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BEING GOOD WITHOUT GOD  
MORAL SIMILARITY BETWEEN THEISTS AND ATHEISTS LEADS  
TO COLLECTIVE ANGST AND PREJUDICE AGAINST ATHEISTS

by

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A thesis submitted to  
the Faculty of Graduate and Postdoctoral Affairs  
in partial fulfillment of the requirements for the degree of

Master of Arts

in

Psychology

Carleton University  
Ottawa, Canada

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## Abstract

Research suggests that the prejudices theists hold against atheists stems from the perception that atheists lack a source of moral guidance normally provided by religious belief. Due to this perceived lack of morality, theists often judge atheists as being distrustful social deviants or rogues (see Gervais & Norenzayan, 2012). As theists perceive atheists as morally lacking, and therefore untrustworthy, perceiving atheists as morally similar to theists should bolster trust in atheists. Prejudice against atheists should be reduced insofar as theists perceive atheists as holding common moral values (see Edgell, Gerteis, & Hartmann, 2006). However, seeing as increased moral similarity between atheists and theists should be threatening to theists' religious social identity, theists may express prejudice against atheists when they perceive atheists as morally similar. Indeed, in Study 1 ( $N = 62$ ), I found that prejudice against atheists occurs when religious people perceive atheists as sharing their religious group's morality and that this relationship was a function of fear for the future of their social group (i.e., collective angst). Of note, this relationship was only significant for participants who had a strong Christian identity. In Study 2 ( $N = 145$ ), I experimentally tested the effects of moral similarity (versus moral difference) on collective angst and in turn prejudice against atheists for participants with varying degrees of Christian identity. The model in Study 2 did not support the correlational findings of Study 1. The implications of these models will be discussed.

*Keywords:* atheists, prejudice, Christians, moral similarity

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PREJUDICE AGAINST ATHEISTS

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## Introduction

If God does not exist, everything is permissible.

Fyodor Dostoevsky (1880), *The Brothers Karamazov*

According to Dostoevsky (1880), a life without God is a life devoid of morality. Those who reject the existence of God (i.e., atheists) —should not be trusted to behave morally. Indeed, perceived moral differences between theists and atheists drives mistrust of atheists, which in turn leads to prejudice against atheists (see Edgell et al., 2006; see Gervais & Norenzayan, 2012; see also Gervais, Shariff, & Norenzayan, 2011). A natural extension of this argument is that prejudice against atheists should be reduced when theists perceive atheists as holding common moral values (see Edgell et al., 2006).

Herein, however, I suggest that any perceived moral similarity between the theist in-group and atheist out-group may lead to prejudice against atheists. This is because intergroup similarity threatens group distinctiveness (Jetten, Spears, & Postmes, 2004). As such, when moral similarity between theists and atheists is salient, theists should feel that their distinctiveness from atheist is being threatened. Importantly, feeling such threat has consequences for intergroup relations. Indeed, there is now a large body of research showing that prejudice increases under perceived intergroup threat (see Stephan & Stephan, 2000; Riek, Mania, & Gaertner, 2006; Stephan, Ybarra, Martinez, Schwarzwald, & Tur-Kaspa, 1998). Atheists are likely to experience prejudice at the hands of theists when theists perceive a lack of moral distinctness between the two groups.

Importantly, perceived moral similarity should be existentially threatening to the religious in-group —if God provides believers with a moral compass, but atheists are morally similar to theists, then the purpose of religiosity is undermined. In this way, moral similarity should heighten collective angst (i.e., concern for the future of the in-group; see Wohl, Branscombe, & Reysen, 2010). As a consequence of feeling collective angst, theists should become motivated to protect the need for religiosity, which should manifest in prejudice against atheists (see Wohl, Squires, & Caouette, 2012).

Of note, one's identification as a theist should moderate the proposed mediation

model. According to Tajfel and Turner (1986), the desire to achieve and maintain positive distinctiveness from out-groups is greatest among high identifiers. As such, high identifiers should experience the greatest amount of existential intergroup threat due to moral similarity salience (Tajfel & Turner, 1986; Bizman & Yinon, 2001).

### **Atheists and the Prejudice They Experience**

Atheists are people who lack belief in deities or supernatural forces (Hunsberger & Altemeyer, 2006). They are not a cohesive, homogenous, or conspicuous group (Edgell et al., 2006). It is therefore difficult to estimate the number of atheists in the world. Recent data suggest that approximately 16% of the world's population (i.e., 1.1 billion people) report being religiously unaffiliated—a group that comprises atheists, agnostics, as well as people who do not affiliate with an organized religious group (Funk & Smith, 2012). In this light, atheists make up a small, but significant portion of the world's population.

From a social psychological perspective, atheists are also an interesting group because they are becoming an increasingly vocal minority due to the rampant prejudice held against them (see Sims, 2009). In one study, for example, 41% of self-identified American atheists reported having been socially ostracized, denied services and professional opportunities, and experiencing hate crimes due to their lack of religious identification (Hammer, Cragun, Hwang, & Smith, 2012). There seems to be truth to atheists' perceptions of prejudice. Harper (2007), for example, found that the majority of words people used to describe atheists were disparaging stereotypes (e.g., immoral, evil, disrespectful, rude, self-indulgent).

According to Gervais and Norenzayan (2012), negative opinions of atheists stem from perceiving atheists as lacking belief in a moralizing god, as such lacking a moral compass. For example, Gervais and Norenzayan (2012) showed that when atheists are framed as having moral guidance via secular authority theists' prejudice against atheists diminishes. There seems to be a pervasive view that atheists reject the moral foundation of society when they reject god (Edgell et al., 2006)—a belief that is crystalized in Psalm 14: 1 (New International Version):

“The fool [atheist] says in his heart,

“There is no God.”

They are corrupt, their deeds are vile;”

This verse claims that without God, people have corrupt thoughts and behaviours, as they have no means of knowing how to behave in an ethical way and in turn only behave corruptly. It may be because of verses and teaching such as those of Psalm that atheists are perceived as not abiding by the moral values of the religious majority. The perception that atheists lack moral values leads to a lack of trust in atheists (see Harper, 2007) and subsequent prejudice against atheists (Gervais, 2011).

In the current research, I take a heretofore-unexamined approach to understanding the antecedents of prejudice against atheists. I aim to use social identity theory as a theoretical framework to demonstrate how particular perceptions of atheists’ morality can lead to a social identity threat, and in turn prejudice. Specifically, I argue that perceptions of atheists’ morality are bound in people’s social identity as a believer in God. As such, variations (or similarities) in the morality of atheists to theists might be interpreted through a lens of social identity threat. In subsequent sections, I outline social identity as a framework to understanding theists’ reactions to the morality of atheists. I also outline the predictive utility of social identity threat for understanding when prejudice against atheists is most likely to occur.

### **Social Identity Theory**

Social identity theory (SIT; Tajfel & Turner, 1979; 1986) provides an important line of theorizing that bears on the origins of intergroup attitudes and behaviour. According to SIT, the part of a person’s sense of self, referred to as his or her social identity, is derived from their membership in social groups (e.g., religious group, sports teams, nationality). Importantly, people are motivated to achieve and maintain a positive view of their own social group and its members relative to other social groups and their members. One way that group members achieve and maintain a positive social identity is by positively differentiating the in-group from relevant out-groups.

In the seminal demonstration of the need for positive in-group differentiation from relevant out-groups, Tajfel, Billig, Bundy, and Flament (1971) divided participants into groups according to trivial categories (e.g., preferences for modern painters). They were then asked to allocate resources to members of their own group (i.e., their in-group) or to members of another group (i.e., an out-group). Specifically, they selected from one of three intergroup money allocation options: a) maximum joint profit, where the participant could give the highest reward to the out-group and receive the maximum amount of reward for their in-group, b) maximum profit for the in-group, where participants can award their in-group as much as they want, regardless of the out-group reward or c) the maximum difference between group, where participants can choose the largest possible reward difference between their in-group and the out-group, in favour of the in-group. Participants most commonly selected the maximum difference option, even though this option led to less reward for the in-group than the maximum joint profit option or the maximum profit for in-group option. The implication of this research is that group members are most interested in creating the largest reward disparity possible between their in-group and the out-group, even if their group received less profit overall. Specifically, group members are motivated to positively differentiate their in-group from similar out-group. Group members do this because it serves to enhance their social identity (Tajfel et al., 1971; Brown, 1984; Tajfel & Turner, 1986). That is, people typically behave in a manner that will ensure the in-group is not only different from relevant out-groups, but also "better" than relevant out-groups.

One way that group members work to achieve positive in-group differentiation is by discriminating against out-group members. Indeed, there is large literature that shows perceived intergroup similarity leads to intergroup derogation (Hornsey & Hogg, 2000; Moghaddam & Stringer, 1988). For example, Moghaddam and Stringer (1988) found that intergroup differentiation is greatest when group members perceive both in-group and out-group members as being similar to themselves on a criterion that is important to the group's identity. In line with Moghaddam and Stringer (1988), I hypothesize that when theists perceive atheists as being morally similar to theists, theists will experience

distinctiveness threat. In turn, to re-establish in-group distinctiveness, theists are expected to be prejudiced against atheists.

### **Theists' Need for Distinctiveness from Atheists**

Religion is both a belief system and a source of social identity for people who belong to a religious group (Hunsberger & Jackson, 2005; Ysseldyk, Matheson, & Anisman, 2010). A central aspect of religious identification is the internalization of religious doctrine that teaches group members how to live life appropriately (in both thought and action). In this way, followers are taught that a moral compass can only be found through God (see Robinson, 1994). As such, moral similarity between theists and atheists may be exceptionally threatening to theists' in-group identity. This is because moral similarity between theists and atheists insinuates that religion is not necessary to being a good person—a situation that should motivate theists to differentiate themselves from atheists. Therefore, as an identity protective response, group members may respond to similar out-group members with hostility (see Brown & Abrams, 1986). With the context of perceived moral similarity between theists and atheists, derogation, de-legitimization, and punishment of atheists is likely to ensue as a means to protect the theists' religious beliefs and identity.

However, intergroup derogation can also occur when intergroup differences are perceived to be large (Jetten et al., 2004). While intergroup differences may not necessarily lead to intense group conflict, the perception of great intergroup differences may hinder intergroup relations (Jetten et al., 2004). In fact, Gervais and Norenzayan (2012) demonstrated that when atheists are perceived as lacking in belief in a god, participants expressed more prejudice towards atheists. Moreover, Gervais and Norenzayan (2012) demonstrate that while these perceived differences in intergroup values and attitudes might not necessarily lead to intense group conflict or a distinctiveness threat, they do lead people to distrust atheists, and in turn express prejudice against atheists. In this light, perceived similarities between theists and atheists should be comforting to theists and lead to increased trust of atheists, or at the very least, the

atheists should not be perceived as threatening to theists.

Indeed, research has demonstrated that low interpersonal distinctiveness can be attractive because of the soothing and predictable nature of sharing complementary beliefs and values (see Insko, Nacoste, & Moe, 1983; Struch & Schwartz, 1989). Nevertheless, while attitude similarities may be beneficial at the interpersonal level, perceiving intergroup similarities tends to elicit feelings of threat as opposed to ease (see Jetten et al., 2004), especially when the dimension of perceived intergroup similarity is an important feature of the in-group identity (see Brewer & Kramer, 1985; see also Piazza & Landy, 2013 for how morality is intertwined with religious belief). It is within this light that I propose moral similarities between theists and atheists will be particularly threatening to theists and lead to prejudice against atheists. Religion is commonly perceived as a key source for moral guidance (Green, 2005). Accordingly, moral similarity between theists and atheists should be existentially threatening.

### **Collective Angst**

I hypothesize that the threat posed by morally similar atheists has existential significance and it is this existential concern that leads to prejudice against atheists. Specifically, because perceived moral similarity undercuts a central pillar of religion, morally similar atheists might heighten anxiety about theists about the need for religious teaching. This existential anxiety is group-based and should lead theists to derogate atheists as a protective response. Wohl and Branscombe (2008a) has labeled such group-based anxiety, collective angst, which they define an emotional response to perceived threats to the future vitality of their in-group. Specifically, to experience collective angst group members have to judge a situation or event as harmful to the preservation of their in-group (Wohl & Branscombe, 2008a). Put another way, collective angst is the concern that develops when one realizes that their in-group may one day cease to exist (Wohl et al., 2012).

Importantly, collective angst is an uncomfortable emotional state, which most people will seek to alleviate. To lessen collective angst, in-group members act in ways that

are aimed at securing a vibrant in-group future (Wohl et al., 2012). Namely, people engage in in-group strengthening behaviours (e.g., donating money to in-group schools) and defensive behaviours towards out-group members (e.g., derogation; Wohl & Branscombe, 2008a). These behaviours are aimed at securing the future vitality of the in-group. It is within this light that I argue the perceived moral similarity between theists and atheists should incite collective angst in theists. This is because moral similarity between theists and atheists would negate the supposition that religion (and its doctrine) is necessary for the development of a sound moral compass for appropriate behaviour (see Robinson, 1994). Accordingly, the threat of moral similarity between theists and atheists is two fold. Moral similarity challenges not only the social group's identity, but also some of the pillars for which the theist social group stands on—that being, religious beliefs about morality. As such, I propose that moral similarity is threatening to theists' religiosity.

