstedt and Smidt 1991), and so both measures were included in the study for comparison purposes. Therefore, fundamentalism was measured using both the 6-item scale from McFarland (1989) and 13 items taken from Altemeyer and Hunsberger (1992). In all of the scales used in this study, participants responded on a 6-point scale from *strongly disagree* to *strongly agree*.

RESULTS AND DISCUSSION

Preliminary Analyses

A total of 143 respondents completed the relevant sections of the questionnaire. To ensure sufficiently reliable scale scores allowing for missing data on some items, a scale score was computed if a participant responded to at least 75% of the items for any given scale. For scales with three or fewer items, all items had to be completed. By this criterion, 127 participants had usable responses for all scales. The remaining 16 participants were missing a maximum of two scale values from the complete set needed for the analyses below. Given the restricted sample size, it was decided to include these participants in the following analyses and use the pair-wise method for computing correlations, keeping a total useable sample of 143 participants.

Scale scores for some attitudes were computed in the opposite direction to that used in some previous analyses. In many studies focusing on prejudice or discrimination, the scales are computed such that higher scores represent more prejudice. This convention is problematic, both because it presumes a normative direction of interpretation when the very focus of the research is to understand socially contested normative positions, and because such a convention becomes less meaningful when applied to issues such as attitudes to abortion. Therefore we have adopted a more consistent convention of scoring all scales such that higher

values represent more positive views toward the target. Thus, higher scores on the attitudes to gay men and lesbians scale represent more positive attitudes rather than more discriminatory views, and higher scores mean more support for the availability of abortion, more support for fundamentalist beliefs, etc. We believe that this convention is less confusing when a range of attitude targets are used, but it does mean that some reported relationships will need to be interpreted in the opposite sense when compared with some past literature.

The raw score alpha coefficients for the scales are reported in Table 1. The reliabilities were moderate to high, with the exception of the attitude to abortion scale, which was based on only 2 items, and therefore not expected to be high. As SEM can be vulnerable to deviations from normality, some preliminary checks were conducted on the scales. A visual inspection of scale distributions showed that most scales were approximately normally distributed. A small negative skew was found in two scales, the attitude to women scale ($z_{\text{skew}} = -4.9$), and the intrinsic scale ($z_{\text{skew}} = -4.3$), but neither of these distributions was considered problematic. A more serious concern was the orthodoxy scale, which was quite severely, and uncorrectably, skewed ($z_{\text{skew}} = -14.9$), with 74% of respondents scoring at 6 on a 6-point scale, and 90% of respondents scoring 5 or higher. Although this was not surprising given that the sample consisted of practicing Christians, correlations with this scale need to be interpreted with caution.

--- Insert Table 1 about here ---

Although the use of pair-wise correlations or skewed variables can create instability under some conditions, comparison checks using list-wise deletion of missing data, and transformed variables showed only very small differences in the correlation matrix. Therefore untransformed variables and pair-wise computation of correlations were used for the following analyses and model fitting.

Correlation Analyses

Religiosity

The correlations among the variables are shown in Table 2. As expected, the correlations among the religious orientation and ideology variables generally followed the pattern found in previous studies (Kirkpatrick 1993; McFarland 1989). The orthodoxy, fundamentalism and intrinsic scales were all moderately correlated. Quest was negatively related to fundamentalism, intrinsic orientation, and orthodoxy.

--- Insert Table 2 about here ---

The extrinsic subscales were not correlated with the intrinsic scale, but did show small correlations with each other as well as the fundamentalism and quest scales

Attitude Scales

The pattern of correlations among the three group based attitude measures (Aboriginal Australians, gay men and lesbians, women) suggested that an underlying group attitude latent variable was present. The abortion measure was moderately correlated with the attitude to homosexuality measure, but not with either of the other group measures. The abortion measure clearly shared something with the attitudes to homosexuality measure that was not shared with the other group measures, and this finding was explored further in the SEM analyses.

