

Atheist Messages Reduce Religiosity and Subjective Wellbeing*

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Abstract

In recent years, atheism has grown in popularity, partly inspired by the rise to prominence of a group of public intellectuals called the “New Atheists” who argue against religion in public fora. What are the social consequences of this development? We test in a laboratory study in Kenya whether exposure to atheist arguments affects self-reported and implicit religiosity, subjective wellbeing, and self-reported tolerance of different social groups. We find a significant negative effect of emotional arguments against religion on both self-reported and implicit measures of religiosity, especially among men, but no effect of scientific appeals. Subjective wellbeing is strongly reduced after emotional atheist messages, again especially among men, suggesting that reductions in religiosity through emotional atheist arguments may have a wellbeing cost. We find no effects of atheism messages on self-reported tolerance. Together, these results suggest that emotional atheist arguments reduce religiosity and subjective wellbeing, especially among men.

Keywords: Atheism, well-being, laboratory experiment, priming

JEL codes: Z12, I31, C91

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1 Introduction

Public intellectuals (e.g. “New Atheists” such as Richard Dawkins, Christopher Hitchens, Sam Harris, and Daniel Dennett) have long and vigorously argued that religion is not only factually inaccurate, but also socially and personally harmful. However, it is unclear whether such arguments can actually influence an individual’s religiosity. In addition, it is unknown whether such advocacy, and atheism in general, has beneficial or detrimental social effects. For instance, cross-sectional evidence suggests that religiosity is positively correlated with subjective wellbeing (for a discussion, see [Deaton and Stone 2013](#) or [Diener, Tay, and Myers 2011](#)) and pro-social behavior ([Shariff et al. 2015](#)). If these relationships are at least partly reflective of a positive causal effect of religion on these outcomes, one might expect a negative effect of exposure to atheism on these outcomes. In the present study, we examine whether exposure to arguments against religion can in fact influence an individual’s religiosity, wellbeing, and tolerance of others. We report the results of an experiment conducted among university students in Nairobi, Kenya in which we expose participants to explicit Atheist messages. Participants watch short videos presenting either scientific or emotional arguments against the existence of God. We then measure both self-reported and implicit religiosity, as well as subjective wellbeing and tolerance of others.

In recent years, researchers have begun to use primes to manipulate religion in laboratory settings, often finding that implicit and explicit religious primes lead to an increase in pro-social behavior and cooperation, especially towards the in-group (see [Shariff et al. 2015](#), for a review). [Norenzayan and Shariff \(2008\)](#) suggest that these results are due to the activation of in-group reputational concerns by the belief that one is being “watched” by a deity, implying that priming effects on prosociality are likely only present in relation to one’s in-group. Indeed, several studies find that religious primes lead to more negative attitudes towards both racial and religious out-groups ([Johnson, Rowatt, and LaBouff 2010](#); [LaBouff et al. 2012](#); [Ramsay et al. 2014](#)). Other studies have shown that religious primes increase honesty ([Randolph-Seng 2007](#)), punishment of unfairness ([McKay et al. 2010](#)), self-control ([Laurin, Kay, and Fitzsimons 2012](#); [Rounding et al. 2012](#)), and risk-taking ([Kupor, Laurin, and Levav 2015](#); [Chan, Tong, and Tan 2014](#)).

These findings suggest that religiosity may directly affect economic behaviors, but all of these studies shock religiosity solely in the ‘positive’ direction. In contrast, in the present study, we are specifically interested in the consequences of a *decrease* in religiosity. To date, only [Shariff et al. \(2008\)](#) has used primes to reduce religiosity, finding evidence that rational, scientific arguments diminished self-reported and implicit religiosity in a Western setting. The present study extends these previous findings in several ways. First, we measure exposure both to rational argumentation and to emotional appeals, whereas [Shariff et al. \(2008\)](#) only evaluate the impact of exposure to rational argumentation. Second, our target population is university students in Kenya, while [Shariff et al. \(2008\)](#) drew on a population of university students in Canada. While our participant pool is not entirely ignorant of atheist arguments, we generally find qualitatively that individuals have had relatively little exposure to, and typically show less acceptance of, these arguments compared

to students in North America. Finally, we extend the study by Shariff et al. by adding outcome measures beyond religiosity, in particular, subjective wellbeing and tolerance of others.

Because of the number of outcome variables, we are careful to avoid data-mining and to control for multiple inference. We employ two strategies to this end. First, the study design and all analysis methods were pre-registered before data analysis began (<https://www.socialsciceregistry.org/trials/766>); our analysis follows this plan strictly, and we point out any additions and deviations below. Second, we control for multiple inference using i. index variables for subgroups of outcomes, ii. seemingly unrelated regression (SUR) to test for the joint significance of the treatment coefficients across all outcomes or indices, and iii. family-wise error rate (FWER) to test for the significance of individual coefficients while controlling for multiple testing.

We find that exposure to emotional arguments against religion decreases religiosity. We examine the effect of exposure to anti-religious arguments on religiosity both through self-reported measures and through a single-target implicit associations task (ST-IAT) measuring the degree to which individuals associate religious concepts with the concepts “real” vs. “imaginary.” We detect a strong negative effect of the emotional message on self-reported religiosity of about 0.40 standard deviations (SD). Additionally, when restricting only to males in the sample (a pre-specified subgroup analysis), we find that the emotional message has a strong negative effect on both self-reported (0.43 SD) and implicit religiosity (0.20 SD). This finding might be understood in light of the fact that women typically show higher levels of religiosity than men (WVS 2015), and thus might be more resistant to Atheist messages. However, unlike Shariff et al. (2008), we find no effect of the rational, scientific message on self-reported or implicit measures of religiosity.

The effects of the atheism messages on self-reported wellbeing are bi-directional: while the emotional atheism message strongly decreases psychological wellbeing among men (0.38 SD), the scientific atheism message strongly increases wellbeing among both men and women by a similar magnitude (0.35 SD). Thus, different arguments for atheism may differentially affect psychological wellbeing, and these effects may be heterogeneous by gender; future work should test the robustness of this finding. Finally, we find no evidence of changes in tolerance.

The paper proceeds as follows: Section 2 describes the design of the experiment; Section 3 discusses our econometric approach; Section 4 presents our findings; and Section 5 concludes.

2 Study design

2.1 Recruitment and experimental structure

The study was conducted at the Busara Center for Behavioral Economics (Busara) in Nairobi, Kenya, a laboratory facility for social science studies. Busara maintains an active participant pool of more than 11,000 Nairobi residents. For the present study, 318 participants who had previously signed-up to be part of the Busara subject pool were recruited using SMS and phone calls and were

informed that they would be paid KES 300 (USD 7.20 PPP)¹ for participation. Participants were told that they were invited to participate in a study about their behavior and preferences.

Recruitment was limited to university students to ensure comprehension of the arguments contained in messages, and to ensure that all participants could participate in the writing task after the messages. In addition, we controlled for heterogeneity in religious background by omitting individuals identified as ethnically Nubian from recruitment. Since most Muslims in the Busara participant pool belong to this ethnicity, we believed this to be the best way to restrict the sample to Christians while avoiding any issues of self-selection that might arise by asking individuals their religion before participation.