Theists believe that religiosity guides them behave righteously because they believe that the God is the primary source of morality (Piazza & Landry, 2013). In addition to serving as a moral compass, religiosity is also a source of group identity (Ysseldyk et al., 2010). According to these two concepts of religiosity, atheists should thus be seen as immoral and as out-group members. And when theists perceive atheists as being morally similar to theists, theists should be threatened. I propose that when theists perceive atheists as morally similar to themselves, theists may become concerned that religion is not necessary for morality. Moreover, theists' religious social identity should also be threatened and they should feel less distinct and less distanced from atheists (see Jetten, Spears, & Manstead, 1997). As a consequence of these threats, theists should experience collective angst, and in turn express prejudice against atheists. These responses are meant to protect the theists' identity—prejudiced and discriminatory treatment of atheists allows theists to feel that they are distinct and distanced from atheists, thus reasserting their social identity (see Jetten et al., 1997). As such, I predict that the relationship between perceived moral similarity and prejudice should be mediated by collective angst.



## **Religious Identity as a Moderator of the Proposed Mediation Model**

According to Tajfel and Turner (1979), one variable that moderates the relationship between distinctiveness and out-group prejudice is the person's identification and commitment to the in-group (see also Jetten et al., 2004). That is, out-group derogation is most likely when in-group members have individually internalized their group membership as part of their personal identity (see Tajfel & Turner, 1979; Jetten, Spears, & Manstead, 1996).

Moreover, intergroup members who are strongly identified and committed to their in-group are the most likely to perceive low intergroup distinctiveness as threatening (Jetten et al., 2004). As such, I propose that the extent to which people identify as a theist (Christians in the case of the current research) moderates the proposed mediation model. This is because those who are highly identify as Christian care deeply about their group—they consider their group an important part of their self. As such, highly identified group members may perceive harm to their group's identity and future as a personal harm (Lickel, Miller, Stenstrom, Denson, & Schmader, 2006). Consequently, highly identified Christians should be particularly likely to feel collective angst when there is a distinctiveness threat, which should result in increased prejudice directed at the threatening out-group.

It is important to note that theists' reactions to morally similar atheists will not be homogenous. In-group members' (e.g., Christians) reactions to the identity threat (e.g., morally similar atheists) is dependent on how highly identified an individual in-group member is and how probable the threat feels (Branscombe, Ellemers, Spears, & Doosje, 1999). Accordingly, I do not expect all theists to respond to morally similar atheists with the same degree of prejudice and derogation. I hypothesize that only those who identify as highly religious will experience collective angst when perceiving atheists as morally similar to theists.

## Overview of Current Studies

In the proposed program of research, I will examine the influence of perceived moral similarity on prejudice against atheists. I will also test possible mechanisms of this relationship. To this end, I will measure theists' perceived moral similarity of atheists and in turn measure theists' (i.e., Christians') collective angst and prejudiced attitudes towards atheists. Prejudice will be measured by asking theists about their willingness to derogate the out-group by limiting their group's presence in society (e.g., not supporting secular organizations). I hypothesize that theists who are anxious about the future vitality of their in-group (as due to the threat of out-group similarity) should be more willing to derogate the out-group. In addition, it is expected that participants' religious identity (i.e., high or low Christian identity) will moderate the relationship between moral similarity, collective angst and prejudice against atheists.

The first study is a correlational study that examines the relationship between Christians' perceived moral similarity of atheists and prejudice against atheists. Thereafter, participants responded to a battery of items that included measures that assessed: a) participants' identification as a Christian, b) the perceived moral similarity between atheists and Christians, and c) collective angst. Lastly, participants' prejudice against atheists was measured via a hypothetical crime trial, in which participants were asked to imagine they were a judge in a drug possession case involving an atheist. After reading the hypothetical case file, participants were asked to assign a bail price, jail term, and likelihood of recidivism for the charged atheist. Higher bail prices, more jail time, and higher average score on likelihood of recidivism demonstrated more prejudice against atheists (see Herzog, 2003).

In the second study, I will again explore the relationship between perceived moral similarity between theists and atheists and prejudice against atheists. In this study, however, moral similarity will be experimentally manipulated—participants will be either presented with an article demonstrating religion as either necessary or unnecessary for morality. This experiment will seek to demonstrate how perceived moral similarity

between theists and atheists causes collective angst and in turn, prejudice against atheists.

To my knowledge, the research presented herein is the first to examine the effect of perceived moral similarity on collective angst, and in turn prejudice against atheists. While the current literature has demonstrated that prejudice occurs when atheists are perceived as morally vacant (see Gervais & Norenzayan, 2012), I anticipate that my research will demonstrate that theists are prejudiced against atheists when atheists are perceived as morally similar to theists (as a result of a fear for the theist in-group's future vitality). This perceived similarity is expected to be especially threatening to theists because it undermines one of the fundamental purposes for religiosity—that being, moral guidance (see Piazza & Landy, 2013).

I expect that the results from Study 2 will be very similar to those of Study 1 and will demonstrate that prejudice against atheists is most prominent when theists perceive greater moral similarity between theists and atheists. This relationship should also depend on the degree to which participants experience collective angst. Lastly, this mediated relationship should only exist for those participants who care the most about their religious identity—highly identified theists, as opposed to low theist identifiers, should be the most likely to be prejudiced against atheists.

## STUDY 1

The purpose of Study 1 was to examine moral similarity between theists and atheists as a source for prejudice against atheists. Specifically, this study was an extension of Gervais and Norenzayan's (2012) research on people's perceptions of atheists as distrustful and deserving of prejudice—due to their lack of moral guidance. I hypothesize that such perceived similarity could cause a distinctiveness threat, resulting in collective angst. Moreover, collective angst is related to out-group prejudice (see Wohl & Branscombe, 2008b). Therefore, rather than lessen prejudice against atheists, moral similarity should indirectly relate to greater prejudice against atheists, as a function of collective angst.

*Hypotheses*

1. Perceived moral similarities between Christians and atheists will predict prejudice against atheists.
2. The relationship between moral similarities and prejudice will be mediated by collective angst
3. Religious identity will moderate the aforementioned mediation.

## Method

### Participants

Data was collected from 79 participants (56.9% were women and ages ranged from 19 to 74 years;  $M = 37.87$ ,  $SD = 13.80$ ). Participants were recruited via Amazon's Mechanical Turk (MTurk) system and were paid US\$ 0.75 for their participation. MTurk allows 'workers' to complete small tasks (e.g., surveys) online for compensation. A recent examination into the demographics and characteristics of MTurk 'workers' found that the majority of these individuals participate in the tasks out of interest or to "pass the time" rather than for purely compensatory purposes (Buhrmester, Kwang, & Gosling, 2011). All participants were from the United States and were surveyed about their religious views and attitudes towards atheists.

Of this sample, I removed two participants who did not consent to participate at the beginning of the study. I also removed one participant's data due to their non-consent to use their data after having completed the study. Lastly, I removed the data of 14 participants who were not Christians. As I am interested in the opinions of Christians (to limit noise in the data) non-Christians were not eligible to participate in this study. The finalized data set was of 62 participants (44.6% women; ages ranged from 21 to 66 years,  $M = 38.46$  years,  $SD = 13.48$ ) As the focus of the study was specifically on how Christians react to perceived similarities between their religious group and atheists, I exclusively analyzed the data of participants who identified as Christians. Of this sample,

44.7% of participants were Protestant Christians, 38.8% were Catholics, and 13.8% identified with "Other" forms of Christianity.

### **Procedure and Design**

Upon providing consent to participate, participants were directed to a link to my survey, which was completely conducted and generated using Qualtrics software, Version 37,894 of the Qualtrics Research Suite (2013). The questionnaire sets consisted of an informed consent form (Appendix B), a religious identity question (Appendix F), and 2 open-ended questions for which participants were asked to describe what constitutes an atheist and what emotions are evoked from thoughts of atheism (Appendix C). Thereafter, participants were asked to complete a battery of questionnaire items that included questions of perceived norms of atheists (moral similarity between Christians and atheists questions) (Appendix E), collective angst scale (Appendix D), and a hypothetical crime scenario to assess prejudice against atheists (Appendix G). The final page included demographic information (Appendix H). Upon completion of the questionnaire, participants were directed to a debriefing form (Appendix I) and asked to reaffirm permission to use their data in the study's analyses (Appendix J).

## **Measures**

### **Religious Identity**

Participants' religious identity was assessed using a modified version of Aron, Aron, and Smollan's (1992) Inclusion of Other in the Self scale (e.g., "*please select the image that best describes how similar you are to members of your religious group*"). For this item, participants were asked to select one of eight variously overlapping Venn diagrams (two circles representing self and Christianity). This scale measures the degree to which participants internalize their religious group as part of their self and identity. The more tightly interwoven the two circles symbolize a greater internalization of one's religious group and as such, a greater identification with the religious group. That is,

higher values (on 1 to 8 scale) indicate a stronger religious identity.

### **Moral Similarity Scale**

This 5-item scale ( $\alpha = .82$ ) assessed the extent to which atheists are perceived to be similar to Christian participants in terms of moral norms (e.g., “*Atheists have similar principles and values to most members of my religious group.*”). Items in this Likert scale were anchored at 1 (*strongly disagree*) and 7 (*strongly agree*). Higher mean scores on this measure indicates more perceived moral similarity between Christians (theists) and atheists.

### **Collective Angst**

This 5-item scale ( $\alpha = .82$ , adapted from Wohl & Branscombe, 2009) assessed the perceived threat to the future vitality of the in-group (e.g., “*I feel anxious about the future of my religious group in America.*”) on a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*).

### **Discrimination Against Atheists**

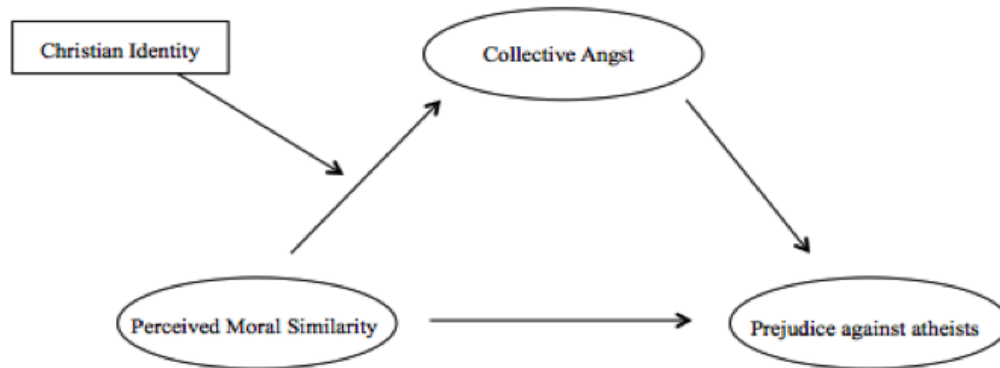
To assess prejudice against atheist participants were asked to imagine that they were the judges in a hypothetical drug possession case involving an atheist. For which, they had to decide the bail price for the charged person (range = \$1.00 to \$50,000.00). Higher bail prices symbolized more prejudice against atheists (see Herzog, 2003). These participants were also asked to assign a specified jail sentencing to the hypothetical atheist (range of 0 to 50 years). More jail time indicated more prejudice against atheists.

## **Results**

### **Preliminary Analyses**

To ensure that the proper assumptions were met for the planned analyses, the data was first screened for outliers and normality issues (e.g., skewness and kurtosis).

Figure 1: Conceptual Model for Study 1



**Sample Size.** According to Tabachnick and Fidell (2001; see also Green, 1991), the minimum sample size for detecting a medium size  $R^2$  is calculated as 50 participants plus 8 times the number of independent variables. Since the current study has 3 independent variables (i.e., moral similarity, Christian identity, collective angst), this study should ideally have a minimum sample of 74 participants. Since the current study has less than the recommended sample size (i.e., 62 participants), the study may risk Type I or Type II errors, reliability of measurement issues, and issues with normality (Spicer, 2005).

**Outliers.** To examine for possible outliers, two regressions were performed with bail price as the dependent variable, and with jail time as the dependent variable, with moral similarity as the predictor for each. To visually examine for possible outliers, I converted the bail price and jail time variables into  $z$  scores and examined for any values that fell outside of the  $\pm 3.00$  standard deviation mark (any  $z$  scores that were larger than 3.00 or smaller than -3.00). No extreme values (outliers) were found using this method. Cook's distance ( $d$ ) was also applied to identify any possible influential outliers in the bail price and jail time variable data. The Cook's distance value for bail price was 0.43. One suggestion for determining 'too large' or 'influential' Cook's distance scores is values larger than 1 (Stevens, 1996, p. 116). As such, there are no influential outliers in

the bail price data. The Cook's distance value for jail time was 0.19, which indicates that this variable also does not have any influential outlier variables.

