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Running head: *Anti-atheist prejudice*

The robustness of anti-atheist prejudice as measured by way of cognitive errors

Leah Giddings[1], Thomas J. Dunn*[1]

[1]Nottingham Trent University

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*Requests for reprints should be addressed to Dr. Thomas J. Dunn, Psychology Division, School of Social Sciences, Nottingham Trent University, Burton Street, Nottingham, NG1 4BU (e-mail: Thomas.Dunn02@ntu.ac.uk).

Abstract

Over the past decade, distrust of atheists has been documented in psychological literature yet remains relatively understudied. The current research sought to test the robustness of anti-atheist prejudice. Specifically, it examined the extent to which an individual's anti-atheist prejudice remained unchanged in light of new information. 100 participants from the UK completed an online experiment. The experiment involved reading a vignette describing the actions of an untrustworthy individual. Participants were asked to make a judgment with regards to the untrustworthy individual's identity. The occurrence of a cognitive bias, namely the conjunction fallacy, was used to measure the frequency of anti-atheist prejudice. An examination of judgment errors (i.e., conjunction fallacies) under different conditions was used to test the robustness of anti-atheism prejudice. The results show that anti-atheist prejudice is not confined either to dominantly religious countries or religious individuals but rather appears to be a robust judgment about atheists.

Introduction

Over the past decade, distrust of atheists has been well documented in psychological literature, despite the decline of religion in many western cultures (Dogan, 2003). In an American poll, only 45% of people said they would be willing to vote for an atheist presidential candidate. Furthermore, when compared to other underrepresented groups such as Jewish, Mormon, female, black, elderly, twice-divorced or homosexual candidates, it was only atheists who would fail to gain a majority vote (Norenzayan & Gervais, 2012). Atheists were also ranked as the group that agreed least with the participant's vision of American society, and the group which Americans would most disapprove of their child marrying (Edgell, Gerteis, & Hartmann, 2006). In one particular study by Cragun, Kosmin, Keysar, Hammer and Nielsen (2012), 43% of atheists and agnostics reported experiencing discrimination in a family, workplace, school, military, social or volunteer organisation context. Previous research has demonstrated the extent of anti-atheist prejudice present in an American sample (Gervais, Shariff, and Norenzayan, 2011). However, there is a dearth of literature exploring anti-atheist prejudice in less religious European countries such as the United Kingdom. Previous research has also failed to exam how susceptible individuals are when it comes to changing their views towards atheists. The aim of the current study is to consider this, investigating the role of a cognitive bias, the conjunction fallacy, in the distrust of atheists using a sample from the UK.

In 2011, Gervais, et al. conducted a number of studies looking at the nature of prejudice against atheists and the role that distrust plays, in comparison to other cultural groups. They found that distrust characterised anti-atheist prejudice but not anti-gay prejudice, which was instead characterised by disgust. Moreover, anti-atheist prejudice was found to be specifically due to distrust, and could not be explained by more general stereotype frameworks such as the Stereotype Content Model (Fiske, Cuddy, Glick & Xu,

2002). Study 2 in Gervais et al. (2011) adapted a conjunction fallacy paradigm to indirectly measure distrust of various groups including atheists. A conjunction fallacy is a cognitive bias whereby two or more things co-occurring appear to be more probable than the occurrence of one of the constituents alone.

For example, Tversky & Kahneman (1983) provided participants with a short description of an individual and asked them to rank a number of statements about the possible occupations and hobbies of the individual from most to least probable. One description focus on a woman named 'Linda': "Linda is 31 years old, single, outspoken and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in anti-nuclear demonstrations" (Tversky & Kahneman, 1983, p. 297). Out of the statements that followed, three were of interest: a representative statement ("Linda is active in the feminist movement"), a non-representative statement ("Linda is a bank teller") and a conjunction statement ("Linda is a bank teller and is active in the feminist movement"). As predicted, 85% of participants ranked the conjunction statement as more probable than the non-representative statement, even though it is statistically less likely. The conjunction fallacy is only committed if the description is judged to be representative of the target's potential group membership. So with the above examples, the 'single' and 'outspoken' description is representative of the stereotypical view a feminist. Even when replicated with a preceding statement that stresses judgements should be based on probability and not intuition, the conjunction fallacy was still committed by 86% of participants (Stolarz-Fantino & Fantino, 1990).