Religiosity and Attitudes

The correlations among the religious and social attitude scales were also broadly as expected. With regard to the group-based measures, higher scores on the intrinsic scale were associated with more positive attitudes toward women and Aboriginal Australians, and more negative attitudes toward homosexual people. This pattern is considered in the context of the structural models presented below. The extrinsic-personal scale had no significant correlations with the social attitude measures. There was a small, positive correlation

between the extrinsic-social scale and the homosexuality measure, such that higher scores on the extrinsic-social scale were associated with positive attitudes toward homosexual people.

Higher scores on the fundamentalism measures were associated with negative attitudes on all the group attitude measures. Quest showed generally the opposite pattern to the fundamentalism measures, with high quest scores being associated with low to moderate positive attitudes on the group-based measures. The orthodoxy measure seemed to only have a small, negative association with attitudes to homosexual people, but not to the other groups. Given the highly skewed distribution of the orthodoxy measure, these results should be treated with caution.

Higher scores on orthodoxy, fundamentalism and intrinsic scales were all associated with more negative attitudes toward abortion. Quest, again following the opposite pattern, is associated with positive attitudes toward abortion. The extrinsic-personal scale again had no significant relationship, while the external-social scale showed a small, positive relationship.

Overall, these patterns of correlation were in line with previous findings, and the abortion measure functioned as anticipated. Abortion was considered as an ideologically legitimate target, such that high intrinsic scores were associated with negative attitudes to abortion as well as homosexuality compared to positive attitudes toward women and Aboriginal Australians. The abortion measure did not correlate with the other attitude measures in such a way as to allow it to be considered a part of the group attitudes factor.

These patterns form the basis for a series of structural models that replicated and extended the findings of McFarland (1989) and Kirkpatrick (1993). Following the approach of McFarland and Kirkpatrick, a model based on a single common group attitudes factor was tested. On the basis of this replication model and the pattern of correlations with the abortion measure, a second model was tested adding a moral orientation factor.

--- Insert Figure 1 about here ---

Structural Models

Single Group Attitudes Models

The first series of models examined a one-factor solution. Based on the findings reported above, only the group attitude variables were included in the one factor model. A conceptual version of the model is shown in Figure 1. The base model (Model 1) assumed that the factor adequately explained the correlations between the group attitude variables, and that all correlations between the religiosity variables and the attitude variables were mediated through the group attitudes factor. The scale of the factor was fixed by setting the variance to 1. The initial model did not fit the data adequately with the single group factor, $\chi^2(14) = 47.50$, $p < .001$, CFI=.92, although the fit indices were in the marginal fit range (see Table 3).

Although this base model was not a close fit for the data, the solution is instructive. The factor loadings are shown in Table 4. The correlations between the religiosity variables and the group factor, and residual correlations are shown in Table 5.

--- Insert Table 3 about here ---

--- Insert Table 4 about here ---

--- Insert Table 5 about here ---

The group attitudes factor accounted for the correlations among the attitude measures themselves, with no significant residual correlations. The two fundamentalism measures and orthodoxy were negatively related to the general group attitudes factor, such that higher scores on fundamentalism or orthodoxy were associated with more negative attitudes to the groups in general. The quest measure was positively related to the general group attitudes factor, such that higher scores on the quest measure were associated with more positive attitudes to the groups in general. None of the other religiosity variables had significant correlations with the general group factor.

Of particular note is the finding that the intrinsic orientation measure has a non-significant relationship with the general group factor, reflecting the fact that it has both positive and

negative relationships with the individual group attitude measures. The intrinsic measure, as a result, has the largest residual correlations with the target attitude variables. After accounting for the relationship with the general group attitudes factor, there are significant residual positive relationships between the intrinsic measure and attitudes to Aboriginal Australians and attitudes to women. An examination of the residuals and the Lagrange Multiplier (LM) test statistics for model modification suggests that the model could be improved by allowing the residual paths with the intrinsic measure to be included in the model. This modified model (Model 2) has a significantly better fit to the data, $\chi^2(12) = 27.18$, n.s., CFI=.97, $\chi^2_{diff}(2) = 20.32$, $p < .001$, (see Table 3 for additional fit indices).