Participants came to the Busara lab for experimental sessions lasting approximately one and half hours. Each session included up to 25 participants. Sessions were administered by two female Kenyan research assistants, who spoke English and Swahili fluently and were trained in helping participants with comprehension. The experiment was conducted in English.²

Upon arriving at the lab, participants were briefed and then randomly assigned to one of 25 computer workstations with partitions on three sides, so that they were unable to see or speak with the other participants. Within each session, individuals were randomly assigned to one of the three conditions. All of the treatments and measures were implemented on HP TouchSmart 310 desktop computers running Windows 7. Each participant wore headphones and watched the video message on his or her own computer. Participants used the touch screen exclusively to mitigate effects of individual differences in experiences using a mouse and keyboard. All treatments were implemented using z-Tree software (Fischbacher 2007). The order of questionnaires, tasks, and messages was as follows; detailed descriptions of all items are given in subsequent sections.

1. Practice IAT
2. Validity ST-IAT (cartoon characters and nature names)
3. Video Message (4 minutes)
4. Writing task and comprehension questions
5. Self-reported religiosity questionnaire
6. Practice IAT
7. Religion ST-IAT
8. Cantril ladder

¹USD values are calculated at purchasing power parity, using the 2014 World Bank PPP estimate for private consumption in Kenya: 0.024

²Restricting participation to university students ensured English comprehension. Although Kenyan universities do not typically require an official test of English proficiency, matriculating students are expected to be proficient in written and spoken English, and much of the instruction is in English. Additionally, Busara has confirmed through previous studies that the vast majority of Kenyan university students are highly proficient in English.

9. WVS tolerance questionnaire
10. PANAS questionnaire
11. Demographics survey

At the conclusion of the final questionnaire, participants were debriefed and paid KES 300 in cash.

2.2 Manipulations

The priming literature distinguishes between four types of primes: explicit, implicit, subliminal, and contextual (Shariff et al. 2015). Our study uses explicit primes, as we are most interested in controlling the content of the prime. Such control is more difficult with implicit or subliminal primes, which rely on an individual’s automatic associations with the concepts presented in the prime. In our case, participants have had little prior exposure to atheism, and thus implicit or subliminal primes would be unlikely to produce strong effects.

The main weakness of explicit priming is its potential to introduce demand effects into the study. By necessity, individuals are more cognizant of the nature of the material they are viewing and are thus more likely to grasp the overall purpose of the experiment. It is therefore possible that individuals would respond by providing the answers they believe the experimenter “wants”. In order to minimize the possibility of this effect, we use an IAT to measure implicit religiosity, which is much less vulnerable to manipulation by the participant (more details below).

The messages used for the study consist of short video presentations (in English) and a writing task in which participants are asked to summarize the main point of the messages. Each participant was randomized into one of three conditions: emotional anti-religious argument, scientific anti-religious argument, and control. Each message is approximately 4 minutes long and consists of a speaker making arguments against religion, or in the case of the control, speaking about vegetables. The speaker is the same Kenyan narrator in all three videos. Bullet points summarizing the main arguments appear on the screen, accompanying the auditory presentation by the speaker. In the emotional condition, the speaker argues that any God must be very cruel if he allows so many people in the world to suffer, concluding that it is unlikely that God exists. In the scientific condition, the speaker argues that the existence of God is unnecessary to explain the universe given our scientific knowledge. In the control condition, the same speaker argues that it is important to eat vegetables every day. The exact text of the messages is provided in Appendix A.1. After viewing the messages, participants are asked to summarize the main arguments in their own words by typing into a text box on their screen and then asked a series of questions to ensure comprehension.

The messages were randomly assigned to conditions within each session, with equal probability for each condition. The setup of the lab included dividers between computers so that participants were unaware of the images shown on the screens of others. Additionally, all participants wore

headphones, so they were unaware of what other participants were hearing. All images used in the implicit religiosity measure (described below) were vetted for comprehension by the experimenters and were further validated through debriefing after several pilot sessions.

2.3 Outcome measures

Self-reported religiosity Our primary outcomes were self-reported and implicit measures of religiosity. Following Shariff et al. (2008), we measure self-reported religiosity with a series of 6 questions in which participants rate different aspects of their religiosity (belief in God, importance of beliefs and religious traditions) on a scale of one to five. As a primary outcome measure, we analyze a weighted-average index of these responses based on the methodology in Anderson (2008). In the Appendix, we also report the results for each of the questions individually and test for joint significance using Seemingly Unrelated Regression (SUR). We also present the results for the first latent factor identified using factor analysis on the responses to the six questions.

Implicit religiosity To control for the possibility of demand effects, we employ a single-target Implicit Association Test (ST-IAT) adapted from (but not identical to) the design used by Shariff et al. (2008). The ST-IAT is a computer-based sorting task that uses response time to measure unconscious associations with a target concept. In each block of the ST-IAT, participants sort three categories of words to the left- and right-hand sides of the screen: synonyms of “real”, synonyms of “imaginary”, and words associated with religion. All language used in the task was vetted for comprehension with the sample population during several pilot sessions.

In one block, the participants sort the religious words and synonyms of “real” to the same side. In a second block, the participants sort religious words and synonyms of “imaginary” to the same side. The order in which these two blocks occur is randomized. The ST-IAT design assumes that participants will more quickly sort target words to the side that represents their implicit association with the target.

As a validity check for the ST-IAT, we also administer ST-IATs using alternatively the names of cartoon characters familiar to most Kenyans, and the names of natural landmarks in Kenya. We hypothesize that individuals should be relatively faster to associate cartoons with the concept imaginary, and faster to associate natural landmarks with the concept real.

Using the result of the ST-IAT described above, for each individual we calculate a D-score as

$$\text{D-Score} = [\text{Mean}(\textit{latency}^{\textit{real}}) - \text{Mean}(\textit{latency}^{\textit{imaginary}})] / \text{SD}^{\textit{both}}$$

where $\textit{latency}^{\textit{real}}$ is the reaction time when associating the concept of interest (religion) with the concept real, and $\textit{latency}^{\textit{imaginary}}$ is the reaction time when associating the concept of interest with the concept imaginary. Latency (response time) is recorded in milliseconds; shorter latency indicates

a stronger implicit association. Following from the equation above, a lower D-score represents a stronger belief in religious concepts.

Following the recommendations in Greenwald et al. (2003), we exclude participants for whom more than 10% of responses are below 300 ms, as well as all responses over 10,000 ms. Individuals who initially respond incorrectly in a trial are required to press the correct response before proceeding to the next trial. We measure latency as the total time from beginning the trial to the entry of a correct response, effectively penalizing incorrect responses with longer latencies (Greenwald, Nosek, and Banaji 2003).

Validity ST-IAT (cartoon characters and nature names) To determine whether the implicit association test operates as desired in this population, we administered a “Cartoon Character” and “Nature Name” ST-IAT at the very beginning of each experimental session that asks participants to associate cartoon characters and names of animals with “real” and “imaginary”. We reason that all participants should have “imaginary” associations with cartoon characters, and “real” associations with nature names. If this ST-IAT successfully measures these associations, we can be confident that it is an effective tool for measuring other implicit attitudes.

