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# POWER AND COHERENCE MATTERS: DOES PERCEIVED GROUP ORGANIZATION INCREASE ATHEIST PREJUDICE?

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ORGANIZATION INCREASE ATHEIST PREJUDICE?

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A Thesis  
Presented to the  
Faculty of  
California State University,  
San Bernardino

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In Partial Fulfillment  
of the Requirements for the Degree  
Master of Arts  
in  
Psychological Sciences

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by  
Janae Michele Koger  
September 2018

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September 2018

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## ABSTRACT

Atheists are some of the least liked people in the world. Previous research has demonstrated that in most stigmatized groups, increased prevalence of the group increases prejudice towards the group. However, the opposite has been found with atheists- increased perceived prevalence decreases prejudice towards atheists. One post-hoc explanation provided for this difference is that since atheists are easily concealable and unorganized as a group, their greater prevalence may not be perceived as a threat. In the present thesis, I 1) attempted to replicate the existing finding that perceived increased prevalence would increase trust towards atheists and 2) directly tested the hypothesis that if atheist groups are presented as collectively powerful and coherent, increased prevalence will no longer decrease anti-atheist prejudice. I did not find support for the hypothesis that prevalence increases atheist trust, nor did I find support for my hypotheses that power and cohesion would manipulate distrust. Atheist prejudice is still pervasive, however, prejudice against atheists may be changing.

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## DEDICATION

This thesis is dedicated to my parents and partner who encouraged and supported me throughout my education. To my mom, Sharan Koger, thank you for encouraging me to complete my Master's degree. To Cody Hunt, thanks for putting up with me.

In loving memory of one of the greatest people I know, my father, Larry Koger.

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# CHAPTER ONE

## INTRODUCTION

### Prejudice Against Atheists

Atheists tend to be the least liked people in the world, compared to other stigmatized groups (Franks & Scherr, 2014). Anti-atheist prejudice is rooted in distrust of atheists, and has been demonstrated to be a strong and prevalent form of prejudice (Gervais, Shariff, & Norenzayan, 2011; Gervais, 2011; Gervais, 2013). Typically, prejudice increases as perceived size of the disliked group increases (Cottrell, & Neuberg, 2005). However, the opposite is true of atheists- increased perceived number of atheists has been demonstrated to decrease anti-atheist prejudice (Gervais, 2011). Gervais (2011) suggested this reversal may be because atheists are not collectively powerful, coherent, or visible, however, this has yet to be formally tested. In the present thesis, I tested if the powerlessness, incoherence, and invisibility of atheists explains why increased prevalence decreases anti-atheist prejudice.

Approximately 12% of Americans surveyed online do not believe in God (Gallup Poll, 2017) however, a recent study that quantified non-believers without directly asking people to label themselves as “atheists” suggests the prevalence of atheists in the United States may be as high as 26% (Gervais & Najle, 2018). Individuals who self-identify as agnostic or atheist report experiencing discrimination (Cragun, Kosmin, Keysar, Hammer, & Nielsen, 2012). They report

experiencing different types of discrimination like denial of services, being the victim of a hate crime, and social ostracism (Hammer, Cragun, Hwang, & Smith, 2012). Consistent with earlier research findings that high group identification buffers against the psychological consequences of discrimination (Branscombe, Schmitt & Harvey, 1999), stronger group identification buffers against some of the negative psychological effects of discrimination in atheists as well (Doane & Elliot, 2015). In these ways, anti-atheist prejudice is similar to other forms of prejudice.

The sociofunctional approach to understanding out-group prejudice provides one explanation for anti-atheist prejudice. The sociofunctional approach argues that motivation for preferential in-group treatment influences people to behave prejudicially toward out-group members (Brewer, 1999). This approach postulates that individuals may have different responses to members of different out-groups based on the particular threat that out-group poses. For example, in a study of emotional responses to different out-groups, participants demonstrated prejudice against feminists, fundamentalist Christians, and gay men; however, they had different emotional reactions to each group. Participants reported feeling more disgust towards gay men, and more anger and resentment towards fundamentalist Christians and feminists. These groups were perceived to have unique threats. Feminists were perceived to be a threat towards social coordination while fundamentalist Christians were perceived to be a threat to freedoms. These emotions that trigger prejudicial responses may be adaptive in

ensuring that one's in-group is well-provided for (Cottrell & Neuberg, 2005). The motivation to respond negatively to out-group members stems from the desire to ensure preferential treatment towards the in-group. Atheists are perceived as posing a threat to morals and social cooperation (Gervais, Shariff & Norenzayan, 2011). Understanding this unique threat may be useful in understanding unique features of anti-atheist prejudice.

Studies of stereotypes about atheists held by non-believers support the sociofunctional approach to understanding anti-atheist prejudice. After being primed with religious words, believers demonstrated more negative attitudes towards value violating groups (like homosexuals and atheists). This relationship persisted after controlling for participant's self-reported religiosity. This suggests that group membership is part of what motivates anti-atheist prejudice (Johnson, Rowatt & LaBouff, 2012). Harper (2007) found that common negative stereotypes held by college-aged believers about non-believers included beliefs that they were hard-headed, cynical, daring, rebellious, faithless, and argumentative. These traits were not attributed to other stigmatized groups or other religious minorities. This suggests atheists are perceived as posing a unique threat to believers, and that may drive discrimination and prejudice. However, anti-atheist prejudice is a particularly strong form of prejudice, and it is not limited to religious individuals. While other stigmatized groups in America have become increasingly more accepted over the last few decades, atheists continue to be increasingly disliked. Using data from Gallup polls, Edgell, Gerteis,

and Hartmann (2006) identified that atheists are less likely to be openly accepted than any other religious, ethnic, and sexual minority group.