While this one factor model accounted for the data fairly well, it included a pattern of residual correlations that require explanation. The general pattern was that the fundamentalism measures correlated negatively with all of the group attitudes measures, but the intrinsic measure correlated positively with some measures and negatively with others as expected. The addition of the attitude to abortion measure, and a second latent factor were modelled to clarify this relationship.

Two-Factor Attitude Model

To test these ideas, we proposed a two-factor model (see Figure 2), in which the group attitudes (Aboriginal Australians, women, homosexuality) defined one factor (Group Attitudes) while attitudes to homosexuality and abortion defined the second factor (Moral Orientation).

--- Insert Figure 2 about here ---

In order to define two factors based on only four indicator variables, and allowing for the attitude to homosexuality measure to load on both factors, some parameters needed to be fixed. The variances of both factors were fixed at 1, and the unstandardised loadings of the indicators of the moral orientation factor were fixed to be equal. These restrictions were sufficient to identify both factors. The religiosity variables were allowed to correlate with

both factors but no residual correlations were included in the model, indicating that all correlations between religiosity variables and attitude variables were expected to be completely mediated through the group and moral orientation factors. The two-factor model with these parameters (Model 3) was analysed and fitted the data well, $\chi^2(15) = 16.74$, n.s., CFI=.996 (see Table 3 for additional fit indices). The factor loadings are shown in Table 6, and the correlations between religiosity variables and the two factors are shown in Table 7.

--- Insert Table 6 about here ---

--- Insert Table 7 about here ---

The two factors in the model completely mediated all correlations between the religiosity variables and the attitude variables. The inclusion of the two factors also clarified the difference in pattern of relationship between the measures such as fundamentalism, orthodoxy, and quest, which had consistent correlations with both factors, compared to the intrinsic measure which had opposite sign relationships with the two factors. For example, fundamentalism had a negative relationship with both factors, such that those with high scores on the fundamentalism scales held more negative views on the group attitude measures, and also on the moral orientation measures. In the case of attitudes to homosexuality, these two negative relationships were additive, such that a high score on fundamentalism was associated with strongly negative attitudes to homosexuality. In contrast, the intrinsic scale had a positive relationship with the group attitudes factor, such that high scores on the intrinsic scale were associated with more positive views toward the groups, but a negative relationship with the moral orientation factor, such that high scores on the intrinsic scale were associated with negative views about homosexuality and abortion. With regard to homosexuality, these relationships acted in opposition with a slightly stronger effect for the moral orientation factor, such that, higher scores on the intrinsic scale were associated with weak negative attitudes to homosexuality.

Although the pattern of negative relationships with both factors held for both fundamentalism measures, there was a trend such that the Altemeyer and Hunsberger (1992) version of the scale was primarily associated with the moral orientation factor, and the McFarland (1989) version of the scale had a more balanced effect on both factors. To explicitly test whether these two scales showed the same overall pattern, an additional model (Model 4) was analysed in which the relationships between the two measures and the group factor were fixed to be equal, and the relationships between the two measures and the moral orientation factor were fixed to be equal. This model also fit the data well, $\chi^2(17) = 25.60$, n.s., CFI=.95, with only a small drop in fit, $\chi^2_{diff}(2) = 8.86$, $p < .05$. Although this drop in fit was significant, neither of the constraints were significant individually, the fit indices still showed very good fit, and the CAIC parsimony index showed an improved fit (see Table 3). On this basis, it could be concluded that the two fundamentalism scales, although they captured a slightly different approach to measurement of the fundamentalism construct, operated in an equivalent manner in predicting the four attitude targets in this study.

GENERAL DISCUSSION

Although a number of past studies have examined the relationship between religiosity and social attitudes to a range of targets, a number of questions have remained neglected in recent times. Our principal goal in the study was to provide a link between these past research findings and some more recent complementary approaches. In particular, earlier studies (e.g., McFarland 1989; Kirkpatrick 1993) used four attitude targets and found a broad underlying dimension of discrimination, but also some residual relationships associated particularly with attitudes to homosexual persons and communists. These differences, at least with respect to attitudes to homosexuality, have been conceptualised in terms of a difference between proscribed and legitimate targets of discrimination (Batson, Shoenrade, and Ventis 1993; Duck and Hunsberger 1999; Hunsberger 1995), the latter explained in terms of a moral dimension of judgement (e.g., Fulton, Gorsuch, and Maynard 1999). However, models of multiple attitude targets have not been updated to recognise this additional dimension, and

recent research has focused, instead, on the predictors of attitudes, often using just two attitudes, such as ethnocentrism and attitudes to homosexuality, as typical targets (e.g., Laythe et al. 2002; Laythe, Finkel, and Kirkpatrick 2001). While these studies have modelled the relationships among the predictors, they have not attempted to model the similarities and differences among the targets.