**Multicollinearity.** Multicollinearity of the independent variables (moral similarity and collective angst) was first examined by looking at the values' correlation,  $r(62) = 0.17$ ,  $p = 0.19$ . A test for multicollinearity indicated that a very low level of multicollinearity was present (VIF = 1.21, Tolerance = 0.83).

**Independent Errors.** The data met the assumption of independent errors (Durbin-Watson value = 2.20).

### Moderated-Mediation Analysis

#### Bail Price Outcome Results

A moderated-mediation was conducted to determine whether the effect of perceived moral similarity between Christians and atheists on prejudice against atheists (bail price), via collective angst, was moderated by identification as a Christians. To test this moderated-mediation model I used Hayes' (2013) PROCESS macro in SPSS.

I first tested the full mediation model for which perceived moral similarity predicted bail bond price via collective angst. Results showed that the independent variable (perceived moral similarity) significantly predicted the dependent variable (bail price),  $b = 2466.19$ ,  $SE = 1106.22$ ,  $p = .03$ . The mediator (collective angst) also appeared to impact the dependent variable (bail price), however, traditional levels of significance were not achieved,  $b = 2103.69$ ,  $SE = 1106.89$ ,  $p = .06$ , predicted the dependent variable (bail bond price). Importantly, the indirect effect of perceived moral similarity on bail bond price via collective angst was not significant, as indicated by  $b = 358.94$ ,  $SE = 336.89$ , 95% CI [-73.85, 1316.62].

Nonetheless, I proceeded to test the proposed moderated-mediation model in which the effect of perceived moral similarity on bail bond price, via collective angst, would be moderated by the strength of Christian identification. To conduct the test of moderated-mediation I used Preacher and Hayes' (2008) bootstrapping technique using 5,000 iterations. As predicted, results of the moderated-mediation analysis showed that



mediation (of perceived moral similarity on bail bond price via collective angst) was significant at 1 SD above the mean of identification as a Christian, as indicated by  $b = 1014.66$ ,  $SE = 544.84$ , 95% CI [190.67, 2488.67]. However, mediation was not present at 1 SD below the mean of Christian identification as indicated by  $b = -481.69$ ,  $SE = 472.05$ , 95% CI [-1745.71, 242.69]. Thus, I found evidence for our hypothesized moderation-mediation model; highly identified Christians who perceived there to be moral similarity between Christians and atheists, felt a high degree of collective angst, which predicted the setting of a high bail bond price for a misbehaving atheist.

Table 1: Means, standard deviations and correlations of Study 1 variables

Variable	<i>M</i>	<i>SD</i>	1.	2.	3.	4.	5.
1. Christian Identity	4.86	2.18	—	—	—	—	—
2. Moral Similarity	3.37	1.22	-.13	—	—	—	—
3. Collective Angst	2.89	1.21	-.02	-.20	—	—	—
4. Jail Time (Years)	6.18	8.71	.18	.18	.39**	—	—
5. Bail Price (Dollars)	10682.52	11654.49	.06	.34**	.31**	.64**	—

\* Correlation is significant at the .05 level (2-tailed).

\*\* Correlation is significant at the .01 level (2-tailed).

Table 2: Summary of mediation for prejudice (bail price) against

Variable	<i>b</i>	<i>SE</i>	df	<i>p</i>	95%CI	
					LL	UL
Moral Similarity	2466.19	1106.22	1	.03	252.64	4679.73
Collective Angst	2103.69	1106.90	1	.06	-111.21	4318.60

### Jail Time Outcome Results

Another moderated-mediation was conducted to determine whether the effect of perceived moral similarity between Christians and atheists on prejudice against atheists (jail time), via collective angst, was moderated by identification as a Christians. To test this moderated-mediation model I used Hayes' (2013) PROCESS macro in SPSS.

I first tested the full mediation model in which perceived moral similarity predicted bail jail time via collective angst. Results showed that the independent variable (perceived moral similarity) did not significantly predict the dependent variable (jail time),  $b = 0.77$ ,  $SE = 0.86$ ,  $p = .38$ , the mediator (collective angst) significantly predicted the dependent variable (jail time),  $b = 2.62$ ,  $SE = 0.86$ ,  $p = .004$ , predicted the dependent variable (jail time). However, the indirect effect of perceived moral similarity on bail bond price via collective angst was not significant, as indicated by  $b = 0.45$ ,  $SE = 0.42$ , 95% CI [-0.13, 1.62].

While the mediation model was not significant without a moderator. I examined if model may be significant at particular levels of Christian identity. Accordingly, I proceeded to test the proposed moderated-mediation model in which the effect of perceived moral similarity on jail time, via collective angst, would only be present among highly identified Christians. To conduct the test of moderated-mediation I used Preacher and Hayes' (2008) bootstrapping technique using 5,000 iterations. As predicted, the results of the moderated-mediation analysis showed that mediation (of perceived moral similarity on bail bond price via collective angst) was significant at 1 SD above the mean of identification as a Christian (i.e., high Christian identity), as indicated by  $b = 1.26$ ,  $SE = 0.67$ , 95% CI [0.30, 2.98]. However, mediation was not present at 1 SD below the mean of Christian identification (i.e., low Christian identity), as indicated by  $b = -0.60$ ,  $SE = 0.59$ , 95% CI [-2.17, 0.34]. Thus, I found evidence for the hypothesized moderation-mediation model; highly identified Christians who perceived there to be moral similarity between Christians and atheists felt a high degree of collective angst, which in turn predicted recommending more jail time for a misbehaving atheist.

Table 3: *Summary of mediation for prejudice(jail time) against atheists*

Variable	$b$	$SE$	df	$p$	95%CI	
					LL	UL
Moral Similarity	0.77	0.86	1	.38	-0.96	2.50
Collective Angst	2.62	0.86	1	<.01	0.89	4.35

### Alternative Moderated-Mediation Model

Because the moderated-mediation model tested was entirely correlational, it is possible that an alternative model could also be significant. Therefore, an alternative model was tested (see Figure 2) based on a different interpretation of the variables and their relationship.

I first tested the full mediation model in which collective angst predicted perceived moral similarity via prejudice against atheists (bail price and jail time). Results showed that the independent variable (collective angst) did not significantly predict the dependent variable (perceived moral similarity),  $b = 0.11$ ,  $SE = 0.13$ ,  $p = .42$ , the mediator (bail price) did not significantly predict the dependent variable (moral similarity),  $b < 0.001$ ,  $SE < 0.001$ ,  $p = .04$ , and the second mediator (jail time) did not significantly predict the dependent variable (moral similarity),  $b = -0.01$ ,  $SE = 0.02$ ,  $p = .64$ . The indirect effect of collective angst on moral similarity via prejudice against atheists (bail price) was significant, as indicated by  $b = 0.08$ ,  $SE = 0.04$ , 95% CI [0.01, 0.18]. However the indirect effect of collective angst on moral similarity via prejudice against atheists (jail time) was not significant, as indicated by  $b = 0.05$ ,  $SE = 0.04$ , 95% CI [-0.02, 0.15].

While the mediation models were not significant, I examined if this model is significant at particular levels of Christian identity. Accordingly, I tested the proposed moderated-mediation model in which the effect of collective angst on moral similarity, via prejudice against atheists (bail price and jail time), would only be present among highly-identified Christians. To conduct the test of moderated-mediation applied Preacher and Hayes' (2008) bootstrapping technique using 5,000 iterations.

Results of the moderated-mediation analysis showed that mediation (of collective angst on perceived moral similarity via bail price) was not significant at the mean of Christian identity  $b = -0.03$ ,  $SE = -0.05$ , 95% CI [0.01, 0.22], and significant at 1 SD above the mean of identification as a Christian, as indicated by  $b = 0.12$ ,  $SE = 0.08$ , 95% CI [0.01, 0.33]. However, moderated-mediation of collective angst on moral similarity was not significant at any level of Christian identity when the mediator was jail time.

This model was conditionally significant when participants had a high Christian

identity and when the mediator was bail price. Statistically this model may be significant, though this alternative model is not theoretically logical. This alternative model suggests that participants have a baseline level of collective angst that leads to the perception of greater similarity due to holding more prejudice towards atheists. Considering Christians are the most prevalent religious group in America, at 78.3% of all religious people in America (see Cooperman, Hackett, & Ritchey, 2014), it is unlikely that Christians experience a baseline collective angst that is high enough to lead them to be prejudiced towards atheists.

Table 4: *Conceptual alternative model (bail price as mediator)*

Variable	<i>b</i>	<i>SE</i>	df	<i>p</i>	95%CI	
					LL	UL
Collective Angst	0.09	0.13	1	.48	-0.17	0.35
Bail price	<0.001	<0.001	1	.03	0.0001	0.0001

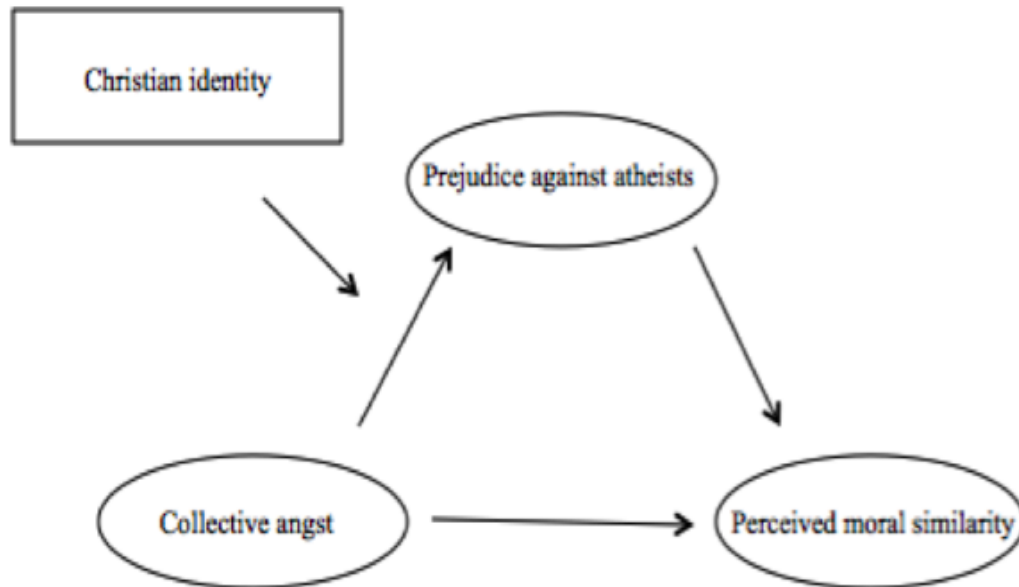
Table 5: *Conceptual alternative model (jail time mediator)*

Variable	<i>b</i>	<i>SE</i>	df	<i>p</i>	95%CI	
					LL	UL
Collective angst	0.12	0.14	1	.38	-0.15	0.40
Jail time	0.02	0.02	1	.38	-0.02	0.06

## Discussion

The purpose of Study 1 was to examine when and why atheists are targets of prejudice by theists (estimated via bail prices and jail time). Robinson (1994) argued that religious doctrine provides a moral compass for followers. In this light, I posited that theists would feel threatened by atheists and experience collective angst, when they are perceived to be morally similar. Christians should be more prejudiced towards atheists when they feel more collective angst.

Results were in line with my hypotheses. Christians who perceived atheists to

*Figure 2: Conceptual Alternative Model*

hold morals that were similar to those taught by Christianity, and thus felt collective angst, set a higher bail bond price for a misbehaving atheist. However, this mediation was only present for highly identified Christians—those who felt a strong tie to their religious group, and thus felt the greatest amount of existential threat from morally similar atheists. I argue that prejudice against atheists—particularly by means of incarceration (e.g., bail price and jail time for crime scenario)—may serve to physically and cognitively separate their religious in-group from the threat posed by atheists. To this end, a second study was conducted that experimentally manipulated Christians' perceptions of either perceived moral similarity or moral difference between themselves and atheists, the collective angst Christians' experienced, as well as prejudice against atheists was assessed.

## STUDY 2

The aim of Study 2 was to assess the model tested in Study 1 using an experimental design. Specifically, the purpose of Study 2 was to demonstrate that perceived moral similarity between Christians and atheists causes Christians to feel

collective angst and thus report more prejudice towards atheists. To establish a cause-and-effect relationship between perceived moral similarity on collective angst and prejudice against atheists, I randomly assigned Christian participants to either a moral similarity or moral difference condition. Participants were randomly assigned to read one of two ostensibly real news articles about atheists' reactions to moral dilemmas. These news articles reported that a series of studies conducted at a prestigious university found that when atheists were presented with a moral dilemma they respond in the same (or a different) manner as theists did. As such, the experimental conditions in Study 2 either presented atheists as being morally similar to (or morally different from) theists. Afterwards, all participants were asked to answer a series of questions that assessed, among other things, perceived moral similarity, collective angst, theists' trust towards atheists, and prejudice against atheists.