Furthermore, atheists were the group that differed most from participants' "vision of American society," and atheists were the group they would disapprove most of if their children were to marry. To further understand why people dislike atheists, Gervais, Shariff, and Norenzayan (2011) used vignettes of an untrustworthy person to measure the conjunction fallacy, in which negative attributes are associated with a particular kind of person. They found that participants were more likely to attribute untrustworthy characteristic to an atheist than they were to other stigmatized groups. This demonstrated that other stigmatized groups are disliked (homosexuals, feminists, liberals, etc.), but are trusted more than atheists. Giddings & Dunn (2016) conducted a study using the same methodology but they included assessments of the respondents' religious identification. They found that although non-religious people made fewer conjunction errors, they still maintained greater distrust of atheists than of religious people. This suggests that atheist prejudice is robust in that it generalizes across judgments about atheists. While out-group threat may explain some of the prejudice atheists experience, it does not fully explain it (Giddings & Dunn, 2016).

Distrust in atheists may originate from a moral distrust. Moral distrust occurs when an individual expects another individual or group of people to not behave pro-socially. Moral distrust operates under the assumption that someone

who does not believe in God may act immorally because they do not believe in a socially monitoring all-knowing power who encourages pro-sociality, which would then encourage prosocial behavior in believers (Gervais, 2013). Such distrust may be founded. Shariff and Norenzayan (2011) demonstrated that participants who believed in a punitive God, compared to a loving God, were less likely to cheat on a test that would display the correct answer to participants if they did not take action to not see the answer. This suggests that belief in a punitive God does increase rule following and promotes pro-sociality. Other studies support the notion that people's intuitions are that non-believers are less likely to be prosocial. For example, Simpson and Rios (2017) had participants write a list of core moral values that an atheist would hold and analyzed ratings of perceived atheist morals. They found that anti-atheist prejudice is explained by the fear that atheists will not act kindly or caring towards others. Swan and Heesacker (2012) tested whether the term atheist itself had negative connotations or if it was the non-belief in God that influenced distrust. They demonstrated that it was the non-belief in God that made even likeable individuals untrustworthy, rather than the atheist label itself. This further suggests that religion is used as a cue to trustworthiness. The belief that since atheists do not believe in a socially monitoring God they will not behave pro-socially, and will not cooperate, motivates distrust (Norenzayan & Shariff, 2008; Shariff, Norenzayan, 2011).

## Factors that Reduce Anti-Atheist Prejudice

Researchers have demonstrated three contexts that decrease atheist distrust: interaction with atheists, the presence of secular authority, and increased atheist prevalence. Researchers have tested how imagined interactions with atheists affects prejudice towards them. After imaging an interaction with an atheist, compared to the control group who thought only about atheists, but not interacting with them, participants reported less distrust, more willingness to cooperate with, and more willingness to engage with an atheist (LaBouff & Ledoux, 2016). This research demonstrates that perceived interaction decreased prejudice against atheists.

The presence of secular rule of law also has been shown to reduce anti-atheist prejudice. Since atheist distrust stems from the perception that a socially monitoring God is necessary for prosociality, distrust towards atheists may be reduced if people perceive that secular organizations are also sources of social monitoring. When participants watched a video regarding secular authority, they demonstrated less distrust of atheists than did participants who watched a control video or did not watch a video (Gervais & Norenzayan, 2012). Furthermore, in countries with strong secular authorities, negative attitudes towards atheists are less common than in regions with weaker secular authorities (Norenzayan & Gervais, 2015). Reminders of secular authority may decrease prejudice against atheists because it demonstrates that secular institutions can also provide social monitoring and enforce pro-social behavior.



Finally, atheist distrust also reduces when perceived prevalence of atheism increases. Gervais (2011) conducted four studies analyzing the effects of atheist prevalence on anti-atheist prejudice. Using a diverse sample of 54 countries, the first study established that in countries with high atheist prevalence, prejudice against atheists was lower at an international level. This correlational relationship was still significant after controlling for socioeconomic development and differences between individualist and collectivist cultures. The second study established that high atheist prevalence was negatively associated with atheist prejudice at the individual level. This relationship was still significant after controlling for belief in God and belief in a dangerous world. The third study provided causal evidence that perceived atheist prevalence reduces anti-atheist prejudice. Participants read that local atheist prevalence was either high or low. High atheist prevalence was associated with lower explicit distrust. Finally, in the fourth study Gervais employed the IAT (Greenwald, McGee & Schwartz, 1998) to show that when prevalence was high, implicit distrust against atheists decreased. These results demonstrated that high atheist prevalence reduces prejudice and distrust of atheists.

This finding is a reversal from how perceived group prevalence typically affects prejudice. Other research has demonstrated that greater the perceived group size, the greater the prejudice (Cottrell, & Neuberg, 2005). Larger groups size generally equates with perceiving a greater threat. For example, in an effort to understand prejudice towards immigrants, researchers found that Dutch

citizens who perceived large immigrant population size also held anti-immigrant attitudes and felt their group interests were threatened (Schlueter & Scheepers, 2010). Similarly, Quillian (1995) demonstrated that perceived group threat towards immigrants is associated with group size, and as group size increases so does prejudicial attitudes towards immigrants. Gervais (2011) argued that since atheists are not visible, powerful, nor collectively coherent, increased atheist prevalence would not equate with increased threat. Atheists are not united in their lack of belief because this lack of belief can originate from a variety of sources (Norenzayan & Gervais, 2013). Similarly, atheists tend to report low in-group identification compared to religious groups, which may influence their lack of group coherence or organization (Ysseldyk, Haslam, Matheson, & Anisman, 2012). Atheists are easily concealable (they cannot be identified through outward appearance), which makes their self-disclosure their only identifying characteristic. Information that atheists are prevalent communicates to people that the existence of many atheists will not negatively affect their social or moral systems. Thus, it may be that people are less distrustful of them when they are presented as being high in numbers.