Other outcomes We also include a questionnaire on tolerance from the World Values Survey; the Cantril ladder to gauge current social status, and expected social status in 5 years; the negative affect questions from the Positive and Negative Affect Scale (PANAS); and basic demographics questions. Details on these questionnaires are provided in Appendix A.

3 Econometric specifications

3.1 Basic specification

Our specification for assessing the effect of the messages on outcomes is

$$y_i = \beta_0 + \beta_1 T_{R,i} + \beta_2 T_{E,i} + \varepsilon_i \tag{1}$$

where y_i is the outcome of interest measured at the level of the individual respondent i . $T_{R,i}$ is an indicator taking a value of 1 if individual i was assigned to the scientific priming condition, and 0 otherwise. $T_{E,i}$ is an indicator taking a value of 1 if individual i was assigned to the emotional priming condition, and 0 otherwise. The omitted category is participants assigned to the control condition. ε_i is an idiosyncratic error term. We report heteroskedasticity-robust standard errors. Note that standard errors are not clustered at the session level because randomization occurred within sessions.

Thus, given random assignment to treatment conditions, β_1 identifies the effect of exposure to the scientific messages on the variable interest. β_2 identifies the effect of exposure to the emotional messages on the variable interest. A joint test of β_1 and β_2 identifies the joint effect of the messages.

3.2 Heterogeneous effects

To test for heterogeneous treatment effects, we estimate the following specification:

$$y_i = \beta_0 + \beta_1 T_{R,i} + \beta_2 T_{E,i} + \beta_3 T_{R,i} \times X_i + \beta_4 T_{E,i} \times X_i + \delta X_i + \varepsilon_i \quad (2)$$

Here, X_i is an indicator for a given dimension of heterogeneity. Given random assignment to treatment conditions, β_3 identifies the heterogeneous effect of exposure to the scientific messages for individuals in group X , and β_4 identifies the heterogeneous effect of exposure to the emotional messages for individuals in group X . We report heteroskedasticity robust standard errors.

As pre-specified in the pre-analysis plan, the main dimensions of heterogeneity are gender and the z-score of the total number of negative emotions reported by the respondent on the PANAS questionnaire. There is little variation in other demographic measures such as education and age, as we restricted recruitment to current university undergraduates living in Nairobi.

3.3 Controlling for multiple inference

We pre-specified the two main outcomes of interest (self-reported religiosity and implicit religiosity) as separate hypotheses; our main analysis therefore considers them separately and does not adjust for multiple comparisons across them. However, for the sake of completeness, we nevertheless report family-wise error rate adjusted (FWER) p -values for specification 3.1 across these two outcomes, following [Anderson \(2008\)](#). We also report the p -values for a joint significance test across these outcomes using Seemingly Unrelated Regression (SUR).

4 Results

4.1 Summary statistics and randomization check

Summary statistics for all demographics and outcome variables are detailed in [Table 1](#). The sample includes 183 males and 133 females. All participants were over 18 years of age, with a mean age of 22 and a maximum age of 26. As mentioned above, all participants were enrolled full-time at local Nairobi universities at the time of participation. In some instances, we were unable to administer all questionnaires; thus, for some variables the number of observations is less than 318. 84% of the sample self-identified as Christian, suggesting that our recruitment strategy was successful.

Table 2 reports the results of a balance check of key variables across treatment categories: demographics and the results of the two practice IATs that were given before priming. We detect no significant difference in these variables across treatment groups, suggesting that randomization was successful.

4.2 Validity IAT

Before presenting the messages, we test the validity of our ST-IAT setup by running versions with concepts we expect to be more quickly associated with “Real” and concepts we expect to be more quickly associated with “Imaginary.” We use well-known animal and plant names and well-known cartoon characters, respectively. Figure 1 depicts the results of this analysis compared to the full-sample results for the religion ST-IAT. As expected, individuals more quickly associated nature names with the concept “real” than with the concept “imaginary”, and associated cartoon characters more quickly with the concept “imaginary” than with the concept “real”. The p -value of test of equality between the d -scores is < 0.01 . This finding is in line with the hypothesis that participants associate items they consider to be real more quickly with the concept “real”, and items they consider to be imaginary more quickly with the concept “imaginary”, suggesting that our ST-IAT is valid.

Figure 1 also shows the results for the ST-IAT for religious words across the entire sample. The corresponding d -score was significantly greater than 0 (one-sided t -test, $p < .001$), suggesting that on average participants were more likely to associate religious words with the concept “real” than “imaginary”. This result is consistent with the fact that our sample is largely Christian.

4.3 Treatment effects

Figure 2 displays the effect of treatment of our main self-reported and implicit measures of religiosity in both our full population and when restricting men only, and Table 3 reports the results of the regressions described in Section 3. Overall, we detect a strong negative effect of exposure to the emotional message on religiosity, especially among men. In the full sample, we detect a decrease of 0.40 SD in self-reported religiosity caused by the emotional message, significant at the 95% level using unadjusted p -values and the 90% level after adjusting for multiple inference. The coefficient on the IAT measure is similarly negative but insignificant. For both measures, there is no significant effect of the scientific message, and the difference between the two messages is not significant. The scientific message does not produce a treatment effect even when restricting to the sample to those individuals who passed all comprehension checks, as shown in Appendix Table A.2.

Note also that the joint test using SUR is significant for the science message, but not the emotional message; this finding results from the insensitivity of SUR to the direction of treatment effects and dilution of the strong effects of the emotional message on self-reported religiosity by small effects on other outcomes.

Our pre-analysis plan pre-specified a heterogeneous analysis by gender. This analysis reveals that the effects among men are stronger than in the sample as a whole: when restricting the sample to male respondents among male participants, we detect a decrease of 0.30 SD in self-reported religiosity caused by the emotional message, significant at the 95% level using unadjusted p-values, and a decrease in implicit religiosity 0.20 points as measured by the religiosity ST-IAT, significant at the 95% level using unadjusted p-values and the 90% level after adjusting for multiple inference. These results suggest men in our sample responded to the anti-religious message, especially when it attacked religion as harmful rather than just untrue. Results for women, and the difference between men and women, are shown in Appendix Table ?? . Columns (1) and (3) report the treatment effects for women and show that there are no significant effects on religiosity, and the treatment effect of the emotional message on implicit religiosity is significantly larger in men than in women.

Turning to subjective wellbeing, we find that, among men, the emotional message induces a 0.38 SD reduction in self-reported subjective wellbeing as measured by the Cantril ladder, significant at the 95% level. This finding is in line with previous studies showing that subjective wellbeing is higher among more religious individuals (Deaton and Stone 2013), and suggests that a decrease in religious belief caused by atheist arguments may reduce subjective wellbeing. We find no evidence that this pattern extends to individual's expectations of their future wellbeing, as the effects on the 5-year Cantril ladder are not significant. Appendix Table ?? shows that the effect on current wellbeing effect is significantly larger in men than in women, consistent with the finding that the emotional message reduced religiosity in men but not in women. One possible mechanism underlying this finding is that the emotional message reminds participants of the suffering in the world, and that this reminder negatively affects wellbeing. The fact that this effect is observed in men but not women may arise from the finding that the message does not affect religiosity in women, but does affect it in men. Thus, women's religiosity, unaffected by the message, may buffer against the negative effect of the emotional message on wellbeing. In contrast, men's religiosity has been reduced by the message and can therefore not protect against the negative wellbeing effects of the message. A caveat to these results is that we observe no overall effect of either message on negative affect, as reported in Appendix Table A.7; they point in the same general direction as the Cantril results, but do not reach significance.

