

Prejudice toward Atheists:  
Perceived Values Threat and Lack of Belief in a Moralizing God

by

Allison Varley

A Thesis Presented in Partial Fulfillment  
of the Requirements for the Degree  
Master of Arts

Approved December 2012 by the  
Graduate Supervisory Committee:

Craig Nagoshi, Chair  
Adam Cohen  
Steven Neuberg

ARIZONA STATE UNIVERSITY

May 2013

## ABSTRACT

National surveys indicate that Americans hold greater prejudice toward atheists than many other historically stigmatized groups. The religious prosociality perspective posits that people will demonstrate prejudice toward anyone who does not believe in a monitoring and punishing god, including atheists, because of the perception that those who lack belief in a monitoring and punishing god cannot be trusted to act in a prosocial manner. The sociofunctional perspective posits that people will demonstrate distinct forms of prejudice toward individuals who present certain types of threats to the group, and previous research suggests that atheists are perceived as posing a threat to group values. In the current study, participants rated targets whose values largely matched their own values more favorably than targets whose values did not largely match their own values. Also, participants rated both targets who believed in a monitoring and punishing god and targets who believed in a god who does not monitor nor punish more favorably than atheist targets. These judgments spanned a variety of measures, including emotional reactions to the target, judgments of target traits, and preferred social distance from the target. Results were consistent with the sociofunctional perspective but did not support the religious prosociality perspective.

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Americans hold extreme prejudice toward some groups, including Blacks, Hispanics, gay men, Muslims, fundamentalist Christians, immigrants, and criminals. However, recent work suggests that Americans may hold the greatest prejudice toward atheists. People have more negative feelings toward atheists than gay men and people perceive atheists as less trustworthy than rapists (Gervais, Shariff, & Norenzayan, 2011). In a nationally representative survey conducted by Edgell, Gerteis, and Hartmann (2006), almost 50% of respondents agreed that they would disapprove of their child wanting to marry an atheist compared to about 27% disapproving of an African American, 19% disapproving of a Hispanic, and 7% disapproving of a Conservative Christian. This same survey found Americans to be more accepting of both homosexual people and recent immigrants than atheists (Edgell et al., 2006). Atheists are also rated less favorably than Muslims. A national survey found that 54% of respondents rated Muslim-Americans favorably, which is considerably greater than the 34% who rated atheists favorably (Pew Research Center, 2002). Finally, my own work suggests that people would like to maintain the greatest amount of social distance from atheists as compared to Jews, Christians, Muslims, theists, and fundamentalist Christians (Varley, Filip-Crawford, & Nagoshi, 2012).

Given this anti-atheist sentiment, it seems reasonable that many people would choose to forgo self-identifying as “atheist.” Less than half of those who claim to not believe in God choose to label themselves as “atheist” (Zuckerman, 2007). However, non-belief in God ranks as the fourth most commonly held belief system in the world; estimates for those who do not believe in God (defined as

self-identified atheists, agnostics, and nonbelievers in a “personal god”) range from 505 million people to 749 million people world-wide, placing nonbelievers behind followers of Hinduism (900 million), Islam (1.2 billion), and Christianity (2 billion) (Zuckerman, 2007).

However, the prevalence of nonbelievers varies widely by country. Figures range from 65% of respondents in Japan reporting that they do not believe in God to 44% in France, 22% in Canada, six percent in the United States, and less than one percent in Afghanistan and Kenya (Norris & Inglehart, 2004; Inglehart, Basanez, Diez-Medrano, Halman, & Luijkx, 2004). Interestingly, unlike many other stigmatized groups, prejudice toward atheists decreases as their perceived prevalence increases (Gervais, 2011). Given that, in the United States, atheists represent a small percentage of the population and they are a relatively unrecognized, socially and politically weak group (Martin, 2002), what is the impetus behind anti-atheist prejudice? I will examine anti-atheist prejudice from two perspectives, each making unique predictions concerning the nature of this prejudice: the religious prosociality perspective (e.g., Atran & Norenzayan, 2004; Norenzayan & Shariff, 2008) and the sociofunctional perspective (e.g., Neuberg, Smith, & Asher, 2000; Cottrell & Neuberg, 2005).

#### RELIGIOUS PROSOCIALITY PERSPECTIVE

The relationship between religious beliefs and social behavior has long been a topic of scholarly inquisition. Given that religion is seen as directly related to moral behavior, many scientists have begun to tease apart the relationship between people’s religious beliefs and their prosocial behaviors. The “religious

prosociality” approach argues that religion is an avenue that guides individuals to act in ways that benefit others, even at a personal cost (Norenzayan & Shariff, 2008). However, religious prosociality may develop from two distinct but related origins: religious affiliation or beliefs about supernatural agents (Preston, Ritter, & Hernandez, 2010).

### **Prosociality and Religious Affiliation**

Why should one’s religious affiliation lead to prosocial behavior? From an evolutionary perspective, we understand that individuals may act altruistically toward kin, since this enhances one’s inclusive fitness (Hamilton, 1964). However, given that larger groups outcompete smaller ones, groups that developed cooperative relationships between non-kin could outcompete those that did not (Atran & Norenzayan, 2004). Indirect reciprocity, where one utilizes a heuristic that says, “Cooperate with individuals who have a reputation for cooperating,” may have been naturally selected for since this allows reciprocal relationships to extend beyond kin. However, to function effectively, indirect reciprocity requires the existence of a reliable cue for inferring others’ cooperative reputations; one’s religious affiliation could serve as this cue (Atran & Norenzayan, 2004).

Since religious practices are costly to perform, one group member could judge whether an unfamiliar group member sacrificed for the group based on the unfamiliar group member’s religious affiliation (Atran & Norenzayan, 2004). Basically, if an unfamiliar group member identified as the same religious affiliation as oneself, one could assume that this group member performed costly

sacrifices for your shared religious group and was therefore worthy of a cooperative, reciprocal relationship (Atran & Norenzayan, 2004). As Norenzayan and Shariff (2008) state:

Religious behaviors and rituals, if more costly to cooperating group members than to freeloaders, may have reliably signaled the presence of devotion and, therefore, cooperative intention toward ingroup members...Religious prosociality, thus, may have softened the limitations that kinship-based and (direct or indirect) reciprocity-based altruism place on group size. (p. 58)

Since sharing one's religious affiliation served as a reliable cue for establishing cooperative relationships, people came to act prosocially towards those who share their religious affiliation.

Similarly, religious affiliation may have served to extend our innate altruistic kin-directed tendencies toward non-kin by conceptualizing those who share our religious beliefs as an extended family (Batson, 1983). By conceptualizing religious groups as "brotherhoods," people could execute and benefit from activities that could not be performed alone, in pairs, or only with kin (Atran & Norenzayan, 2004). Thus, religious affiliation may have promoted prosocial behavior by serving as a reliable cue for indirect reciprocity and extending kin-like relationships beyond one's immediate family.

### **Prosociality and Beliefs about Supernatural Agents**

However, religious beliefs specifically concerning supernatural agents may also have facilitated prosocial behavior. Since indirect reciprocal

relationships function by cooperating with others who have a reputation for cooperating, groups should be especially concerned about members who have a reputation for acting selfishly (Norenzayan & Shariff, 2008). Once a selfish group member is detected, the group may exclude or punish him (Norenzayan & Shariff, 2008). Indeed, groups that punish free-riders (i.e., people who benefit from group efforts without contributing) stabilize cooperative behavior and outcompete groups that do not punish free-riders (Henrich, 2006). Thus, to avoid exclusion or punishment, humans should be especially concerned about being perceived as free-riders (Norenzayan & Shariff, 2008). Given that humans judge others by monitoring their behavior, humans should, and do, act more prosocially when they feel they are being watched (Norenzayan & Shariff, 2008; Haley & Fessler, 2005). However, it is difficult to directly monitor, and subsequently reward or punish, others' behaviors in large groups.

It is possible that to deal with the problem of humans' inability to monitor and punish others' behaviors, our ancestors may have outsourced this monitoring and punishing to supernatural agents (Gervais et al., 2011). If people believe that they are being watched and may be appropriately punished, whether by humans or supernatural agents, they should behave more prosocially. In fact, people increase their socially desirable responding when primed with thoughts of God and they cheat less when they view God as more punishing and less loving (Gervais & Norenzayan, 2012; Shariff & Norenzayan, 2011). Thus, given people's concern for maintaining a reputation as cooperators (and not free-loaders), belief in monitoring and punishing supernatural agents may have promoted prosocial

behavior by inducing individuals to feel that they are being watched and may be punished if they act selfishly.

### **God Images**

The religious prosociality literature more generally refers to monitoring and punishing supernatural agents as “moralizing gods” or “morally concerned gods.” A moralizing god is defined as a “High God” (i.e., “a spiritual being who is believed to have created all reality and/or to be its ultimate governor, even though his/her sole act was to create other spirits who, in turn, created or control the natural world” (p. 129)) who is present and active in human affairs and who is specifically supportive of human morality (Roes & Raymond, 2011). Thus, a moralizing god is distinct from both a High God who is present but not active in human affairs and a High God who is present and active in human affairs but who is not supportive of human morality (Roes & Raymond, 2011). Importantly, cultural belief in moralizing gods is positively related to group size; so, even though most world cultures do not endorse moralizing gods, the majority of the world’s religious adherents do believe in moralizing gods (Roes & Raymond, 2011). Also, although the concept of a “moralizing god” and a “monitoring and punishing god” seem somewhat distinct, the world’s most widespread religions often describe supernatural agents as able to monitor, reward, and punish human behavior (Atran & Norenzayan, 2004).

The concept of a monitoring and punishing god appears to fit well with Froese and Bader’s (2007) model of god images. Froese and Bader (2007) measure an individual’s god image as two dimensions: God’s level of engagement

in the world and God's level of judgment. Beliefs about God's level of engagement are measured with items like, "God is removed from worldly affairs" and "God is concerned with the well-being of the world" while beliefs about God's level of judgment are measured with items like, "God is angered by human sins" and description of God as "wrathful" (Froese & Bader, 2007, p. 468). So it seems likely that a person who believes in a monitoring and punishing god would score highly on both God engagement (believing in an Active God) and God judgment (believing in an Authoritative God) (Froese & Bader, 2008). Typically, people tend to view God as highly engaged and moderately judgmental, and these dimensions are positively correlated with one another (Froese & Bader, 2007).

Importantly, Froese and Bader's (2007) god image model seems to better fit the concept of a monitoring and punishing god than other models. Researchers who examine god image as it relates to attachment style might distinguish people's god concepts as those of a Loving God (e.g. forgiving, caring, accepting), a Controlling God (e.g. restricting, controlling), and a Distant God (e.g. unresponsive, unavailable, impersonal) (Kirkpatrick, 1998). Although believing in a Controlling God is likely positively related to believing that God punishes one's behavior and believing in a Distant God is likely negatively related to believing that God monitors one's behavior, both of these concepts focus on one's relationship with God as a personal caregiver figure, which seems theoretically distinct from beliefs about God's moral concern about human life in general. Other work that distinguishes between omnipotent, omnipresent, omniscient, and eternal God concepts (Trimeche, Vinsonneau, & Mullet, 2006)



also seems less applicable to the concept of a monitoring and punishing god than Froese and Bader's construction.

## SOCIOFUNCTIONAL PERSPECTIVE

The central tenet of the sociofunctional approach to prejudice is that, rather than conceptualizing prejudice as a general evaluation or attitude, prejudice should be conceptualized as qualitatively distinct emotions which stem from perceptions of specific tangible threats (Cottrell & Neuberg, 2005). Since interdependent group living is essential to human survival and reproduction, humans should be especially attuned to threats to effective group living, such as resource threats (e.g., threats to territory, economic resources, and physical security) or operational integrity threats (e.g., threats to reciprocity, communication, and common values) (Cottrell & Neuberg, 2005). Once a person recognizes a threat to himself or the in-group, he should experience an emotional reaction relevant to that threat and psychological or behavioral responses designed to minimize the threat (Cottrell & Neuberg, 2005).

For example, if an out-group, such as gay men, is perceived as posing a threat to the ingroup's physical health (i.e., the out-group spreads contagious disease), this should elicit an emotional reaction of disgust and a motivation to minimize contamination (Cottrell & Neuberg, 2005). However, if an out-group, such as Mexican-Americans, is perceived as a threat to the in-group's property, this should elicit an emotional reaction of anger and a motivation to secure the in-group's property (Cottrell & Neuberg, 2005). Thus, people should have distinct emotional, cognitive, and behavioral reactions toward groups such as thieves, cheaters, traitors, and the physically disabled since each of these groups poses a unique threat to the group (Neuberg et al., 2000).

## **Atheist Threat**

Little research has addressed either the threat that atheists are seen to pose or specific emotional reactions to atheists. However, Gervais et al. (2011) found strong evidence that atheists are seen as untrustworthy (i.e., a trust threat) while Edgell et al. (2006) postulate that atheists are perceived as a symbolic moral and cultural “other”, possibly representing a threat to the in-group’s values or a threat to social coordination. As Edgell et al. (2006) state:

To be an atheist...is not to be one more religious minority among many in a strongly pluralist society. Rather, Americans construct the atheist as the symbolic representation of one who rejects the basis for moral solidarity and cultural membership in American society altogether. (p. 230)

Ritter and Preston (2011) found that exposure to an atheist text (Richard Dawkins’ *The God Delusion*) elicited a disgust reaction from participants. Although Ritter and Preston (2011) explain this reaction in terms of a perceived spiritual purity violation, Cottrell and Neuberg (2005) hypothesize that a disgust reaction should be elicited by either a perceived threat to group health or group values. Findings from Varley et al. (2012) similarly demonstrate that the strongest emotional reaction to atheists is moral disgust (see Figure 1). As would be predicted by the sociofunctional perspective, Varley et al. also found that atheists were perceived as posing the greatest threat to values, and this perceived values threat was more pronounced than a perceived threat to trust (see Figure 2).

## **The Importance of Shared Values**

Why should the perception that atheists hold different values be especially threatening? The sociofunctional perspective more broadly categorizes people perceived to hold different values as counter-socializers (Neuberg et al., 2000). Efficiently navigating the world requires a vast amount of information that is not innate to humans; as such, people strongly invest in educating and socializing the youth (Neuberg et al., 2000). Individuals who appear to endorse values incompatible with those of others, especially core values, may be seen as interfering with necessary socialization processes and therefore threatening the effective functioning of the group (Neuberg et al., 2000).