The explanation for the reduction of atheist distrust, in response to information about high atheist prevalence, operates on the assumption that atheists as a group are not collectively coherent or powerful. In the present study, I manipulated participants' perceptions of the coherence and collective power of atheists to determine if this explains why increased prevalence reduces distrust

toward atheists. I also explored the potential covarying effects of political orientation on the relationship between prevalence and atheist distrust. It may be that individuals who are more conservative are less likely to trust atheists than individuals who are more liberal. I also explored the potential mediating effects of belief in God, as Gervais (2011) did, religious importance, and the belief that atheists are the cause of moral decline in society. The goals of the present study were twofold: First, I attempted to replicate Gervais' finding that increased prevalence reduces prejudice. Second, I intended to extend these findings by demonstrating that increased prevalence only decreases distrust if atheists are perceived as not collectively coherent or powerful. I tested the following hypotheses:

Hypothesis 1: If no information about the collective coherence of atheists is provided, increased prevalence will increase trust of atheists.

Hypothesis 2: If atheists are described as collectively incoherent and not powerful, increased prevalence will increase trust of atheists, similar to if no information is provided.

Hypothesis 3: If atheists are described as collectively coherent and powerful, increased prevalence will increase atheist distrust.

Hypothesis 4: Belief that atheists are the cause of moral decline in society will mediate the relationship between prevalence, power and coherence, and atheist distrust.

## CHAPTER TWO

### PILOT DATA

Gervais (2011) participants' read a report about atheist prevalence relative to other groups on their university campus and worldwide. Prevalence was manipulated to be either high or low. Respondents indicated their distrust towards atheists, religiosity, general feelings towards atheists, and perceived contact with atheists. I used a similar study design, stimuli, and outcome measures to test my hypotheses. Following Gervais' (2011) procedure, I conducted a pilot study of perceived atheist prevalence in the sample population to generate "high" and "low" prevalence values.

Gervais (2011) collected pilot data to create an average of student perceptions of atheists and then manipulated that average for high and low atheist prevalence number. Gervais asked participants to provide a percentage estimate of atheist prevalence at their university. Approximately forty percent of his participants estimated that the university had five percent or fewer atheists, and less than five percent of his participants estimated an atheist prevalence of above thirty percent. On average, his participants reported a perceived atheist prevalence of about twelve percent (11.45%, SD = 9.49%). He decided to use fifty percent in his manipulated report to operationalize high prevalence, and five percent to represent low prevalence, arguing that these estimates would be quite high and realistically low respectively.

I collected my own pilot data to survey student's perception of different group's prevalence. 111 (86 females) students reported their percentage estimate of each of the following groups: Atheists, vegans, Buddhists, and Jews. Participants reported they thought atheists to be more common than Gervais' participants ( $M=27\%$ ,  $SD=19\%$ ). This is contrary to Gervais' pilot data; in which forty percent of Gervais' participant's estimated atheist prevalence to be below thirty percent, and only five percent of his participants estimated prevalence to be above thirty percent. Participants in the lowest quartile reported atheists to make up ten percent of the university's population, while participants in the highest quartile reported atheists at forty percent. Only about thirteen percent (12.6%) of my participants estimated that the university had five percent or fewer atheists, and almost seventy percent (65.8%) estimated an atheist prevalence above thirty percent.

Our participants believed atheists to be more prevalent than Gervais' (2011) participants, so five percent atheist prevalence would still be a good low. Our participants did not believe atheists to be more than fifty percent prevalent. Because of this, I decided to use Gervais (2011) original manipulated prevalence of five percent of low atheist prevalence and fifty percent for high atheist prevalence.

## CHAPTER THREE

### METHOD

#### Participants

G-power analysis revealed that for a small effect size of,  $\eta_p^2 = .04$  ( $p < .05$ ), a sample of,  $n = 200$  participants will be needed to obtain statistical power at the recommended .80 level (Cohen, 1988). However, due to a large attention check fail rate of forty eight percent in the first data collection period, I recollected data with new quality detectors and increased my sample to 450 participants. In the first data collection period, I collected data from 305 participants, of which 170 participants (males= 63) passed attention checks. The majority of these participants indicated being Latino or Hispanic (69%), and were, on average, 20 years old (median= 19, range: 18-51). In the second data collection period, I added participants to ensure that after exclusion, based on attention check failure, I would maintain satisfactory power in all six of my conditions. I collected data from 220 participants, of which 181 (males = 19) participants passed attention checks. The majority of these participants indicated being Latino or Hispanic (70%), and were, on average 23.5 years old (median = 22, range: 18-55). After combining both data collection periods and excluding participants who failed attention checks ( $n = 149$ ), data from 350 participants were used in analysis. The majority of participants were female ( $n = 286$ ) and identified as

Hispanic (n = 246), with a mean age of 21.84 years (Median = 20, age range: 18-55).

To mask the study goals and hypotheses, participants were told that they were reading news articles about different groups on the university campus. At the end of the study participants were debriefed with the true purpose of the study. There were no gender or major restrictions on participation. All participants were recruited online through the Department of Psychology Subject Pool SONA site and redirected to Qualtrics to complete the study. Upon completion of the study, participants were compensated 0.5 unit of credit to be granted towards a psychology course of their choosing. This study was approved by CSUSB psychology department's Institutional Review Board (IRB).

## Measures

### Atheist Prevalence and Power/Coherence Manipulation

Participants read one of six news articles adapted from Gervais (2011) that described atheist prevalence, power, and coherence. Half of the articles claimed that atheist prevalence worldwide and at the participant's university was high (10% worldwide and 50% on campus) and half claimed that prevalence was low (rare worldwide and 10% on campus). Gervais's original stimuli contained no information about atheist power/coherence. Two of the articles were almost identical to Gervais' (2011) and only provided information about prevalence (high/low). I altered the university name to be that of the participants in my study.

I edited the additional four articles to include explicit information about atheist power and coherence as a group and each article represented a different experimental condition (high prevalence/high power and coherence, high prevalence/low power and coherence, low prevalence/high power and coherence, low prevalence/low power and coherence; Appendix A).