Intriguingly, the science message actually has the opposite effect on subjective wellbeing in the full population. We detect a 0.35 SD increase in subjective wellbeing as measured by the Cantril ladder, significant at the 99% level, and a 0.25 SD increase in expected future subjective wellbeing, significant at the 90% level. This effect is driven mainly by women, who show a significant 0.60 SD increase in wellbeing after the scientific message. Thus, it appears that the emotional atheism message reduces subjective wellbeing among men, while the scientific message increases it in the whole sample (although only significant in women). A possible mechanism underlying the positive wellbeing affect of the science message may be that it makes respondents feel liberated, while still providing an explanation for events in the world; however, this explanation is at odds with the fact that the scientific message does not in fact reduce religiosity. An alternative account is that the

increase in wellbeing induced by the scientific message may increase participants' perceived control of events in the world and thereby raise wellbeing even in the absence of changes in religiosity. Future work might test these hypotheses.

Finally, we detect no significant effect on tolerance, suggesting no change in social preferences due to decreases in religiosity.

5 Conclusion

We report on the results of a study in which university students in Kenya were exposed to two different types of atheist messages, following which we measured their religiosity, subjective wellbeing, and tolerance. We find a large and significant negative effect of emotional atheist messages on self-reported and implicit measures of religiosity, especially among men. However, we detect no effect of scientific messages on religiosity, in contrast to the results of the only other study to date examining the effect of such messages ([Shariff, Cohen, and Norenzayan 2008](#)).

Our study contributes to the literature in several ways. First, we provide evidence that atheist messages such as those presented by the “New Atheists” actually affect the intensity of religious belief, at least in the very short term. Second, our evidence suggests that religiosity may be more vulnerable to emotional than to rational non-religious appeals, at least in this population. Third, our finding that non-religious messages affect men more than women suggests that men may be more vulnerable to atheist messages, possibly because they are less religious than women in the cross-section ([WVS 2015](#)). Fourth, we find no evidence that a decrease in religiosity is associated with either increases or decreases in tolerance. This finding is at odds with previous studies that find religious messages cause racial bias and strong in-group preferences ([Johnson, Rowatt, and LaBouff 2010](#); [LaBouff et al. 2012](#); [Ramsay et al. 2014](#)). Finally, we find that emotional atheist messages also cause a decrease in self-reported subjective wellbeing, suggesting that decreases in religiosity may adversely affect welfare. This finding supports existing correlational studies linking higher levels of religiosity with higher subjective wellbeing.

Future work might assess whether atheist messages similar to those used in the present study impact other outcomes beyond religiosity, wellbeing, and tolerance. Most prominently, given the literature connecting religious messages to increases in pro-social behavior, we believe it important to evaluate whether anti-religious messages have the opposite effect. Additionally, one might look for effects of atheist messages on in-group and out-group preferences, honesty, and risk-taking. Together, the answers to these questions may contribute to understanding whether the message promulgated by thinkers like the New Atheists is socially beneficial or harmful. By implication, these results would give us better insight into the role of religion in society, both in terms of its benefits and harms.

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Table 1: Summary Statistics

	Mean	SD	Median	Minimum	Maximum	N
Male	0.58	0.49	1.00	0.00	1.00	316
Female	0.42	0.49	0.00	0.00	1.00	316
Age	21.96	1.63	22.00	18.00	27.00	241
Self-identified Christian	0.84	0.36	1.00	0.00	1.00	318
Self-identified Muslim	0.01	0.08	0.00	0.00	1.00	294
No religion	0.02	0.13	0.00	0.00	1.00	294
Cartoon IAT D-Score	-0.14	0.52	-0.20	-1.39	1.29	318
Nature IAT D-Score	0.13	0.50	0.16	-1.58	1.21	318
Self-Reported Religiosity Total Score	24.33	4.17	25.00	6.00	30.00	318
Implicit Religiosity (IAT D-Score)	0.09	0.49	0.11	-1.35	1.27	318
Subjective Wellbeing - Now (Cantril)	5.57	1.80	5.00	0.00	10.00	318
Subjective Wellbeing - 5 Years (Cantril)	8.31	1.42	9.00	1.00	10.00	318
Tolerance Total Score (WVS)	-2.11	1.22	-2.00	-7.00	0.00	318
Panas Negative Affect Total	168.63	160.74	128.00	0.00	816.00	294

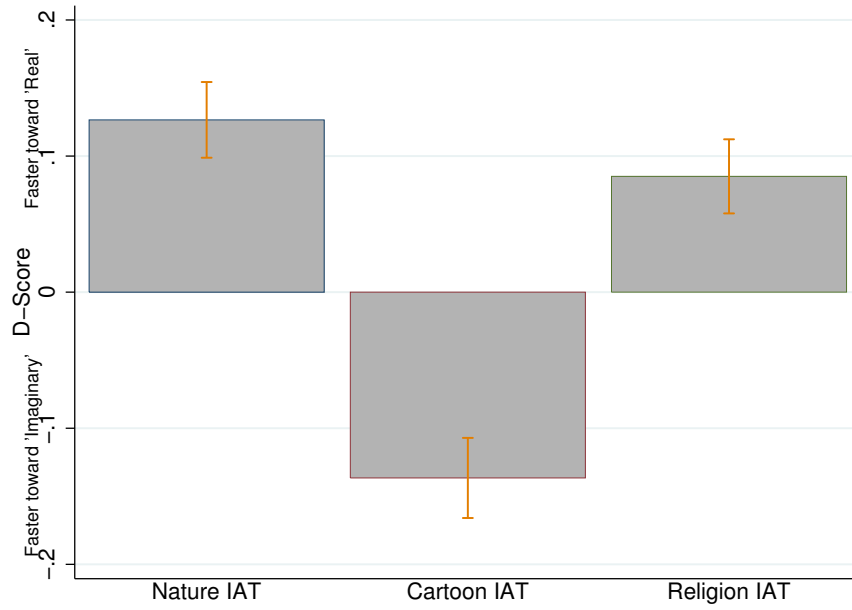
Notes: Summary statistics for all demographic and outcome variables. Each row corresponds to a separate characteristic. Male and Female are indicator variables for respondent's gender. Religious categories are indicators for whether a respondent identifies as a member of that religion. Cartoon, nature, and religion IAT results are reported as D-scores for each individual, with higher values corresponding to a faster association with the concept "real". Self-reported religiosity is taken as a total across six questions using a five-point Likert scale, with higher values corresponding to greater religiosity. Both subjective wellbeing scales are 11 point Cantril ladders, with higher values corresponding to greater subjective wellbeing. Total tolerance score is a reverse coding of a total of 10 binary questions described in the Appendix. PANAS is a total across 12 questions asking individuals to rate the degree to which they are currently feeling a particular emotion on a 1 to 100 scale. The sample was 318, but in some cases, individuals declined to give a response to specific questions.