In addition to the manipulation of moral similarity between Christians and atheists new prejudice measures were added to Study 2. In Study 1, prejudice was measured using a proxy measure, where theists' prejudice towards atheists was estimated via the harshness of their sentencing of an atheist who was charged with drug possession. Since this outcome measure did not directly measure prejudice, a prejudice questionnaire was used in Study 2 and the proxy measure of prejudice that was used in Study 1 was omitted. Prejudice against atheists was measured using a derogating the out-group measure.<sup>1</sup> The derogating of the out-group measure will be explained in greater detail in the methods section.

In addition to the religious identity measure that was used in Study 1, Study 2 introduced a new measure of religiosity —the Intrinsic and Extrinsic Religious Orientation scale (Gorsuch & McPherson, 1989). According to Allport and Ross (1967), there are two fundamental types of religious orientation: the extrinsic religious orientation, where by religious identification is used for self-serving purposes (e.g., security and comfort), and an

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<sup>1</sup>Bolstering in-group support and social distance from atheists were also used to measure prejudice against atheists. Three measures were used because as noted by Allport (1954), prejudice can be expressed through, out-group derogation, increased in-group support, as well as increased social distance (see Brewer, 1999 for review). Nevertheless none of these measures of prejudice proved to be a better measure than the others, so I focused on the most face valid measure of prejudice against atheists (i.e., derogation of the out-group).

intrinsic religious orientation, where by religion provides meaning and guidance (e.g., morals, values). While intrinsic religiosity may seem as if it would guide people to be more pro-social towards all people, because it entails living the laws of the bible, Herek (1987) has demonstrated that intrinsic religiosity seems to only relate to tolerance of specific groups that are accepted by Christian teachings. Because atheism is inherently in opposition to religious beliefs and doctrine, atheism may be perceived as challenging religious foundations and therefore, atheists may be perceived as threatening to intrinsically religious people.

For Study 2, it was anticipated that participants with an intrinsic religious orientation would be most likely to be prejudiced against morally similar atheists compared to participants with an extrinsic religious orientation. As such, the intrinsic religious orientation was expected to moderate the effect of perceived moral similarity on collective angst, and in turn, prejudice against atheists.

#### *Hypotheses*

1. Moral similarity between Christians and atheists will lead Christians to experience more collective angst than moral difference will.
2. Moral similarity will lead Christians to express greater prejudice towards atheists, as demonstrated by wanting to derogate the atheist out-group.
3. Collective angst will mediate the relationship between the moral similarity and derogation against the atheist out-group.
4. Moral similarity (in comparison to moral difference) should lead to greater prejudice (i.e., derogating out-group) via collective angst, though only for participants who are high in Christian identity.
5. Moral similarity should lead to greater prejudice (derogating out-group) via collective angst, though only for participants who have an intrinsic religious orientation.

## Method

### Participants

Data was collected from 220 participants (61.40% women; ages ranged from 18 to 79 years,  $M = 36.85$ ,  $SD = 14.02$ ). Participants were recruited through Amazon's Mechanical Turk (MTurk) system. All participants were from the United States. Of this sample, I recorded suspicious cases to be removed from the data set for analyses (e.g., participant is not Christian, or has two or more failed attention and manipulation checks).

First, all ineligible cases were identified and deleted, those being participants who were marked as ineligible upon the initial screening of the study (e.g., participant who responded "No" when asked "Are you a Christian" in the pre-screening survey). Since Christians' attitudes towards atheists were of primary interest (due to the literature's focus on Christians' attitudes towards out-groups and to simplify the study), any participants who noted that they were not Christians at the beginning of the study ( $n = 13$ ) were removed from the data set. Additionally, all participants who chose to withdraw from the study ( $n = 5$ ) were removed from the data set. Lastly, the demographics were screened for participants' reported religious affiliation; those who noted anything other than Christian were not used in the study's analyses ( $n = 6$ ).

The data was scanned to ensure that none of the variables were missing more than 5% of data (see Dong & Peng, 2013). The missing data portion of the frequency tables for each individual variable was examined to screen for missing data. None of the items of interest were missing more than 5% of data.

The completion time of a study can signify how much effort and attention participants committed to answering the study. Too little time may signify a lack of attention and too much time may indicate a loss of attention, cognitive fatigue, or satisficing (see Galesic & Bosnjak, 2009). As such, the participants' survey completion times were standardized into  $z$  scores and any participants whose completion time was an outlier was removed from analyses ( $n = 28$ ). Outliers were determined by examining if the participants' completion time was outside of  $\pm 3$  standard deviations from the mean



completion time ( $M = 12.85$  minutes,  $SD = 5.21$  minutes).

In order to ensure that the moral similarity prime did induce participants to think of atheists as morally similar to Christians, the manipulation check was analyzed. The manipulation check was placed immediately after the news article (i.e., the manipulation); this manipulation was to ensure that the participant did in fact read the news article. This question was a multiple-choice question that asked what the news article was about. The manipulation group the participant was placed into was cross-referenced with participants' response on the manipulation check. Any participant whose response was incongruent with the article they read (i.e., they responded that their article reported moral similarity when in fact they had read a the article on moral difference) was excluded from the study's data analyses ( $n = 6$ ).

Attention checks were also included throughout the survey to ensure that participants were reading each item carefully. These attention checks all said '*please leave this item blank*'. Participants were excluded from the analyses if they missed 3 or more of the 5 attention checks in the study ( $n = 1$ ).

The study also included a process debriefing section, where participants were asked open-ended questions about what they expected the study's purpose was, and any questions they have about the study (see Ross, Lepper, & Hubbard, 1975). This section was scanned for evidence of participants' suspicion of the study's hypotheses (e.g., '*How people, specifically Christians view atheists given the information from an article stating that atheists are as moral as Christians.*'). Suspicion is problematic to the outcome measures because the participants may have been answering questions dishonestly to match their expectations of the study's purpose. Since the study also included questions that allowed participants to air any suspicions or questions they had about the study, the responses were scanned for any indication of participants' suspicions (e.g., '*I don't think the news article was real*'). Participants who seemed suspicious of the manipulation (i.e., news articles) were not included in the study's analyses ( $n = 6$ ). A later manipulation check was also used to examine if participants internalized or believed what they had read in the fictitious news articles; this asked them how moral they perceived atheists as being.

If the participants' response was not consistent with the article they were assigned to read, they were removed from the analyses ( $n = 7$ ).

Once the data cleaning was performed there were 145 participants (65.50% women, ages ranged from 18 to 79 years,  $M = 37.68$  years,  $SD = 14.37$  years) left for the main data analyses. All participants were self-identified Christians (e.g., 55.20% Protestant, 31.00% Catholic, 13.80% "Other" (e.g., Baptist, Non-denominational Christian, and Lutheran).

### **Procedure and Design**

Participants were awarded US \$0.75 for completing a 30-minute long online survey. The compensation of US \$0.75 was based on the typical rate that is offered on MTurk for similar 30-minute long psychology research surveys. Participants accessed the survey through the MTurk recruitment (Appendix K) page. On this page there was a link to direct participants to the online survey hosted by Qualtrics.com. Before proceeding to the survey, participants were first asked to read an informed consent page (see Appendix L).

Once informed consent was obtained, participants were randomly assigned to one of two experimental conditions—e.g., moral similarity or moral difference between theists and atheists. All participants were told that the present study focused on religious attitudes and morality. Participants were then asked to respond to two questionnaires about their religious identification and orientation (Appendix M and N). Participants were then asked to read one of two ostensibly real news briefs (i.e., vignettes) about the results of studies conducted at a prestigious research institute by a renowned researcher. These news briefs were about Christians and atheists' responses to moral dilemmas (Appendix O). The first of these vignettes was crafted to prompt participants to perceive Christians and atheists as morally similar, that is to say to make participants believe that atheists respond precisely like Christians in identical moral dilemmas:

The Pew report was released to coincide with the publication of a series of comprehensive studies by Edward Jones and his colleagues at Harvard University on the morality of Christians and atheists. Jones has been studying trends and changes in moral behavioral patterns of people and groups for over 20 years.

Their findings show that when atheists were faced with moral dilemmas, they responded the same as Christians who were faced with identical dilemmas. Additionally, Atheists and Christians provided very similar kinds of explanations for their moral decisions. This research suggests that there are fundamental similarities in the moral decision making of atheists and Christians.

In the second condition, participants were influenced to perceive moral differences between themselves and atheists; the vignette suggested that research demonstrates that atheists responded differently from Christians who were faced with identical moral dilemmas:

The Pew report was released to coincide with the publication of a series of comprehensive studies by Edward Jones and his colleagues at Harvard University on the morality of Christians and atheists. Jones has been studying trends and changes in moral behavioral patterns of people and groups for over 20 years.

Their findings show that when atheists were faced with moral dilemmas, they responded differently from Christians who were faced with identical dilemmas. Additionally, Atheists and Christians provided very different kinds of explanations for their moral decisions. This research suggests that there are fundamental differences in the moral decision making of atheists and Christians.

These fabricated news briefs were all aimed at influencing Christians' perceptions of intergroup similarity between themselves and atheists. After reading these news briefs, participants were asked to answer a single item questionnaire about the news brief's findings as a manipulation check (Appendix P). Next, participants were asked to complete items that assessed collective angst (Appendix Q). Thereafter, participants completed items that assessed Christians' prejudice towards atheists [e.g., derogating out-group members (Appendix R)].

After prejudice towards atheists was measured, all participants were asked to complete demographic questions (Appendix S). Upon completion of the survey, participants were debriefed on the study's true purpose and told that the news article they read was fabricated (Appendix T) and then asked to agree or disagree to the use of their data in analyses (Appendix U).

## Measures

### **Moral Similarity Manipulation Check**

After reading the manipulation, participants were asked to answer one question on what findings were reported in the news brief (i.e., according to this article): a) atheists are morally similar to Christians, b) atheists are morally different from Christians, or c) this article is not about the morality of Christians and atheists.

### **Religiosity**

Participants' religiosity was assessed using two scales. The first of which was a modified version of the Inclusion of Other in Self scale (or inclusion of in-group in self scale; adapted from Aron, Aron, & Smollan, 1992), which was previously used in Study 1. This one-item measure involved selecting one of nine Venn diagram-like pairs of circles that varied in the level of overlap between the self and in-group. This measure is intended to measure participants' self-identification with Christianity. Participants were asked to select the pair of circles that best represents their current relationship with their in-group.

Average scores were computed for this scale ( $M = 4.61$ ,  $SD = 2.81$ ), the more highly religiously identified the participant is, the more tightly intertwined the Venn diagram-like circles are (represented by a higher value on a 1 to 9 scale). This scale is intended to measure the strength of Christians' identification with their religious group, and thus higher scores indicate a stronger sense of religiosity.

The second scale used was the Intrinsic and Extrinsic Religious Orientation measure (Gorsuch & McPherson, 1989). This scale measures the type of religious orientation of participants (i.e., intrinsic or extrinsic). This scale is composed of an 8-item intrinsic religiosity subscale ( $\alpha = .87$ ) that anchored at 1 (*strongly disagree*) to 5 (*strongly agree*) and included items such as: "I enjoy reading about Christianity (*Intrinsic orientation*)". Average scores were computed for this scale ( $M = 3.50$ ,  $SD = 0.83$ ), higher values indicate a stronger intrinsic religiosity. This scale also composed of an 6-item extrinsic religiosity subscale ( $\alpha = .69$ ), also anchored at 1 (*strongly disagree*) to 5 (*strongly agree*) and included items such as "I go to church because it helps me to make friends (*Extrinsic orientation*)". Average scores were computed for this scale ( $M = 2.89$ ,  $SD = 0.66$ ), higher values indicate a stronger extrinsic religiosity.

### **Collective Angst**

Anxiety about the future vitality of the Christian in-group was measured using an adapted form of Wohl & Branscombe's (2009) 5-item collective angst scale ( $\alpha = .82$ ). These items are anchored at 1 (*strongly disagree*) and 7 (*strongly agree*). The items that participants were asked to respond to include: "I feel anxious about the future of my religious group." and "I feel confident that my religious group will survive (reverse scored)". Average scores were computed for this scale ( $M = 2.78$ ,  $SD = 1.19$ ), higher scores indicate experiencing greater collective angst.