Thus, the research reported here provides an important link between these findings. The use of SEM allowed us to model the impact of two underlying dimensions onto which typical attitude targets could be mapped, a group attitudes dimension and a moral orientation dimension, thus explicitly mapping the proposed explanations for previous findings of both similarities and differences in the attitude patterns. This model is particularly valuable because these two factors completely mediate the relationships among all the religiosity variables and the attitude targets. Recent studies (e.g., Laythe et al. 2002; Laythe, Finkel, and Kirkpatrick 2001) have used separate multiple regressions with targets that are themselves strongly correlated and this causes a number of interpretational difficulties. In the model presented here, the higher-level latent variables are essentially uncorrelated, and thus more easily interpreted when regressed onto various predictors.

The model also provides an alternative and more statistically robust approach to exploring the different components of attitudes toward homosexual persons. Disentangling these components at the item level to create subscales (e.g., Fulton, Gorsuch, and Maynard 1999; LaMar and Kite 1998; Veenvliet and Hunsberger 2003; Wilkinson 2004) has proven difficult, as component measures remain strongly correlated. The approach taken here is to disentangle these components in terms of the largely independent paths from the higher-order constructs to the specific attitudes. In the case of attitudes to homosexuality, this allows researchers to model the overall relationship in terms of the additivity or complementarity of the two component paths.

The value of being able to statistically disentangle these complementary paths can be seen particularly in the case of intrinsic orientation. In this study, intrinsic orientation had a

positive pathway to attitudes to homosexuality via the group attitudes factor, and a negative pathway via the moral orientation factor. The resulting zero-order correlation was relatively small, and taken alone this might lead to the conclusion that the intrinsic orientation was not a good predictor of social attitudes. The model proposed here suggests that the intrinsic orientation may act as an important predictor of each of the components, and that examining only the zero-order correlation may not illuminate conceptually important relationships. Several studies have pointed to the “Love the sinner, but hate the sin” phenomenon (e.g., Fulton, Gorsuch, and Maynard 1999; Veenvliet and Hunsberger 2003). The approach taken here may provide a better avenue to explicitly test the consequences of holding such an ideological position, since this can be explicitly modelled as a positive path through the group attitudes factor, supporting civil rights and avoiding discrimination toward persons (“Love the sinner”), and a negative path through the moral orientation factor (“hate the sin”).

In spite of a modest sample size, we are confident of the usefulness of the model presented here, mainly because the pattern of correlations on which it is based is reasonably consistent with patterns found in a range of other studies in the same domain. We have no reason to think that the model presented here would not also explain similar patterns of relationships in these other studies if clearer indicators of the two factors had been present. Nonetheless, it is appropriate to suggest that our model needs to be tested for generality in two ways.

It will be important to confirm that the two latent variables derived here do emerge in other samples, particularly ones varying in degree of commitment and content of belief, and that the relationship of religiosity measures with social attitudes is still completely mediated through these factors. We do not make a strong claim about the relative weight of complex paths in the model from sample to sample. In some samples, even attitudes toward dimensionally complex targets like homosexual people may be largely dominated by one dimension over the other. We would also expect that the relative emphasis could change over time. We might speculate, for example, that racial attitudes would have had a complex loading on these

dimensions in the past, but that the moral dimension is no longer used rhetorically in framing racial attitudes for most people.