In Gervais et al. (2011) (study 2), the conjunction fallacy paradigm was used to measure the distrust towards atheists in comparison to Christians (the religious ingroup for the American population), Muslims (a religious outgroup) and rapists (a justifiably distrusted group). The participants were presented with a vignette that described a criminally

untrustworthy individual, and asked whether it was more probable that this individual was either a) a teacher or b) a teacher and an atheist (condition 1), a teacher and a Christian (condition 2), a teacher and a Muslim (condition 3), or a teacher and a rapist (condition 4). Participants committed the conjunction fallacy in the 'atheist' and 'rapist' conditions, but not in the 'Christian' or 'Muslim' conditions, indicating that participants considered the untrustworthy individual to be representative of both atheists and rapists. Not only this, but in terms of distrustfulness, atheists and rapists were seen to not significantly differ from one another. Committing the conjunction fallacy against atheists was predicted by participants' belief in God, meaning that as ratings of belief in God increased, so did the likelihood of committing the conjunction fallacy. Subsequent studies found that a criminally untrustworthy individual was seen as representative of only atheists, and not Jewish people, feminists, or homosexuals.

Despite the evidence and numerous secular reasons as to why an atheist might behave morally and prosocially (Saslow et al., 2013; Beit-Hallahmi, 2010; Allport & Ross, 1967; Shariff and Norenzayan, 2007; Hirschi and Stark, 1969; Gervais & Norenzayan, 2012), research shows that many people still intuitively distrust atheists. This paper will explore the robustness of such anti-atheist prejudice. It will specifically explore the role of cognitive biases in the distrust of atheists. Cognitive biases are systematic and predictable errors in thinking. Kahneman (2011) argues that thought is organised into two distinct systems. System 1 is fast, intuitive thought, which tends to be automatic, unconscious and requires very little effort. This system deals with everyday decision making and ambiguous situations, whereas system 2, a slow, logical system, deals with deliberate, meticulous thinking. This system is characterised by conscious, controlled thought, which requires a lot of cognitive effort. Although system 2 is much more accurate, it would not be possible to process all information and decisions this way, which is why we tend to rely on system 1 when making

snap judgments and decision. A reliance on system 1 means we are susceptible to errors in thinking and cognitive biases. This paper will focus on a cognitive bias known as the conjunction fallacy. The conjunction rule states that the probability of two things co-occurring is always lower than the probability of the occurrence of one of the constituent parts. For example, the probability of finding a person with brown hair is higher than finding a person with brown hair and blue eyes (i.e., one is a subset of the other). However, under conditions of uncertainty the conjunction fallacy can often occur, where the conjunction of two or more things may appear to be more representative than its individual constituents.

Making a conjunction error is a manifestation of the use of the representativeness heuristic in making judgements, where predictions are made on the basis of what appears most representative, rather than based on the statistical probability of the outcome (Kahneman & Tversky, 1973). In other words, there is the tendency to ignore base rate information for other more specific or seemingly relevant information when making a judgement, rather than integrating the two together (Bar-Hillel, 1980).

Although research has sought to measure anti-atheist prejudice indirectly through the use of cognitive biases it has not yet discerned the robustness of such beliefs. For instance, is it possible to modulate the frequency of conjunction errors and thus prejudicial judgments against atheists? More specifically, when an individual commits a conjunction error and integral to that error is a deep rooted belief, how might a cognitive bias compete with a belief? In previous research the occurrence of a conjunction error (i.e., a cognitive bias) is taken as an indirect measure of an individual's belief. However, if an individual was made aware of that cognitive bias, would it be more important for the individual to stick with a held belief or prevent a cognitive bias?

Competition between applying a heuristic and making a probabilistic calculation might be considered akin to competition between system 1 and system 2 (Kahneman, 2011). Two factors that can contribute to the re-thinking of a decision include the introduction of additional information and a second opportunity to reconsider a prior decision (e.g., question repetition). When it comes to making or changing judgments the effect of presenting new information is an important factor to consider. Cognitive dissonance is one such mechanism which may force re-evaluation of a prior judgment based on competing information. Cognitive dissonance describes the internal conflict or arousal that is caused by holding two contradictory cognitions, and can be caused by informational inconsistency, whereby new information is incompatible with currently held views. In order to eliminate this dissonance, the individual may try to alter one of their cognitions (Festinger, Riecken & Schacter, 1956).

Repetition of a question can also have an impact on decision making, by providing people with the opportunity to process information at a deeper level (Nelson, 1977). Smith and DeCoster (2000) suggest that when motivated and given enough time, people can think deeply about a task, and may come up with a qualitatively different answer to what they would come up with using a "quick and dirty" approach, which can again be related to the distinction between system 1 and 2 processing described by Kahneman (2011). This implies that deeper processing may occur when a question is repeated, as the individual has more time to process the information and make a judgement. Furthermore, having a second chance at answering a question can allow for more careful, elaborative processing, which may evoke a more complex evaluation of the task and the judgement to be made (Obermiller, 1985). This should lead to information being processed in a more logical way, using system 2, and therefore make errors (e.g., cognitive biases) less likely to occur.