### Atheist Distrust

I used two scales of atheist prejudice. The first was a two-item distrust measure that Gervais (2011) used. Participants rated the items “Atheists are dishonest,” and, “Atheists are trustworthy.” on a seven-point scale (-3= *strongly disagree*, 3= *strongly agree*). I reverse scored the first item and took the average of the two items to compute the variable atheist distrust ( $\alpha = .72$ ). On average, across conditions, participants did not find atheists to be particularly distrustful ( $M = -1.05$ ,  $SD = 1.46$ ).

I also used The Negative Attitudes Towards Atheists scale as a second measure of atheist distrust (Gervais & Shariff, 2010). This scale includes seven items that measure explicit anti-atheist prejudice. Items include, “In times of crisis I am more inclined to trust people who are religious,” “I would be uncomfortable with an atheist teaching my child,” and “Societies function better if everyone believes in God.” I took the average of the items to compute the negative attitudes towards atheist measure, I found the atheist distrust scale to be valid ( $\alpha = .72$ ,  $M = 26.86$ ,  $SD = 7.88$ ).



Gervais' (2011) assumption was that atheist threat was explaining why prevalence effects atheist distrust. I included an item to directly assess how threatening participants perceived atheists as a group. Participants rated their agreement on the following item, "Atheists are not a threat as a group ( $M = 2.00$ ,  $SD = 0.87$ ; seven-point scale,  $-3 = \textit{strongly disagree}$ ,  $3 = \textit{strongly agree}$ ).

#### Atheists are the Cause of Moral Decline

To assess if participants believed that atheists are one cause of moral decline in society and if that influenced their distrust of atheists, participants responded to one item: "Atheists are one cause of moral decline in society" and rated their agreement on a seven-point scale ( $M = -1.10$ ,  $SD = 1.58$ ;  $-3 = \textit{strongly disagree}$  and  $3 = \textit{strongly agree}$ ).

#### Religious Belief

To assess if belief in God moderated the relationship between prevalence and distrust, participants responded to the following item, "I believe in God," on a scale of  $-3$  (*strongly disagree*) to  $3$  (*strongly agree*). To assess if religious importance impacted the relationship between prevalence and distrust, participants rated their agreement with the following: "My religion is important to me" (seven-point scale,  $-3 = \textit{strongly disagree}$ ,  $3 = \textit{strongly agree}$ ).

On average, participants reported having a strong belief in God ( $M = 1.84$ ,  $SD = 1.83$ ), with about eighty percent (80.40%) of participants indicating at least some belief in God (a score of 1 or greater). The majority of participants indicated that their religion was of importance to them ( $M = 1.23$ ,  $SD = 1.83$ ), with almost

seventy percent (69.80%) of participants indicating that their religion is at least somewhat important to them (a score of one or greater).

### Political Orientation

To assess if political orientation moderated the relationship between prevalence and atheist distrust, participants responded to three items: “I tend to be more liberal than I am conservative” and “I tend to be more conservative than I am liberal.” I reverse-scored the first item and took the average of these two items to create a composite measure of political conservatism ( $\alpha = .88$ ; seven-point scale, -3= *strongly disagree*, 3= *strongly agree*). On average, participants reported being less conservative than they were liberal ( $M = 3.52$ ,  $SD = 1.69$ ).

Participants also indicated their political party by choosing one of the following options: Democratic, Republican, No party affiliation, and prefer not to answer. The majority of participants identified as democratic ( $n = 211$ ), however 100 participants chose to not disclose their party affiliation (Republican  $n = 41$ ).

### Alternative Explanations

Gervais (2011) collected a number of measures to rule out alternative explanations, I collected the same measures in the case that I replicated his prevalence decreasing distrust finding.

Perceived Contact. Participants responded to an open-ended prompt asking them how many atheists they know (Gervais, 2011). On average, participants claimed to know around three atheists (Median = 2.00, SD = 4.93). Then participants rated their agreement (-3 = strongly disagree, 3 = strongly agree) to the following statements, “I often come into contact with atheists,” and “I rarely come into contact with atheists” (Gervais, 2011). I reverse coded the item “I rarely come into contact with atheists” and took the average of the two items to compute the scale: atheist contact ( $\alpha = .89$ ) Participants did not report frequently coming into contact with atheists (M = 6.79, SD = 3.84).

General Attitudes. I measured attitudes towards atheists using a standard 0-100 “feeling thermometer.” Where participants rated the warmth or coldness they felt towards atheists (lower scores indicate colder feelings). Participants did not report particularly cold, nor warm feelings towards atheists (M = 57.85, SD = 23.17).

### Manipulation Checks

Prevalence Manipulation Check. Participants rated a single-item measure stating, “Atheists are very common” on a seven-point scale (-3= *strongly disagree*, 3= *strongly agree*).

Power/Cohesion Manipulation Check. The following two items assessed atheist cohesion and power: “Atheists are becoming powerful as a group” and “Atheists are becoming cohesive as a group”. Participants rated these statements on a seven-point scale (-3= strongly disagree, 3=strongly agree).

## CHAPTER FOUR

### RESULTS

#### Data Screening

##### Outliers

Outliers were identified using z-scores greater than or equal to,  $z = 3.3$ ,  $p < .001$ . No outliers were identified using this criterion.

##### Normality

Normality was determined by taking the z-scores of skewness and kurtosis and by using the criteria,  $z = 3.3$ ,  $p < .001$ . Using this criteria, normality for all variables was assumed.

#### Manipulation Checks

There was a significant effect of prevalence on the belief that atheists are common,  $F(1, 350) = 351.22$ ,  $p < .001$ . Participants in the low prevalence conditions were more likely to believe that atheists were less common ( $M = -1.22$ ,  $SD = 1.88$ ) than participants in the high prevalence conditions, who believed atheists were more common ( $M = 1.94$ ,  $SD = 1.25$ ). This indicates that the stimuli were effective in influencing participant's perceptions about atheist prevalence.