### **Derogating the Out-Group**

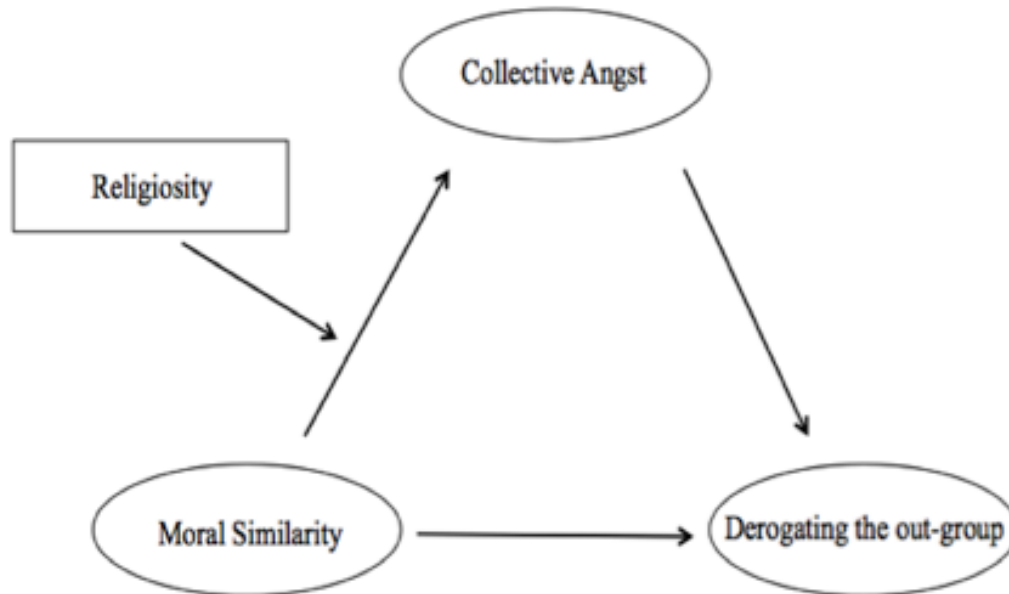
To assess participants' desire to derogate out-group members (i.e., atheists), so as to limit atheists' presence in society, participants were asked to answer questions on the

Derogating the out-group scale (adapted from Wohl et al., 2010). This 6-item measure ( $\alpha = .79$ ) includes: “I would not send my child to a secular (non-religious) school” and “Mixing of the Christian lifestyle with an atheist lifestyle is not a positive change for Christian people.” These items are anchored at 1 (*strongly disagree*) and 7 (*strongly agree*). Average scores were computed for this scale ( $M = 3.45$ ,  $SD = 1.26$ ), higher scores indicate stronger negative attitudes towards atheists.

### Debriefing

Once participants had completed the survey they were automatically sent to a webpage that contained a debriefing form describing the true purpose of the study, the debriefing also explained that the news articles were fabricated, in addition to why deception had to be used for this study. The debriefing form also provided researcher contact information.

Figure 3: Conceptual model for Study 2



## Results

To test the hypothesis that collective angst mediates the relationship of moral similarity on out-group derogation, I performed a mediation analysis. The morality manipulation (coded as moral difference = 0 and moral similarity = 1) served as the independent variable, collective angst as the mediator, and out-group derogation as the dependent variable. The mediation model was run and analyzed using Hayes' (2013) PROCESS macro (all variables were mean centered). The relationship between moral similarity and derogation of out-group was not mediated by collective angst. The results showed that the independent variable (moral similarity conditions) did not significantly affect the dependent variable (derogation of out-group),  $b = -0.21$ ,  $SE = 0.20$ ,  $p = .29$ . The unstandardized regression coefficient between the morality manipulation and collective angst was non-significant,  $b = -0.03$ ,  $SE = 0.19$ ,  $p = .88$ . The unstandardized regression coefficient for collective angst on derogating the out-group was significant,  $b = -0.25$ ,  $SE = 0.09$ ,  $p = .004$ . The bootstrapped unstandardized indirect effect was also non-significant as the confidence 95% interval contains 0,  $b = 0.21$ ,  $SE = 0.20$ ,  $LLCI = -0.61$ ,  $ULCI = 0.18$ . Thus, moral similarity did not cause participants to experience greater collective angst and in turn derogate the out-group more.

Table 6: Means, standard deviations and correlations of Study 2 variables

	Variable	<i>M</i>	<i>SD</i>	1.	2.	3.	4.	5.
Different Morals	1. Christian Identity	4.41	2.77	—	—	—	—	—
	2. Intrinsic Religiosity	3.58	0.74	.73**	—	—	—	—
	3. Collective Angst	2.79	1.13	-.20	-.24*	—	—	—
	4. Derogate Out-Group	3.61	1.24	.39**	.52**	-.34**	—	—
Similar Morals	1. Christian Identity	5.22	2.65	—	—	—	—	—
	2. Intrinsic Religiosity	3.61	0.81	.52**	—	—	—	—
	3. Collective Angst	2.73	1.22	-.18	.27**	—	—	—
	4. Derogate Out-Group	3.41	1.24	.18	.38**	-.14	—	—

\* Correlation is significant at the .05 level (2-tailed).

\*\* Correlation is significant at the .01 level (2-tailed).

To test the hypothesis that high Christian identity moderated moral similarity's effect on collective angst and in turn the amount participants derogated the atheist out-group, I conducted a moderated-mediation using the morality manipulations as the independent variable, inclusion of group within self for the Christians identity in place of the moderator, collective angst as the mediator, and derogation of the out-group as the dependent variable. The moderated-mediation model was run and analyzed using Hayes' (2013) PROCESS macro (all variables were mean centered). The relationship between moral similarity and derogation of the out-group was not mediated by collective angst or moderated by Christian identity. The interaction of the morality condition and Christian identity did not significantly affect collective angst,  $b = -0.009$ ,  $SE = 0.07$ ,  $p = .90$ . The unstandardized regression coefficient for collective angst on derogating out-group was significant,  $b = -0.25$ ,  $SE = 0.09$ ,  $p = .004$ . The bootstrapped unstandardized moderated-mediation effect was non-significant as the confidence 95% interval contains 0,  $b = 0.002$ ,  $SE = 0.02$ ,  $LLCI = -0.036$ ,  $ULCI = 0.042$ . Thus, Christian identity does not moderate moral similarity's effect on collective angst, or Christians' derogation of the atheist out-group.

Table 7: *Summary of mediation for derogation against atheists*

Variable	$b$	$SE$	df	$p$	95%CI	
					LL	UL
Morality manipulation	-0.22	0.20	1	.29	-0.61	0.18
Collective angst	-0.25	0.20	1	< .001	-0.42	-0.08

To test the hypothesis that an intrinsic religious orientation moderates moral similarity's effect on collective angst and in turn the amount participants derogate the out-group, I conducted a moderated-mediation using the morality manipulations as the independent variable, intrinsic religious orientation in place of the moderator, collective angst as the mediator, and derogating the out-group as the dependent variable. The moderated-mediation model was run and analyzed using Hayes' (2013) PROCESS macro (all variables were mean centered). The relationship between moral similarity and



derogating the out-group was not mediated by collective angst or moderated by intrinsic religiosity. The interaction of the morality condition and intrinsic religiosity did not significantly affect collective angst,  $b = -0.09$ ,  $SE = 0.24$ ,  $p = .71$ . The unstandardized regression coefficient for collective angst on derogating the out-group was significant,  $b = -0.25$ ,  $SE = 0.09$ ,  $p = .004$ . The bootstrapped unstandardized moderated-mediation effect was non-significant as the confidence 95% interval contains 0,  $b = 0.02$ ,  $SE = 0.07$ , LLCI =  $-0.09$ , ULCI =  $0.18$ . Thus, intrinsic religiosity does not moderate moral similarity's effect on collective angst, or in turn moral similarities effect on derogating the out-group.

### Alternative Models

An independent sample t-test was performed to test the hypothesis that collective angst is affected by perceiving atheists as morally similar to Christians. The morality conditions: moral difference (coded as 0 in analysis) and moral similarity (coded as 1 in analysis) were the independent variable and collective angst was the dependent variable. Participants in the moral difference condition ( $M=2.78$ ,  $SD=1.13$ ) and the moral similarity condition ( $M = 2.75$ ,  $SD = 1.21$ ) did not significantly differ in the extent to which participants reported experiencing collective angst,  $t(146) = 0.15$ ,  $p = .88$ ,  $d = 0.03$ .

Table 8: *t-test results comparing moral difference and moral similarity effects on collective angst*

Variable	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	<i>d</i>
Morality similarity	78	2.75	1.21	0.15	0.88	0.03
Moral difference	70	2.78	1			

To test the hypothesis that moral similarity causes increased derogation against the out-group, I performed an independent sample t-test. I used the morality conditions [moral difference (0) and moral similarity (1)] as the independent variable and the derogating out-group as the dependent variable. Participants in the moral difference condition ( $M=3.58$ ,  $SD=1.25$ ) and the moral similarity condition ( $M = 3.37$ ,  $SD = 1.25$ ) did not significantly differ in the extent to which they expressed derogation against

atheists,  $t(146) = 1.01$ ,  $p = 0.32$ ,  $d = 0.17$ . Overall, these results are incongruent with my hypothesis, moral similarity does not cause prejudice as measured by out-group derogation.

Table 9: *t-test results comparing moral difference and moral similarity effects on derogation of out-group*

Variable	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	<i>d</i>
Morality similarity	78	3.37	1.25	1.01	0.32	0.17
Moral difference	70	3.58	1.25			

## Discussion

The purpose of Study 2 was to examine whether perceived moral similarity between Christians and atheists causes heightened prejudice against atheists as a function of collective angst. I posited that Christians would feel threatened when they were presented with ostensible evidence for how atheists are morally similar (in comparison to when they are presented with evidence on how atheists are morally different) to the Christian group. I also hypothesized that the threat of moral similarity would cause Christians to experience collective angst and in turn express more prejudice against atheists. Lastly, I predicted that the effect of moral similarity on collective angst and prejudice against atheists should be strongest for Christians who are highly identified members of their religious group and for Christians who are intrinsically religious.

The results of Study 2 did not support my hypotheses. Christians who were presented with the moral similarity (versus the moral difference) condition did not feel significantly more collective angst, nor did Christians express greater prejudice towards atheists when they perceived atheists as morally similar. Additionally, this mediation was not significant when I accounted for Christian identity or religious orientation. That is, highly identified Christians and intrinsically religious Christians were not significantly more threatened by moral similarity; they did not experience significantly more collective angst or express significantly more prejudice towards atheists than Christian participants

who were less highly identified or who are less intrinsically religious. Therefore, the experimental manipulation of moral similarity did not significantly cause Christians to experience collective angst nor did it heighten Christians' prejudice against atheists.

## General Discussion

Prejudice against atheists has previously been attributed to theists' perception that atheists lack a source of moral guidance, which is typically afforded through religious belief. Research suggests that perceived moral differences between theists' and atheists' drives mistrust of atheists, which in turn leads to prejudice against atheists (see Edgell et al., 2006; see Gervais & Norenzayan, 2012; see also Gervais et al., 2011). Research on prejudice against atheists has focused on how perceived moral differences between these groups can lead to prejudice against atheists (see Gervais & Norenzayan 2012; Gervais et al., 2011). The current two studies, however, took a different approach to the issue of prejudice against atheists. I examined how moral similarity between theists and atheists could lead to prejudice against atheists as due to collective angst. Specifically, I posited that perceived moral similarity between theists and atheists would threaten theists' religious social identity—moral similarity implies that theists are not morally distinct from atheists. Highly identified theists should perceive moral similarity with atheists as a threat to the future vitality of religion-based moral teaching and this religion in general (i.e., collective angst). Prejudice against atheists is the result of in-group members' need to protect theists' moral distinctiveness.

The goal of this program of research was to better understand why theists are prejudiced against atheists. By framing prejudice against atheists by theists within the social identity theory and group distinctiveness literature, I was able to demonstrate how perceiving moral similarities between one's theist group and atheists can also lead to prejudice against atheists, as a result of group based existential angst (i.e., collective angst). To my knowledge, this is the first set of studies to examine how perceiving atheists as similar to one's group can lead to prejudice.

The purpose of Study 1 was to determine whether or not prejudice against atheists could be predicted by perceived moral similarity and collective angst. To test this hypothesis, I conducted a correlational study. I measured how perceived moral similarity leads to prejudice as a function of feeling collective angst. I hypothesized that when highly identified theists perceived moral similarity between themselves and atheists they would feel that their group's distinctiveness from atheist was being threatened. As a result, these theists would express heightened prejudice against atheists as a result of feeling collective angst. Consistent with this prediction, I found that highly identified Christians expressed heightened prejudice against atheist when they perceived atheists as being morally similar to themselves. Moreover, theists' experience of collective angst was the mechanism by which moral similarity led to heightened prejudice against atheists. Of note, this relationship was only significant when Christian participants were highly identified as Christians.