Previous research suggests that perceived value similarity between groups is negatively related to intergroup antagonism (Schwartz, Struch, & Bilsky, 1990). Similarly, a positive relationship exists between perceived in-group/out-group value discrepancy and prejudice toward the out-group (Biernat, Vescio, & Theno, 1996). Interestingly, rather than perceiving that outgroups violate their values, ingroup members tend to perceive that outgroups share their values, but to a lesser degree (Biernat et al., 1996). As such, prejudice may be more strongly related to the perception that the outgroup is less supportive of the ingroup's values rather than the perception that the outgroup violates the ingroup's values (Biernat et al., 1996).

## **Religious Values**

The majority of work on the relationship between religion and values has utilized Schwartz's (1994) conception of values. First, Schwartz (1994) states:

A value is a (1) belief (2) pertaining to desirable end states or modes of conduct, that (3) transcends specific situations, (4) guides selection or evaluation of behavior, people, and events, and (5) is ordered by importance relative to other values to form a system of value priorities. (p. 20)

More specifically, Schwartz (1994) defines values as transsituational goals that motivate action and serve as standards for justifying and judging action. As such, values are distinguishable from needs, attitudes, and preferences.

Schwartz (1994) has defined ten motivational values, which relate to three universal human goals of providing for humans' biological needs, coordinating social interaction, and maintaining the survival and smooth functioning of groups. Schwartz's ten values are as follows: (1) power (i.e., social status and prestige), (2) achievement (i.e., personal success), (3) hedonism (i.e., sensuous gratification), (4) stimulation (i.e., excitement and novelty), (5) self-direction (i.e., independent thought and action), (6) universalism (i.e., protecting the welfare of all people and nature), (7) benevolence (i.e., enhancing the welfare of people with whom one is in frequent personal contact), (8) tradition (i.e., accepting the customs that culture and religion provide), (9) conformity (i.e., restraint of actions likely to harm others), and (10) security (i.e., safety and stability of society, relationships, and self).

According to Schwartz (1994), some values are complementary while others are incompatible (i.e., pursuing one value may conflict with the pursuit of another value). As such, the ten values are conceptualized as having a circular

structure with complementary values next to each other and incompatible values opposing each other (Schwartz, 1994). There are two basic conflicts represented in this circular structure: self-enhancement values (e.g., power and achievement) versus self-transcendence values (e.g., benevolence and universalism) and openness to change values (e.g., self-direction and stimulation) versus conservatism values (e.g., security, conformity, and tradition) (Roccas, 2005). The structural relationship of these values has been confirmed across many studies and has been validated in more than 50 countries (Roccas, 2005; Saroglou, Delpierre, & Dernelle, 2004). Finally, self-reported value priorities relate in a meaningful way to actual behaviors like political, environmental, consumer, prosocial, and antisocial behaviors (Saroglou et al., 2004).

Multiple cross-cultural studies have examined the relationship between religiosity and values. A meta-analysis from 21 independent samples in 15 different countries concluded that religiosity is positively related to placing high importance on tradition and conformity and placing low importance on hedonism, stimulation, and self-direction (Saroglou et al., 2004). This pattern of relationships holds across different countries, religions, and denominations (Saroglou et al., 2004). Religiosity was also positively related to security and benevolence, and negatively related to universalism, achievement, and power, but these relationships were weaker than those mentioned earlier (Saroglou et al., 2004). Despite the fact that, across religions, more religious people tend to value conservatism and to devalue openness to change, I have found no study using

Schwartz's model that reports differences in value hierarchies across religious groups. Roccas (2005) highlights:

The similarity in the pattern of correlations of values and religiosity across various denominations does not imply that different religious groups hold identical value hierarchies. These patterns of correlation reflect differences within each religious group, but they do not exclude the existence of value differences across religions. (p. 753)

Studies utilizing other conceptions of values have found that religious groups differ in their value hierarchies. Rokeach (1973) reports similarities and differences in value hierarchies across religious groups. Religious groups similarly rank family security, a world at peace, and freedom as the most important values and pleasure, social recognition, an exciting life, and a world of beauty as the least important values (Rokeach, 1973). In terms of differences, Rokeach (1973) compared American Jews, Christians, and nonbelievers. Jews valued family security, equality, pleasure, inner harmony, wisdom, and personal competence more highly than Christians while Christians emphasized values concerning cleanliness, obedience, politeness, salvation, and forgiveness more so than both Jews and nonbelievers (Rokeach, 1973). In terms of cross-cultural analyses, Inglehart and Baker (2000) conclude that value differences between religious groups are smaller within a nation than across nations; for example, a Muslim and a Jew will have more similar values within a nation than a Muslim and a Jew from two different nations.

Finally, I have not found any study examining the *perceived* values of religious groups, aside from a study by Roccas (2003) (as cited in Roccas, 2005), which examines the perceived values of one's religious ingroup. Since findings from Varley et al. (2012) suggest that atheists are seen as a values threat, it seemed necessary to run a pilot study establishing the perceived values of a target who believes in god and a target who does not believe in god, and to compare these perceived values to the participant's own self-reported values. In a between-subjects design with three levels, 200 participants from an undergraduate Social Psychology course at Arizona State University (mean age = 21.30 years, 125 females, 73 males, 1 "other" gender) were randomly assigned to rate either their own values, the perceived values of a target who believes in god, or the perceived values of a target who does not believe in god. The items used to assess values ratings were adapted from the European Social Survey (Bilsky, Janik, & Schwartz, 2011), a 21-item assessment of Schwartz's 10 motivation values.

Participants reported that an atheist target values self-transcendence values (universalism and benevolence) and conservation values (conformity, tradition, and security) less so than themselves. In terms of a values hierarchy, the atheist target was seen as most strongly valuing openness to change, followed by self-enhancement, self-transcendence, and finally conservation. Also, participants rated the target who believes in god as valuing conservation values (conformity and tradition) more so than themselves but universalism, achievement, and openness to change values (hedonism, stimulation, and self-direction) less so than themselves. Overall, atheists are seen as weakly valuing self-transcendence and



conservation, and people may feel threatened by this perceived values discrepancy. Finally, it is important to note that people may perceive belief in God as a value in itself, although I have not found any literature exploring this possibility.

## SIMILARITIES AND DIFFERENCES OF THE PERSPECTIVES

Although I will contrast the predictions made by these two perspectives, I do not conceptualize these perspectives as mutually exclusive. I believe that the god belief and values threat mechanisms may both influence prejudice toward atheists. Both perspectives share basic assumptions concerning the costs and benefits of large group living and both postulate that people should demonstrate prejudice toward individuals perceived to threaten the group. However, the perspectives differ in their focus on specific threats. The religious prosociality perspective focuses specifically on threats related to religious beliefs and practices (e.g., religious affiliation and god beliefs) while the sociofunctional perspective focuses on broad threats, including perceived values threat.

At this point, the perspectives become functionally intertwined again because one could argue that, if a target does not share one's religious affiliation or god beliefs, that this may result in a perceived values difference. As noted previously, it is possible that people perceive belief in God, or belief in a moralizing god, as a value in itself, such that lacking belief in God constitutes a values difference. So, perception of another's religious affiliation or god beliefs may be confounded with judgments of values difference or similarity. Although perceptions of target god beliefs are likely related to judgments of values similarity, I will independently manipulate these variables in order to examine their unique effects.

## CURRENT STUDY

The current study sought to explore prejudice toward atheists by contrasting the predictions derived from the religious prosociality perspective and the sociofunctional perspective. The religious prosociality perspective predicts that people should anticipate cooperative interactions with, and therefore desire to interact with, both others who share their religious affiliation and others who believe in a monitoring and punishing god (i.e., a moralizing god). Since the defining feature of atheists is a lack of belief in the existence of god, the religious prosociality perspective predicts that people should anticipate non-cooperative interactions with, and therefore desire to avoid interaction with, atheists because atheists do not believe in a moralizing god.

The sociofunctional perspective predicts that people should desire to avoid interaction with others perceived to pose a threat to the ingroup. To the extent that atheists are perceived as posing a threat to the group's values, people should desire to avoid interaction with atheists. To summarize, the religious prosociality perspective predicts that people desire to avoid interacting with atheists because atheists do not believe in a moralizing god whereas the sociofunctional perspective predicts that people desire to avoid interacting with atheists because they believe that atheists pose a threat to the group, and research suggests that atheists are seen as a greatest threat to group values.

In order to contrast these predictions, I directly compared the effects of target god beliefs and target value similarity on prejudice and discrimination toward the target. As such, my first independent variable was value similarity

between the participant and the target: the target was portrayed as either (1) sharing a large amount of the participant's values (i.e., a high values match) or (2) sharing a small amount of the participant's values (i.e., a low values match). My second independent variable was the target's beliefs about god: the target was portrayed as either (1) an atheist who does not believe in god, (2) believing in a god who monitor's and punishes one's behavior (i.e., a moralizing god) or, (3) believing in a god who does not monitor and does not punish one's behaviors (i.e., a non-moralizing god).

The religious prosociality perspective makes no explicit prediction about anticipated interactions with individuals who believe in a god who does not monitor nor punish. However, if the cue for a cooperative interaction with another is truly that the other believes in a monitoring and punishing god, then people should desire to avoid interacting with a believer in a non-monitoring, non-punishing god as much as an atheist.

The main dependent variables of interest were participant ratings of the extent to which they would prefer to interact with the target across a variety of activities. Participants were led to believe that a face-to-face interaction would occur between themselves and the target. Participants were asked to rate how much they would prefer to participate in a variety of activities with the target under the assumption that they would perform whichever activity they rated the most favorably. The activities to be rated included an activity that required cooperation between participant and target (i.e., cooperation activity), an activity that required trust (i.e., trust activity), an activity that required competition (i.e.,

competition activity), an activity that required conversation but without cooperation/trust/competition (i.e., conversation activity), and an activity that required the participant and target to meet but without further interaction (i.e., minimal interaction activity). Other dependent variables included ratings of target characteristics, emotional reactions toward the target, and preferred social distance from the target.

## **Hypotheses**

### 1. Religious Prosociality Perspective:

- a. Participants will prefer to perform the cooperation and trust activities with targets who believe in a monitoring and punishing god (i.e., a moralizing god) more so than targets who believe in a non-monitoring and non-punishing god (i.e., a non-moralizing god) and atheist targets (see Figure 3).
- b. Participants will prefer to avoid performing the cooperation and trust activities with both atheist targets and targets who believe in a non-moralizing god, and there will be no difference in the preference for these activities between atheist targets and targets who believe in a non-moralizing god (see Figure 3).
- c. Participants will demonstrate no preference to perform the competition activity, the conversation activity, or the minimal interaction activity as a function of target god belief (see Figure 4).
- d. The targets' values match with the participant will not have an effect on preference for activities. There will be no difference in preference for

activities between low values match targets and high values match targets (see Figure 3 and Figure 4).

## 2. Sociofunctional Perspective:

- a. Participants will prefer to perform cooperation and trust activities with high values match targets more so than low values match targets (see Figure 5).
- b. Participants will prefer to avoid performing the cooperation and trust activities with low values match targets (see Figure 5).
- c. Participants will demonstrate no preference to perform the competition activity, the conversation activity, or the minimal interaction activity as a function of target values match (see Figure 6).
- d. The targets' god beliefs will not have an effect on preference for activities. There will be no difference in preference for activities between atheist targets, targets who believe in a moralizing god, and targets who believe in a non-moralizing god (see Figure 5 and Figure 6).

## METHODS

### **Participants**

Three hundred and eighty-five participants from the introductory psychology subject pool at Arizona State University participated in this study for research credit. As the hypothesized processes were expected to apply only to people who believe in God, all participants were pre-screened as believing in God (as indicated by selecting “Yes, I believe in God.” as opposed to “No, I do not believe in God.” on a pre-screening questionnaire). Thirteen of these participants were removed because of technical issues during the study, three were removed because they failed to complete any of the 38 dependent variable items, six were removed because they completed the survey in less than 25 minutes (average time to complete the survey was 42 minutes), four were removed because they had been speaking English for less than 6 years, and five were removed who no longer appeared to believe in God (strongly disagreed that “God exists” and also strongly agreed with the item “I don’t believe in God”); therefore, analyses were conducted on 354 participants (144 men, 210 women, mean age = 19.1 years, *SD* age = 2.45).

Participants were primarily Caucasian (57.9%), with 14.4% identifying as Latino/a, 11.3% identifying as biracial/multiracial, 7.3% identifying as Asian, 3.7% identifying as Black, 2.0% as Native American, and 0.8% as Middle Eastern. Religious affiliation data were also collected from the pre-screening questionnaire. Of the original pool of 385 participants who participated in the study, 25.9% were Christian (non-Catholic), 25.9% were Catholic or Greek

Orthodox, 16.8% were “spiritual, but not religious”, 7.8% were agnostic, 3.4% were Mormon, 1.3% were Muslim, 6.2% “other”, and 1.0% or less each indicated the following religious affiliations: Buddhist, Jewish, Native American, Hindu, and atheist.

## **Design**

A 2 (target values match: high versus low) X 3 (target god belief: atheist versus believer in a non-moralizing god versus believer in a moralizing god) between-subjects design was used. Target gender was matched to participant gender, such that female participants rated only female targets and male participants rated only male targets. This procedure was adopted in order to avoid the possible confound of sexual attraction, which could possibly affect judgments in an opposite-sex target design. Participants responded to demographic questions, completed a series of inventories and individual difference measures, and rated the target on measures of activity preference, target characteristics, emotional reactions, and preferred social distance.

## **Procedure**

The researcher informed the participant that this was a study designed to investigate people’s reactions to online profiles, specifically when given limited information in the profiles. The participant was told that she was *the activity selector* in this experiment. As the activity selector, it was her job to look at another’s profile and decide which type of activity she would engage in with the person in the profile (i.e., the target). The participant was told that she would rate how much she would prefer to interact with the target across a variety of



activities, after which the participant and the target would meet and perform the highest rated activity. The participant was led to believe that the person whose profile she would view was in the same building as her but on another floor of the building in order to protect the other's anonymity.