There was a significant effect of power and coherence on the belief that atheists are powerful,  $F(1, 350) = 53.73$ ,  $p < .001$ , and the belief that atheists are cohesive,  $F(1, 350) = 63.55$ ,  $p < .001$ . Participants in the atheist in the high

power and cohesion conditions were more likely to believe that atheists were powerful ( $M = 0.62$ ,  $SD = 1.70$ ) and cohesive as a group ( $M = 0.82$ ,  $SD = 1.35$ ) than participants in the low power and cohesion group who believed atheists were less powerful ( $M = -0.80$ ,  $SD = 1.75$ ) and cohesive ( $M = -0.54$ ,  $SD = 1.61$ ). This indicates that my power and cohesion conditions adequately influenced participant's beliefs about atheist power and group coherence.

### Tests of Hypotheses 1-3

To test Hypotheses 1-3, I implemented a 3 (Group Organization: high, low, no information control) X 2 (Prevalence: high, low) study design. I took the average of the two items: atheists are trustworthy (reverse coded) and atheists are dishonest to compute the variable: atheist distrust, as Gervais (2011) did. The model was not significant,  $F(5, 350) = 0.98$ ,  $p > .05$ . The main effect of prevalence was not significant,  $F(1,350) = 0.87$ ,  $p > .05$ . The main effect of group organization was also not significant,  $F(1,350) = 0.61$ ,  $p > .05$ . The interaction between prevalence and group organization was also not significant,  $F(1,350) = 0.08$ ,  $p > 0.05$ . There were no significant differences in atheist distrust scores across the six groups (Table 1). Therefore, I did not find support for Hypotheses 1-3.

Table 1. Means and standard deviations of atheist distrust across conditions

Organization	Prevalence High		Prevalence Low	
	Mean	SD	Mean	SD
High	2.62	1.15	2.77	1.18

Low	2.56	0.94	2.64	1.22
No Information	2.52	0.91	2.88	1.21

I conducted the same 3x2 ANOVA using scores on the Negative Attitudes Towards Atheists Scale as the dependent variable. Again, I did not find support for Hypotheses 1-3. The model was not significant,  $F(5,350) = 0.41, p > .05$ . The main effect of prevalence was not significant,  $F(1,350) = 0.16, p > .05$ . The main effect of group organization was also not significant,  $F(1,350) = 1.26, p > 0.05$ . The interaction between prevalence and group organization was also not significant,  $F(1,350) = 0.67, p > .05$ . There were no significant differences in negative attitudes towards atheists scores across the six groups (Table 2).

Table 2. Negative attitudes towards atheists across conditions

Organization	Prevalence High		Prevalence Low	
	Mean	SD	Mean	SD
High	3.91	1.13	3.86	1.06
Low	3.66	1.20	3.82	1.16
No Information	3.87	1.11	3.82	1.13

I conducted the same 3x2 ANOVA using Atheists are a threat as the dependent variable. Again, I did not find support for Hypotheses 1-3. The model was not significant,  $F(5,350) = 0.68, p > .05$ . The main effect of prevalence was not significant,  $F(1,350) = 0.03, p > .05$ . The main effect of group organization was also not significant,  $F(1,350) = 0.72, p > .05$ . The interaction between prevalence and group organization was also not significant,  $F(1,350) = 0.57, p$

>.05 . There were no significant differences in negative attitudes towards atheists scores across the six groups (Table 3).

Table 3. Atheists are a threat across conditions

Organization	Prevalence High		Prevalence Low	
	Mean	SD	Mean	SD
High	2.06	0.86	2.00	0.86
Low	1.90	0.90	1.99	0.87
No Information	1.41	1.60	1.35	1.68

#### Hypothesis 4

Because there was no evidence of a relationship between prevalence or power and coherence and trust, there was no reason to test Hypothesis four, as the function of Hypothesis 4 was to test a mediator of the relationship between prevalence/power/coherence and trust.

#### Covariates

I tested three potential covariates using the two-item atheist distrust composite as the outcome variable and prevalence and power/coherence as predictors in a 3x2 ANCOVA design. None of the potential covariates were significantly correlated with atheist distrust: Belief in God ( $r = -.04, p > .05$ ), religious importance ( $r = .01, p > .05$ ), and, political conservatism, ( $r = .10, p > .05$ ). Belief in God did not significantly correlate with prevalence within conditions

( $r = .03$ ,  $p > .05$ ). However, political conservatism was nearly significant in the ANCOVA.

I ran an ANCOVA to test the hypothesis that political orientation significantly affected the relationship between prevalence, power and coherence and atheist distrust. Political conservatism significantly covaried with atheist distrust,  $F(1, 350) = 4.08$ ,  $p < .05$ . However, Political conservatism did not significantly affect the relationship between prevalence, power and coherence and atheist distrust,  $F(5, 350) = 0.937$ ,  $p > .05$ . The main effect of prevalence was not significant,  $F(5, 350) = 0.08$ ,  $p > .05$ . The main effect of organization was not significant,  $F(5, 350) = 0.20$ ,  $p > .05$ . The interaction between prevalence and organization was not significant,  $F(5, 350) = 0.18$ ,  $p > .05$ . Political conservatism was not a significant covariate.

Controlling for belief in God did not significantly affect the relationship between prevalence, coherence and power and atheist distrust,  $F(5, 350) = 1.17$ ,  $p > .05$ . The main effect of prevalence was not significant,  $F(1, 350) = 0.02$ ,  $p > .05$ . The main effect of organization was not significant,  $F(1, 350) = .21$ ,  $p > .05$ . The interaction between prevalence and organization was not significant,  $F(1, 350) = .15$ ,  $p > .05$ . Belief in God was not a significant covariate.