These ideas lead to one aspect of the current study, which aims to examine the stubbornness of fallacies regarding atheists when a judgment is forced to be repeated. It's

possible that question repetition may force a change in holding a prejudice belief. It also explores the interaction between maintaining a previously held prejudice belief which drives a cognitive bias, even in light of new information aimed at correcting the bias. In other words, we ask whether new information that exposes a cognitive bias can lead to change in a prejudicial belief.

Another aspect of the current research is to examine the robustness of anti-atheist beliefs through group affiliation. Although Gervais et al. (2011) demonstrated a distinct lack of trust for atheists generally, they did not however break their analysis down into further dimensions examining levels of anti-atheist prejudice for sub-groups (e.g., non-religious vs. religious individuals). Given that ingroup-outgroup dynamics have been supposed as playing a role in such prejudice, any differences in anti-atheist prejudice between an outgroup (i.e., religious) and ingroup (i.e., non-religious) would provide an additional angle by which to measure the level of robustness of anti-atheist prejudice. For example, the more robust and culturally ingrained a negative group judgment is, the more likely negative judgments are to be upheld towards that group, regardless of one's own values or group connection. This may hold true for both the subject of the judgment or the affiliation of the judger (i.e., religious or atheist in both cases).

Aims for the current study

The aim of this study is to build on the previous work in the area of atheist distrust by investigating its robustness in light of new information. Similar to previous research, it aims to apply cognitive biases, namely the conjunction fallacy, as an experimental manipulation to measure atheist distrust. It is predicted that, consistent with findings presented in Gervais, et al.'s (2011) paper, conjunction errors will be more frequently committed by participants when the target is an atheist than when the target is religious (i.e., confirming previous findings

regarding anti-atheist distrust). However, it will also extend previous work by introducing new dimensions which aim to examine the robustness of anti-atheist beliefs. It will achieve this in two ways. First, by exploring whether participants who are presented with new information (population statistics in this case) and asked to respond to the conjunction problem a second time will use this new information to make judgements about the probability of the target being an atheist or religious in line with the data (e.g., it should be reported that the target is likely to be atheist when population statistics suggest that the majority of the population is atheist), or whether they make judgements independent of what is suggested by this data (i.e., rely on an underlying belief about atheists). In sum, the first aim is to investigate whether an individual will maintain a prejudice belief (i.e., continue to apply a representational heuristic) and make a conjunction error or switch to providing an answer reliant on new information and avoid making a conjunction error but go against an intuitively held belief about atheists. The degree to which such an alteration will take place may also be dependent upon both the subject of the judgment (religious or atheist) or the affiliation of the judger (religious or non-religious) and ultimately inform us as to the robustness of such beliefs.

Secondly, this research aims to explore the robustness of anti-atheist prejudice by examining the extent to which non-religious individuals may also hold negative opinions (e.g., distrust) towards atheists more generally. It could be argued that if non-religious individuals hold negative views towards atheists, this is an indication of anti-atheist prejudices being heavily ingrained, such that they are relied upon to make judgments regardless of one's own group affiliation.

Methods

Design

A 2 (conjunction option: religious v. atheist) x 2 (response: pre- v. post-information) x 3 (population information: correct v. equal v. reversed) mixed design experiment was employed. The conjunction option intended to compare conjunction errors committed against atheists and conjunction errors committed against religious people. As this was between-subjects, participants were randomly assigned to one of two groups, where one group was given an atheist target, and the other was given a religious target. For example, Group 1 were asked if it was more probable that the character in the vignette was a) *a teacher* or b) *a teacher and an atheist*, and group 2 were asked if it was more probable that the character in the vignette was a) *a teacher* or b) a *teacher and religious*.

The response factor was a within-participant factor and equated to an individual's response to the vignette before they were given any additional information (population statistics) and after they were given additional information. The last factor was a between-participant factor and related to the type of information the participant was presented with during the post-information response. The type of information varied from information that was a correct representation of the levels of religious and atheist people currently present in the UK, information that was skewed to suggest that there are approximately equal numbers of atheists and religious people present in the UK, and lastly information that was skewed to suggest that there were significantly more atheists than religious people currently present in the UK population.

Participants

For the experiment, 100 individuals were recruited from Nottingham Trent University. The age range of the participants was 18-47 years old (*Mean*=21.02, *SD*=2.93), with 30 males and 70 females taking part. Demographic data revealed that participants were mainly atheist and agnostic (43%) and Christian (33%), with others reporting their religious affiliation as Muslim (10%), Hindu (6%), Jewish (2%) and other (6%).

Materials and Procedure

Participants initially indicated the strength of their belief in God on a scale of 1-100, where 1 indicated no belief and 100 reflected a very strong belief. Participants then read a short scenario in the form of a vignette about 'Richard' (see Figure 1) an individual who behaves in an untrustworthy manner in different situations (based on study 2 of Gervais, et al., 2011).