Overall, Study 1 was successful in establishing a relationship between prejudice against atheists and perceived moral similarity and collective angst. In the discussion for Study 1, I argued that prejudice against atheists might serve to distance the Christian group from the threat posed by morally similar atheists. To further substantiate these preliminary results, I retested them using an experimental design. Study 2 experimentally tested whether prejudice against atheists is caused by moral similarity (versus moral difference) between Christians and atheists, and if this effect is mediated by Christians' experience of collective angst. Additionally, I examined how Christians' religious identity and religious orientation moderates the effects of perceived moral similarity on collective angst and in turn, prejudice. I hypothesized that moral similarity would cause Christians to express prejudice against atheist, because they feel collective angst. I also predicted that this effect would only be significant when participants were highly identified Christians with an intrinsic religious orientation, however, results from Study 2 were not in line with these predictions. Christians who were presented with the moral similarity condition did not experience significantly more collective angst or express significantly more prejudice against atheists than Christians who were presented with the moral

difference condition. Essentially, this study did not replicate the results from Study 1 and may suggest a few methodological issues with Study 2.

### **Limitations and Methodological Issues**

There may be concerns about exclusively looking at Christians' attitudes towards atheists (particularly when this project is meant to generalize to theists' attitudes towards atheists). However, researchers have demonstrated that it is religious identity and religious orientation (e.g., intrinsic religiosity) rather than affiliation with a specific denomination that influences theists' attitudes (Hunsberger, Owusu, & Duck, 1999). For the present studies, I specifically chose to study Christians because they are the most prominent religious group in the United States and in most of the world; Christians make up 78.40% of religious adults in the United States (Pew Research Center, 2008) and 31.50% of the global religious population (Pew Research Center, 2014). Accordingly, the results found in my studies could be fairly generalizable due to the preponderance of Christians in society. That is, when theists are prejudiced against atheists, they are most likely Christians. Nevertheless, future research on this topic should look at more diverse samples of religious denominations in order to generalize the findings of such studies.

Although the results of Study 1 were consistent with my predictions, the results of Study 2 did not support the predicted model. Study 2 may have been limited by the strength of some of the measures that were used. A vignette was used to influence participants' perceptions of atheists' moral similarity to Christians. While vignettes have been found to be an effective mean of influencing participants' perceptions or attitudes (Hughes & Huby, 2004; see Stolte, 1994; see also Beck, 2010 for review on usefulness of vignettes), others have also noted precautions to using vignettes (see Torres, 2009; Neff, 1979). For example, perhaps the vignettes describing atheists' and Christians' moral similarity (or moral difference) behavioural reactions would have been more convincing and influential if they had involved a more specific behaviour rather than the vague and possibly abstract "responded the same as Christians who were faced with identical dilemmas". In future studies it may also be useful to first pilot the vignette to verify its

internal validity, reliability and effectiveness in influencing the attitudes that we anticipate that it will influence and to see if it is representative of situations relating to moral similarity (see Hughes & Huby, 2004).

Researchers such as Kinicki, Hom, Trost, and Wade (1995) have suggested that the simple text vignettes (in comparison to video or live action behaviours) may only impose very low cognitive demands and may not be very immersive or memorable to participants. The manipulation I used may be critiqued as an ecologically invalid method of influencing Christians' opinions of atheists' morality as vignettes tend to face issues of reliability and validity, especially external validity (Gould, 1996). Nevertheless, textual vignettes (e.g., presenting participants with ostensible news reports) to influence intergroup (or interpersonal) attitudes have been applied in past research with great success in influencing participants' attitudes (Halperin, Porat, & Wohl, 2013; Schimel, Wohl, & Williams, 2006; see Beck, 2010 for review on usefulness of vignettes).

A possible methodological issue for this study is the complexity of its model (i.e., moderated mediation); causality (especially in a path model) is a difficult concept to establish. Hayes (2013) refers to causality as "the cinnamon bun of social sciences, a sticky concept". He adds that it is very difficult to explain the mechanisms of variables' relationship entirely, no matter how many mediators or moderators we account for (Hayes, 2013, p. 17). This is not to say that the use of a causal model (i.e., moderated mediation) is useless, rather it points to the importance of recognizing the limitations of data and be cautious with our interpretations of this data.

## **Future Directions and Implications**

To establish that the types of prejudiced reactions of theists express toward atheists are based on theists' values and not just atheists' out-group status, future studies should examine how theists react to morally similar (or different) members of other religious out-groups (e.g., Muslim). Moreover, methodological issues that should be re-examined in future research: Study 1 should be replicated as a correlational model to confirm the results. It may be useful to change the dependent variable used to measure

prejudice. Study 1 used a proxy measure of prejudice, whereas it may be more useful (for comparative purposes) to use the same prejudice measure throughout the correlational and experimental studies of this program of research. Study 2 should also be replicated (with a more specific description of atheist and Christian behaviours vignette) to see if the relationships found in the correlational study can be replicated experimentally.

Study 1 suggests that it is very possible that perceived moral similarity between Christians and atheists can lead to prejudice against atheists as a function of collective angst. These findings were unique from the current literature that typically demonstrates how intergroup differences (rather than similarities) lead to prejudice against atheists (Gervais et al., 2011; Gervais, 2011; Edgell et al., 2006). These results, however, were preliminary and could not definitively say that moral similarity causes prejudice against atheists because of collective angst. Nevertheless, this model was the first, to my knowledge, to integrate social identity theory into research on prejudice against atheists, and the first to posit that intergroup similarities between theists and atheist can be perceived as an intergroup threat. Ultimately, Study 1 demonstrated the potential intergroup consequences of perceiving atheists as morally similar to theists. Though Study 2 did not experimentally support these hypotheses, I maintain that the theoretical model reasonably integrates and frames theories of social identity theory and intergroup distinctiveness within the context of religiosity.

## Conclusion

The present set of studies steps away from the current trend in research on prejudice against atheists by focusing on how moral similarity can also lead to prejudice against atheists, but due to collective angst rather than distrust (as has previously been the focus of research on prejudice against atheists). The current study presents preliminary results on how intergroup threat (interpersonal distrust) leads to prejudice against atheists. Research has primarily deduced that because atheists lack a belief in God, they are perceived as immoral and dangerous, and therefore deserving of prejudice

for protective reasons. Whereas, I found that even when atheists are perceived as morally similar, theists are still prejudiced against them. These novel and intricate results highlight the need for more research to better understand prejudice against atheists.



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## Appendix A

### **MTurk Recruitment Announcement**

Religious Beliefs and Attitudes (30mins/\$0.75)

As a participant, you will answer a variety of questionnaires about your religious attitudes and beliefs, as well as your attitudes about religious ideology. You will also be asked to read about a person who has different religious beliefs. You will then be asked questions about this person as well as their group.

Your participation as well as your responses will be strictly confidential. Only researchers associated with the research project will know you participated in the study and no one will know how you responded to the questions asked.

### **Eligibility Requirements**

1. Resident of the United States of America.
2. Currently identify as a Christian. This includes many denominations of Christianity including, but not limited to Catholics, Orthodox, Lutherans, Anglicans, Baptists, etc.

This study takes about 30 minutes, and upon completion you will receive US\$0.75 for your participation. This study has received clearance by the Carleton University Psychology Research Ethics Board.



## Appendix B

### **Informed Consent Form**

The purpose of an informed consent is to ensure that you understand the purpose of the study and the nature of your involvement. The informed consent must provide sufficient information such that you have the opportunity to determine whether you wish to participate in the study.

**Present study.** Religious Beliefs and Attitudes

**Research Personnel.** The following people are involved in this study, and may be contacted at any time if you have questions or concerns:

Travis Sztainert (travis\_sztainert@carleton.ca)

Dr. Darcy Dupuis (darcy.dupuis@carleton.ca)

Kendra McLaughlin (kendra.mclaughlin@carleton.ca)

Dr. Michael Wohl (Faculty Sponsor, email: michael\_wohl@carleton.ca, phone number: 613-520-2600, ext. 2908).

**Concerns.** Should you have any ethical concerns about this research, please contact Dr. Shelley Brown (Chair, Psychology Ethics Board, shelley.brown@carleton.ca, 613-520-2600, ext. 1505. For other concerns, please contact Dr. Anne Bowker (Chair, Department of Psychology, psychchair@carleton.ca, 613-520-2600, ext. 8218).

**Purpose.** The purpose of this study is to examine religious beliefs and attitudes.

**Task Requirements.** During this study you will answer a variety of questionnaires about your religious beliefs and attitudes. You will also read a scenario and respond to some questions specifically about this scenario. Your responses will be completely anonymous. You will be able to skip any questions you feel uncomfortable answering without being penalized.

**Benefits/compensation.** We are offering eligible participants who complete the study US \$0.75 for participating.

**Potential Risk/Discomfort.** There are no physical risks to participating in this study. The possibility and magnitude psychological harm is low because we are not intending to

make you feel in any particular way. That said, there is always the possibility that you might not like or approve of the questions we ask. If you feel any discomfort or distress, you may choose not to answer specific questions, and you will not be penalized in any way if you do this. The debriefing form at the end of the study provides contact information for local support services that you may contact if you need or want help.

**Anonymity/Confidentiality.** We collect data through the software Qualtrics, which uses servers with multiple layers of security to protect the privacy of the data (e.g., encrypted websites and password protected storage). Please note that Qualtrics is hosted by a server located in the USA. The United States Patriot Act permits U.S. law enforcement officials, for the purpose of an anti-terrorism investigation, to seek a court order that allows access to the personal records of any person without that person's knowledge. In view of this we cannot absolutely guarantee the full confidentiality and anonymity of your data. With your consent to participate in this study you acknowledge this.

**Right to withdraw.** Your participation in this study is entirely voluntary. You may skip any question that makes you feel uncomfortable and/or don't want to answer for any reason by clicking the next button at the bottom of their screen. You may withdraw after giving your consent by repeatedly pressing the next button until you reach the end of the study and you will still receive the full compensation for participating. If you withdraw, you have the right to request that your data be deleted. If you decide to drop out we ask that you read the Debriefing form at the end to retrieve your Completion Code. Thank you!

This study has received clearance by the Carleton University Psychology Research Ethics Board.

I have read the above form and understand the conditions of my participation. My participation in this study is voluntary, and I understand that if at any time I wish to leave the experiment, I may do so without having to give an explanation and with no penalty whatsoever. Furthermore, I am also aware that the data gathered in this study are confidential and anonymous with respect to my personal identity. Selecting the consent

option indicates that I agree to participate in this study.

----- Consent

----- Withdraw

## Appendix C

### Open-ended questions about atheists (created for this study)

In the box shown below, please briefly describe what you know about atheists. In other words, "What is an atheist?"

In the box shown below please briefly describe the emotions that the thought of atheists arose in you.

## Appendix D

### Collective Angst (adapted from Wohl and Branscombe, 2009)

7-point scale (1 = strongly disagree; 2 = disagree; 3 = somewhat disagree; 4 = neither agree nor disagree; 5 = somewhat agree; 6 = agree; 7 = strongly agree)

1. I feel anxious about the future of my religious group in America.
2. I feel confident that my religious group in America will survive. (reverse coded)
3. I feel secure about the future of my religious group in America. (reverse coded)
4. I feel worried that my religious group will not always thrive in America.
5. I feel concerned that the future existence of my religious group's culture in America is in jeopardy.

## Appendix E

### Moral Similarity Scale (created for this study)

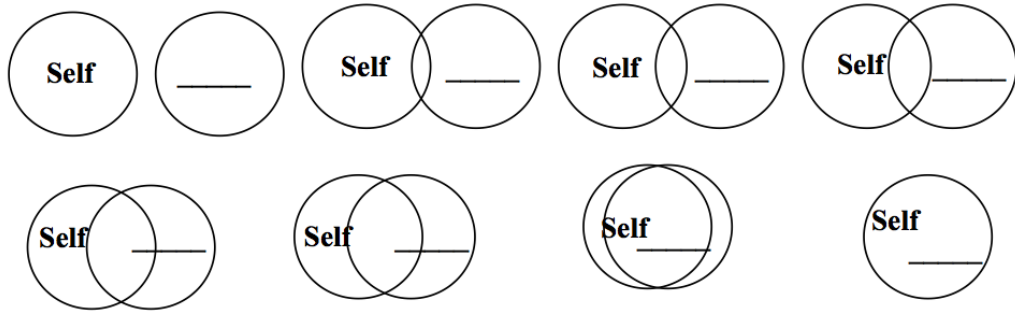
7-point scale (1 = strongly disagree; 2 = disagree; 3 = somewhat disagree; 4 = neither agree nor disagree; 5 = somewhat agree; 6 = agree; 7 = strongly agree)

1. Most of Atheists' beliefs differ from the beliefs of members of my religious group.  
(reverse coded)
2. Atheists have similar principles and values to most members of my religious group.
3. Atheists think similarly to members of my religious group.
4. Atheists and members of my religious group interact with their friends and family in very different ways. (reverse coded)
5. In day-to-day life, Atheists think and behave like members of my religious group.