Controlling for religious importance did not significantly affect the relationship between prevalence, power and coherence and atheist distrust,  $F(5, 350) = 1.05$ ,  $p > .05$ . The main effect of prevalence was not significant,  $F(5, 350) = 0.08$ ,  $p > .05$ . The main effect of organization was not significant,  $F(5, 350) =$



0.14,  $p > .05$ . The interaction between prevalence and organization was not significant,  $F(5, 350) = 0.12$ ,  $p > .05$ . Religious importance was not a significant covariate.

Table 4. Political Conservatism as a covariate across conditions

Organization	Prevalence High		Prevalence Low	
	Mean	<i>SD</i>	Mean	<i>SD</i>
High	2.06	0.86	2.00	0.86
Low	1.90	0.90	1.99	0.87
No Information	1.41	1.60	1.35	1.68

## CHAPTER FIVE

### DISCUSSION

I investigated factors that may influence trust, a unique form of prejudice, towards atheists. Specifically, I attempted to replicate Gervais (2011) finding that perceived increased atheist prevalence decreased distrust towards atheists. I hypothesized that because atheists are not powerful nor cohesive as a group, they do not pose a threat when participants perceive there to be more of them. Therefore, if participants were lead to believe that atheists are collectively powerful and coherent, the positive effects of increased prevalence would dissipate. If participants perceived there to be few atheists who are collectively powerful and cohesive, their distrust of atheists should increase. I hypothesized that political orientation may covary the relationship between prevalence and distrust, specifically that individuals who are more conservative may distrust atheists more than individuals who are liberal.

Although the false news manipulation was successful in convincing participants that atheists were either prevalent or not and either powerful and coherent or not, I did not replicate Gervais (2011) finding that increased atheist prevalence decreases atheist distrust. I did not find support for my hypotheses that increased power and coherence would increase atheist distrust.

I found that atheist prejudice is not influenced by atheist prevalence, atheist power or atheist coherence. A number of factors could explain my finding.

First, it may be that atheists pose threats unique to their individual characteristic and not their group size. It may be that disbelief in God, and therefore the assumption that an individual will not behave prosocially, is equally threatening individually and in larger numbers. Therefore, participant's perceptions of atheist group size may not matter. One atheist may pose the same perceived threat to prosociality and group cooperation as a group of many atheists may. It may only take one individual to pose a large threat to cooperation, therefore, it may be more realistic for participants to only focus on the feasibility of one individual behaving non-prosocial.

Another possibility is that Gervais' (2011) original finding was a non-replicable false positive. The replication crisis, which came to fruition in 2012, has caused debate, concern, and within recent years, close examination amongst psychologists. There have been a number of proposed causes for the replication crisis within social psychology. The file drawer problem, a term coined by Rosenthal (1979), proposes that failed psychology studies are rarely, if ever, published. The field of social psychology tends to only acknowledge significant findings while non-significant findings are stored in the "file drawer". Therefore, psychologists have little incentive to seek publication for non-significant findings. There have been fewer replication studies in recent years, highlighting the problem that only inventive and significant research is valued (Pashler & Wagenmakers, 2012). While Gervais (2011) was able to replicate his own findings, I did not succeed. Gervais (2011, Study 4) replicated his findings that

experimentally manipulating participant's perceived prevalence of atheists decreased distrust independent of atheist contact. He even expanded upon these findings by demonstrating that participant's implicit distrust towards atheists were reduced when they were lead to believe that atheists were more common. It is important to note that the first two studies he conducted were correlational in nature- he observed a relationship between prevalence and distrust, and was only able to experimentally replicate prevalence decreasing distrust in one study. Therefore, he replicated his own findings in the final study he conducted. There is no evidence in the literature to suggest that there has been a replication of these findings since.

Another explanation for my null findings is that as atheists become more recognizable and prevalent in society (Gallup Polls, 2017), atheist distrust may be decreasing. My study was conducted 7 years after the publication of Gervais' study. A recent pew research survey found adults under fifty years old, are less likely to believe in a biblical God. These younger adults are also less likely to believe in a God or higher spiritual power (although, belief in God is still more common than disbelief), they are also less likely to subscript to a particular religion or denomination (Pew Research, 2018). It may be that since younger people tend not to identify with a particular religion and instead are more likely to believe in a higher power or God, they may not view atheists as such a threatening outgroup, compared to other groups.

My sample mirrored Gervais (2011) sample in many ways: I collected data from a population of university students and the majority of my participants were female. However, my participants varied in two critical ways. First, many of my participants failed attention checks and had to be excluded from the study, which brings concern to the efficacy of the data. I had hoped to address this issue by informing participants they would only be compensated if they passed the attention checks. Second, due to differences between atheist prevalence belief between Gervais (2011) participants, and my own, it may be that my participants were less prejudiced against atheists. In my pilot data collection, I found that students believed atheists to be more prevalent on average, than students at the University of Kentucky. It may be that prevalence did not increase trust because participants already believed atheists to be prevalent. This may result in their atheist prejudice being unaffected by atheist prevalence.

In an attempt to understand why my manipulation of power and coherence was unsuccessful in increasing or decreasing prejudice, I propose that it may have been informative to measure distrust towards atheists before the presence of the manipulation. By taking a premeasure of atheist distrust, I may have been able to determine if participants were greatly or slightly prejudiced towards atheists, resulting in a ceiling or floor effect, explaining why my replication was not successful. In an attempt to understand why my manipulation of prevalence was unsuccessful in influencing prevalence, I propose that individual uncontrolled differences between samples may have produced non-significant results, as

discussed above. Also, with my current study design I was not able to assess if there was any effect of my manipulation on participant's implicit prejudice towards atheists.

### Implications

As this research suggests, one avenue for successfully decreasing atheist distrust may not be a viable option for decreasing prejudice towards atheists. Atheist distrust may be more complicated and multifaceted than previous research suggests. Therefore, finding a one pill cures all solution may not be feasible. Other methods of decreasing atheist distrust must be explored.