While the participant was seated in front of a computer, the researcher explained that before the participant could view the target's profile, the participant had to fill out her own profile information on the computer. The participant was told that the target would not see her profile or personal information, but that it was necessary for her to fill out this information because the computer would be calculating how well the participant and the target matched on a certain set of dimensions. The researcher told the participant that this match information would be visible in the profiles. Furthermore, the participant was told that she would only be viewing a same-sex target and that there would be no identifying information in the target's profile.

Although participants completed this survey in the research lab, the study was conducted using the online survey software Qualtrics. The participant first filled out demographic information and then began to take a series of "inventories". The participant filled out these inventories believing that she would be matched to the target on these dimensions. A "religious beliefs" inventory and a "values" inventory were included as these relate to the independent variables of interest. For further description of the inventories, please see the Materials section.

Once the participant finished filling out these inventories, information on the computer screen stated that the computer system was randomly selecting four topics from the inventories she just filled out. The next screen showed that the computer system randomly selected the four topics of “life goals, religious beliefs, activity preferences, and values.” The participant was told that these four pieces of information would be displayed on the profile she would view. The participant was told that some of this profile information would be displayed as a match percentage, as in “The two of you are an *X% favorite foods* match.” while other information would be displayed as a description, as in “This person enjoys Italian food and Japanese food.”

The computer screen then stated that the target profile was being generated for the participant to view. The target’s profile information then appeared on the screen, with each piece of profile information presented individually. The first screen appeared and indicated the target’s gender, then the next screen indicated the target’s age, etc. This ensured that the participant was fully aware of all profile information and did not overlook certain information. Next, the entire profile appeared on the screen, and the participant rated the target on a multitude of items. Once the participant finished recording her reactions, the researcher began the debriefing procedure.

## **Materials**

**Profiles.** For an example profile, see Appendix B. All profiles included information on the following four dimensions: values, activity preferences, religious beliefs, and life goals. Target age, gender, and a brief “about me” section

were also displayed. Religious beliefs and activity preferences were presented as descriptive information (e.g., “This person believes...”) while life goals and values were presented as match information (e.g., “The two of you are an X% match). The participant believed that this information was gathered from the inventories the target supposedly filled out and synthesized by the computer system.

The information about religious beliefs represented the manipulation of the target god belief independent variable. The atheist targets were described as, “She/He does not believe in God. She/He is an atheist,” the moralizing god targets were described as, “She/He believes in God. She/he believes that God monitors one’s behaviors. She/he believes that God punishes one’s bad behaviors,” and the non-moralizing god targets were described as, “She/He believes in God. She/he does not believe that god monitors one’s behaviors. She/he does not believe that God punishes one’s bad behaviors.”

The information about target values represented the manipulation of the target values match independent variable. The low values match targets were described as matching the participant’s values 21% while the high values match targets were described as matching the participant’s values 91%. Using percentages rather than simply classifying the target as a “low, moderate, or high” match was intended to give the illusion of variability and to obscure the true intent of the study.

The rest of the information in the profile was filler information intended to distract the participant from the variables of interest and provide an illusion of

complexity and reality. The targets' ages were 19 years old, which is close to the mean age of the sample. The gender of the target was always matched to participant gender. The "about me" section and the "favorite activities" sections both gave brief, generic information about the target. Finally, each target was presented as a moderate match (60%) on the dimension of life goals.

**Inventories.** First, it is important to note that each inventory was labeled for the participant with the hope that this labeling would enhance clarity when looking at the target profile. For example, the values inventory was clearly labeled "Values" so that when the participant saw that she and the target were an X% values match, she knew which questions this match information was supposedly based on. The "religious beliefs" inventory (7 original items, 14 Intrinsic/Extrinsic Religious Orientation items, and 12 Religious Fundamentalism items) included items assessing the participant's beliefs about god's existence, whether god monitors one's behaviors, punishes one's bad behaviors, and rewards one's good behaviors. Also included in this "religious beliefs" inventory were the Religious Fundamentalism Scale - Revised (Altemeyer & Hunsberger, 2004) and the Intrinsic/Extrinsic Religious Orientation Scale (Gorsuch & McPherson, 1989). The "values" inventory was the European Social Survey (Bilsky, Janik, & Schwartz, 2011), a 21-item assessment of Schwartz's 10 motivation values.

Other inventories included a 13-item "favorite activities" inventory (i.e., leisure activities), an 11-item political beliefs inventory, a 15-item "media preferences" inventory (e.g., favorite types of music, movies, and books), and a 17-item "life goals" inventory (e.g., academic goals, career goals, family goals).

The participants also completed individual difference measures framed as “personality” inventories, “thinking style” inventories, or “beliefs about society” inventories. The shortest versions of these inventories and individual difference measures were used whenever possible as to not overwhelm the participant.

**Dependent variables.** See Appendix C for dependent variable items.

While looking at each profile, participants assessed how much they would prefer to perform a variety of activities with the target, the characteristics they believed the target possesses, emotional reactions to the target, and the degree of social distance they would prefer to maintain from the target. As previously stated, five activities were rated: a cooperation activity, a trust activity, a competition activity, a conversation activity, and a minimal interaction activity. After rating each of these activities on a Likert scale, the participant was asked to rank order them.

Next, participants rated the target on the following 12 characteristics: trustworthiness, kindness, competence, warmth, cooperativeness, whether the target can distinguish right from wrong, generosity, morality, honesty, being accepting (as opposed to being judgmental), friendliness, and similarity to the participant. Then, the participant indicated emotional reactions to the target with one general warmth/coldness item and 16 specific emotional reactions (angry, mad, sad, depressed, frightened, afraid, morally disgusted, morally sick, happy, joyful, feeling pity, feeling “sorry for them”, feeling sympathy, compassionate, entertained, and amused). Importantly, the participant was asked to rate how much *a person like them* would feel each emotion in response to the target, rather than to report their personal emotional reactions to the target. Given the limited

information the participant had about the target, we thought that participants would find it awkward to rate anger, sadness, etc. in response to an individual they had never interacted with. Finally, preferred social distance was assessed with two items; one item assessed whether the participant would prefer to avoid social activities with the target and the other item assessed whether the participant would prefer to avoid living with the target as a roommate. This resulted in the participant rating the target with a total of 38 items.

**Individual Difference measures.** Several individual difference factors were also measured. Individual differences in religious attitudes were assessed using the Religious Fundamentalism Scale - Revised (Altemeyer & Hunsberger, 2004) (Cronbach's alpha = .94) and the Intrinsic/Extrinsic Religious Orientation Scale (Gorsuch & McPherson, 1989) (intrinsic religiosity Cronbach's alpha = .84; extrinsic religiosity Cronbach's alpha = .77). The Religious Fundamentalism Scale assesses the belief that there is one religious truth, that evil forces oppose this truth, and that those who believe this truth have a special relationship with God (Altemeyer & Hunsberger, 1992). The Intrinsic/Extrinsic Religious Orientation Scale measures one's intrinsic religiosity (i.e., using religion as an end in itself) and extrinsic religiosity (i.e., using religion as a means to nonreligious ends, such as social affiliation) (Allport, 1966).

Participants were also measured on Right Wing Authoritarianism (Altemeyer, 1981) (Cronbach's alpha = .90), which assesses one's beliefs that authority should be obeyed, tradition should be followed, and unconventional individuals should be punished. This measure allowed me to explore whether

negativity toward targets stemmed from general negative attitudes toward unconventional individuals.

**Demographics questions.** Demographic items included questions about age, gender, race, socioeconomic status, sexual orientation, years speaking English (for non-native English speakers), and generational status in the United States.

## RESULTS

Eleven of the twelve trait items were combined into 3 trait composites: perceived target warmth, morality, and prosociality. The warmth composite (Cronbach's alpha = .81) contained the warmth, friendliness, kindness, and being accepting items. The morality composite ( $r = .49, p < .001$ ) contained the morality and "can distinguish right from wrong" items. The prosociality composite (Cronbach's alpha = .83) contained the generosity, honesty, trustworthiness, and cooperativeness items. The trait items indicating perceived target similarity to the participant and perceived target competence did not fit well on any of these composites and therefore remained individual items.

The 16 specific emotional reaction items represented 8 emotion constructs, each with two items. The two items for each of the 8 constructs were positively, significantly correlated with each other ( $r$  ranging from .31 to .76,  $p < .001$ ). Therefore, the two items representing each construct were averaged together into the following eight emotional reaction composites: anger, fear, sadness, pity, moral disgust, happiness, amusement, and compassion. The two social distance items were also significantly, positively correlated ( $r = .59, p < .001$ ), so these were averaged together into a composite representing social distance.

A 2 (values match: high, low) X 3 (target god belief: atheist, non-moralizing god, moralizing god) X 2 (participant gender: male, female) between-subjects analysis of variance (ANOVA) was conducted for each of the dependent variables (preference for five activities, three target characteristics, nine emotional reactions, and preferred social distance). Tables 1 through 18 give the means and



standard deviations for each condition. Tables 19 through 22 present correlations between the dependent measures. Participant gender was included as a predictor variable in order to test for possible gender differences in preference for activities. For example, there may be a main effect of participant gender such that men prefer the competition activity more so than women.

I performed ANOVA planned comparisons to examine the *a priori* hypotheses. I examined the complex contrast comparing the atheist and non-moralizing god conditions pooled together to the moralizing god condition (contrast coefficients: atheist = -1, non-moralizing god = -1, moralizing god = 2) and also performed a simple contrast comparing the atheist condition to the non-moralizing god condition (contrast coefficients: atheist = 1, non-moralizing god = -1, moralizing god = 0). If the religious prosociality perspective were supported, I would expect a significant effect of the complex contrast (atheist/non-moralizing god vs. moralizing god) and a non-significant effect of the simple contrast (atheist vs. non-moralizing god), specifically for the cooperation and trust activities. This pattern would suggest that the atheist and non-moralizing god targets are seen as significantly different from the moralizing god target, but not seen as significantly different from each other.

### **Planned Comparisons Results**

**Activity preferences dependent measures.** The five activity dependent measures were largely uncorrelated with each other (see Table 19), so ANOVAs were run on each of the five activities separately. However, the cooperation activity and competition activity were highly, positively correlated. Both of these

activities were framed as “games”, suggesting that participants who were inclined to prefer one type of game were also inclined to prefer the other type of game. Still, I did not average these two activities together because examining the effects of the independent variables on participants’ preferences to play a game did not seem relevant to the theories being examined.

For all five of the activity dependent measures, the complex contrast comparing the pooled atheist and non-moralizing god conditions to the moralizing god condition was not significant and there were no significant interactions with the complex contrast. For all five of the activity dependent measures, the simple contrast comparing the atheist and non-moralizing god conditions was not significant and there were no significant interactions with the simple contrast, except for a significant interaction between the simple contrast and values match for the competition activity,  $F(1, 341) = 5.31, p = .022$ .

As stated previously, the religious prosociality perspective would predict significant effects of the complex contrast and non-significant effects of the simple contrast. As such, I will report significant effects of both the complex contrast and the simple contrast, but I will not elaborate upon, discuss, or interpret these contrast effects unless they fit the pattern predicted by the religious prosociality perspective. Instead, results of omnibus tests will be reported later and this will allow for further discussion and interpretation of the effects of the target god belief variable. Also, significant effects of both the values match and gender variables will be discussed later in the “omnibus test results” section.

**Perceived target traits dependent measures.** For all three of the perceived target traits (warmth, morality, and prosociality), the contrast effects pattern predicted by the religious prosociality perspective was not supported. However, there were significant main effects of both the complex contrast (such that the atheist/non-moralizing god targets were rated lower on these traits than the moralizing god targets) [warmth:  $F(1, 341) = 4.06, p = .045$ ; morality:  $F(1, 337) = 27.65, p < .001$ ; prosociality:  $F(1, 337) = 9.61, p = .002$ ] and the simple contrast (such that atheist targets were rated lower than non-moralizing god targets) [warmth:  $F(1, 341) = 12.51, p < .001$ ; morality:  $F(1, 337) = 16.21, p < .001$ ; prosociality:  $F(1, 337) = 8.17, p = .005$ ]. Also, for both perceived target warmth and prosociality, there was a significant interaction between the simple contrast and gender [warmth:  $F(1, 341) = 6.94, p = .009$ ; prosociality:  $F(1, 337) = 8.28, p = .004$ ]. For perceived target warmth, morality, and prosociality, there were no other significant interactions with either the complex contrast or the simple contrast.

**Emotional reactions dependent measures.** The five negative emotional reactions (anger, fear, sadness, pity, and moral disgust) were all strongly, positively correlated with each other; similarly, most of the positive emotional reactions (happiness, amusement, compassion, general warmth) were strongly, positively correlated (see Table 20). However, the authors chose to not average the emotion measures into either a negative emotion or a positive emotion composite. The sociofunctional approach takes a functionally specific view of emotions; different events evoke different emotions and these distinct emotions

relate to specific cognitive, physiological, and behavioral tendencies (Cottrell & Neuberg, 2005). As such, it seemed beneficial to leave each emotional reaction as a unique dependent measure, rather than averaging them together.

For all nine of the emotional reactions to the target (anger, fear, sadness, pity, moral disgust, general warmth, happiness, amusement, and compassion), the contrast effects pattern predicted by the religious prosociality perspective was not supported. For the five negative emotional reactions (anger, fear, sadness, pity, and moral disgust) there were no main effects of the complex contrast or significant interactions with the complex contrast. However, for all five of these negative emotional reactions, there was a significant main effect of the simple contrast [anger:  $F(1, 338) = 14.21, p < .001$ ; fear:  $F(1, 337) = 5.71, p = .017$ ; sadness:  $F(1, 338) = 10.99, p = .001$ ; pity:  $F(1, 338) = 5.78, p = .017$ ; moral disgust:  $F(1, 337) = 19.18, p < .001$ ], i.e. greater negative emotional reactions were elicited by the atheist compared to the non-moralizing god target. There was also a significant interaction between the simple contrast and values match for anger,  $F(1, 338) = 5.49, p = .020$ , fear,  $F(1, 337) = 8.05, p = .005$ , and sadness  $F(1, 338) = 9.99, p = .002$ . For the five negative emotional reactions, there were no other significant interactions with either the complex or simple contrast.