**********Please insert Figure 1. Here**********

Participants were assigned to one of two groups, where group 1 was presented with a forced-choice question about whether it was more probable that Richard was either a) a teacher or b) a teacher and an atheist, and group 2 was asked if it was more probable that Richard was a) a teacher or b) a teacher and religious. If the second option of 'teacher and an atheist' or 'teacher and religious' was chosen, the participant would have committed the conjunction error, whereas choosing the first option was considered as 'no error'. After this, all participants were shown a table containing information about the percentages of religious and non-religious people in England and Wales, based on a 2011 UK Government Census (Office

for National Statistics, 2012). The type of information presented varied on three levels, with each participant seeing only one of these. In one condition, the information was correct, whereby a religious majority and non-religious minority was presented (see Table 1). In the second condition, the population information was manipulated so that religious and non-religious people appeared to be roughly equal in the population (see Table 2). In the final condition, the population information was reversed to present a non-religious majority and religious minority (see Table 3). The vignette about Richard was then presented again, and participants were required to answer the same question as previously shown.

**********Please insert Table 1. Here**********

**********Please insert Table 2. Here**********

**********Please insert Table 3. Here**********

Results

The mean belief in God rating was 40 (SD=36.5), with participants reporting the full range of the scale from 1-100. In total, 60% of participants committed the conjunction fallacy for the initial, pre-information judgement when the conjunction subject was atheist, as opposed to just 8% when the conjunction subject was religious. After the population information was presented, this changed to 52% and 36% respectively.

Figure 2 shows that religious participants committed more conjunction errors by selecting the 'teacher and an atheist' option for the atheist conjunction subject than non-

religious participants, and were less likely to select the 'teacher' (no error) response. Figure 3 demonstrates that both religious and non-religious participants were more likely to select the 'teacher' option for the religious conjunction subject, rather than committing the conjunction error by selecting the 'teacher and religious' option.

**********Please insert Figure 2. Here**********

**********Please insert Figure 3. Here**********

A two-way logistic regression was performed owing to the dependent variable being dichotomous (conjunction error or no error). The predictor variables included in the model were conjunction subject, belief in God, religious affiliation and post-information (second) response. The overall logistic model was significant (χ^2=20.91(6), p<.01), with three variables being found to be significant predictors. There was a significant main effect for conjunction subject (b=-3.06, p<.01), meaning that when the conjunction subject was atheist (i.e. 'teacher and an atheist'), participants were more likely to commit the conjunction error compared to when the conjunction subject was religious. The main effect found for belief in God (b=.07, p<.05) shows that conjunction errors were more likely when the participants' belief in God was stronger. And finally, the main effect found for the post-information (second) response (b=-3.71, p<.01) indicates that participants were less likely to commit

conjunction errors when the question was asked a second time, following the presentation of the population statistics.

A highly significant interaction was identified between conjunction subject and second response (b=3.34, p<.001). This shows that when the conjunction subject was atheist, presenting the population statistics had little impact on the likelihood of making a conjunction error, however when the conjunction subject was religious, merely presenting some kind of information (regardless of what specific population statistics were shown) significantly reduced the likelihood of committing a conjunction error (see figure 4). There was also an interaction between the conjunction subject and belief in God which was approaching significance (b=-.04, p=.07), suggesting that a higher rating of belief in God increased the likelihood of conjunction errors when the conjunction subject was atheist, and decreased the likelihood of conjunction errors when the conjunction subject was religious (see figure 5).

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**********Please insert Figure 5. Here**********

Due to sample size limitations, the effect of the type of population statistics (correct, equal and reversed) could not be included in the main logistic model. Instead a chi-square test

was conducted for the atheist conjunction subject and the religious conjunction subject separately, both with Yates' continuity correction (Dancey & Reidy, 2011). The chi-square with Yates' continuity correction for the atheist conjunction subject was not significant (χ^2=0.17(2), p=.91), showing that the number of conjunction errors committed did not significantly differ depending on what types of population statistics were shown (see figure 6). The chi-square with Yates' continuity correction for the religious conjunction subject, however, was significant (χ^2=7.38(2), p<.05). Figure 7 shows that more errors were committed when the population statistics were correct (i.e. when the majority of people were shown to be religious) and the fewest errors were committed when the population statistics were reversed (i.e. when religious people were shown to be in the minority).