Table 2: Randomization Check

	Control Mean (SD)	Science Prime	Emotions Prime
Male	0.58 (0.50)	0.06 (0.07)	-0.06 (0.07)
Female	0.42 (0.50)	-0.06 (0.07)	0.06 (0.07)
Age	21.99 (1.68)	-0.09 (0.26)	-0.01 (0.25)
Self-identified Christian	0.81 (0.39)	0.07 (0.05)	0.04 (0.05)
Self-identified Muslim	0.01 (0.10)	-0.01 (0.01)	-0.00 (0.01)
No religion	0.03 (0.17)	-0.02 (0.02)	-0.02 (0.02)
Cartoon IAT D-Score	-0.10 (0.55)	0.00 (0.07)	-0.12 (0.07)
Nature IAT D-Score	0.07 (0.49)	0.10 (0.07)	0.08 (0.06)
Total Observations	110	91	117

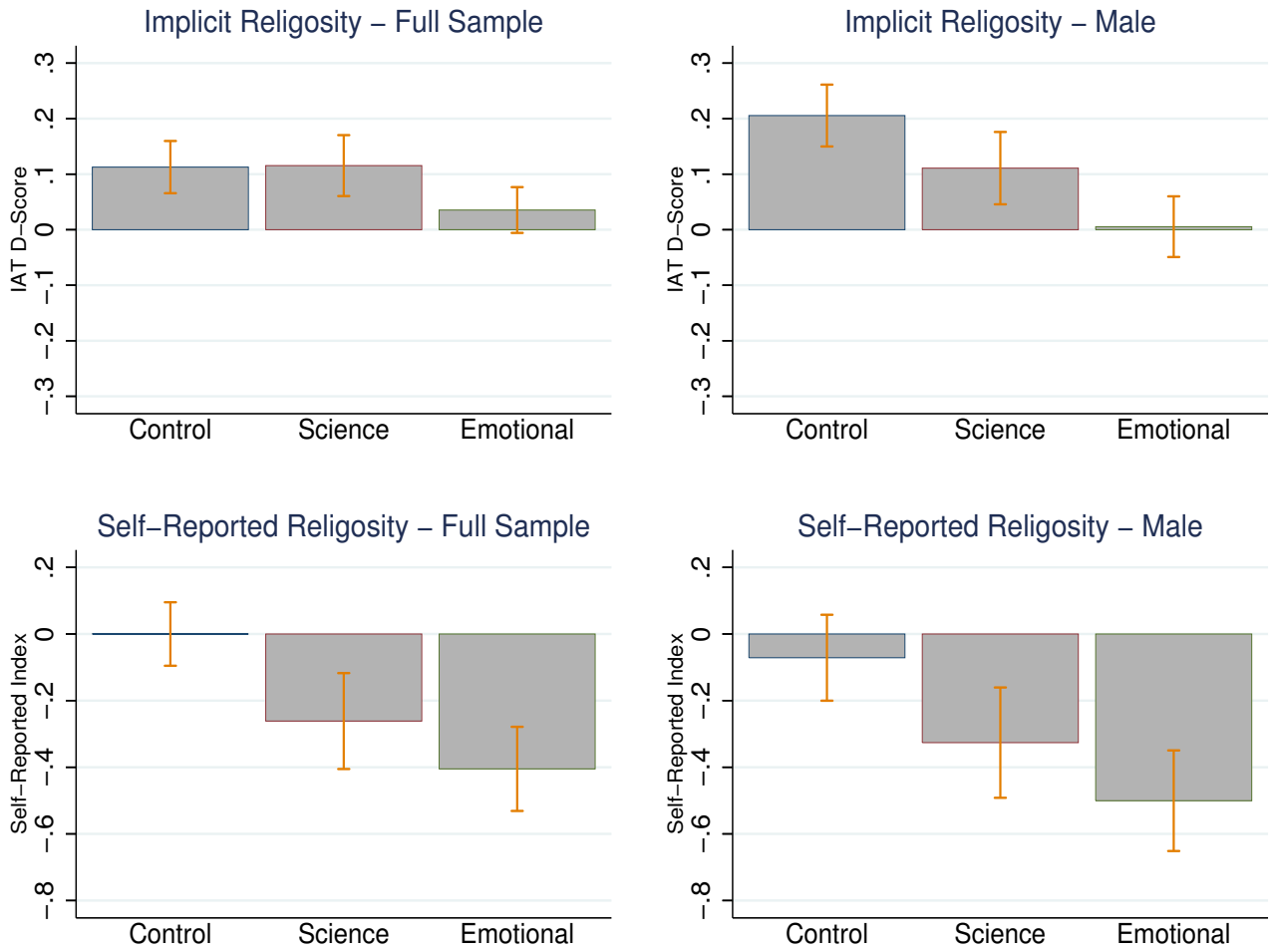
Notes: Results are coefficients and standard errors for OLS regressions of various demographics on indicators for treatment status. Characteristics of interest are listed on the left. Column (1) reports the mean and SD of the control group. Column (2) and (3) report the coefficients and standard errors from the regression of the characteristic of interest on indicators for the science and emotions message, respectively. The last line reports the total number of observations in each condition. * denotes significance at 10 pct., ** at 5 pct., and *** at 1 pct. level.

Figure 1: IAT Validity Check: Cartoon vs. Nature Names



Notes: Bar graphs showing means and 1 standard error of the mean (SEM) of individual d-scores for the cartoon vs. nature single-target IAT. Higher values indicate a faster association between target concept and the concept “Real”, while lower values indicate a faster association between target concept and the concept “Imaginary”.

Figure 2: Treatment Effects



Notes: Top panels: Bar graphs showing means and 1 SEM of individual d-scores for the religiosity single-target IAT. Higher values indicate a faster association between target concept and the concept “Real”, while lower values indicate a faster association between target concept and the concept “Imaginary”. Bottom panels: means and 1 SEM for self-reported religiosity.

Table 3: Treatment Effect Regressions

	All Respondents					Male Respondents				
	(1) Control Mean	(2) Science Prime	(3) Emotions Prime	(4) Difference	(5) N	(6) Control Mean	(7) Science Prime	(8) Emotions Prime	(9) Difference	(10) N
Self-Reported Religiosity Index (Anderson)	0.00 (1.00)	-0.26 (0.17) [0.42]	-0.40** (0.16) [0.07]*	0.14 (0.19) [0.69]	318	-0.07 (1.03)	-0.25 (0.21) [0.73]	-0.43** (0.20) [0.15]	0.17 (0.22) [0.69]	185
Implicit Religiosity (IAT D-Score)	0.11 (0.49)	0.00 (0.07) [0.97]	-0.08 (0.06) [0.60]	0.08 (0.07) [0.56]	318	0.21 (0.45)	-0.09 (0.09) [0.73]	-0.20** (0.08) [0.06]*	0.11 (0.09) [0.50]	185
Subjective Wellbeing - Now (Cantril)	0.00 (1.00)	0.35** (0.15) [0.14]	-0.03 (0.13) [0.94]	0.38** (0.15) [0.10]*	318	0.07 (1.17)	0.19 (0.22) [0.76]	-0.38** (0.19) [0.16]	0.57*** (0.19) [0.03]**	185
Subjective Wellbeing - 5 Years (Cantril)	-0.00 (1.00)	0.25* (0.14) [0.29]	-0.04 (0.13) [0.94]	0.29** (0.14) [0.16]	318	-0.16 (1.12)	0.31 (0.20) [0.56]	0.06 (0.17) [0.83]	0.25 (0.17) [0.50]	185
Tolerance Score (WVS)	0.00 (1.00)	0.23 (0.15) [0.42]	0.14 (0.13) [0.67]	0.09 (0.15) [0.69]	318	0.18 (0.98)	0.10 (0.19) [0.84]	0.09 (0.17) [0.83]	0.00 (0.19) [0.99]	185
Panas Negative Affect Total	0.00 (1.00)	-0.06 (0.14) [0.88]	0.21 (0.15) [0.60]	-0.27* (0.16) [0.34]	294	0.00 (1.07)	-0.09 (0.17) [0.84]	0.23 (0.19) [0.52]	-0.32* (0.17) [0.29]	175
Joint test (p -value)		0.08*	0.15				0.37	0.02**		