For the emotional reaction of general warmth to the target, there was a significant main effect of the complex contrast (such that the atheist/non-moralizing god targets elicited less warmth than the moralizing god targets),  $F(1, 337) = 5.78, p = .017$ , and the simple contrast (such that the atheist targets elicited less warmth than the non-moralizing god targets),  $F(1, 337) = 10.42, p = .001$ , but

no significant interactions with either the complex or simple contrast. For the emotional reaction of happiness, there was a significant main effect of the simple contrast (such that the atheist targets elicited less happiness than the non-moralizing god targets),  $F(1, 338) = 8.89, p = .003$ , but no main effect of the complex contrast and no significant interactions with either the simple or complex contrast. For both amusement and compassion, there were no significant main effects of the complex or simple contrast or significant interactions with either of these contrasts.

**Social distance dependent measure.** For the measure of preferred social distance from the target, the contrast effects pattern predicted by the religious prosociality perspective was not supported. However, there was a significant main effect of the simple contrast (such that participants wanted to be farther from atheist targets than non-moralizing god targets),  $F(1, 338) = 14.02, p < .001$ , but no main effect of the complex contrast and no significant interactions with either the simple or complex contrast.

### **Omnibus Test Results**

After running the ANOVAs with contrast codes to examine the a priori hypotheses, I ran the same 2 (values match: high, low) X 3 (target god belief: atheist, non-moralizing god, moralizing god) X 2 (participant gender: male, female) between-subjects ANOVAs as omnibus tests to more thoroughly examine the effects of target god belief.

**Activity preferences dependent measures.** With regard to the cooperation activity, there was a significant main effect of gender, such that men

rated the activity as more preferable than women,  $F(1, 341) = 4.20, p = .041, \eta_p^2 = .012$ . For the cooperation activity, there were no other significant main effects or interactions. With regard to the competition activity, there was also a significant main effect of gender, such that men rated the activity as more preferable than women,  $F(1, 341) = 27.92, p < .001, \eta_p^2 = .076$ . For the competition activity, there were no other significant main effects or interactions.

With regard to the conversation activity, there was a significant main effect of values match, such that participants rated the activity as more preferable with the high values match targets than the low values match targets,  $F(1, 342) = 8.78, p = .003, \eta_p^2 = .025$ . For the conversation activity, there were no other significant main effects or interactions. Finally, with regard to both the trust activity and the minimal interaction activity, there were no significant main effects or interactions.

**Perceived target traits dependent measures.** With regard to perceived target warmth, there was a significant interaction between target god belief and participant gender,  $F(2, 341) = 3.47, p = .032, \eta_p^2 = .020$  (see Figure 7). The target god belief main effect was also significant,  $F(2, 341) = 8.30, p < .001, \eta_p^2 = .046$ , as was the participant gender main effect,  $F(1, 341) = 8.49, p = .004, \eta_p^2 = .024$ . However, because the interaction was significant, I did not interpret these main effects. Rather, I examined the differences among the target god belief conditions separately by males and females. The female simple effect test indicated statistically significant differences among the means  $F(2, 207) = 11.80, p < .001$ , whereas the male simple effect test was non-significant,  $F(2, 140) =$

1.11,  $p = .331$ . Within the female participants, Tukey post hoc tests indicated that atheist targets were perceived as significantly less warm than both the believers in a non-moral god ( $p < .001$ ) and the believers in a moral god ( $p = .001$ ). Within the female participants, ratings of target warmth did not significantly differ between the non-moral god targets and the moral god targets.

With regard to perceived warmth, there was also a significant main effect of values match, such that participants judged high values match targets as more warm than the low values match targets,  $F(1, 341) = 25.40, p < .001, \eta_p^2 = .069$ . There were no other significant main effects or interactions for perceived target warmth.

With regard to perceived target prosociality, there was a significant interaction between target god belief and participant gender,  $F(2, 337) = 4.14, p = .017, \eta_p^2 = .02$  (see Figure 8). The target god belief main effect was also significant,  $F(2, 337) = 8.91, p < .001, \eta_p^2 = .050$ , as was the participant gender main effect,  $F(1, 337) = 5.80, p = .017, \eta_p^2 = .017$ . However, because the interaction was significant, I did not interpret these main effects. Rather, I examined the differences among the target god belief conditions separately by males and females. The female simple effect test indicated statistically significant differences among the means  $F(2, 205) = 12.86, p < .001$ , whereas the male simple effect test was non-significant,  $F(2, 138) = 2.09, p = .128$ . Within the female participants, Tukey post hoc tests indicated that atheist targets were perceived as significantly less prosocial than both the believers in a non-moral god ( $p < .001$ ) and the believers in a moral god ( $p < .001$ ). Within the female

participants, ratings of target prosociality did not significantly differ between the non-moral god targets and the moral god targets.

With regard to perceived prosociality, there was also a significant main effect of values match, such that participants judged high values match targets as more reciprocal than the low values match targets,  $F(1, 337) = 17.06, p < .001, \eta_p^2 = .048$ . There were no other significant main effects or interactions for perceived target warmth.

With regard to perceived morality, there was a significant main effect of values match, such that participants judged the high values match targets as more moral than the low values match targets,  $F(1, 337) = 11.80, p = .001, \eta_p^2 = .034$ . There was also a significant main effect of target god belief, such that participants judged the believers in a moral god as the most moral, followed by the believers in a non-moral god and the atheist,  $F(2, 337) = 22.01, p < .001, \eta_p^2 = .116$ . Tukey post hoc tests indicated that participants judged the atheists to be less moral than both the believers in a non-moral God ( $p < .001$ ) and the believers in a moral God ( $p < .001$ ). Participants also judged believers in a moral god to be significantly more moral than believers in a non-moral god ( $p = .016$ ). Finally, there were no other significant main effects or interactions.

**Emotional reactions dependent measures.** The emotional reactions of anger, sadness, and fear showed similar patterns, such that there were significant interactions between target god belief and values match [anger:  $F(2, 338) = 3.36, p = .036, \eta_p^2 = .019$ ; sadness:  $F(2, 338) = 6.78, p = .001, \eta_p^2 = .039$ ; fear:  $F(2, 337) = 4.23, p = .015, \eta_p^2 = .024$ ] (see Figures 9, 10, 11). For all three emotional



reactions, there were also significant main effects of target god belief [anger:  $F(2, 338) = 7.29, p = .001, \eta_p^2 = .041$ ; sadness:  $F(2, 338) = 6.50, p = .002, \eta_p^2 = .037$ ; fear:  $F(2, 337) = 3.56, p = .030, \eta_p^2 = .021$ ], as well as significant main effects of values match [anger:  $F(1, 338) = 5.19, p = .023, \eta_p^2 = .015$ ; sadness:  $F(1, 338) = 4.78, p = .029, \eta_p^2 = .014$ ; fear:  $F(1, 337) = 5.17, p = .024, \eta_p^2 = .015$ ]. However, because the interactions were significant, I did not interpret these main effects.

Rather, I examined the differences among the target god belief conditions separately by high values match and low values match. The low values match simple effect tests indicated statistically significant differences among the means [anger:  $F(2, 172) = 7.69, p = .001$ ; sadness:  $F(2, 172) = 10.60, p < .001$ ; fear:  $F(2, 171) = 6.39, p = .002$ ] where as the high values match simple effect tests were non-significant [anger:  $F(2, 172) = 1.48, p = .230$ ; sadness:  $F(2, 172) = 0.07, p = .933$ ; fear:  $F(2, 172) = 0.27, p = .766$ ]. Within the low values match participants, Tukey post hoc tests indicated that participants reported significantly more anger, sadness, and fear in response to the atheist targets than both the believers in a non-moral god (anger:  $p < .001$ ; sadness:  $p < .001$ ; fear:  $p = .003$ ) and the believers in a moral god (anger:  $p = .087$ ; sadness:  $p < .001$ ; fear:  $p = .019$ ), although this comparison of the atheist targets to the believers in a moral god reached only marginal significance. Within the low values match participants, ratings of anger, sadness, and fear did not significantly differ between the non-moral god targets and the moral god targets. For anger, sadness, and fear, there were no other significant main effects or interactions.

For the emotional reaction of pity, there was a significant main effect of target god belief, such that participants indicated that the atheist targets elicited the most pity, followed by the believers in a moral god and the believers in a non-moral god,  $F(2, 338) = 3.62, p = .028, \eta_p^2 = .021$ . Tukey post hoc tests indicated that participants reported greater pity in response to the atheists than in response to both the believers in a non-moral God ( $p = .035$ ) and the believers in a moral God ( $p = .069$ ), although this last effect is only marginally significant. Furthermore, participants did not significantly differ in their ratings of pity in response to the believers in a non-moral God and the believers in a moral God. With regard to pity, there was also a marginally significant main effect of participant gender, such that men reported greater pity than women,  $F(1, 338) = 3.79, p = .053, \eta_p^2 = .011$ . There were no other significant main effects or interactions.

For the emotional reaction of moral disgust, there was a significant main effect of target god belief, such that participants indicated that the atheist targets elicited the most moral disgust, followed by the believers in a moral god and the believers in a non-moral god,  $F(2, 337) = 10.57, p < .001, \eta_p^2 = .059$ . Tukey post hoc tests indicated that participants reported greater moral disgust in response to the atheists than in response to both the believers in a non-moral God ( $p < .001$ ) and the believers in a moral God ( $p = .001$ ). Furthermore, participants did not significantly differ in their ratings of moral disgust in response to the believers in a non-moral God and the believers in a moral God. There was also a significant main effect of values match, such that participants indicated greater moral disgust

in response to the low values match targets than the high values match targets,  $F(1, 337) = 4.54, p = .034, \eta_p^2 = .013$ . There were no other significant main effects or interactions.

The emotional reactions of happiness and general warmth showed similar patterns; there were significant main effects of target god belief, such that participants indicated that the believers in a moral god elicited the most happiness and general warmth, followed by the believers in a non-moral god and the atheists, [happiness:  $F(2, 338) = 6.34, p = .002, \eta_p^2 = .036$ ; general warmth:  $F(2, 337) = 8.12, p < .001, \eta_p^2 = .046$ ]. Tukey post hoc tests indicated that participants reported less happiness and general warmth in response to the atheists than in response to both the believers in a non-moral God (happiness:  $p = .004$ ; general warmth:  $p = .001$ ) and the believers in a moral God (happiness:  $p = .002$ ; general warmth:  $p < .001$ ). Furthermore, participants did not significantly differ in their ratings of happiness and general warmth in response to the believers in a non-moral God and the believers in a moral God.

There were also significant main effects of values match with regard to happiness, general warmth, and amusement, such that participants indicated greater happiness, general warmth, and amusement in response to the high values match targets than the low values match targets, [happiness:  $F(1, 338) = 10.91, p = .001, \eta_p^2 = .031$ ; general warmth:  $F(1, 337) = 17.75, p < .001, \eta_p^2 = .050$ ; amusement:  $F(1, 338) = 11.38, p = .001, \eta_p^2 = .033$ ]. With regard to both happiness and compassion, there were main effects of participant gender, such that women reported greater happiness and compassion than men [happiness:  $F(1,$

338) = 17.02,  $p < .001$ ,  $\eta_p^2 = .048$ ; compassion:  $F(1, 337) = 7.60$ ,  $p = .006$ ,  $\eta_p^2 = .022$ ]. There were no other significant main effects or interactions.

**Social distance dependent measure.** With regard to social distance, there was a significant main effect of values match, such that participants indicated a desire to be closer to the high values match targets than the low values match targets,  $F(1, 338) = 20.00$ ,  $p < .001$ ,  $\eta_p^2 = .056$ . There was also a significant main effect of target god belief, such that participants indicated a desire to be closest to the believers in a non-moral God, followed by the believers in a moral god and the atheists,  $F(2, 338) = 7.05$ ,  $p = .001$ ,  $\eta_p^2 = .040$ . Tukey post hoc tests indicated that participants desired to be farther from the atheists than both the believers in a non-moral God ( $p < .001$ ) and the believers in a moral God ( $p = .063$ ), although this last effect is only marginally significant. Furthermore, participants did not significantly differ in their desire for distance from the believers in a non-moral God and the believers in a moral God. Finally, there were no other significant main effects or interactions.

### **Exploratory Analyses**

Exploratory analyses were conducted with the individual difference measures of Religious Fundamentalism, Intrinsic Religiosity, Extrinsic Religiosity, and Right Wing Authoritarianism. I performed a series of three-factor analyses of covariance (ANCOVA) to assess the influence of target god belief, values match, and participant gender on each of the dependent variables, while controlling for each individual difference. Across all of the dependent variables, and when covarying out each of these four individual differences, the effects of

the independent variables on the dependent variables did not dramatically change. Some effects that were previously significant at  $p < .05$  became only marginally significant at  $p < .10$ , and some effects that were previously marginally significant became significant at  $p < .05$ , but the overall pattern of mean differences did not change as a result of covarying out any of these four individual differences.

I also explored the effects of two other individual differences: belief in a moralizing god and the attitude that believing in God is a value. The attitude that believing in God is a value was assessed with a single item ( $M = 4.11$ ,  $SD = 1.85$ ). Participants were asked to indicate the degree to which a series of statements represented values; one item stated, “It is important to believe in God” and participants indicated on a six-point Likert scale the degree to which this statement represented a value. Belief in a moralizing god is a composite of three items (Cronbach’s alpha = .80,  $M = 0.50$ ,  $SD = 1.69$ ) measuring the participant’s beliefs that god monitors one’s behaviors, rewards one’s good behaviors, and punishes one’s bad behaviors. As with the previously mentioned individual differences, I performed a series of three-factor ANCOVAs to assess the influence of target god belief, values match, and target gender on each of the dependent variables while controlling for each individual difference. Across all of the dependent variables, and when covarying out each of these two individual differences, the effects of the independent variables on the dependent variables did not dramatically change.

## DISCUSSION

From the religious prosociality perspective, people were hypothesized to demonstrate prejudice toward any target who did not believe in a moralizing god. In contrast, from the sociofunctional perspective, people were hypothesized to demonstrate prejudice toward any target who did not share their values. Overall, the findings demonstrated support for the sociofunctional perspective and lack of support for the religious prosociality perspective.

