

6-1-2022

Beyond Religiosity: Examining the Relative Effects of Religiosity and Religious Ideation on Climate Skepticism (a Research Note)

Kristin Haltinner
University of Idaho, khaltinner@uidaho.edu

Dilshani Sarathchandra
University of Idaho, dilshanis@uidaho.edu

Follow this and additional works at: <https://egrove.olemiss.edu/jrss>



Part of the [Place and Environment Commons](#), [Rural Sociology Commons](#), and the [Sociology of Religion Commons](#)

Recommended Citation

Haltinner, Kristin, and Dilshani Sarathchandra. 2022. "Beyond Religiosity: Examining the Relative Effects of Religiosity and Religious Ideation on Climate Skepticism (a Research Note)." *Journal of Rural Social Sciences*, 37(3): Article 1. Available At: <https://egrove.olemiss.edu/jrss/vol37/iss3/1>

This Research Note is brought to you for free and open access by the Center for Population Studies at eGrove. It has been accepted for inclusion in *Journal of Rural Social Sciences* by an authorized editor of eGrove. For more information, please contact egrove@olemiss.edu.

Beyond Religiosity: Examining the Relative Effects of Religiosity and Religious Ideation on Climate Skepticism (a Research Note)

Cover Page Footnote

Please address all correspondence to Dr. Kristin Haltinner (khaltinner@uidaho.edu).

Beyond Religiosity: Examining the Relative Effects of Religiosity and Religious Ideation on Climate Skepticism

Kristin Haltinner
Dilshani Sarathchandra
University of Idaho

ABSTRACT

Much of the existing scholarship on climate change uses religiosity to measure the effects of religion on climate skepticism and results in inconsistent findings. Drawing on insights from the study of religion and environmentalism more broadly, we suggest that scholars should seek a deeper understanding of religion's impacts by considering the influence of specific religious beliefs on perceptions of climate change. We further contend that researchers should consider how these factors shape attitudes within and between segments of the public who hold varying positions on climate change. We test these contentions using a novel sample of 1,000 self-declared "climate skeptics" in the U.S. Pacific Northwest. We find that, among skeptics, specific religious beliefs are more strongly associated with a range of selected climate/environmental attitudes (i.e., conspiracy ideation, trust in climate science, pro-environmentalism, emotions about climate change) than is religiosity. We discuss these findings and their implications for future scholarship.

KEYWORDS

Climate skepticism, conspiracy ideation, perceptions of climate change, pro-environmentalism, religiosity, religion

INTRODUCTION

Among scholarship on climate change, "religiosity" (often measured by frequency of religious service attendance or self-identification as religious in environmental work) is the preferred measure of religion's impact on climate skepticism. McCright (2016), for example, finds religiosity to be a

weak or inconsistent predictor of climate skepticism. A brief look at the literature confirms McCright's contention. Some scholars find that religiosity is a positive predictor of climate skepticism (Wang and Kim 2018; McCright and Dunlap 2011) while others show that religiosity has a weak or moderating effect on people's concerns about climate change (McCright 2016; Zhou 2015) and still others find no correlation between religiosity and concern about climate change (Kellstedt, Zahran, and Vedlitz 2008).

This inconsistency also exists in literature on religiosity and environmentalism more broadly. Kanagy and Nelsen (1995) find that frequency of religious attendance is associated with a decrease in environmentalism. However, Boyd (1999) finds no relationship between these two variables while Kanagy and Willits (1993), Eckberg and Blocker (1996), and Peifer, Khalsa, and Ecklund (2018) found a positive relationship between frequency of church attendance and environmental behavior.

Alternatively, religious scholars have turned to an examination of specific religious beliefs (what we will call "religious ideation" in this research note) to predict environmental attitudes and beliefs. Among the beliefs scholars find associated with lower levels of environmentalism are that of human dominion over earth (White 1967; Hand and Van Liere 1984; Eckberg and Blocker 1996; Tarakeshwar et al. 2001) and those associated with Biblical end-times (Guth et al. 1995).

We contend that those who are interested in religion's impacts on climate skepticism should take note from the lessons of the broader environmental scholarship and examine how skepticism manifests not only in the context of religiosity but also in the context of specific religious beliefs (e.g., beliefs in human dominion, beliefs in the Biblical end-times). While the relationship between belief in human dominion and climate change has yet to be investigated, scholarship does point to a significant relationship between end-times theology and skepticism. For instance, Barker and Bearce (2012) find that the end-of-days theology is associated with greater skepticism surrounding climate change. They conclude that the perception that the end-times are near shortens adherents' perception of the length of time in the future. Given they see no future to protect, adherents resist pro-climate policy initiatives.

In this research note, we draw from prior theories in religion and environmentalism to test the traditional mode of measuring religion's impact on skeptics, *religiosity*, which we measure by the frequency of religious service attendance, against that suggested by extant scholarship

as more robust, *religious ideation*, which we measure using several specific religiously based beliefs about the environment (i.e., climate change indicates God’s will, climate change is the end-of-days as predicted in the Book of Revelation, climate change is punishment for our sins, and humans were meant to rule over the rest of nature). We use a unique dataset gathered from surveying 1,000 self-declared climate change skeptics in the U.S. Pacific Northwest region, representing a range of religious affiliations (Protestant, Christian, Catholic, Mormon, atheist or agnostic, and other religions, as well as religiously unaffiliated), including a majority of Christians (approximately 50 percent of the sample), and examine the relative effects of religiosity and religious ideation on a series of selected outcome measures: conspiracy ideation (i.e., skeptics’ belief that climate change is a “hoax”), trust in climate science, pro-environmentalism, and emotion-based responses to climate change. We suggest that climate skeptics are distinct from the general population with regard to religion’s effects on conspiracy ideation, but similar along other outcome measures. Methodologically, by demonstrating the relative effects of religiosity and religious ideation on diverse outcome variables, our findings suggest that religious ideation is a more useful variable for empirical analysis of climate skepticism than religiosity. To affirm this, future research should consider additional religious beliefs in their analyses.