The second form of confirmation pertains to the breadth of indicators of the factors. We included four attitude targets in this study largely for pragmatic reasons, but it would be appropriate for future studies to include a larger number of attitude targets to confirm the stability of the model in variable-space as well as in participant-space. The inclusion of additional measures of group attitudes as well as moral attitudes would provide greater confidence in the usefulness of the model, as well as in the naming of the latent variables. It will also be important to include a wider range of attitude measures in order to consider other higher-level constructs than the two-factor model used here. In any factor analysis, more indicators provide greater confidence in the focus as well as the scope of the latent constructs. Finally, we note that the two-factor model, as an example of a higher-order analysis of attitude structure, may have much in common with other models of hierarchically organised structure in symbolic attitudes (see Eagly and Chaiken 1998). Such models serve to focus our attention on the larger social and ideological context in which our attitudes are embedded, and we are thereby reminded that the hierarchical structure of the attitudes is a product of the larger social and historical context rather than being something fundamental to the attitudes themselves. The two factors explored here may sit between the level of specific attitude objects, and the higher-level operation of ideologies, and thus may provide a useful clarification of the links between the two levels of analysis. It may be that ideologies can be more clearly distinguished by their different profiles of association with the attitude factors we have elaborated here, rather than being lost in the complex patterns of specific attitudes. By providing a method for modelling the simple structure underlying complex and contested social attitudes, we hope that researchers will be able to focus greater attention on the ways in which religious belief and experience continue to frame the parameters of current social and political debate.

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Table 1: Reliability, means and standard deviations for orientation, attitude and belief scales.

Variable	Items	Reliability (Alpha)	N	Mean (SD)
Religious Orientation and Belief Variables				
Fundamentalism ¹	6	.81	139	4.10 (1.21)
Fundamentalism ²	13	.82	141	3.84 (0.99)
Quest	11	.63	137	3.44 (0.76)
Intrinsic	8	.78	143	4.66 (0.79)
External-Social	3	.73	143	3.12 (1.22)
External-Personal	3	.66	143	3.61 (1.22)
Orthodoxy	5	.84	143	5.67 (0.75)
Attitude Variables				
Attitude to Homosexuality	10	.91	137	3.20 (1.30)
Attitude to Abortion	2	.40	143	3.82 (1.49)
Attitude to Women	11	.74	142	5.03 (0.69)
Attitude to Aboriginal Australians	6	.75	142	4.13 (0.98)

Notes: ¹ McFarland (1989) scale; ² Altemeyer and Hunsberger (1992) scale.

Table 2: Correlations of religiosity and attitude scales

Scales	Religiosity Scales							Attitude Scales			
	1	2	3	4	5	6	7	8	9	10	11
1. Fundamentalism ¹	--	.71***	-.61***	.38***	.04	.29**	.40***	-.30**	-.54***	-.23**	-.38***
2. Fundamentalism ²		--	-.63***	.41***	-.17	.07	.40***	-.14	-.55***	-.20*	-.50***
3. Quest			--	-.27**	.14	-.25**	-.31***	.16	.43***	.23**	.38***
4. Intrinsic				--	-.16	-.02	.43***	.20*	-.20*	.20*	-.35***
5. Extrinsic-Social					--	.34***	-.16	-.05	.21*	.00	.19*
6. Extrinsic-Personal						--	.16	-.13	-.10	-.04	.04
7. Orthodoxy							--	-.00	-.28**	.03	-.26**
8. Aborig. Aust.								--	.46***	.37***	-.01
9. Homosexuality									--	.30***	.51***
10. Women										--	.15
11. Abortion											--

Notes: ¹ McFarland (1989) scale; ² Altemeyer and Hunsberger (1992) scale.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3: Model comparison summary table.

Model	df_{model}	χ^2_{model}	NFI	CFI	RMSEA	CAIC
1 Single (Group) factor model	14	47.50***	.90	.92	.13	-35.59
2 Single (Group) factor model with residuals.	12	27.18**	.94	.97	.10	-44.04
Model change 1 to 2	2	20.32***				
3 Two-factor model	15	16.74	.97	1.0	.03	-72.28
4 Two-factors with constraints	17	25.60	.95	.98	.06	-75.28
Model change 3 to 4	2	8.86*				

Note: Good fit is indicated by NFI and CFI close to one, small values of RMSEA (close to zero), large negative values for CAIC, and small χ^2 .