With regard to the sociofunctional perspective, I found an effect of values match in the expected direction (more positivity toward high values match targets) across a variety of dependent measures (conversation activity, perceived target warmth/morality/prosociality, negative emotions, positive emotions, and social distance). Furthermore, the sociofunctional perspective predicts that a perceived threat to group values should result in a primary emotional reaction of disgust, with possible secondary emotional reactions of anger and fear (Cottrell & Neuberg, 2005). In support of this, the results indicated a significant main effect of values match for moral disgust, anger, fear, and also sadness, such that participants rated the low values match targets as eliciting these emotions more so than the high values match targets.

With regard to the religious prosociality perspective, I found an effect of target god belief across a variety of dependent measures (perceived target morality, negative emotions, positive emotions, and social distance), but this effect was not in the expected direction. The religious prosociality perspective explicitly predicts that people should demonstrate greater positivity toward

believers in a moralizing god than atheists, and I did find this pattern across many dependent measures. However, the religious prosociality perspective further predicts that people should demonstrate greatest positivity toward believers in a moralizing god, as opposed to both believers in a non-moralizing god and atheists, and that people should demonstrate equivalent negativity toward believers in a non-moralizing god and atheists. This pattern was not found for any of the dependent measures. The pattern found in the current study indicated that participants experienced greatest negativity toward atheists, as opposed to both believers in a moralizing god and believers in a non-moralizing god. Also, results indicated equivalent positivity toward believers in a moralizing god and believers in a non-moralizing god (although differences between believers in a moralizing god and believers in a non-moralizing god reached significance in some instances).

For some dependent measures, I found significant interactions between the independent variables. For example, target god belief interacted with values match for certain negative emotional reactions (anger, sadness, and fear). These interactions indicated that participants reacted more negatively toward the low values match atheist than the other five targets. This suggests that, with regard to certain negative emotions, as long as the target shares a perceiver's values, the target should be perceived positively regardless of their god beliefs. Furthermore, not sharing a perceiver's values only counts against a target if the target also does not believe in god.

Finally, target god belief interacted with participant gender with regard to judgments of target warmth and prosociality. Although participant gender was the variable included in all analyses, participant gender was matched to target gender. As such, these interactions suggest that, with regard to judgments of target characteristics, target god belief may produce varying judgments depending on the perceiver's and/or target's gender. Specifically, men and women appear to judge atheists equivalently negatively. However, women judge female believers in god (both moralizing god and non-moralizing god) more positively than female atheists, while men's judgments of male believers in god do not significantly differ from their judgments of male atheists.

I could not find any pattern of data to suggest why participant gender may interact with target god belief. In the current study, men and women participants' religious beliefs and attitudes (religious fundamentalism, intrinsic religiosity, extrinsic religiosity, belief in a moralizing god, attitude that belief in god is a value, god locus of control) did not significantly differ. So, perhaps target gender was driving the interaction between target god belief and gender for judgments of target warmth and prosociality. Previous research suggests that men are more likely to imagine god as controlling than women (Krejci, 1998). Perhaps men inferred that male targets saw god as controlling, and any target who believes in a controlling god would be judged as relatively low on warmth and prosociality. As such, the judgments of male targets who believed in god did not significantly differ from the judgments of atheist male targets, in terms of perceived warmth and prosociality.



Overall, the data suggest that both proposed mechanisms of prejudice toward atheists (values match and target god belief) do impact prejudice toward targets. Perceivers demonstrate increased negativity toward both targets who do not share their values and targets who do not believe in god. For the most part, these mechanisms function independently. However, they appear to interact with regard to specific negative emotional reactions, such that perceivers feel especially negatively toward atheists who do not share their values.

### **Alternative Explanations of Findings**

The fact that, in some instances, perceivers felt especially negative toward one of the targets (the low values match atheist) points to the possibility of a sufficiency effect. Previous research concerning judgments of target racial typicality has found that target skin color and target facial physiognomy (e.g., face shape) each serve independently as cues of racial typicality, although skin color appears to be a stronger cue (Stepanova & Strube, 2012). If “I believe in god” and “I share your values” each act as a sufficient cue of prosocial behavior, then the presence of only one cue should be enough to result in a positive evaluation of the target. This could explain the pattern that, for some of the negative emotion measures, participants felt relatively positively toward all targets who had at least one of these cues and relatively negatively toward the target who lacked both cues.

I investigated this possibility using contrast codes. I examined the complex contrast comparing the non-moralizing god and moralizing god conditions pooled together to the atheist condition (contrast coefficients: atheist =

2, non-moralizing god = -1, moralizing god = -1) and also performed a simple contrast comparing the non-moralizing god condition to the moralizing god condition (contrast coefficients: atheist = 0, non-moralizing god = -1, moralizing god = 1). If the sufficiency perspective were supported, I would expect a significant interaction between the complex contrast (non-moralizing god/moralizing god vs. atheist) and values match (such that the low values atheist is rated more negatively than all others) and a non-significant interaction of the simple contrast (non-moralizing god vs. moralizing god) and values match. This pattern would suggest that the low values atheist alone is viewed more negatively than all other targets.

I did find a pattern to support the sufficiency perspective for all five negative emotions (anger, fear, sadness, moral disgust, and pity), as well as the competition activity. This pattern suggests that, with regard to negative emotions, presentation of at least one of the two cues (either believing in god or sharing the participant's values) is enough to result in relatively positive evaluations of the target. However, we do not find this pattern for any of the other four activities, the three target traits, the four positive emotions, or social distance. So, overall, the low values atheist is not singled out. In general, participants view any target who shares a small amount of their values and any target who does not believe in god relatively negatively.

Another explanation of the current study's findings could be that perceived similarity to the target is mediating the effects of both target god beliefs and values match to the dependent measures. A plethora of previous research

concerning the role of similarity in interpersonal relationships has found a positive relationship between perceived similarity to a target and liking of the target (see Sunnafrank, 1983, for a review). It seems likely that participants would perceive themselves as more similar to the high values match targets as opposed to the low values match targets (since the “match” implies similarity), and that participants would see themselves as more similar to the targets who believe in god than the atheist targets (since all participants were pre-screened as believing in God).

In fact, I found this pattern of similarity ratings in the current study. I ran a 3 (target god belief) X 2 (values match) X 2 (participant gender) omnibus test ANOVA with similarity as the dependent variable. There was a significant effect of target god belief,  $F(2, 341) = 10.90, p < .001, \eta_p^2 = .060$ , and values match,  $F(1, 341) = 49.73, p < .001, \eta_p^2 = .127$ , but no other main effects or interactions. Tukey post hoc tests indicated that participants perceived themselves as less similar to atheists as compared to both the believers in a non-moral God ( $p < .001$ ) and the believers in a moral God ( $p < .001$ ), and believers in a non-moral god and believers in a moral god did not significantly differ from each other. Although I did not measure general liking as a dependent measure, I did have many measures that were positively and negatively valenced. Given that the high values match targets were generally rated more positively than the low values match targets, and that the targets who believe in god were rated more positively than the atheist targets, these relationships may be mediated by perceived similarity to the target.

Mediation was assessed using the Sobel test. Regression coefficients and standard errors were collected by conducting the following regression analyses: values match (coded as high values match = 1, low values match = -1) predicting similarity, values match and similarity predicting the dependent measure, target god belief (code 1: atheist = -2, non-moral god = 1, moral god = 1; code 2: atheist = 0, non-moral god = -1, moral god = 1) predicting similarity, and target god belief and similarity predicting the dependent measure. Perceived similarity to the target was found to mediate the relationships between values match and the dependent measures and also target god belief (code 1, but not code 2) and the dependent measures at  $p < .05$  for the following dependent measures: all three perceived target traits (warmth, morality, prosociality), all five negative emotions (sadness, anger, fear, moral disgust, pity), three of the four positive emotions (general warmth, happiness, amusement), and social distance. The regression analyses demonstrated positive relationships between values match and similarity (as values match increased, perceived similarity increased), as well as target god belief and similarity (targets who believed in god were perceived as more similar to the participant than atheist targets). The regression analyses also demonstrated positive relationships between similarity and the positively valenced dependent measures (perceived target traits, positive emotions, and social distance), while demonstrating negative relationships between similarity and the negatively valenced dependent measures (negative emotions).

## **Limitations of the Study**

Certain methods of the current study limit the interpretation and generalizability of the results. First, interpretation of the target god belief effects may be limited by the believability of the target who believes in a non-moralizing god. As previously discussed, the world's most widespread religions often describe supernatural agents as able to monitor, reward, and punish human behavior (Atran & Norenzayan, 2004). As such, it is possible that participants had never before encountered a target who believed in a god, but a god who did not monitor nor punish human behavior. Lack of familiarity with such a target may have resulted in participants not understanding or fully accepting the target's beliefs, leading the participant to judge the believer in a non-moralizing god similarly to the believer in a moralizing god.

Second, interpretation of gender effects is limited by the fact that participant gender was confounded with target gender. Although this allowed us to control for possible sexual attraction effects between participant and target, I am unable to determine whether the gender effects were a result of the participant's gender, the target's gender, or an interaction between the two.

Third, the failure to find effects for the activity preference dependent measures may be a result of the confounding between activity domain (e.g., trust, competition, cooperation) and activity type (e.g., playing a game, watching a movie, having a discussion), as indicated by the strong correlation between the two "game" activities. Also, the failure to find effects for these measures may indicate that participants did not feel personally invested in the activities. In the

real world, an interaction involving trust or cooperation requires a feeling of personal investment in the activity since the outcome has “real world” consequences. In the lab, asking participants to interact with a stranger for ten minutes with no possibility of reward or punishment may not have allowed for this feeling of personal investment in the cooperation or trust activities.

Fourth, as previously discussed, the wording of the emotional reaction items limits the interpretation of the emotion dependent measures results. Participants were asked to report the perceived emotional reactions of a person like them to the target, rather than their personal emotional reactions to the target. As such, it is possible that the participants themselves were not experiencing any strong emotional reactions to the targets, yet inferred that a person like them might experience certain emotional reactions.

Finally, this study was conducted with an American, undergraduate, majority White, majority Christian, theist, convenience sample. As such, I must avoid overgeneralizing the results of this study to atheists, the US population in general, or to other cultures.

### **Significance of the Findings**

The current findings lend further support to the sociofunctional perspective. Although the current study did not investigate perceived threat as a function of target values match to the participant, participants indicated greater negativity toward targets who shared a small amount of their values and reported the predicted emotional reactions to the low values match targets. The current findings also relate well to previous work establishing that atheists are perceived

as untrustworthy (Gervais, Shariff, & Norenzayan, 2011). The current study contained a single item assessing the perceived trustworthiness of the target (this item was averaged into the prosociality trait composite). I ran a 3 (target god belief) X 2 (values match) X 2 (participant gender) omnibus test ANOVA with trustworthiness as the dependent variable. There was a significant main effect of values match (such that high values match targets were perceived as more trustworthy),  $F(1, 336) = 13.11, p < .001, \eta_p^2 = .038$ , and a significant main effect of target god belief,  $F(2, 336) = 0.27, p < .001, \eta_p^2 = .052$ , but no other main effects or interactions. Tukey post hoc tests indicated that participants perceived atheists as less trustworthy than both believers in a non-moral god ( $p = .018$ ) and believers in a moral god ( $p < .001$ ), but participants did not significantly differ in their ratings of believers in a non-moral god and believers in a moral god.

The current findings raise important questions for the religious prosociality perspective. Previous research has established that people demonstrate greater prosocial behavior when they feel they are being watched and when they view god as more punishing (Haley & Fessler, 2005; Shariff & Norenzayan, 2011). In other words, individual's beliefs about monitoring and punishment do predict their prosocial behaviors. However, the current study demonstrated that knowledge of targets' beliefs about monitoring and punishing supernatural agents did not differentially predict target judgments, as long as the target believed in god. So, even though individual's beliefs about supernatural monitoring and punishment predict their prosocial behaviors, perhaps people do not perceive information about another's god beliefs as diagnostic of the other's

behavior. Overall, the current study suggests that people feel more positively toward targets who believe in god as opposed to atheists, but this preference for god believers appears unrelated to beliefs about supernatural monitoring and punishment.

The fact that participants felt more positively toward targets who shared a large amount of their values as opposed to targets who shared a small amount of their values is relevant to intergroup relations. Presumably, people tend to believe that they share more values with their ingroup members than with outgroup members. Previous research demonstrates that people experience psychological discomfort when ingroup members, but not outgroup members, violate their personal values (Glasford, Pratto, & Dovidio, 2008). As such, our results concerning target values match can be applied to many forms of prejudice, including religious prejudice, racial prejudice, and xenophobia. Target judgments related to perceived values match might also function on an individual level. So, we may feel negatively about another individual because we perceive that the individual does not share our values, ignoring the other's group membership. On the individual and group level, it may be possible to reduce negativity toward others by portraying the other as sharing our values. In other words, focusing on values similarity, rather than values differences, may increase liking.

Also, results indicate increased negativity toward atheist targets. In some instances, perceived values match modified this negativity, such that participants felt more positively toward atheists who shared a large amount of their values as opposed to atheists who shared a small amount of their values. So, atheists may be



able to increase people's positivity toward them by focusing on values similarity. However, in the real world, many theists would probably doubt an atheist who professed to share their values.

### **Future Directions**

To disentangle experimental effects of the independent variables from possible similarity effects, future studies could examine prejudice toward atheists within an atheist sample rather than a theist sample. The religious prosociality perspective predicts that people should anticipate cooperative interactions with believers in a moralizing god and non-cooperative interactions with atheists, since belief in a moralizing god acts as a cue of being a cooperative group member. This cue should function similarly, regardless of perceivers' god beliefs, so atheist perceivers should also desire to avoid interaction with atheist targets. If we were to find that atheists desired to avoid interaction with other atheists, this would lend support to the religious prosociality perspective while not lending support to the similarity perspective.

Also, future studies could investigate acceptance of a non-moralizing god image. If most Americans have only been exposed to concepts of a moralizing god, they may not be able to fully accept or comprehend a non-moralizing god. If this is the case, Americans may have only two cognitive classifications concerning people's god beliefs: either you believe in a god (and all gods are moralizing gods) or you do not believe in a god. If this were true, to accurately investigate reactions to targets who believe in a non-moralizing god, studies

would need to be conducted in cultures where the culture's adherents have been exposed to a non-moralizing god image.