For this study, it may be that other factors are reducing atheist prejudice, nulling the effect of prevalence on distrust. Previous research has demonstrated that reminders of secular authority decrease atheist prejudice (Gervais & Norenzayan, 2012). These participants live in a fairly liberal area with a strong secular presence. It may be that my participants perceived secular authority to be strong, and therefore the prevalence manipulation to decrease their prejudice did not work.

This study also demonstrates the importance and vitality of testing replication hypotheses and attempting to expand on those hypotheses. While Gervais (2011) was able to replicate his result across two experimental studies, we were not. This suggests that the initial result on prevalence decreasing distrust may have had temporal, locational, or other interfering confounds. The

replication crisis is slowly being addressed, however, the field must provide incentives and motivation for researchers to replicate their colleagues work.

## Conclusions

This research attempted to replicate a finding that resulted in decreased distrust towards atheists. I attempted to explain the underlining mechanism that resulted in the decreased prejudice. Instead, I discovered a potentially nonreplicable result. This failed replication may be due to shifting social perceptions about atheists, differing prevalence perceptions of atheists, or that atheists are becoming more recognizable in society. Other mechanisms need to be explored to attempt to explain anti atheist prejudice, and by explaining anti atheist prejudice, factors to reduce it can be discovered.

Gervais (2011) suggested that accurately reflecting the increasing prevalence of atheists may increase trust towards them. However, my research suggests that this may not be the case. It may be that accurately reflecting prejudice does little or nothing to reduce distrust. Perhaps it may be that informing individuals' of atheist prevalence can make atheists seem "pushy" with their disbelief, as Gervais (2013) noted as a potential limitation of publically exposing atheist prevalence. The literature on atheist distrust is sparse, even though the number of self-identifying atheists has grown in the last decades. More literature is needed to explore current attitudes towards atheists and the mechanisms that drive distrust towards atheists. By discovering and exploring

these mechanisms efforts can be made to continue to decrease the general public's prejudice and distrust towards atheists.



APPENDIX A  
MANIPULATED NEWS ARTICLES

## Atheist prevalence worldwide and at the University: Common and Cohesive/Powerful

### Worldwide Atheism Rates

It can be quite difficult to determine how common atheists (people who do not believe in God) are around the world. However, Philip Zuckerman has combed through a great deal of sociological research, and his results are striking.

Zuckerman estimates that there are between 500 million and 700 million atheists in the world. That is nearly 10% of the world's population. Globally, atheists are 58 times more numerous than Mormons, 41 times more numerous than Jews, and twice as numerous as Buddhists; nonbelievers constitute the fourth largest religious group in the world, trailing only Christians, Muslims, and Hindus. He also reported that atheists have become more cohesive and politically powerful as a group. They have formed organizations in most Western cities and each year an increasing number of atheists is elected to political office. They report being interested in changing social policy and criminal justice systems to better fit their ideals (Zuckerman, 2007).

### CSUSB Psychology Atheism Rates

Within the CSUSB psychology department, we have conducted numerous studies on peoples' religious beliefs. Using these data, we find that atheists are incredibly common. Aggregating across a number of separate studies, we find that approximately 50% of students indicate that they do not believe in God. These students have an active atheist group on campus, meet regularly, and atheist students are active in student governance.

Clearly, atheists are very common.

Atheist prevalence worldwide and at the University: Common and non-cohesive/  
not powerful

#### Worldwide Atheism Rates

It can be quite difficult to determine how common atheists (people who do not believe in God) are around the world. However, Philip Zuckerman has combed through a great deal of sociological research, and his results are striking.

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#### CSUSB Psychology Atheism Rates

Within the CSUSB psychology department, we have conducted numerous studies on peoples' religious beliefs. Using these data, we find that atheists are incredibly common. Aggregating across a number of separate studies, we find that approximately 50% of students indicate that they do not believe in God. However, these students do not have an active atheist group on campus, do not meet regularly, and are unlikely to be active in student governance.

Clearly, atheists are very common.

Atheist prevalence worldwide and at the University: Uncommon and non-cohesive/ not powerful

#### Worldwide Atheism Rates

It can be quite difficult to determine how common atheists (people who do not believe in God) are around the world. Compared to the great world religions, atheists are fairly rare, and do not have a particularly visible worldwide presence. And, according to data from Norris and Inglehart (2006), atheists are becoming less common worldwide, relative to other religious groups. They also reported that atheists not become cohesive or politically powerful as a group. There are very few atheist organizations in most Western cities and very few atheists are elected to political office (Zuckerman, 2007).

#### CSUSB Psychology Atheism Rates

Within the CSUSB psychology department, we have conducted numerous studies on peoples' religious beliefs. Using these data, we find that atheists are fairly uncommon. Aggregating across a number of separate studies, we find that only about 5% of students indicate that they are atheists. These students do not have an active atheist group on campus, do not meet regularly, and are unlikely to be active in student governance.

## Atheist prevalence worldwide and at the University: Uncommon and cohesive/ Powerful

### Worldwide Atheism Rates

It can be quite difficult to determine how common atheists (people who do not believe in God) are around the world. Compared to the great world religions, atheists are fairly rare, and do not have a particularly visible worldwide presence. And, according to data from Norris and Inglehart (2006), atheists are becoming less common worldwide, relative to other religious groups. They also reported that atheists have become more cohesive and politically powerful as a group. They have formed organizations in most Western cities and each year an increasing number of atheists is elected to political office. They report being interested in changing social policy and criminal justice systems to better fit their ideals.

### CSUSB Psychology Atheism Rates

Within the CSUSB psychology department, we have conducted numerous studies on peoples' religious beliefs. Using these data, we find that atheists are fairly uncommon. Aggregating across a number of separate studies, we find that only about 5% of students indicate that they are atheists. These students have an active atheist group on campus, meet regularly, and atheist students are active in student governance.