## Appendix F

### Religious Identity Measure

1. Please circle the picture that best describes how similar you are to members of your religious group?



## Appendix G

### **Atheist Crime Scenario (created for this study)**

Please consider the below scenario and respond to the following question: Daniel is an atheist in his late 20s who has recently moved to your region for work. Six months after moving in, Daniel is charged with possession of cocaine. Please imagine that you are the judge in Daniel's trial for possession of cocaine. You have decided that he is guilty of his crime. Please answer the following questions. Please note that we prefer that you make your own judgments based on your gut reaction without referring to any external sources.

1. What amount of time would you sentence Daniel to serve in prison (please indicate your response in months and years)? [sliding scale measure: 0 – 70 years]
2. At what price would you set Daniel's bail bond (in other words, how much money would he/his family have to pay to have him released)? [sliding scale measure: \$1 – \$1,000,000]
3. How likely do you think it is that Daniel will repeat his crime? [7 pt scale: Very likely -----Not very likely]



## Appendix H

**Demographics Instructions:** Please fill in the information below, so that we may obtain some general information on the people participating in this study (This information will not be associated with your name in any way).

1. Gender: Male ( ) Female ( )
2. Age ----.
3. What is the name of the state in which you live? -----.
4. Ethnicity:
  - ----Caucasian/White
  - ----African-American
  - ----Indigenous or Aboriginal
  - ----Asian
  - ----Middle Eastern
  - ----Hispanic
  - ----Latino
  - ----Other
  - ----Prefer not to say
5. Religion:
  - ----None—Atheist (e.g., non-belief in God)
  - ----None—Agnostic (e.g., belief that the existence of God cannot be known)
  - ----Protestant (e.g., United, Anglican, Baptist, Presbyterian, Lutheran, Pentecostal, Mennonite)

- \_\_\_\_Catholic (e.g., Roman Catholic, Ukrainian Catholic)
- \_\_\_\_Muslim
- \_\_\_\_Jewish
- \_\_\_\_Buddhist
- \_\_\_\_Hindu
- \_\_\_\_Sikh
- \_\_\_\_Baha'i
- \_\_\_\_Other (Please specify):\_\_\_\_\_

6. Please rate how conservative or liberal you are on the following scale:

1. \_\_\_\_ (very liberal)
2. \_\_\_\_ (liberal)
3. \_\_\_\_ (somewhat liberal)
4. \_\_\_\_ (moderate)
5. \_\_\_\_ (somewhat conservative)
6. \_\_\_\_ (conservative)
7. \_\_\_\_ (very conservative)

## Appendix I

### Debriefing Form

Thank you for your participation in this study! This is a debriefing form, which will clarify the purpose of our study and why we are interested in this issue.

#### **What are we trying to learn in this research and how was this study designed?**

The purpose of this study was to investigate the attitudes and beliefs of Christians. We asked you some questions about your own religious belief. Additionally, we were interested in your attitudes toward people who have different beliefs. You were randomly assigned to a condition in which you were asked about your attitudes and beliefs toward either atheists or Muslims. More specifically, we were interested in how you view the norms, identity, and behaviors of either atheists or Muslims. You will recall that we included a series of partly finished words for you to complete. Some of the words could have been completed with death related words or non-death related words (e.g., GR\_ \_ \_ couple be completed as 'grape' or 'grave"). Previous research suggests that people will use more death related words when they think about others who are threatening to their way of thinking. We wanted to see if thinking about the different groups we asked about led to more death-related word completions.

#### **Why is this important to scientists or the general public?**

Research suggests that in the North America, atheists are more despised than any other minority. In particular, people greatly distrust atheists. Thus far, the underlying psychological mechanisms for this hatred and distrust have yet to be examined. Determining why atheists are particularly despised can help to understand and address hostility between different groups in society.

#### **What are our hypotheses and predictions?**

We predict that atheists may act as a specific type of threat to Christians. Specifically, we hypothesize that atheists, as compared to Muslims, will be seen as anti-Christian and anti-American, which may result in increased dislike and distrust toward atheists. We expect that people of particular religious orientations will have a

greater highest tendency to view atheists in opposition to Christianity.

**Where can I learn more?**

Wikipedia article on discrimination against atheists:

[http://en.wikipedia.org/wiki/Discrimination\\_against\\_atheists](http://en.wikipedia.org/wiki/Discrimination_against_atheists)

2012 Report on discrimination against atheists, humanists, and the non-religious

[http://www.americanhumanist.org/system/storage/63/14/a/3436/2012\\_IRF\\_Report.pdf](http://www.americanhumanist.org/system/storage/63/14/a/3436/2012_IRF_Report.pdf)

**Is there anything I can do if I found this experiment to be emotionally upsetting?**

Yes. If you feel any emotional distress or anxiety after participating in this study, please feel free to contact one of the helplines nearest to your location. A list of helplines by town and state can be found at

<http://www.befrienders.org/helplines/helplines.asp?c2=USA>.

**What if I have questions later?**

If you have any remaining concerns, questions, or comments about the experiment, please feel free to contact Travis Sztainert ([travis.sztainert@carleton.ca](mailto:travis.sztainert@carleton.ca)), Dr. Darcy Dupuis ([darcy.dupuis@carleton.ca](mailto:darcy.dupuis@carleton.ca)), Kendra McLaughlin ([kendra.mclaughlin@carleton.ca](mailto:kendra.mclaughlin@carleton.ca)) or Dr. Michael Wohl (Faculty Sponsor, email: [michael.wohl@carleton.ca](mailto:michael.wohl@carleton.ca), phone number: 613-520-2600, ext. 2908). Should you have any ethical concerns about this research, please contact Dr. Shelley Brown (Chair, Psychology Ethics Board, [shelley.brown@carleton.ca](mailto:shelley.brown@carleton.ca), 613-520-2600, ext. 1505). For other concerns, please contact Dr. Anne Bowker (Chair, Department of Psychology, [psychchair@carleton.ca](mailto:psychchair@carleton.ca), 613-520-2600, ext. 8218).

**Thank you for participating in this research!**

## Appendix J

### **Informed Consent to the Use of Data**

The purpose of an informed consent is to ensure that you now understand the true purpose of the study and that you agree to allow your data to be used for research and teaching purposes. Because you were only told of the procedures and not the purpose of this study at the outset, we are now asking for your consent to allow your data to be used for research and teaching purposes.

**Purpose.** The purpose of this study is to assess attitudes and beliefs, as well as existential concerns regarding atheists or Muslims.

**Anonymity/Confidentiality.** The data collected in this study are kept anonymous and confidential.

**Right to withdraw data.** You have the right to indicate that you do not wish your data to be used in this study. If you indicate this is your choice, then all measures you have provided will be destroyed.

**Signatures:** I have read the above description of the study investigating reactions to atheists and Muslims. The data in the study will be used in research publications or for teaching purposes. By consenting, I agree to allow the data I have provided to be used for these purposes.

I CONSENT

DO NOT CONSENT

**Completion Code to receive credit for participation:**

Survey Completion Code: RELIGIOUSATTITUDES

## Appendix K

### Recruitment Announcement

Religious Beliefs and Morality (30mins/\$0.75)

As a participant, you will answer a variety of questionnaires about your religious attitudes and beliefs about morality, as well as your attitudes about religious ideology. You will then be asked questions about your reactions to people of different religious groups. Your participation as well as your responses will be strictly confidential. Only researchers associated with the research project will know you participated in the study and no one will know how you responded to the questions asked.

### Eligibility Requirements:

1. Resident of the United States of America.
2. Currently identify as a Christian. This includes many denominations of Christianity including, but not limited to Catholics, Orthodox, Lutherans, Anglicans, Baptists, etc.

This study takes about 30 minutes, and upon completion you will receive US\$0.75 for your participation. This study has received clearance by the Carleton University Psychology Research Ethics Board (Reference # 14-084).

## Appendix L

### **Informed Consent Form**

The purpose of an informed consent is to ensure that you understand the purpose of the study and the nature of your involvement. The informed consent must provide sufficient information such that you have the opportunity to determine whether you wish to participate in the study.

**Present study:** Religious Beliefs and Morality

**Research Personnel.** The following people are involved in this study, and may be contacted at any time if you have questions or concerns:

Kendra McLaughlin (kendra.mclaughlin@carleton.ca)

Dr. Darcy Dupuis (darcy.dupuis@carleton.ca)

Travis Sztainert (travis\_sztainert@carleton.ca)

Dr. Michael Wohl (Faculty Sponsor, email: michael\_wohl@carleton.ca, phone number: 613-520-2600, ext. 2908).

**Concerns.** Should you have any ethical concerns about this research, please contact Dr. Shelley Brown (Chair, Psychology Ethics Board, shelly.brown@carleton.ca, 613-520-2600, ext. 1505. For other concerns, please contact Dr. Anne Bowker (Chair, Department of Psychology, psychchair@carleton.ca, 613-520-2600, ext. 8218).

**Purpose.** The purpose of this study is to examine religious beliefs about morality and behaviors associated with these attitudes.

**Task Requirements.** During this study you will answer a variety of questionnaires about your religious beliefs and attitudes. Your responses will be completely anonymous. You will be able to skip any questions you feel uncomfortable answering without being penalized. In this study, we are interested in looking at people's perceptions of morality. The entire study is completed online (IP addresses will not be recorded). You will be asked to first complete some identification questions and then read a brief news article concerning recent report published on religious beliefs and morality. You will then be asked to complete a series of questionnaires asking you about your opinions and reactions

to that report and provide some basic demographic information about yourself.

**Benefits/compensation.** We are offering eligible participants who complete the study US \$0.75 for participating.

**Potential Risk/Discomfort.** There are no physical risks to participating in this study. That said, some individuals might feel discomfort or distress when asked to read about morality and attitudes. Should you feel any discomfort or distress, you may choose not to answer specific questions without being penalized in any way. The debriefing form at the end of the study provides contact information for local services that you may contact if you should require further support.

**Anonymity/Confidentiality.** We collect data through the software Qualtrics, which uses servers with multiple layers of security to protect the privacy of the data (e.g., encrypted websites and pass-word protected storage). Please note that Qualtrics is hosted by a server located in the USA. The United States Patriot Act permits U.S. law enforcement officials, for the purpose of an anti-terrorism investigation, to seek a court order that allows access to the personal records of any person without that person's knowledge. In view of this we cannot absolutely guarantee the full confidentiality and anonymity of your data. With your consent to participate in this study you acknowledge this.

**Right to withdraw.** Your participation in this study is entirely voluntary. You may skip any question that makes you feel uncomfortable and/or don't want to answer for any reason by clicking the next button at the bottom of their screen. You may withdraw after giving your consent by repeatedly pressing the next button until you reach the end of the study and you will still receive the full compensation for participating. If you withdraw, you have the right to request that your data be deleted. If you decide to drop out we ask that you read the Debriefing form at the end to retrieve your Completion Code. Thank you!

This study has received clearance by the Carleton University Psychology Research Ethics Board (#14-084).

I have read the above form and understand the conditions of my participation.



My participation in this study is voluntary, and I understand that if at any time I wish to leave the experiment, I may do so without having to give an explanation and with no penalty whatsoever. Furthermore, I am also aware that the data gathered in this study are confidential and anonymous with respect to my personal identity. Selecting the consent option indicates that I agree to participate in this study.

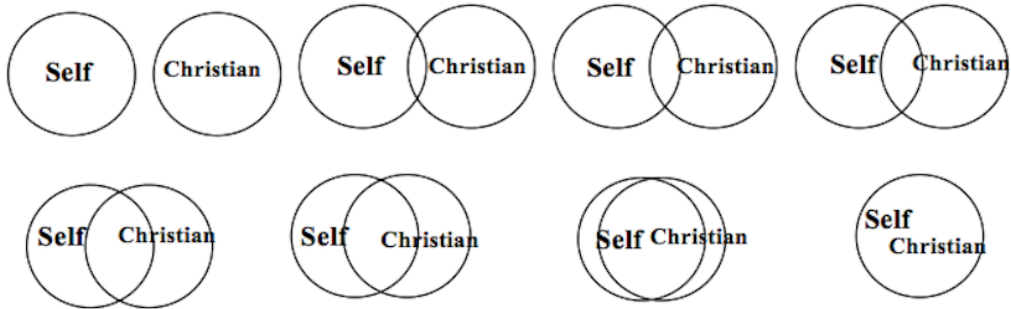
----- Consent

----- Withdraw

## Appendix M

**Inclusion of Other in Self (Inclusion of in-group in self)** (adapted from Aron, Aron, & Smollan, 1992)

Please circle the picture that best describes how much you identify with Christianity:



## Appendix N

### **Intrinsic and Extrinsic Religious Orientation** (Gorsuch & McPherson, 1989)

Please indicate the extent to which you agree or disagree with the following statements:

5-point scale (1 = strongly disagree – 5 = strongly agree).