Notes: OLS estimates of the effects of priming on outcome variables. Outcome variables are listed on the left and reported in z-score units with the exception of the IAT results which report individual d-scores. For each outcome variable, we report the coefficients of interest with heteroskedasticity robust standard errors in parentheses and FWER-adjusted p-values in brackets. Columns (1) through (5) report the results for the full sample. Columns (6) through (10) report the results when restricting to males. Columns (1) and (6) report the mean of the outcome variable among the control group. Columns (2) and (7) report the effect of viewing the science message. Columns (3) and (8) report the effect of viewing the emotional message. Columns (4) and (9) report the difference between the effects of the two messages. Columns (5) and (10) report the sample size. * denotes significance at 10 pct., ** at 5 pct., and *** at 1 pct. level.

A Experiment details

A.1 Messages

A.1.1 Scientific atheism message

- Most people think that you need God to explain the existence of life, but they are wrong.
- Science offers us an explanation of how the complexity of life arose out of simplicity without God.
- The theory that God exists does not offer a good explanation for anything.
- The origin of life was a chemical event, whereby a simple molecule able to replicate itself and pass down its structure (such as DNA) came into existence.
- This strikes many people as improbable, but scientists invoke large numbers to explain how life arose despite the unlikeliness.
- With so many planets in the universe, life still would have emerged on one billion planets.
- Once life came into existence, Charles Darwin's theory of evolution by natural selection explains how complex life forms arose step by step without a God.
- Millions of mutations happen in life forms all the time, but only those that make an organism better able to survive are passed down.
- Over millions of years, these beneficial mutations add up, and organisms become more and more complex and well suited to their environment.
- The alternative that life was designed by God is unnecessary, and it is also highly improbable.
- Any designer like God capable of designing something really complex like life, has to be really complex himself.
- The existence of God would raise a bigger mystery than it solves because it does not tell us where God came from, so God is not a good explanation for the universe.

A.1.2 Emotional atheism message

- The widespread pain and suffering in the world is very strong evidence that God does not exist.
- 9,000,000 children die every year before they reach the age of five. That is 24,000 children a day, 1,000 per hour, 17 per minute.

- Any God that would allow children by the millions to suffer and die in this way and for their parents to grieve in this way is either powerless or evil.
- According to many Christians, millions of people will go to Hell simply because they were born into the wrong religion.
- If God created these people, then he is responsible for the fact that they were brought up with a different religion and are ignorant of Christianity
- God created a world in which they would not be Christians, and then he created a penalty for this ignorance that he created, so he must be evil.
- In the Christian viewpoint, any murderer can spend his life raping and torturing children, but will be forgiven by God if he converts to Christianity.
- Christians use a double standard to exonerate their vision of God.
- Given everything that God does not do to help people, believing in God is morally reprehensible.
- If God exists and is good, he would not have given us a book (the Bible) that defends slavery and tells us to kill people for imaginary crimes like witchcraft.
- However it is not just the Christian God that is immoral and evil – any religion that justifies this killing is immoral and evil.
- It is clear that either God does not exist or he is evil.

A.1.3 Control message

- You need to eat vegetables everyday because you simply cannot find another food group that is as perfectly matched to our everyday human needs.
- The nature of vegetables and the nature of human health are matched up in a way that simply cannot be duplicated by other food groups.
- To begin with, vegetables as a group are so low in calories that it is very difficult to gain weight even if you overeat them.
- On average, there are only 50 calories or less per cup from most of the healthiest vegetables.
- That amount is astonishingly low, even when you compare it to other food groups.
- The uniquely low-calorie nature of vegetables as a group means that you can eat a lot of them and not have to worry about the calories.

- Optimal nutrition is another reason that vegetables are important on a daily basis because you need a supply of vitamins every day.
- When considered as a group, vegetables are unusually rich sources for a full mixture of water-soluble vitamins.
- When it comes to vegetables, there is also their abundance of phytonutrients to consider.
- Finally is the pleasure of chewing and amazing digestive benefits that come from the high-fiber content of vegetables.
- Food cannot move through our digestive tract in a healthy way unless it is fiber-rich, and vegetables are some of the very richest sources of fiber that exist.
- It is clear that you should eat a lot of vegetables every day.

A.2 Additional outcome measures

A.2.1 Cantril Ladder

To assess how religion may influence an individual’s sense of status, we present participants with a Cantril ladder, which asks participants where they would rate their current life compared to the best possible life they can imagine for themselves, both now and in five years by indicating where they stand (will stand) on a picture of a ladder with steps labeled 0 to 10.

We calculate z-scores for responses to both the present-date and 5-year Cantril ladder question.

Tolerance We adapt a series of questions from the World Values Survey asking participants “Of the following groups of people, which would you not like to have as neighbors?”

- Drug addicts
- People of a different race
- People who have AIDS
- Immigrants / foreign workers
- Homosexuals
- People of a different religion
- Atheists/people with no religion
- Heavy drinkers

- Unmarried couples living together
- People who speak a different language

We analyze individual responses and test joint significant with SUR regression; in addition, we calculate both aggregate and weighted average indexes across all responses.

A.2.2 Positive and Negative Affect Schedule (PANAS)

To assess the possible effect of the messages on affect, individuals complete questions from the PANAS evaluating negative affect after viewing the messages. On a scale of 1 (not at all) to 100 (very much), participants are asked “How much do you feel...”

- “Distressed, at this moment?”
- “Upset, at this moment?”
- “Guilty, at this moment?”
- “Ashamed, at this moment?”
- “Hostile, at this moment?”
- “Irritable, at this moment?”
- “Nervous, at this moment?”
- “Jittery, at this moment?”
- “Scared, at this moment?”
- “Afraid, at this moment?”
- “Frustrated, at this moment?”
- “Stressed, at this moment?”

We evaluate whether priming impacted affect by analyzing individual responses and testing for joint significance with SUR regression; in addition, we analyze the summary indices of this measure.

A.2.3 Demographics

We ask individuals to report their gender, age and religious affiliation.