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 4: Factor loadings for the baseline one factor model (Model 1).

Scale	Group Factor	Residual
Attitude to Homosexuality	.83***	.56
Attitude to Aboriginal Australians	.54***	.84
Attitude to Women	.42***	.91

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 5: Correlations of religiosity variables with the inter-group factor, and standardised residuals for Model 1.

Scale	Group Factor	Standardised Residuals		
		Att. to H'sexuality	Att. to Abor. Aust.	Att. to Women
Fundamentalism ¹	-.63***	-.02	.05	.03
Fundamentalism ²	-.60***	-.06	.18*	.05
Quest	.49***	.03	-.12	.03
Intrinsic	-.10	-.12	.26**	.24**
Extrinsic-Social	.18	.06	-.15	-.07
Extrinsic-Personal	-.13	.01	-.05	.01
Orthodoxy	-.27**	-.07	.14	.14

Notes: ¹ McFarland (1989) scale; ² Altemeyer and Hunsberger (1992) scale

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 6: Factor loadings for the two-factor model (Model 3)

Scale	Group Factor	Moral Orientation	Residual
Attitude to Homosexuality	.52***	.72***	.40
Attitude to Aboriginal Australians	.77***		.64
Attitude to Women	.48***		.88
Attitude to Abortion		.65***	.76

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 7: Correlations of religiosity variables with the group and moral orientation factors for Model 3.

Scale	Group Factor	Moral Orientation
Fundamentalism ¹	-.37 _a ***	-.50 _b ***
Fundamentalism ²	-.18 _a	-.66 _b ***
Quest	.21*	.48***
Intrinsic	.30**	-.51***
Extrinsic-Social	-.05	.32**
Extrinsic-Personal	-.17*	-.00
Orthodoxy	.01	-.40***

Note: Correlation between factors is .07, n.s.

¹ McFarland (1989) scale; ² Altemeyer and Hunsberger (1992) scale

_{a,b} In Model 4, these parameters with the same subscript were fixed to be equal.

* $p < .05$. ** $p < .01$. *** $p < .001$.