APPENDIX B  
SURVEYS

I created the following items, established scales include citations:

I read an article about how many Christians there are.

1. Yes
2. No
3. Not sure

I read an article about how many atheists there are.

1. Yes
2. No
3. Not sure

Please rate your agreement with the following statements using the scale below.

[Participants will rate these statements on a seven-point scale -3= strongly disagree, 3= strongly agree]

Atheists are dishonest

Atheists are trustworthy

Atheists are not a threat as a group

Atheists are becoming powerful as a group

Atheists are becoming cohesive as a group

Please respond to the following prompt by typing your answer in the text entry box below.

[Participants will type in their response]

How many atheists do you know?

Please rate your agreement with the following statements using the scale below.

[Participants will rate these statements on a seven-point scale -3= strongly disagree, 3= strongly agree]

I often come into contact with atheists

I rarely come into contact with atheists

Please rate your agreement with the following items using the scale below.

[Negative attitudes towards atheist scale (Gervais, Shariff, 2010), participants will rate their agreement with each item on a scale of -3= strongly disagree, 3= strongly agree]

I would be uncomfortable with an atheist teaching my child

I strongly believe that church and state should not be kept separate

Societies function better if everyone believes in God

Religion facilitates moral behavior in a way that nothing else can

I would prefer to spend time with people who are religious believers

In order to check for careless responding please choose mostly disagree for this item

I would not at all be bothered if the United States president did not have religious beliefs

In times of crisis, I am more inclined to trust people who are religious.

Please indicate on the below thermometer how you feel towards atheists. Higher ratings indicate more “warm” feelings while low ratings indicate “cold” feeling.  
[General attitudes thermometer. Participants will rate their “warmth” or “coldness” towards atheists. There will be a scale of 1-100 for participants to indicate their feelings towards atheists]

Please rate your agreement with the following statement using the scale below.  
[Participants will rate these statements on a seven-point scale -3= strongly disagree, 3= strongly agree]  
I believe in God

Please rate your agreement with the following statement using the scale below.  
[Participants will rate these statements on a seven-point scale -3= strongly disagree, 3= strongly agree]  
There cannot be morality without God.

Please rate your agreement with the following statement using the scale below.  
[Participants will rate these statements on a seven-point scale -3= strongly disagree, 3= strongly agree]  
My religion is important to me

Demographic questions

Please respond to the following questions

[Participants will either select the answer that best describes them or type in their response]

What is your age?

[Text entry box]

What is your gender?

1. Male
2. Female
3. Prefer not to answer

Please indicate the ethnicity that best describes you

White

Black or African American

American Indian or Alaska Native

Asian

Native Hawaiian or Pacific Islander

Latino or Hispanic

Other



What is your major? [Text entry box]

What year in school are you? [Text entry box]

Please rate your agreement with the following statements using the scale below.

[Participants will rate these statements on a seven-point scale -3= strongly disagree, 3= strongly agree]

I tend to be more conservative than I am liberal.

I tend to be more liberal than I am conservative.

Please choose the option that best describes your political affiliation

[Participants will choose one option that best describes their political affiliation with the option to not answer]

1. Democratic
2. Republican
3. No party affiliation
4. Prefer not to answer

Please rate your agreement with the following statement using the scale below.

[Participants will rate these statements on a seven-point scale -3= strongly disagree, 3= strongly agree]

Atheists are the cause of moral decline in society (because of atheist influence people have fewer morals)

Please answer the following questions:

[Participants will choose from the options below the questions]

Please use the text entry box below to tell us what you think this study was about (Participants use text entry box, this will be used to see if they bought the deception)

APPENDIX C  
INFORMED CONSENT



College of Social and Behavioral Sciences  
Department of Psychology

**INFORMED CONSENT**

**Description:** You are invited to participate in a study by Cari Goetz, Assistant Professor of Psychology at California State University, San Bernardino. This study has been approved by the Department of Psychology Institutional Review Board Sub-Committee of the California State University, San Bernardino, and a copy of the official Psychology IRB stamp of approval should appear on this consent form.

**Procedures:** You will be asked to read an article and answer questions regarding what you read and questions about yourself. When you complete the survey a more detailed description of the study will be provided.

**Duration and Compensation:** Altogether the study should take no longer than 15 minutes to complete. You will receive 0.5 unit of credit for participating. However, if you fail the quality detectors that assess whether you are taking this study seriously, you will be eliminated from the research and not provided with credit.


**Participation:** Your participation in this study is entirely voluntary. You are free to withdraw your participation at any time during the study, or refuse to answer any specific question, without penalty or withdrawal of benefit to which you are otherwise entitled

**Confidentiality:** The information that you give us will be kept confidential and will be used for research purposes only. Data will be stored in password-protected computers accessible by the researcher. The results of this study will be submitted for conference presentations and publication in a scientific journal. Analyses of the data will be conducted on group responses and not individual responses. Thus, your name will not appear on any data reports. Data will be stored indefinitely on a password-protected drive.

**Risks and Benefits:** This study involves no risks beyond those routinely encountered in daily life, nor any direct benefits to you as a participant. There are no benefits to you personally but your responses help improve the understanding of social attitudes.

**Questions:** If you have any questions or concerns regarding this study, please feel free to contact the Department of Psychology IRB Subcommittee at Psych.irb@csusb.edu. Results from this study will be available from Dr. Cari Goetz, CGoetz@csusb.edu after July 1, 2019.

By clicking the arrow to continue, you are acknowledging the statement below:  
I understand that any information about me obtained from this research will be held strictly confidential. I acknowledge that I am of at least 18 years old. I understand and agree with the terms described above.

California State University			
Psychology Institutional Review Board Sub-Committee			
Approved	2/3/18	Void After	2/3/19
IBB #	H-	Co-Chair	
18WI-03			

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