B Detailed results

Table A.1: Overall Treatment Effects - Detailed Findings

	(1) Control Mean	(2) Science Prime	(3) Emotions Prime	(4) N
Religiosity Self-Report Index	0.00 (1.00)	-0.26 (0.17)	-0.40** (0.16)	318
Religiosity Factor Index	-0.00 (1.00)	-0.43** (0.18)	-0.48*** (0.17)	318
Religion IAT D-Score	0.11 (0.49)	0.00 (0.07)	-0.08 (0.06)	318
Religion IAT D-Score (Alt Algorithm)	0.11 (0.51)	-0.00 (0.08)	-0.07 (0.06)	318
Panas Negative Affect Total	0.00 (1.00)	-0.06 (0.14)	0.21 (0.15)	294
WVS Tolerance Total	-0.00 (1.00)	-0.23 (0.15)	-0.14 (0.13)	318
Cantril (Now)	0.00 (1.00)	0.35** (0.15)	-0.03 (0.13)	318
Cantril (5 Yrs)	-0.00 (1.00)	0.25* (0.14)	-0.04 (0.13)	318
Joint test (p -value)		0.08*	0.13	

Notes: OLS estimates of the effects of priming on outcome variables. Outcome variables are listed on the left and reported in z-score units with the exception of the IAT results which report individual d-scores. For each outcome variable, we report the coefficients of interest and heteroskedasticity robust standard errors in parentheses. * denotes significance at 10 pct., ** at 5 pct., and *** at 1 pct. level.

Table A.2: Overall Treatment Effects - Passed Comprehension Checks

	(1) Control Mean	(2) Science Prime	(3) Emotions Prime	(4) Joint Test <i>p</i> -value	(5) N
Self-Reported Religiosity Index (Anderson)	0.01 (0.93)	-0.29 (0.20)	-0.38** (0.17)	0.06*	244
Self-Reported Religiosity Index (Factor)	0.04 (0.94)	-0.59*** (0.21)	-0.41** (0.19)	0.01***	244
Implicit Religiosity (IAT D-Score)	0.08 (0.50)	0.09 (0.08)	-0.03 (0.07)	0.32	244
Implicit Religiosity (IAT D-Score Alt Algorithm)	0.08 (0.53)	0.09 (0.09)	-0.02 (0.08)	0.43	244
Subjective Wellbeing - Now (Cantril)	-0.06 (1.00)	0.41** (0.17)	-0.06 (0.15)	0.01**	244
Subjective Wellbeing - 5 Years (Cantril)	-0.06 (1.00)	0.41*** (0.15)	-0.08 (0.15)	0.00***	244
Tolerance Score (WVS)	-0.01 (0.99)	0.18 (0.17)	0.04 (0.16)	0.55	244
Panas Negative Affect Total	0.00 (1.01)	-0.02 (0.16)	0.30 (0.19)	0.20	226
Joint test (<i>p</i> -value)		0.02**	0.30		

Notes: OLS estimates of the effects of priming on outcome variables. The sample is restricted to individuals who passed the comprehension checks at the beginning of the study. Outcome variables are listed on the left and reported in z-score units with the exception of the IAT results which report individual d-scores. For each outcome variable, we report the coefficients of interest and heteroskedasticity robust standard errors in parentheses. * denotes significance at 10 pct., ** at 5 pct., and *** at 1 pct. level.

Table A.3: Overall Treatment Effects - Christian

	(1) Control Mean	(2) Science Prime	(3) Emotions Prime	(4) Joint Test p -value	(5) N
Self-Reported Religiosity Index (Anderson)	0.11 (0.85)	-0.30* (0.18)	-0.36** (0.15)	0.04**	268
Self-Reported Religiosity Index (Factor)	-0.02 (1.02)	-0.39** (0.19)	-0.30* (0.17)	0.07*	268
Implicit Religiosity (IAT D-Score)	0.10 (0.49)	0.01 (0.08)	-0.03 (0.07)	0.80	268
Implicit Religiosity (IAT D-Score Alt Algorithm)	0.10 (0.51)	0.02 (0.08)	-0.02 (0.07)	0.85	268
Subjective Wellbeing - Now (Cantril)	-0.05 (1.01)	0.46*** (0.16)	0.06 (0.15)	0.01**	268
Subjective Wellbeing - 5 Years (Cantril)	-0.10 (1.00)	0.36** (0.15)	0.05 (0.14)	0.03**	268
Tolerance Score (WVS)	-0.02 (0.99)	0.15 (0.16)	0.10 (0.15)	0.62	268
Panas Negative Affect Total	0.02 (1.00)	-0.07 (0.15)	0.20 (0.16)	0.23	268
Joint test (p -value)		0.08*	0.47		

Notes: OLS estimates of the effects of priming on outcome variables. Outcome variables are listed on the left and reported in z-score units with the exception of the IAT results which report individual d-scores. The sample is restricted to individuals who self-identify as being of Christian faith. For each outcome variable, we report the coefficients of interest and heteroskedasticity robust standard errors in parentheses. * denotes significance at 10 pct., ** at 5 pct., and *** at 1 pct. level.

Table A.4: Heterogeneous Treatment Effects by Gender - Detailed Findings

	(1) Science Prime	(2) Science Prime X Male	(3) Emotions Prime	(4) Emotions Prime X Male	(5) F-test (1)+(2)=0 (p-value)	(6) F-test (3)+(4)=0 (p-value)	(7) N
Self-Reported Religiosity Index (Anderson)	-0.24 (0.31)	-0.01 (0.37)	-0.40 (0.25)	-0.05 (0.32)	0.24	0.03**	316
Self-Reported Religiosity Index (Factor)	-0.29 (0.28)	-0.24 (0.36)	-0.44 (0.28)	-0.09 (0.35)	0.02**	0.02**	316
Implicit Religiosity (IAT D-Score)	0.14 (0.13)	-0.23 (0.15)	0.09 (0.10)	-0.28** (0.13)	0.28	0.02**	316
Implicit Religiosity (IAT D-Score Alt Algorithm)	0.14 (0.13)	-0.24 (0.16)	0.08 (0.10)	-0.26** (0.13)	0.30	0.03**	316
Subjective Wellbeing - Now (Cantril)	0.60*** (0.21)	-0.39 (0.30)	0.37** (0.17)	-0.76*** (0.25)	0.35	0.04**	316
Subjective Wellbeing - 5 Years (Cantril)	0.23 (0.17)	0.08 (0.26)	-0.19 (0.19)	0.25 (0.26)	0.12	0.74	316
Tolerance Score (WVS)	0.38* (0.23)	-0.30 (0.30)	0.23 (0.20)	-0.13 (0.27)	0.66	0.59	316
Panas Negative Affect Total	-0.02 (0.27)	-0.06 (0.32)	0.18 (0.24)	0.07 (0.31)	0.64	0.20	292

Notes: OLS estimates of the effects of priming on outcome variables, with interaction terms by gender. Outcome variables are listed on the left and reported in z-score units with the exception of the IAT results which report individual d-scores. For each outcome variable, we report the coefficients of interest and heteroskedasticity-robust standard errors in parentheses. Columns (1) and (3) report the effect of the science and emotion messages for female respondents. Columns (2) and (4) report the difference in the treatment effects between male and female respondents. Columns (5) and (6) test the joint significance of the main and interaction effects for each message. * denotes significance at 10 pct., ** at 5 pct., and *** at 1 pct. level.