1. I enjoy reading about Christianity.
2. I go to church because it helps me to make friends.
3. It doesn't much matter what I believe so long as I am good. (reverse coded)
4. It is important to me to spend time in private thought and prayer.
5. I have often had a strong sense of God's presence.
6. I pray mainly to gain relief and protection.
7. I try hard to live all my life according to my religious beliefs.
8. What religion offers me most is comfort in times of trouble and sorrow.
9. Prayer is for peace and happiness.
10. Although I am religious, I don't let it affect my daily life. (reverse coded)
11. I go to church mostly to spend time with my friends.
12. My whole approach to life is based on my religion.
13. I go to church mainly because I enjoy seeing people I know there.
14. Although I believe in my religion, many other things are more important in life.  
(reverse coded)

Intrinsic items: 1,3,4,5,7,10,12,14

Extrinsic items: 2,6,8,9,11,13

## Appendix O

### **Morality Manipulation/News Briefs**

*Research Shows that Christians and Atheists Share Similar [Have Different] Morals Do people need religion to be moral?*

According to a report by the Pew Research Center released on Thursday, the answer is yes [no]! Christians and atheists responded to an array of moral situations in a very similar [different] fashion. The report was based on telephone interviews conducted with 41,024 Christians from all 50 U.S. states and the District of Columbia.

The Pew report was released to coincide with the publication of a series of comprehensive studies by Edward Jones and his colleagues at Harvard University on the morality of Christians and atheists. Jones has been studying trends and changes in moral behavioral patterns of people and groups for over 20 years.

Their findings show that when atheists were faced with moral dilemmas, they responded the same as [differently from] Christians who were faced with identical dilemmas. Additionally, Atheists and Christians provided very similar [different] kinds of explanations for their moral decisions. This research suggests that there are fundamental similarities [differences] in the moral decision making of atheists and Christians.

According to Professor Jones, "there is a pervasive belief that religion is necessary to be moral. However, our results show that this view of morality is [isn't] justified." In other words, the recent findings of both Professor Jones and the Pew Research Center are in support of [counter to] the age-old argument that religion provides a moral base for appropriate behaviour.

Dr. Jones' research appears in the April edition of *American Psychologist* a leading journal in the field of psychology.

SECTIONS HOME SEARCH The New York Times 562 COMMENTS

U.S.

## Research Shows that Christians and Atheists Have Similar Morals

By JAMES MOORE MAR 21, 2014

Do people need religion to be moral?

Results published in a recent Pew Report suggest that believers think the answer is yes. Those are the findings in a report released Thursday by the Pew Research Center, which sought to gauge Christians' opinions about morality and religion. The report was based on telephone interviews conducted with 41,024 Christians from all 50 U.S. states and the District of Columbia.

"There is a pervasive belief that religion is necessary to be moral. That is, religion provides people with a moral compass," reads the report.

Interestingly, the Pew report was released the same week that Professor Edward Jones of Harvard University published the results of a series of comprehensive studies on the morality of atheists and Christians in the top journal *American Psychologist*.

Jones and his colleagues from the prestigious university have been studying trends and changes in moral behavioral patterns of people and groups for over 20 years.

According to Jones, there is a great deal of consistency in atheists and Christians morals and values.

"Our results show that Christians' perceptions about the morality of atheists aren't justified," says Jones. These findings put a crack in the age-old argument that religion provides a moral base for appropriate behavior.



The Pew Research Center is a nonpartisan American think tank based in Washington, D.C., that provides information on social issues, public opinion, and demographic trends shaping the United States and the world.

RELATED COVERAGE  
Views on Morality  
MAR 2, 2014

SECTIONS HOME SEARCH The New York Times 562 COMMENTS

U.S.

## Research Shows that Christians and Atheists Have Dissimilar Morals

By JAMES MOORE MAR 21, 2014

Do people need religion to be moral?

Results published in a recent Pew Report suggest that believers think the answer is yes. Those are the findings in a report released Thursday by the Pew Research Center, which sought to gauge Christians' opinions about morality and religion. The report was based on telephone interviews conducted with 41,024 Christians from all 50 U.S. states and the District of Columbia.

"There is a pervasive belief that religion is necessary to be moral. That is, religion provides people with a moral compass," reads the report.

Interestingly, the Pew report was released the same week that Professor Edward Jones of Harvard University published the results of a series of comprehensive studies on the morality of atheists and Christians in the top journal *American Psychologist*.

Jones and his colleagues from the prestigious university have been studying trends and changes in moral behavioral patterns of people and groups for over 20 years.

According to Jones, there is a great deal of inconsistency in atheists and Christians morals and values.

"Our results show that Christians' perceptions about the morality of atheists are justified," says Jones. These findings provide support for the age-old argument that religion provides a moral base for appropriate behavior.



The Pew Research Center is a nonpartisan American think tank based in Washington, D.C., that provides information on social issues, public opinion, and demographic trends shaping the United States and the world.

RELATED COVERAGE  
Views on Morality  
MAR 2, 2014

## **Appendix P**

### **Morality Similarity Manipulation Check**

According to this article:

- A) Atheists are morally similar to Christians.
- B) Atheists are morally different from Christians.
- C) This article was not about the morality of Christians or atheists

## Appendix Q

### **Collective Angst (adapted from Wohl and Branscombe, 2009)**

7-point scale (1 = strongly disagree; 2 = disagree; 3 = somewhat disagree; 4 = neither agree nor disagree; 5 = somewhat agree; 6 = agree; 7 = strongly agree)

1. I feel anxious about the future of my religious group in America.
2. I feel confident that my religious group in America will survive. (reverse coded)
3. I feel secure about the future of my religious group in America. (reverse coded)
4. I feel worried that my religious group will not always thrive in America.
5. I feel concerned that the future existence of my religious group's culture in America is in jeopardy.

## Appendix R

**Derogating the Out-Group** (adapted from Wohl, Branscombe, & Reysen, 2010)

7-point scale (1 = strongly disagree; 2 = disagree; 3 = somewhat disagree; 4 = neither agree nor disagree; 5 = somewhat agree; 6 = agree; 7 = strongly agree). Based on Sociocultural Dimensions (Derogate atheists as being part of society).

1. I would not send my child to a secular (non-religious) school
2. I would not allow my children to be taught secular (non-religious) values/culture
3. I would support (e.g., donate to) secular (non-religious) organizations (e.g., Amnesty International) (reverse coded)
4. I would help promote and maintain a secular (non-religious) way of life (reverse coded)
5. Mixing of the Christian lifestyle with an atheist lifestyle is a not a positive change for Christian people.
6. I would never marry someone who is an atheist.
7. I don't like atheists.



## Appendix S

**Demographics Instructions:** Please fill in the information below, so that we may obtain some general information on the people participating in this study (This information will not be associated with your name in any way).

1. Gender: Male ( ) Female ( )
2. Age ----.
3. What is the name of the state in which you live? -----.
4. Ethnicity:
  - ----Caucasian/White
  - ----African-American
  - ----Indigenous or Aboriginal
  - ----Asian
  - ----Middle Eastern
  - ----Hispanic
  - ----Latino
  - ----Other
  - ----Prefer not to say
5. Religion:
  - ----None—Atheist (e.g., non-belief in God)
  - ----None—Agnostic (e.g., belief that the existence of God cannot be known)
  - ----Protestant (e.g., United, Anglican, Baptist, Presbyterian, Lutheran, Pentecostal, Mennonite)

- \_\_\_\_Catholic (e.g., Roman Catholic, Ukrainian Catholic)
- \_\_\_\_Muslim
- \_\_\_\_Jewish
- \_\_\_\_Buddhist
- \_\_\_\_Hindu
- \_\_\_\_Sikh
- \_\_\_\_Baha'i
- \_\_\_\_Other (Please specify):\_\_\_\_\_

6. Please rate how conservative or liberal you are on the following scale:

1. \_\_\_\_ (very liberal)
2. \_\_\_\_ (liberal)
3. \_\_\_\_ (somewhat liberal)
4. \_\_\_\_ (moderate)
5. \_\_\_\_ (somewhat conservative)
6. \_\_\_\_ (conservative)
7. \_\_\_\_ (very conservative)

## Appendix T

### Debriefing Form

Thank you for your participation in this study! This is a debriefing form, which will clarify the purpose of our study and why we are interested in this issue.

#### **What are we trying to learn in this research and how was this study designed?**

The purpose of this study was to investigate the attitudes and beliefs of Christians about atheists. Specifically, we are interested in how Christians feel about atheists who are morally similar (or dissimilar) to Christians. More specifically, we were interested in how you view the norms, identity, and behaviours of these atheists. In this study, you were randomly assigned to read one of two fabricated news articles comparing atheist and Christians' morals. These news articles were either framed as atheists having similar moral foundations as Christians, or different moral foundations from Christians.

Please be aware that all of these news articles and research were mostly fictional and the researchers that were cited and interviewed do not exist. The only element that was true in the news article was the segment from the Pew Research Center, which found that the majority of people interviewed agreed that belief in God is necessary to being religious. These news articles were created solely for the purpose of investigating the effects of believing that atheist are morally similar or dissimilar to Christians on Christians' outlook on their religious groups future. It would have been impossible for the researchers to investigate these effects if participants had known that the scenarios were fictitious. It was also necessary not to fully disclose the nature of our study because knowing it would have affected participants' responses.

Your responses in our study make a valuable contribution to research that demonstrates how people's attitudes towards atheists influences how atheists are treated in society. This research may contribute to the development of interventions to help to those who have experienced discrimination, and your contribution is truly appreciated

#### **Why is this important to scientists or the general public?**

Research suggests that in the North America, atheists are more despised than any

other minority. In particular, people greatly distrust atheists. Thus far, the underlying psychological mechanisms for this hatred and distrust have yet to be examined.

Determining why atheists are particularly despised can help to understand and address hostility between different groups in society.

### **What are our hypotheses and predictions?**

We predict that atheists may act as a specific type of threat to Christians. Specifically, we hypothesize that atheists, as compared to Muslims, will be seen as anti-Christian and anti-American, which may result in increased dislike and distrust toward atheists. We expect that people of particular religious orientations will have a greater highest tendency to view atheists in opposition to Christianity.

### **Where can I learn more?**

Wikipedia article on discrimination against atheists:

[http://en.wikipedia.org/wiki/Discrimination\\_against\\_atheists](http://en.wikipedia.org/wiki/Discrimination_against_atheists)

2012 Report on discrimination against atheists, humanists, and the non-religious:

[http://www.americanhumanist.org/system/storage/63/14/a/3436/2012\\_IRF\\_Report.pdf](http://www.americanhumanist.org/system/storage/63/14/a/3436/2012_IRF_Report.pdf)

### **Is there anything I can do if I found this experiment to be emotionally upsetting?**

Yes. If you feel any emotional distress or anxiety after participating in this study, please feel free to contact one of the helplines nearest to your location. A list of helplines by town and state can be found at:

<http://www.befrienders.org/helplines/helplines.asp?c2=USA>

### **What if I have questions later?**

If you have any remaining concerns, questions, or comments about the experiment, please feel free to contact Kendra McLaughlin (kendra.mclaughlin@carleton.ca), Dr. Darcy Dupuis (darcy.dupuis@carleton.ca), Travis Sztainert (travis.sztainert@carleton.ca), or Dr. Michael Wohl (Faculty Sponsor, email: michael\_wohl@carleton.ca, phone number: 613-520-2600, ext. 2908). Should you have any ethical concerns about this research, please contact Dr. Shelley Brown (Chair, Psychology Ethics Board, shelley.brown@carleton.ca, 613-520-2600, ext. 1505).

For other concerns, please contact Dr. Anne Bowker (Chair, Department of Psychology, [psychchair@carleton.ca](mailto:psychchair@carleton.ca), 613-520-2600, ext. 8218).

**Thank you for participating in this research!**

## Appendix U

### **Informed Consent to the Use of Data**

The purpose of an informed consent is to ensure that you now understand the true purpose of the study and that you agree to allow your data to be used for research and teaching purposes. Because you were only told of the procedures and not the purpose of this study at the outset, we are now asking for your consent to allow your data to be used for research and teaching purposes.

**Purpose.** The purpose of this study is to assess attitudes and beliefs about morality and atheists, as well as behaviours that result from certain attitudes about atheists.

**Anonymity/Confidentiality.** The data collected in this study are kept anonymous and confidential.

**Right to Withdraw Data.** You have the right to indicate that you do not wish your data to be used in this study. If you indicate this is your choice, then all measures you have provided will be destroyed.

**Signatures:** I have read the above description of the study investigating reactions to morally similar atheists or morally different atheists. The data in the study will be used in research publications or for teaching purposes. By consenting, I agree to allow the data I have provided to be used for these purposes.

I CONSENT

I DO NOT CONSENT