**********Please insert Figure 6. Here**********

**********Please insert Figure 7. Here**********

Discussion

This study provides evidence for the robustness of atheist distrust. It supports findings by Gervais, et al. (2011) in that when presented with an untrustworthy individual, people commit the conjunction fallacy and judge them to be an atheist, but are unlikely to judge them as religious. Therefore, it is found that untrustworthiness is seen as characteristic of atheists but not of religious people, even by a UK population, a largely non-religious group (almost half the participants described themselves as either atheist or agnostic). Interestingly,

results also show that the proportion of conjunction errors against atheists differed depending on the religious affiliation of the individual. If the individual making a judgement with regards to an atheist is themselves non-religious the proportion of conjunction errors is roughly equal to non-errors. Whereas when the individual making a judgment with regards to an atheist is religious, conjunction errors are more frequent than non-errors. Furthermore, although not quite significant, there was a tendency for belief in God to predict more errors for the atheist conjunction subject and fewer errors when they were religious.

These findings indicate a number of interesting points. First, although being non-religious does attenuate the frequency of errors (i.e., anti-atheist prejudice) it does not wholly diminish them. Second, non-religious individuals still maintain significantly greater distrust (i.e., more conjunction errors) of atheists in comparison to religious individuals. Third, religious and non-religious individuals hold the same degree of trustworthiness (committed fewer conjunction errors) towards religious individuals.

These findings suggest that distrust of atheists is not purely based on ingroup-outgroup bias or a preference for those similar to oneself, as even atheists in the sample committed conjunction errors when the conjunction target was atheist (see figure 2). This is in line with Gervais et al.'s (2011) argument that a model based on symbolic group membership and threat (e.g., Edgell, Gerteis, & Hartmann, 2006) cannot wholly explain anti-atheist prejudice. This then begs the question of why do non-religious individuals, and societies which are deemed to be relatively non-religious (e.g., the UK), still hold anti-atheist views. Additionally, why might individuals who deem themselves to be non-religious or atheists perceive religious individuals as more trusting and atheists as untrustworthy at all?

Previous explanations of anti-atheist prejudice suggest that atheists may be perceived as being more untrustworthy because people suppose that an individual will behave more

prosocially if that individual believes that they are being monitored (one argument for the prosocial function of religion). However, one would assume that atheists themselves who do not believe in any type of religious monitoring, would understand that it is not a necessary requisite to engage in prosocial behaviour. One explanation could be that even atheists themselves may hold some sort of intuitive view about the trustworthiness of people as determined by a person's belief that they are being monitored. However, this seems implausible given that atheists, as individuals who do not believe the necessity of religious monitoring to behave in a trustworthy manner, would assume that someone who does not consider such monitoring would be untrustworthy, otherwise they would have to regard themselves as being untrustworthy.

Another possibility as to why atheists might perceive other atheists as untrustworthy is because atheists as a social group do not have an explicitly defined value system (at least not as defined as an organised religion). Therefore to any perceiver (religious or otherwise), an atheist, unlike a religious individual, has the potential to hold many different values (malevolent or benevolent). The moral landscape of an atheist - even to other atheists - is perhaps more of an unknown quantity and therefore regarded as an uncertainty. The uncertainty of a group without a defined value system might be considered threatening and lead to negative evaluation of a member from that group. This suggests that atheists may perceive other atheists as being untrustworthy for different reasons than a religious individual perceives an atheist as being untrustworthy. It is possible that religious monitoring may well explain the negative anti-atheist prejudice by religious individuals as observed in previous work but group membership (or lack of identity with a group) may go some way to accounting for anti-atheist prejudice by other atheists or non-religious individuals; atheists may simply not identify with other atheists. Well established moral norms associated with religious groups may be relied upon by both religious and non-religious individuals when

casting judgement about the trustworthiness of an act committed by a religious individual. After all, a person does not need to be part of a religious group to be aware of the kind of moral structures espoused (e.g., God is watching you), particularly when current legal structure may have been derived from such religious groups. It seems prudent to consider that when it comes to judging the trustworthiness of an act committed by an atheist, different motivations for a religious individual and an atheist may culminate in the same negative response (e.g., prejudice attitude centred on distrust). For a religious individual it may well be attributed to a lack of religious monitoring, whereas for an atheist it may be a lack of coherent group identification, simply because atheists as a group do not have a coherent code of rules. Additionally, if a non-religious individual does not explicitly identify themselves with the group 'atheist' (owing to its lack of coherent group structure), then there is the possibility of reflexive negativity, whereby negative culturally derived associations attached to the word 'atheist' might well inform judgements about atheists for non-religious individuals just as they can for religious individuals.

Although it is true that non-religious individuals committed anti-atheist prejudice, it should be noted that non-religious individuals' responses for a) teacher and b) teacher and atheist did not differ significantly. This suggests that non-religious individuals perhaps did not identify with the group 'teacher and atheist' just as much as they did not identify with the group 'teacher'. This supports the proposition that atheists may not find other atheists particularly trustworthy because they cannot strongly identify with the group 'atheist'. In other words, individuals who deem themselves to be atheists cannot identify with a group that does not have an explicit value system (i.e., atheists), much in the same way as they cannot with any other group that does not possess an explicit value system (i.e., teachers). Thus, the predictability of a group member's actions may go some way to accounting for prejudicial views centred on distrust. Examination of the coherence of a group's value system (which

could define the predictability of a group member's actions) as a factor determining views of distrust should be an avenue for future research.