Table A.5: Self-reported Religiosity Detailed Treatment Effects

	(1) Control Mean	(2) Science Prime	(3) Emotions Prime	(4) Joint Test <i>p</i> -value	(5) N
My personal religious beliefs are very important to me.	-0.00 (1.00)	-0.39** (0.18)	-0.50*** (0.17)	0.01***	318
My religion or faith is an important part of my identity.	0.00 (1.00)	0.11 (0.14)	-0.21 (0.15)	0.11	318
Religion important to understand me.	-0.00 (1.00)	-0.02 (0.15)	-0.04 (0.14)	0.95	318
I believe strongly in the teachings of my religion or faith.	-0.00 (1.00)	0.08 (0.15)	-0.08 (0.15)	0.58	318
I believe in God.	0.00 (1.00)	-0.23 (0.18)	-0.21 (0.14)	0.22	318
I consider myself a religious person.	0.00 (1.00)	-0.03 (0.15)	-0.13 (0.14)	0.63	318
Self-Reported Religiosity Index (Anderson)	0.00 (1.00)	-0.26 (0.17)	-0.40** (0.16)	0.03**	318
Joint test (<i>p</i> -value)		0.07*	0.08*		

Notes: OLS estimates of the effects of priming on outcome variables. Outcome variables are dummies, except for the index, which is reported in z-score units. For each outcome variable, we report the coefficients of interest and heteroskedasticity robust standard errors in parentheses. * denotes significance at 10 pct., ** at 5 pct., and *** at 1 pct. level.

Table A.6: Tolerance Detailed Treatment Effects

	(1) Control Mean	(2) Science Prime	(3) Emotions Prime	(4) Joint Test <i>p</i> -value	(5) N
Drug Addicts	0.59 (0.49)	-0.14** (0.07)	0.01 (0.07)	0.07*	318
People of Different Race	0.08 (0.28)	0.05 (0.04)	0.04 (0.04)	0.45	318
People with AIDS	0.04 (0.19)	0.04 (0.03)	0.02 (0.03)	0.43	318
Immigrants	0.03 (0.16)	-0.01 (0.02)	0.02 (0.03)	0.50	318
Homosexuals	0.58 (0.50)	-0.05 (0.07)	-0.12* (0.07)	0.19	318
Different Religions	0.06 (0.25)	0.00 (0.04)	0.01 (0.03)	0.92	318
Atheists	0.17 (0.38)	0.01 (0.05)	-0.00 (0.05)	0.95	318
Heavy Drinkers	0.48 (0.50)	-0.13* (0.07)	-0.08 (0.07)	0.17	318
Unmarried Couples Cohabiting	0.10 (0.30)	-0.07* (0.03)	-0.03 (0.04)	0.13	318
People who Speak Other Languages	0.11 (0.31)	0.02 (0.05)	-0.03 (0.04)	0.42	318
Tolerance Score (WVS)	0.00 (1.00)	0.23 (0.15)	0.14 (0.13)	0.29	318
Joint test (<i>p</i> -value)		0.20	0.44		

Notes: OLS estimates of the effects of priming on outcome variables. Outcome variables are dummies and represent responses to the question: “Of the following groups of people, which would you not like to have as neighbors?” Total tolerance score is a reverse coding of the total of the 10 binary questions. For each outcome variable, we report the coefficients of interest and heteroskedasticity robust standard errors in parentheses. * denotes significance at 10 pct., ** at 5 pct., and *** at 1 pct. level.

Table A.7: PANAS Detailed Treatment Effects

	(1) Control Mean	(2) Science Prime	(3) Emotions Prime	(4) Joint Test <i>p</i> -value	(5) N
distressed	0.00 (1.00)	0.17 (0.16)	0.25 (0.15)	0.23	294
upset	-0.00 (1.00)	-0.13 (0.14)	0.07 (0.14)	0.39	294
guilty	-0.00 (1.00)	0.07 (0.15)	0.33* (0.17)	0.16	294
ashamed	0.00 (1.00)	-0.12 (0.12)	0.19 (0.16)	0.09*	294
hostile	-0.00 (1.00)	-0.17 (0.13)	-0.11 (0.13)	0.46	294
irritable	0.00 (1.00)	-0.05 (0.14)	0.11 (0.15)	0.53	294
nervous	-0.00 (1.00)	-0.11 (0.16)	-0.03 (0.14)	0.78	294
jittery	0.00 (1.00)	-0.01 (0.15)	0.03 (0.14)	0.96	294
scared	0.00 (1.00)	-0.07 (0.15)	0.26 (0.17)	0.15	294
afraid	0.00 (1.00)	0.09 (0.18)	0.34* (0.17)	0.15	294
frustrated	-0.00 (1.00)	-0.04 (0.16)	0.13 (0.15)	0.54	294
stressed	0.00 (1.00)	-0.13 (0.15)	0.17 (0.16)	0.22	294
Panas Negative Affect Total	0.00 (1.00)	-0.06 (0.14)	0.21 (0.15)	0.21	294
Joint test (<i>p</i> -value)		0.32	0.33		

Notes: OLS estimates of the effects of priming on outcome variables. Outcome variables are listed on the left and reported in z-score units. The question asked is “How much do you feel...”, and participants respond on a scale from 1–100. For each outcome variable, we report the coefficients of interest and heteroskedasticity robust standard errors in parentheses. * denotes significance at 10 pct., ** at 5 pct., and *** at 1 pct. level.

Table A.8: PANAS Detailed Treatment Effects - Male

	(1) Control Mean	(2) Science Prime	(3) Emotions Prime	(4) Joint Test <i>p</i> -value	(5) N
distressed	0.06 (0.98)	0.28 (0.20)	0.22 (0.19)	0.30	175
upset	0.05 (0.94)	-0.19 (0.16)	0.12 (0.18)	0.20	175
guilty	0.08 (1.16)	-0.04 (0.19)	0.17 (0.22)	0.60	175
ashamed	0.10 (1.23)	-0.26 (0.16)	0.02 (0.20)	0.06*	175
hostile	-0.08 (0.74)	-0.22** (0.11)	0.03 (0.14)	0.03**	175
irritable	-0.03 (1.01)	-0.10 (0.15)	0.06 (0.17)	0.52	175
nervous	0.06 (1.02)	-0.19 (0.19)	0.11 (0.20)	0.32	175
jittery	0.10 (0.93)	-0.01 (0.20)	-0.11 (0.17)	0.78	175
scared	0.00 (1.11)	-0.13 (0.19)	0.18 (0.21)	0.32	175
afraid	-0.01 (0.99)	0.03 (0.20)	0.32 (0.21)	0.29	175
frustrated	-0.12 (0.88)	0.05 (0.18)	0.31* (0.17)	0.18	175
stressed	-0.15 (0.94)	-0.05 (0.18)	0.32* (0.19)	0.15	175
Panas Negative Affect Total	0.00 (1.07)	-0.09 (0.17)	0.23 (0.19)	0.18	175
Joint test (<i>p</i> -value)		0.06*	0.50		

Notes: OLS estimates of the effects of priming on outcome variables. Outcome variables are listed on the left and reported in z-score units. The question asked is “How much do you feel...”, and participants respond on a scale from 1–100. For each outcome variable, we report the coefficients of interest and heteroskedasticity robust standard errors in parentheses. * denotes significance at 10 pct., ** at 5 pct., and *** at 1 pct. level.