Finally, when controlling for values match, participants still felt relatively negative toward the atheist targets. This suggests that lacking belief in god presents some threat or problem aside from a values threat. Perhaps disagreeing about certain ideas that people perceive to be self-evident truths will lead to negativity, regardless of values match. For example, if I proclaim that the sky is red and you believe that it is blue, you probably will not feel positively toward me, even if we both place importance on similar values, like putting others before oneself. If we disagree about the "obvious" state of the universe, we may not be able to trust each other's judgments in general. Future studies could explore the effects of this type of belief dissimilarity.

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Table 1

*Table of means for cooperation activity broken out by target god belief, values match, and participant gender*

	<b>Atheist</b>	<b>Non-moralizing God</b>	<b>Moralizing God</b>
	M (SD)	M (SD)	M (SD)
<b>Low Values</b>			
<b>Men</b>	5.42 (1.64)	5.35 (2.02)	5.65 (2.08)
<b>Women</b>	5.34 (1.76)	4.76 (1.86)	4.82 (2.20)
<b>High Values</b>			
<b>Men</b>	5.33 (2.01)	5.83 (1.93)	5.22 (1.93)
<b>Women</b>	5.22 (2.23)	4.81 (2.20)	5.15 (2.22)

Table 2

*Table of means for trust activity broken out by target god belief, values match, and participant gender*

	<b>Atheist</b>	<b>Non-moralizing God</b>	<b>Moralizing God</b>
	M (SD)	M (SD)	M (SD)
<b>Low Values</b>			
<b>Men</b>	4.04 (2.63)	3.81 (2.38)	3.87 (2.38)
<b>Women</b>	4.86 (2.22)	3.88 (2.33)	4.12 (2.57)
<b>High Values</b>			
<b>Men</b>	3.92 (2.52)	4.13 (2.52)	4.04 (2.29)
<b>Women</b>	3.41 (2.47)	4.28 (2.56)	3.59 (2.08)



Table 3

*Table of means for competition activity broken out by target god belief, values match, and participant gender*

	<b>Atheist</b>	<b>Non-moralizing God</b>	<b>Moralizing God</b>
	M (SD)	M (SD)	M (SD)
<b>Low Values</b>			
<b>Men</b>	6.13 (1.48)	5.00 (2.06)	5.52 (1.73)
<b>Women</b>	4.56 (2.40)	4.06 (1.94)	4.42 (2.35)
<b>High Values</b>			
<b>Men</b>	4.92 (2.36)	6.04 (1.68)	5.35 (2.01)
<b>Women</b>	4.27 (1.97)	4.00 (2.03)	4.61 (2.11)

Table 4

*Table of means for conversation activity broken out by target god belief, values match, and participant gender*

	<b>Atheist</b>	<b>Non-moralizing God</b>	<b>Moralizing God</b>
	M (SD)	M (SD)	M (SD)
<b>Low Values</b>			
<b>Men</b>	4.50 (2.17)	5.50 (1.92)	5.61 (1.53)
<b>Women</b>	5.44 (1.89)	5.44 (1.60)	5.67 (1.87)
<b>High Values</b>			
<b>Men</b>	6.04 (1.43)	5.88 (1.78)	5.70 (1.40)
<b>Women</b>	5.70 (1.47)	6.19 (1.53)	5.94 (1.77)

Table 5

*Table of means for minimal interaction activity broken out by target god belief, values match, and participant gender*

	<b>Atheist</b>	<b>Non-moralizing God</b>	<b>Moralizing God</b>
	M (SD)	M (SD)	M (SD)
<b>Low Values</b>			
<b>Men</b>	4.25 (2.25)	5.04 (2.55)	4.22 (2.45)
<b>Women</b>	4.53 (2.25)	4.68 (2.16)	4.42 (2.21)
<b>High Values</b>			
<b>Men</b>	4.96 (2.29)	4.00 (2.30)	4.48 (1.83)
<b>Women</b>	4.81 (1.87)	5.06 (2.25)	4.91 (2.43)

Table 6

*Table of means for perceived target warmth broken out by target god belief, values match, and participant gender*

	<b>Atheist</b>	<b>Non-moralizing God</b>	<b>Moralizing God</b>
	M (SD)	M (SD)	M (SD)
<b>Low Values</b>			
<b>Men</b>	5.88 (1.05)	5.98 (0.94)	6.25 (0.85)
<b>Women</b>	5.97 (1.26)	6.56 (0.94)	6.66 (0.87)
<b>High Values</b>			
<b>Men</b>	6.51 (0.82)	6.63 (0.82)	6.69 (0.72)
<b>Women</b>	6.36 (1.01)	7.28 (0.64)	6.85 (0.87)

Table 7

*Table of means for perceived target morality broken out by target god belief, values match, and participant gender*

	<b>Atheist</b>	<b>Non-moralizing God</b>	<b>Moralizing God</b>
	M (SD)	M (SD)	M (SD)
<b>Low Values</b>			
<b>Men</b>	5.46 (1.52)	6.08 (1.23)	6.59 (1.11)
<b>Women</b>	5.46 (1.76)	6.26 (1.45)	7.11 (1.11)
<b>High Values</b>			
<b>Men</b>	6.31 (0.96)	6.65 (0.91)	6.89 (0.84)
<b>Women</b>	5.93 (1.68)	6.93 (1.08)	7.17 (1.12)

Table 8

*Table of means for perceived target prosociality broken out by target god belief, values match, and participant gender*

	<b>Atheist</b>	<b>Non-moralizing God</b>	<b>Moralizing God</b>
	M (SD)	M (SD)	M (SD)
<b>Low Values</b>			
<b>Men</b>	5.80 (1.20)	5.71 (0.87)	6.23 (0.76)
<b>Women</b>	5.93 (1.17)	6.39 (0.86)	6.60 (0.78)
<b>High Values</b>			
<b>Men</b>	6.38 (0.95)	6.46 (0.61)	6.60 (0.77)
<b>Women</b>	6.03 (0.94)	6.93 (0.82)	6.70 (0.84)

Table 9

*Table of means for anger emotional reaction broken out by target god belief, values match, and participant gender*

	<b>Atheist</b>	<b>Non-moralizing God</b>	<b>Moralizing God</b>
	M (SD)	M (SD)	M (SD)
<b>Low Values</b>			
<b>Men</b>	3.17 (1.54)	2.10 (0.76)	2.43 (1.18)
<b>Women</b>	2.70 (1.55)	1.91 (0.99)	2.36 (1.27)
<b>High Values</b>			
<b>Men</b>	2.00 (1.04)	2.02 (0.87)	2.52 (1.02)
<b>Women</b>	2.39 (1.28)	1.93 (0.99)	2.10 (0.90)

Table 10

*Table of means for sadness emotional reaction broken out by target god belief, values match, and participant gender*

	<b>Atheist</b>	<b>Non-moralizing God</b>	<b>Moralizing God</b>
	M (SD)	M (SD)	M (SD)
<b>Low Values</b>			
<b>Men</b>	2.88 (1.21)	1.90 (0.85)	2.02 (0.92)
<b>Women</b>	2.46 (1.23)	1.76 (1.07)	1.73 (1.04)
<b>High Values</b>			
<b>Men</b>	1.73 (0.78)	1.91 (0.69)	2.15 (0.95)
<b>Women</b>	2.04 (1.15)	1.82 (0.75)	1.71 (0.70)



Table 11

*Table of means for fear emotional reaction broken out by target god belief, values match, and participant gender*

	<b>Atheist</b>	<b>Non-moralizing God</b>	<b>Moralizing God</b>
	M (SD)	M (SD)	M (SD)
<b>Low Values</b>			
<b>Men</b>	2.57 (1.11)	1.75 (0.60)	1.96 (0.82)
<b>Women</b>	2.20 (1.21)	1.72 (0.94)	1.76 (1.04)
<b>High Values</b>			
<b>Men</b>	1.60 (0.82)	1.93 (0.97)	1.96 (0.95)
<b>Women</b>	1.90 (0.92)	1.68 (0.86)	1.49 (0.74)

Table 12

*Table of means for pity emotional reaction broken out by target god belief, values match, and participant gender*

	<b>Atheist</b>	<b>Non-moralizing God</b>	<b>Moralizing God</b>
	M (SD)	M (SD)	M (SD)
<b>Low Values</b>			
<b>Men</b>	3.00 (1.35)	2.63 (1.31)	2.26 (1.04)
<b>Women</b>	2.86 (1.36)	1.88 (1.08)	2.23 (1.24)
<b>High Values</b>			
<b>Men</b>	2.65 (1.26)	2.41 (1.03)	2.57 (0.93)
<b>Women</b>	2.33 (1.51)	2.36 (1.13)	2.32 (1.04)

Table 13

*Table of means for moral disgust emotional reaction broken out by target god belief, values match, and participant gender*

	<b>Atheist</b>	<b>Non-moralizing God</b>	<b>Moralizing God</b>
	M (SD)	M (SD)	M (SD)
<b>Low Values</b>			
<b>Men</b>	3.00 (1.86)	1.96 (0.86)	2.07 (0.99)
<b>Women</b>	2.70 (1.50)	1.68 (1.15)	1.94 (1.51)
<b>High Values</b>			
<b>Men</b>	1.81 (0.94)	1.80 (0.88)	2.07 (1.09)
<b>Women</b>	2.51 (1.62)	1.72 (0.87)	1.71 (0.84)

Table 14

*Table of means for general warmth emotional reaction broken out by target god belief, values match, and participant gender*

	<b>Atheist</b>	<b>Non-moralizing God</b>	<b>Moralizing God</b>
	M (SD)	M (SD)	M (SD)
<b>Low Values</b>			
<b>Men</b>	5.88 (1.68)	6.38 (1.24)	6.70 (1.15)
<b>Women</b>	6.06 (1.49)	6.81 (1.03)	6.73 (1.28)
<b>High Values</b>			
<b>Men</b>	6.92 (0.78)	6.83 (0.98)	7.22 (0.74)
<b>Women</b>	6.49 (1.60)	7.33 (0.68)	7.03 (0.90)

Table 15

*Table of means for happiness emotional reaction broken out by target god belief, values match, and participant gender*

	<b>Atheist</b>	<b>Non-moralizing God</b>	<b>Moralizing God</b>
	M (SD)	M (SD)	M (SD)
<b>Low Values</b>			
<b>Men</b>	4.81 (1.39)	5.00 (1.50)	5.39 (1.03)
<b>Women</b>	5.17 (0.96)	5.76 (1.00)	5.80 (1.05)
<b>High Values</b>			
<b>Men</b>	5.35 (0.95)	5.67 (1.26)	5.41 (1.47)
<b>Women</b>	5.54 (1.02)	6.19 (1.06)	6.16 (0.71)

Table 16

*Table of means for amusement emotional reaction broken out by target god belief, values match, and participant gender*

	<b>Atheist</b>	<b>Non-moralizing God</b>	<b>Moralizing God</b>
	M (SD)	M (SD)	M (SD)
<b>Low Values</b>			
<b>Men</b>	5.10 (1.25)	4.87 (1.34)	5.46 (0.86)
<b>Women</b>	4.80 (1.16)	5.37 (1.10)	5.20 (1.28)
<b>High Values</b>			
<b>Men</b>	5.35 (1.10)	5.54 (1.23)	5.48 (0.95)
<b>Women</b>	5.41 (1.55)	5.65 (1.21)	5.97 (0.96)

Table 17

*Table of means for compassion emotional reaction broken out by target god belief, values match, and participant gender*

	<b>Atheist</b>	<b>Non-moralizing God</b>	<b>Moralizing God</b>
	M (SD)	M (SD)	M (SD)
<b>Low Values</b>			
<b>Men</b>	4.04 (1.64)	4.21 (1.45)	4.04 (1.59)
<b>Women</b>	4.17 (1.31)	4.50 (1.22)	4.21 (1.17)
<b>High Values</b>			
<b>Men</b>	3.88 (1.19)	3.80 (1.64)	4.37 (1.46)
<b>Women</b>	4.19 (1.28)	4.90 (1.75)	4.91 (1.19)

Table 18

*Table of means for social distance broken out by target god belief, values match, and participant gender*

	<b>Atheist</b>	<b>Non-moralizing God</b>	<b>Moralizing God</b>
	M (SD)	M (SD)	M (SD)
<b>Low Values</b>			
<b>Men</b>	4.46 (1.88)	4.79 (1.42)	4.76 (1.28)
<b>Women</b>	4.63 (1.59)	5.15 (1.20)	5.03 (1.19)
<b>High Values</b>			
<b>Men</b>	5.25 (1.25)	5.85 (1.11)	5.50 (1.38)
<b>Women</b>	4.79 (1.55)	6.15 (1.32)	5.43 (1.65)



Table 19

*Pearson Product Moment Correlation Matrix of the Activity Preference, Trait Composite, and Social Distance Dependent Measures*

Measure	1	2	3	4	5	6	7	8	9
1. Conversation	-----	.17**	.18**	.27**	-.01	.28**	.19**	.26**	.30**
2. Cooperation		-----	-.05	.23**	.50**	.15**	.01	.11*	.23**
3. Minimal			-----	.09	-.01	.10	.04	.11*	-.07
4. Trust				-----	.23**	.06	.01	.11*	.15**
5. Competition					-----	-.06	-.07	-.03	.08
6. Warmth						-----	.55**	.80**	.57**
7. Morality							-----	.60**	.42**
8. Reciprocity								-----	.55**
9. Social Distance									-----

*Note.* \* $p < .05$ , \*\* $p < .01$

Table 20

*Pearson Product Moment Correlation Matrix of the Emotional Reaction Dependent Measures*

Measure	1	2	3	4	5	6	7	8	9
1. Anger	-----	.52**	.69**	.52**	.65**	-.30**	-.15**	.05	-.38**
2. Fear		-----	.72**	.49**	.53**	-.22**	-.17**	.08	-.32**
3. Sadness			-----	.63**	.65**	-.24**	-.13*	.13*	-.36**
4. Pity				-----	.51**	-.21**	-.09	.19**	-.27**
5. Moral Disgust					-----	-.29**	-.20**	.02	-.42**
6. Happiness						-----	.57**	.48**	.49**
7. Amusement							-----	.32**	.38**
8. Compassion								-----	.16**
9. General Warmth									-----

Note. \*p < .05, \*\*p < .01

Table 21

*Pearson Product Moment Correlation Matrix of the Emotional Reaction Dependent Measures with the Activity Preference Dependent Measures*