The current research also sought to investigate the role on new information when it comes to making a judgment. Fewer conjunction errors were committed in response to a second presentation of the question after the population statistics had been seen. An explanation for this could be that as participants were given another opportunity to process the information, they were able to do so in a slower, more logical way using system 2 rather than the fast and intuitive system 1 (Kahneman, 2011), supporting suggestions by previous researchers that deeper and more complex processing can occur if the opportunity is given (e.g. Nelson, 1977; Obermiller, 1985; Smith & DeCoster 2000). The results also showed that participants did not use the population statistics when the conjunction subject was an atheist and therefore committed the conjunction fallacy, indicated by the lack of significant difference between types of information (see figure 6). This suggests that the subject being an atheist was deemed more relevant in relation to the untrustworthy behaviour so the base-rate information was not used by participants to form their judgement which is in line with Bar-Hillel's (1980) explanation of the base-rate fallacy. The belief that atheists are untrustworthy is so robust that any other information that may contradict this (such as atheists being relatively infrequent in the general population) is discounted in favour of the intuitive response.

Conversely, the base-rate fallacy was not committed when the conjunction subject was religious, as the population statistics were very much considered in making a judgement: the largest number of conjunction errors was made when the population was presented as largely religious and the fewest errors occurred when religious people were presented as the minority. This suggests that people do not have an automatic intuitive view that a religious person would behave in an untrustworthy manner, so they search for other sources of

information that may help to form their judgement. The only other information present were the population statistics, which explains why the rate of errors so closely followed the pattern dictated by these for the religious conjunction subject. However, it should be noted that a limitation of this aspect of the study is that the types of population information had to be analysed separately from the logistic model using chi square, due to a thinning out of the sample size once broken down into levels. In future, it should be included in the main logistic model, enabling any possible interactions with other factors to be explored.

In terms of competition between making a conjunction error and sticking with the application of a representational heuristic, interestingly the results suggest that competition may depend on how strong the belief is (i.e., how representational the individual believes the conjunction subject is of the behaviour contained within the vignette). It appears that holding a strong prejudicial belief can hinder engagement of a more open and rational manner of making a judgment about an individual. Specifically, with regards to cognitive biases, it appears to be much harder to become aware of such a bias when the belief held is strong, even in light of mechanisms that should allow for re-evaluation of an initial judgment (i.e., new information). Thus, the more ingrained a prejudice belief is the less likely someone is in altering that view even in light of contradictory evidence. Applying this to the idea of thinking via system 1 (i.e., a representational heuristic) and system 2 (probabilistic calculation), it suggests that activation of these systems seems to be modulated by the strength of a prejudicial belief.

Conclusion

The field of atheist distrust is a relatively new and understudied area of psychological research. It is important for the phenomemon to be better understood, especially as numbers of atheists are ever increasing in many parts of the world. The current study adds to a growing body of literature about the robustness of atheist distrust. It demonstartes that even in largely non-religious populations atheist prejudice is apparent. It also shows that even atheists or non-religious individuals can often hold prejudice views about other atheists and also that given the opportunity to re-evaluate a prior anti-atheist judgement (and correct a prior congitive error) individuals will often not do so. Together, these findings suggest that anti-atheist distrust is deeply and culturally ingrained regardless of an individual‘s group membership. Overall, the findings direct future reasearch to focus on the views of athiests with regards to other atheists and also the relationship between coherent group values and both the predictability of a group member’s actions and consequent level of trustworthiness. Looking to the future, it is also important to explore how these perceptions and attitudes towards atheists manifest behaviourally, whether people act on these prejudices and in what contexts. It is only once the nature and extent of the issue is better understood that we can take measures to address it.

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Richard is 31 years old. On his way to work one day, he accidentally backed his car into a parked van. Because pedestrians were watching, he got out of his car. He pretended to write down his insurance information. He then tucked the blank note into the van's window before getting back into his car and driving away. Later the same day, Richard found a wallet on the sidewalk. Nobody was looking, so he took all of the money out of the wallet. He then threw the wallet in a trash can.

Figure 1. A vignette about 'Richard' an individual who behaves in an untrustworthy manner (taken from Gervais et al., 2011)

	Correct	*Equal*	*Reversed*
Religious affiliation	**Percentage of population in England & Wales (%)**	**Percentage of population in England & Wales (%)**	**Percentage of population in England & Wales (%)**
No religion	25	46	68
Religious	68	47	25
Not stated	7	7	7

Table 1.