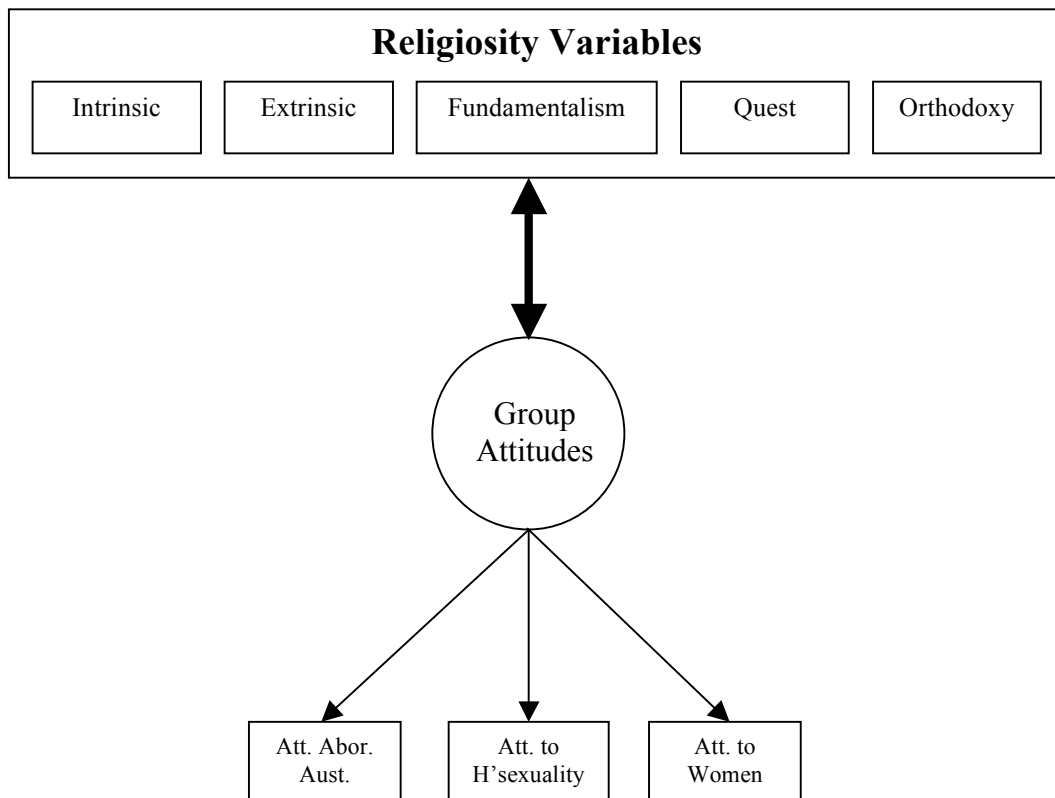


Figure1: Religiosity and the single factor model of group attitudes

Note: Although not explicitly shown to avoid overcrowding the diagram, the model includes all inter-correlations between religiosity variables, and between religiosity variables and the group attitudes latent variable.

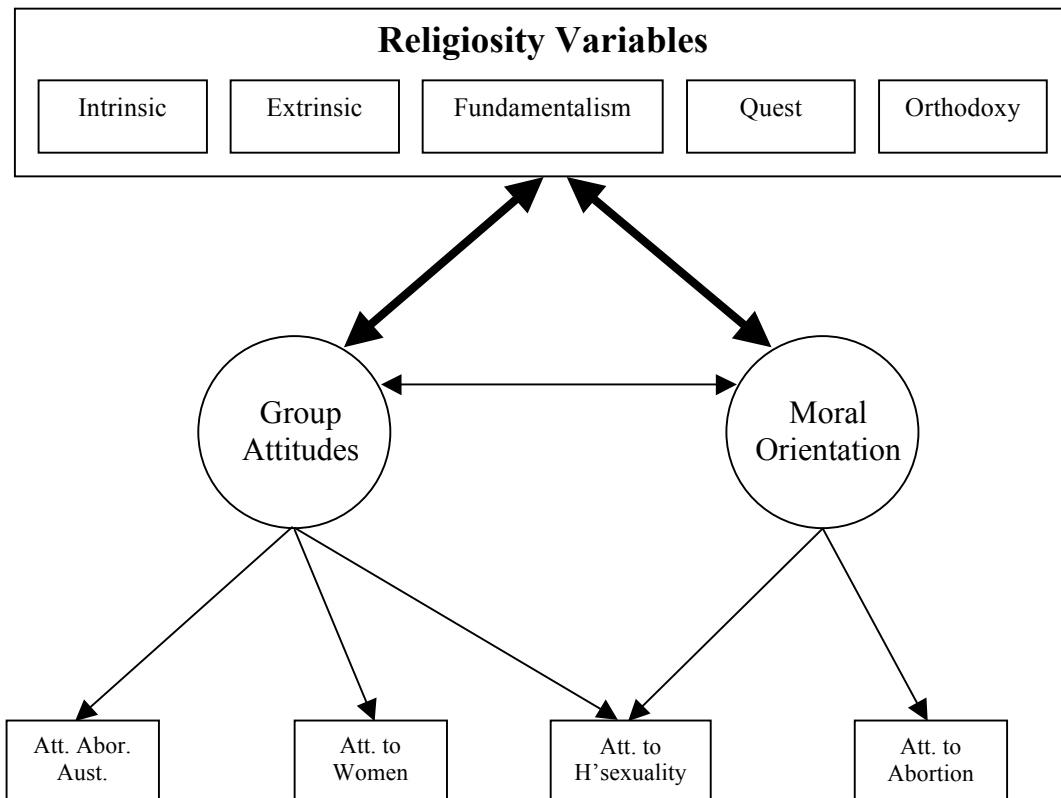


Figure 2. Religiosity and two-factor model of attitudes

Note: Although not explicitly shown to avoid overcrowding the diagram, the model includes all inter-correlations between religiosity variables, and between religiosity variables and the group attitudes and moral orientation latent variables.