Measure	Conversation	Cooperate	Minimal	Trust	Compete
Anger	-.24**	-.11*	-.06	-.10	.02
Fear	-.17**	-.07	-.10	-.03	.06
Sadness	-.19**	-.08	.01	.02	.03
Pity	-.10	-.05	-.02	.03	.10
Moral Disgust	-.27**	-.10	-.03	-.14**	-.02
Happiness	.23**	.17**	-.01	.10	.00
Amusement	.22**	.12*	.02	.12*	.04
Compassion	.08	.08	.00	.16**	.03
General Warmth	.36**	.16**	.07	.11*	.00

*Note.* \* $p < .05$ , \*\* $p < .01$

Table 22

*Pearson Product Moment Correlation Matrix of the Emotional Reaction Dependent Measures with the Trait Composite and Social Distance Dependent Measures*

Measure	Warmth	Morality	Reciprocity	Similar	Social Distance
Anger	-.39**	-.38**	-.37**	-.32**	-.38**
Fear	-.39**	-.28**	-.34**	-.19**	-.20**
Sadness	-.38**	-.38**	-.35**	-.25**	-.26**
Pity	-.28**	-.37**	-.30**	-.23**	-.23**
Moral Disgust	-.37**	-.47**	-.39**	-.40**	-.42**
Happiness	.50**	.39**	.47**	.41**	.49**
Amusement	.43**	.30**	.39**	.34**	.42**
Compassion	.16**	.13*	.17**	.10	.20**
General Warmth	.63**	.46**	.59**	.58**	.56**

Note. \*p < .05, \*\*p < .01

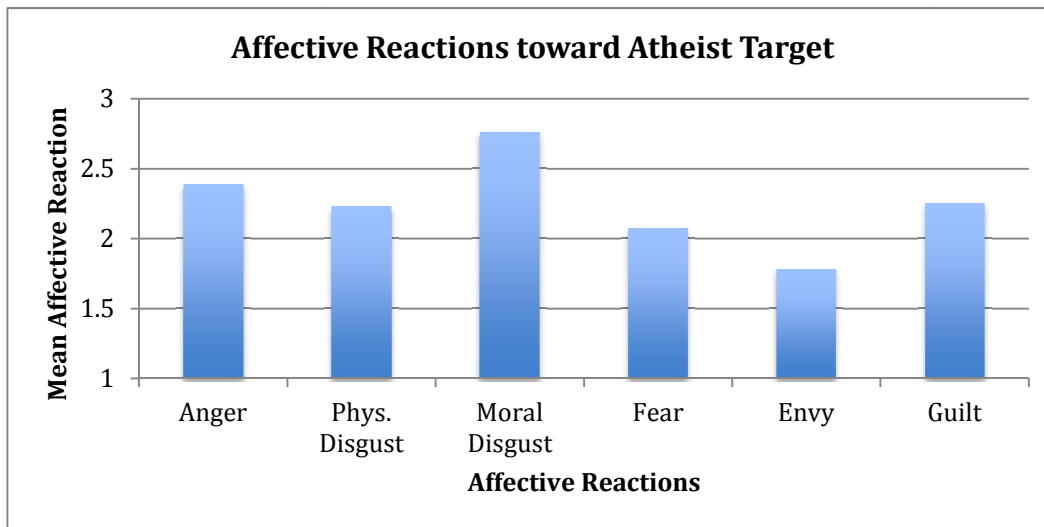


Figure 1. Participants' mean emotional reactions to atheists ( $n = 61$ ).

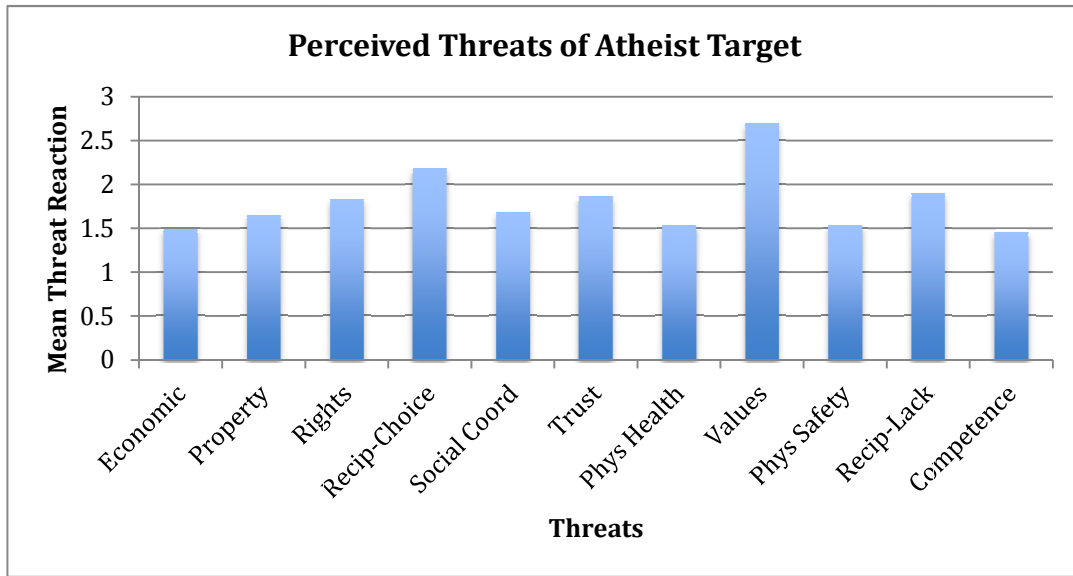
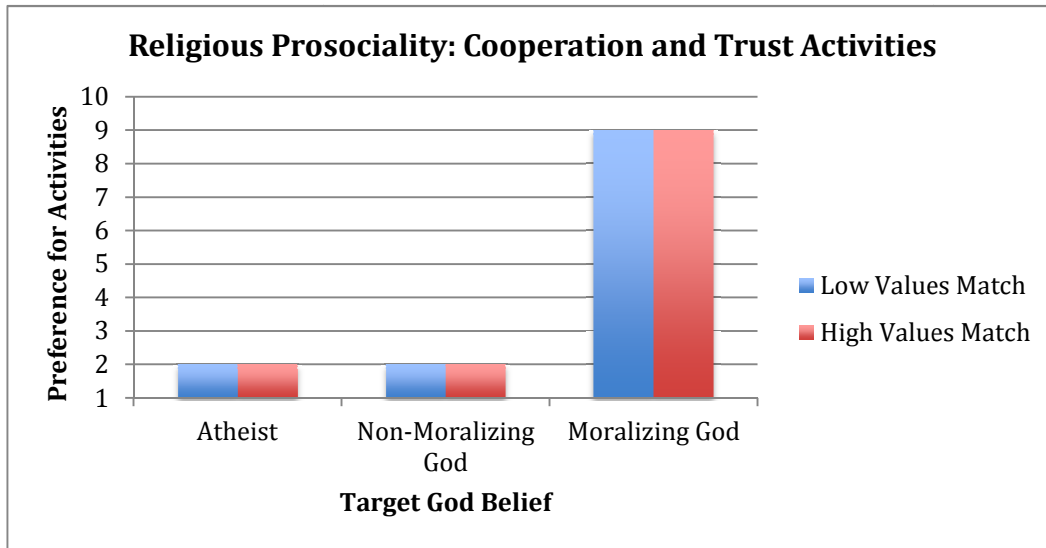


Figure 2. Participants' mean perceived threat reactions to atheists ( $n = 61$ ).



*Figure 3.* Predicted results for the cooperation and trust activities from the religious prosociality perspective.

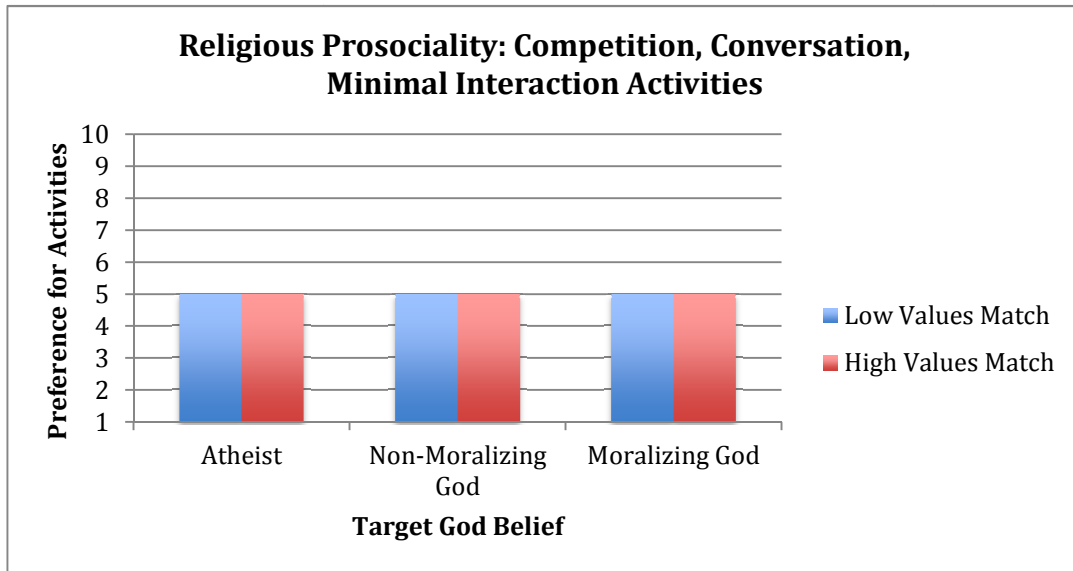
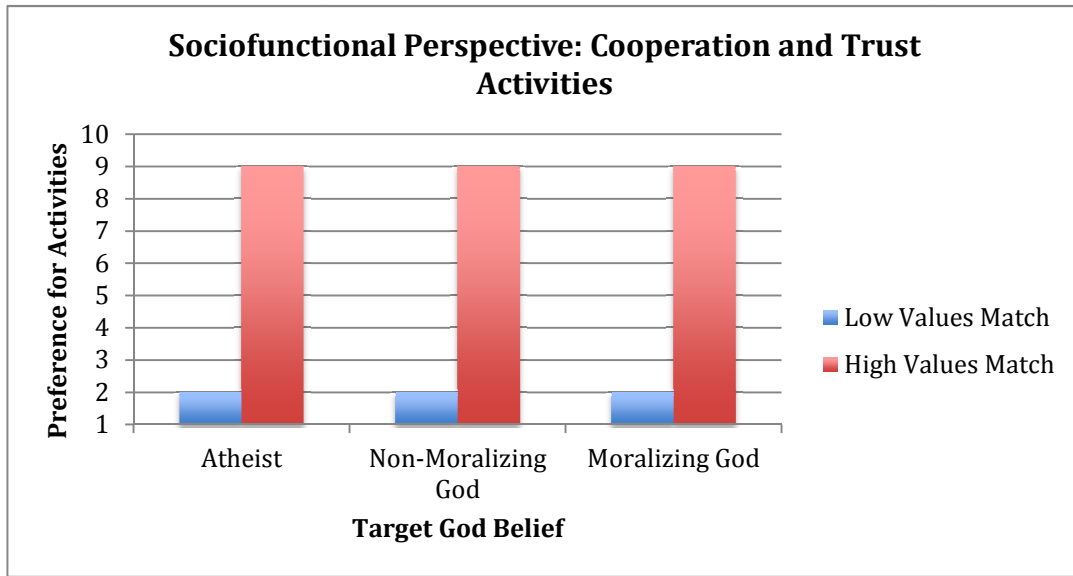
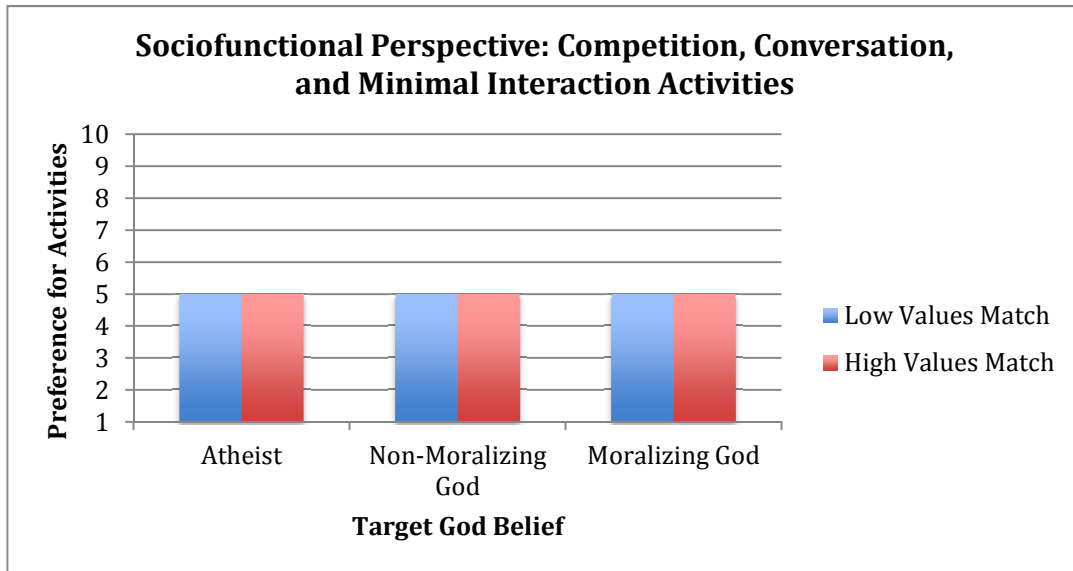


Figure 4. Predicted results for the competition, conversation, and minimal interaction activities from the religious prosociality perspective.





*Figure 5.* Predicted results for the cooperation and trust activities from the sociofunctional perspective.



*Figure 6.* Predicted results for the competition, conversation, and minimal interaction activities from the sociofunctional perspective.