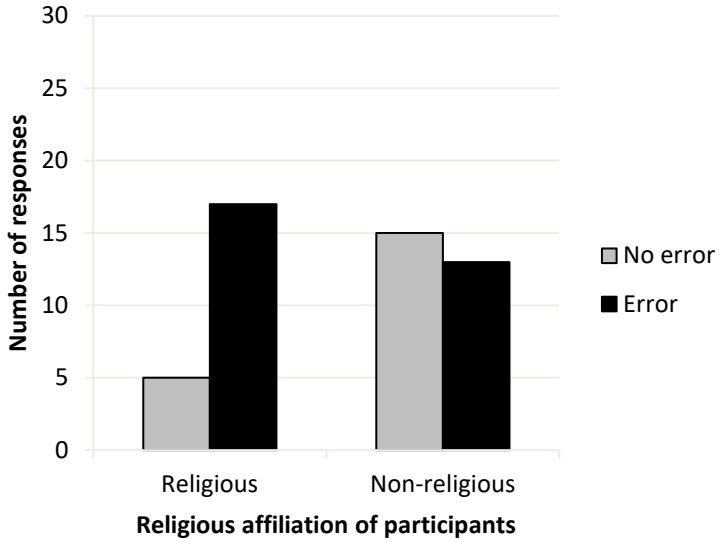

Figure 2. The number of conjunction errors (selecting the 'teacher and an atheist' option) and no error (selecting the 'teacher' option) responses given by religious and non-religious participants for the atheist conjunction subject in the pre-information judgement.

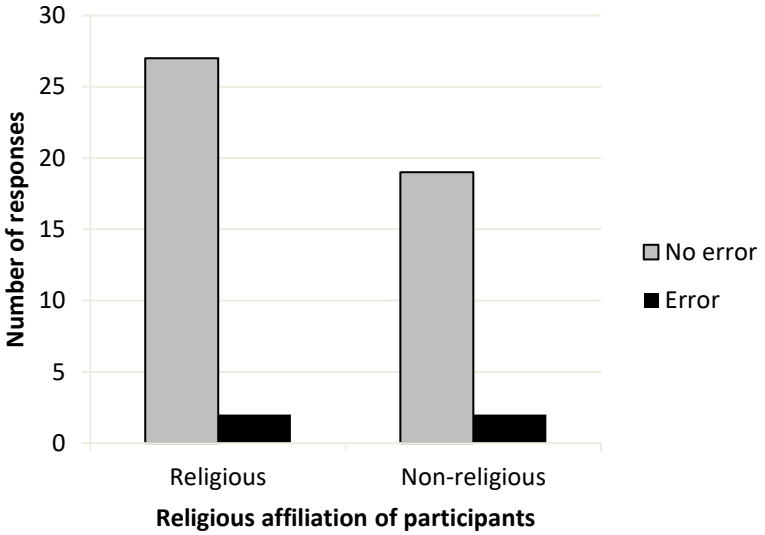

Figure 3. The number of conjunction errors (selecting the 'teacher and religious' option) and no error (selecting the 'teacher' option) responses given by religious and non-religious participants for the religious conjunction subject in the pre-information judgement.

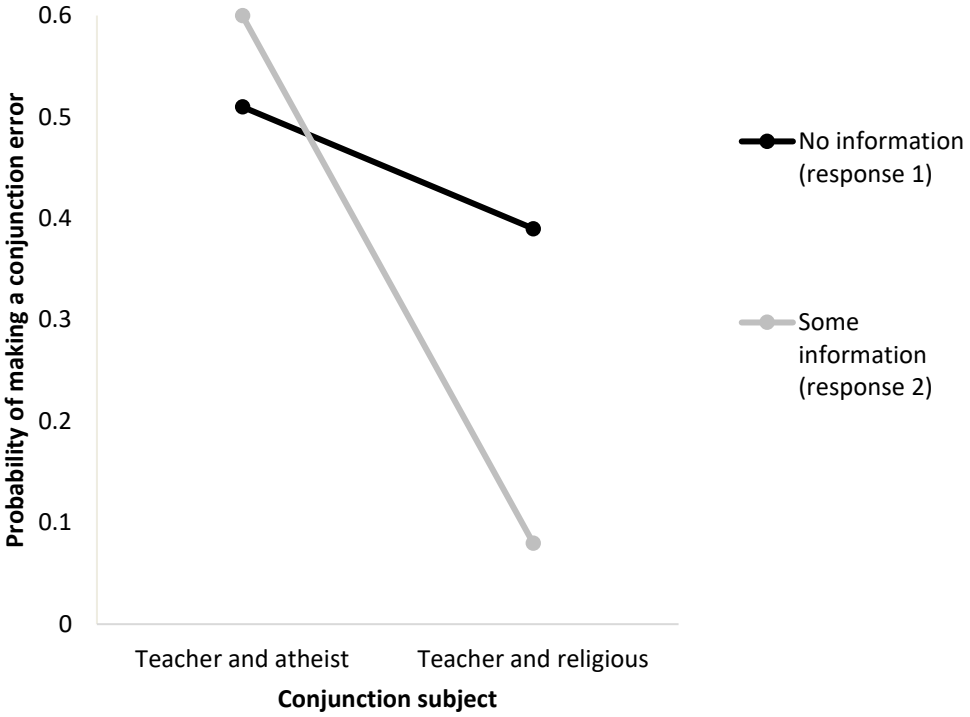

Figure 4. The effect of the interaction between the conjunction subject and population information on the probability of making a conjunction error.

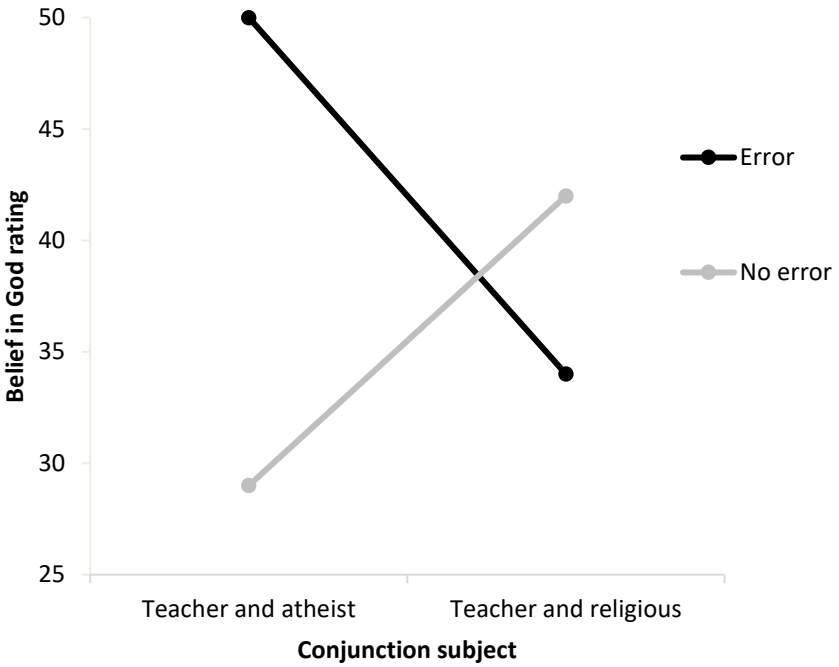

Figure 5. The effect of the interaction between the conjunction subject and belief in God rating on the probability of making a conjunction error.

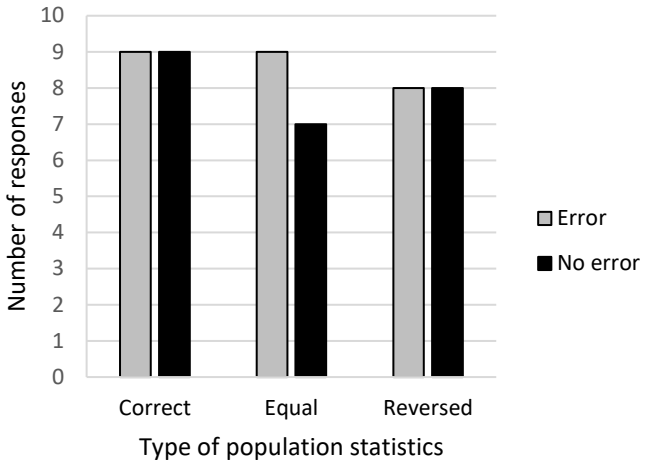

Figure 6. Responses by type of population statistics shown when the conjunction subject was an atheist.

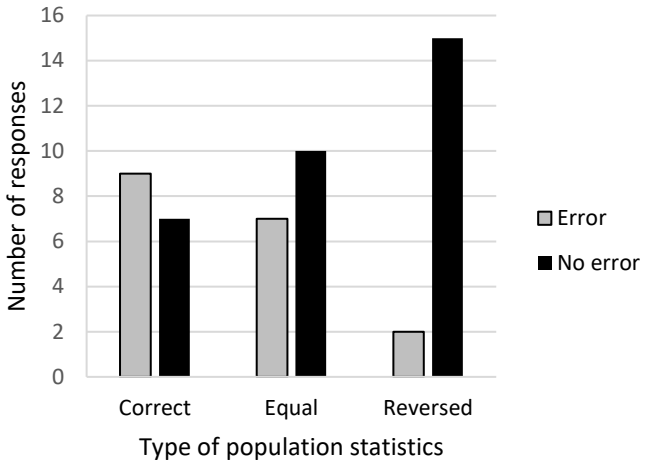

Figure 7. Responses by type of population statistics shown when the conjunction subject was religious.