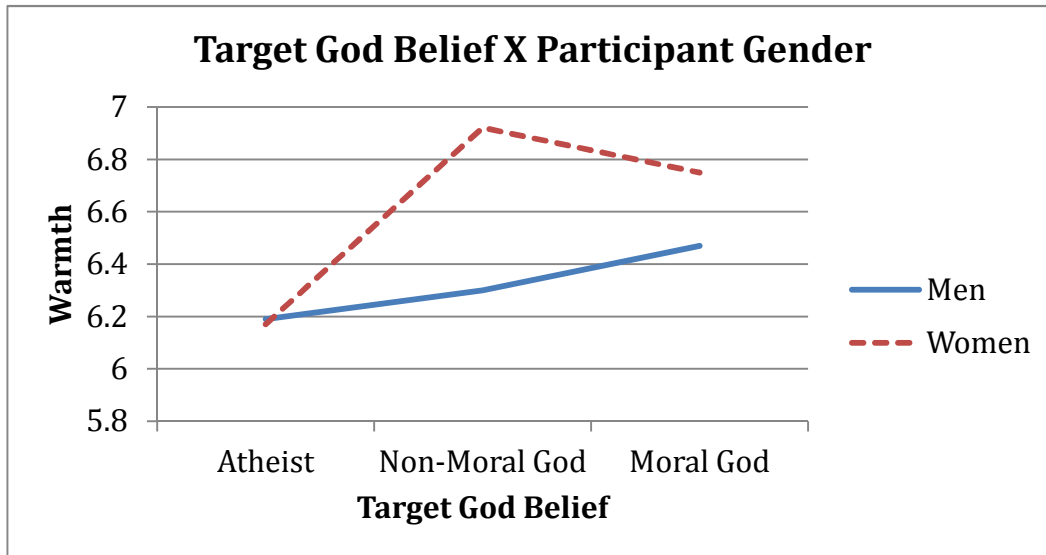


Figure 7. Judgments of target warmth as a function of target god belief and participant gender ( $n = 341$ ).

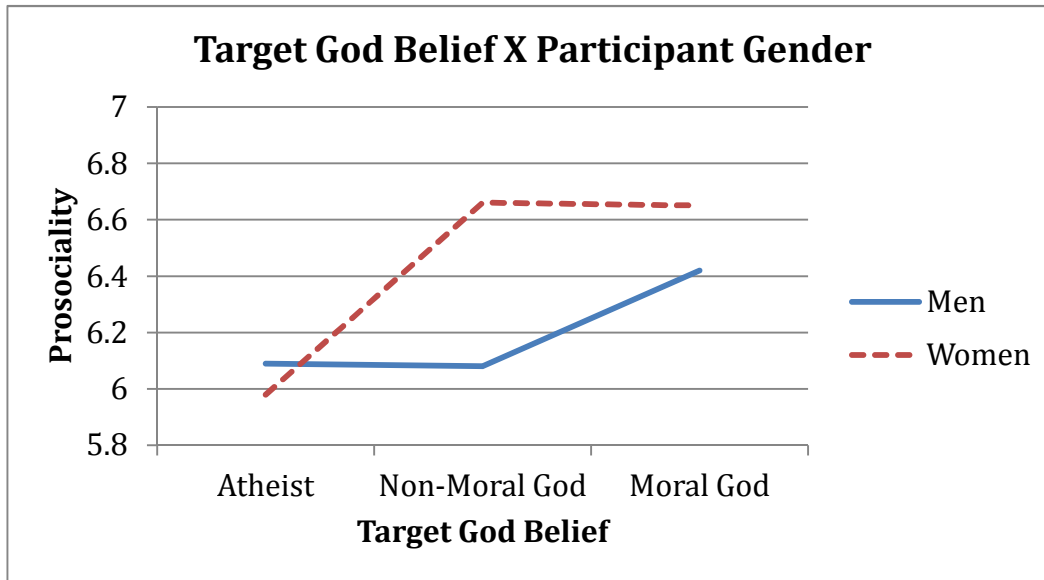


Figure 8. Judgments of target prosociality as a function of target god belief and participant gender ( $n = 337$ ).

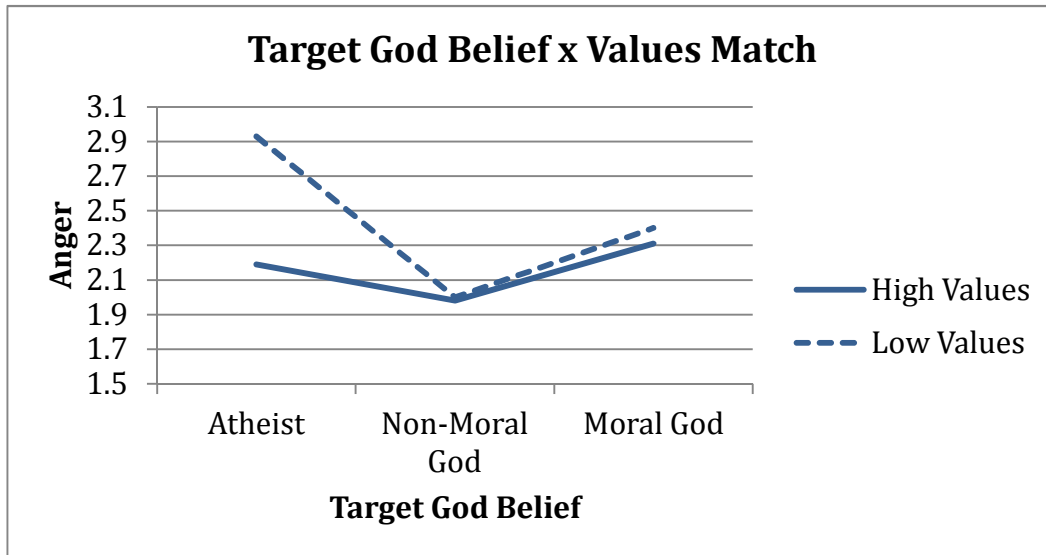


Figure 9. Emotional reaction of anger as a function of target god belief and values match ( $n = 337$ ).

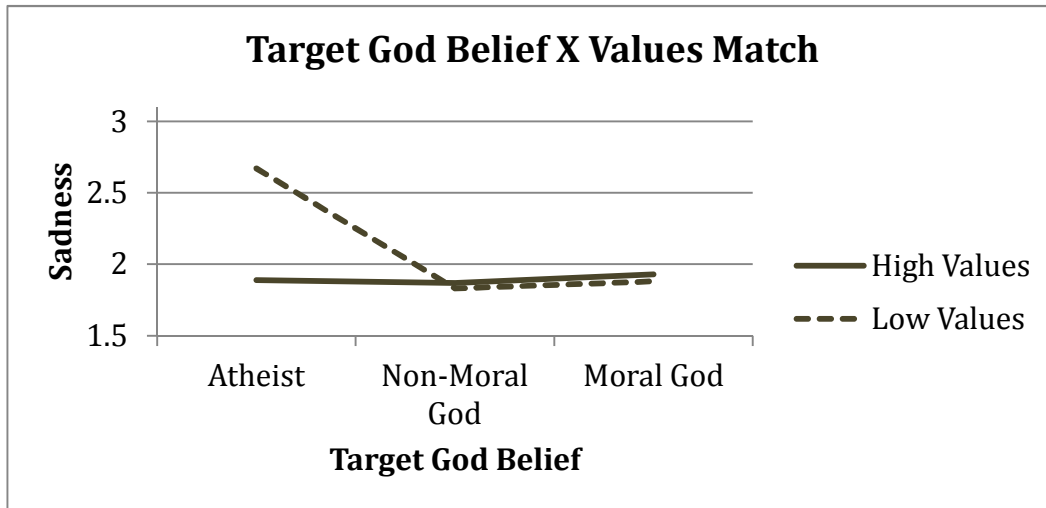


Figure 10. Emotional reaction of sadness as a function of target god belief and values match ( $n = 337$ ).

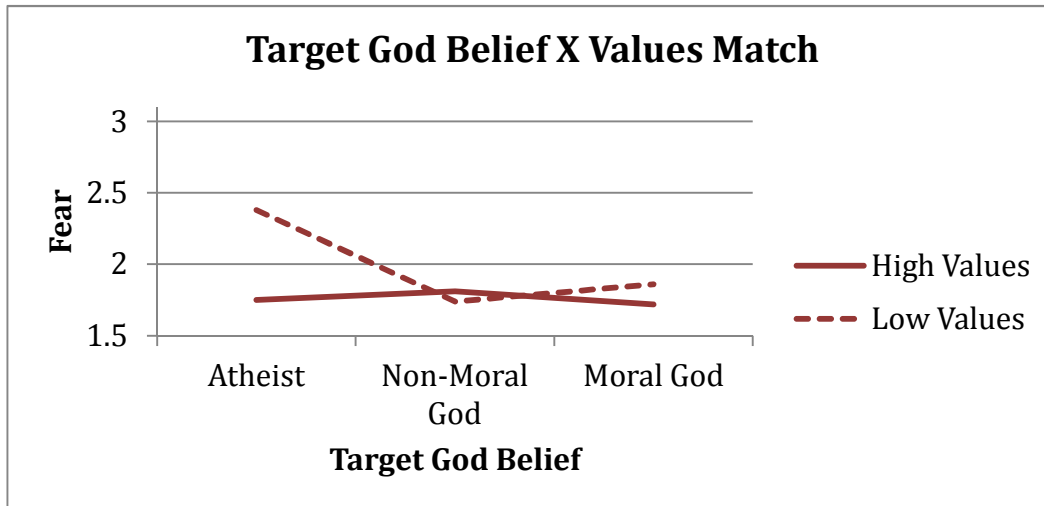


Figure 11. Emotional reaction of fear as a function of target god belief and values match ( $n = 337$ ).

APPENDIX A  
EXAMPLE PROFILE



<b>Gender:</b>	Female
<b>Age:</b>	19
<b>About me:</b>	I just moved here from Ohio. I have two awesome dogs at home that I miss a lot. Most of the time I'm in class or making drinks at the coffee shop I work at, but I try to hang out with my friends as much as I can.
<b>Values:</b>	The two of you are a <i>91% values</i> match.
<b>Favorite Activities:</b>	<ul style="list-style-type: none"><li>-She <i>enjoys</i> watching movies.</li><li>-She <i>enjoys</i> travelling.</li><li>-She <i>does not enjoy</i> arts and crafts.</li></ul>
<b>Beliefs About God:</b>	<ul style="list-style-type: none"><li>-She <i>believes</i> in God.</li><li>-She <i>does not believe</i> that God monitors one's behaviors.</li><li>-She <i>does not believe</i> that God punishes one's bad behaviors.</li></ul>
<b>Life Goals:</b>	The two of you are a <i>60% life goals</i> match.

APPENDIX B  
DEPENDENT MEASURES

**Preference for interaction with different types of activities:**

**Instructions:** “Below is a list of different types of activities. We would like for you to rate how much you would prefer to perform each of the activities with the person in the profile. Please read the description of each activity carefully. After you have rated all of the activities, you and the person in the profile will meet next door and perform the activity that you rated as the most preferable. Each of the activities will take about 15 minutes.”

**Response Scale:** 1 (I would strongly prefer to *not* perform this activity with this person) to 8 (I would strongly prefer to perform this activity with this person)

1) [Cooperation activity] “You and the other person will play a game. The goal of the game is for both of you, as a team, to earn 50 points. To earn the points, you will have to work together because you cannot earn the 50 points by acting alone.”

2) [Trust activity] “You and the other person will meet and have a discussion. You will each tell a story about a challenging moment in your life. First, the other person will tell you their story, and then you will tell your story. We ask that you be completely honest and open.”

3) [Competition activity] “You and the other person will play a game. The goal of the game is to be the first person to earn 10 points. You and the other person will each be trying to win the game first. You will have to do your best to earn points for yourself while taking away points from the other person.”

4) [Conversation activity, i.e. no cooperation, trust, or competition] “You and the other person will watch a short clip from a movie together and then discuss what you watched with each other. Please feel free to talk about what you’re seeing with the other person while the clip is playing.”

5) [Minimal interaction activity] “You and the other person will watch a short clip from a movie together. However, we ask that you remain completely silent while watching the movie clip. Then, each of you will write some brief comments giving your reaction to the film clip. Please do not discuss your reaction to the clip with the other person as we do not want your opinion to influence the other person’s opinion.”

6) **Rank Order:** Now that you’ve rated each activity individually, we would like for you to rank the activities. Please place a “1” next to your most desired activity, a “2” next to your second most desired activity, etc.

### **Target Impressions**

**Instructions:** “We would like for you to give us your impressions of the person in the profile. What kind of person does the person in the profile seem like to you? To me, the person in the profile seems...”

**Response Scale:** [8-point scale, with each end representing one of two opposing traits]

7) Competent vs. Incompetent (R)

- 8) Like he/she cannot distinguish right from wrong vs. Like he/she can distinguish right from wrong
- 9) Warm vs. Cold (R)
- 10) Cooperative vs. Uncooperative (R)
- 11) Trustworthy vs. Untrustworthy (R)
- 12) Mean vs. Kind
- 13) Selfish vs. Generous
- 14) Moral vs. Immoral (R)
- 15) Judgmental vs. Accepting
- 16) Dishonest vs. Honest
- 17) Friendly vs. Unfriendly (R)
- 18) Similar to me vs. Not similar to me (R)

**Feelings toward the target:**

- 19) Please rate how warm or cold you feel about the person in the profile.

[9 point scale: Very Cold, Quite Cold, Fairly Cold, A bit more cold than warm feeling, No feeling at all, A bit more warm than cold feeling, Fairly warm, Quite warm, Very warm]

**Instructions:** In general, if the person in the profile were to interact with someone like you, how likely is it that the target would make a person like you feel...”

**Response Scale:** 8-point scale, very unlikely to very likely

20-35) Angry, Mad, Sad, Depressed, Afraid, Frightened, Morally disgusted,  
Morally Sickened, Happy, Joyful, Pity, Sorry for them, Sympathetic,  
Compassionate, Amused, Entertained

**Social Distance:**

*Instructions:* “Please indicate your feelings about the person in the profile.”

*Response Scale:* 8-point scale, with each end representing one of two opposing preferences

36) I would prefer to avoid participating in social activities with this person vs. I would prefer to participate in social activities with this person

37) I would prefer to avoid living with this person as a roommate vs. I would prefer to live with this person as a roommate

APPENDIX C  
IRB APPROVAL

**To:** Craig Nagoshi PSY  
**From:** Mark Roosa, Chair Soc Beh IRB  
**Date:** 08/29/2012  
**Committee Action:** Exemption Granted  
**IRB Action Date:** 08/29/2012  
**IRB Protocol #:** 1208008134  
**Study Title:** Judgments of Online Profiles

The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(2).

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

You should retain a copy of this letter for your records.