LITERATURE REVIEW

Below we examine the literature on both religiosity and religious ideation as they relate to existing scholarship on climate skepticism. We further explore their association with each of our outcome variables in turn: conspiracy ideation, trust in science, environmentalism, and emotional response to climate disasters.

Religiosity and Belief in Climate Change, Conspiracy Ideation, Trust in Science, Environmentalism, and Emotion

As mentioned, religiosity is an inconsistent predictor of belief in climate change. For example, McCright (2016) finds that religiosity is associated with people’s denial that climate change is occurring but has no relationship to one’s belief that it will have a negative impact, while McCright and Dunlap (2011) and Wang and Kim (2018) find religiosity is a positive predictor of climate change skepticism. In contrast, Kellstedt et al. (2008) conclude that there is no relationship between religiosity and climate skepticism.

Scholarship on the intersection of conspiracies regarding climate change and religion suggests that religiosity is positively correlated with the belief that climate change is a hoax (Grzesiak-Feldman 2007; Galliford and Furnham 2017; Lewandowsky, Oberauer, and Gignac 2013; Sarathchandra and Haltinner 2020). In fact, this relationship is so powerful among skeptics specifically, that Sarathchandra and Haltinner (2020) find that for every one-degree increase in religiosity (as measured by religious service attendance) among a sample of climate change skeptics, there is a 12 percent increase in the likelihood one believes climate change is a hoax.

Unlike climate change and conspiracy ideation, religiosity in the United States is consistently, inversely correlated with scientific literacy and trust in or perceptions of science. The more religious an individual, the less likely they are to perceive science positively and trust scientific information (McPhetres and Zuckerman 2018; Chan 2018). Religiosity is also associated with negative views regarding scientific advances (Bénabou, Ticchi, and Vindigni 2015; Scheufele et al. 2009).

Religiosity is not a consistent predictor of environmentalism. Kanagy and Nelsen (1995), for example, found that an increase in church attendance is correlated with greater willingness to sacrifice the environment for economic gain. However, they found no relationship between frequency of church attendance and self-identification as an environmentalist. Boyd (1999) also found no relationship between religiosity and environmentalism, using data from the General Social Survey. In contrast, Eckberg and Blocker (1996) and Kanagy and Willits (1993) find church attendance to be associated with pro-environmental attitudes and individual behavior.

Despite these null and negative findings, Carlisle and Clark (2018) find that frequency of religious attendance is negatively correlated with support for government spending on environmental protection. Clements McCright, and Xiao (2014) further complicate the understanding of religiosity and environmentalism by demonstrating that church attendance is positively associated with pro-environmental behaviors but negatively associated with pro-environmental attitudes.

Existing research on affect and climate change has not yet considered the role religiosity has on these experiences. However, research on religiosity more broadly shows that it is generally correlated with emotional well-being (George, Ellison, and Larson 2002). Scholars posit that, at least in part, the positive impact of religion on emotional well-being is a result of the community formed religious engagement

(Zinnbauer and Pargament 2002). The more integrated someone is in their religious community, the greater the emotional benefits (Krause and Hayward 2013; Strawbridge et al. 2001). Studies that focus on religion's impact on long-term existential fears, such as death, find that religion – in this case Christianity – seems to moderate fear of death wherein the more people attend church activities, the less they experience death anxiety (Feifel and Nagy 1981). This scholarship suggests that religiosity may mitigate some strong emotions such as fear and dread which has implications for emotion-based responses to environmental and climate disasters.

Religious Ideation and Belief in Climate Change, Conspiracy Ideation, Trust in Science, Environmentalism, and Emotion

As mentioned, scholarship that examines the relationship between specific religious beliefs and climate skepticism is less common but seem to show more consistent results than religiosity. Beliefs that the Bible is the literal word of God and in end-of-days theology are associated with greater rejection of climate science (Haluza-Delay 2014; Barker and Bearce 2012). However, an exception arises in the case of Latter-day Saints who are more likely than mainline Christians to believe in end-of-days theology yet do not differ significantly with regard to their perspectives on climate change (Haltinner and Sarathchandra 2020).

Similarly, scholarship on the relationship between religiosity and adherence to conspiracy theories has produced mixed results. Some find that, when combined with other demographic variables, religiosity is inversely correlated with belief in conspiracies (Freeman and Bentall 2017; Furnham 2013; Lobato et al. 2014) while others suggest a positive correlation between religiosity and acceptance of conspiracies that are in line with underlying religious ideologies (Oliver and Wood 2014). For example, Christians are more likely to adhere to political or medical conspiracies than are members of other religious groups (Galliford and Furnham 2017).

While a majority of prior research that examines the association between religious affinity and science trust operationalizes religion in terms of religious sect and religiosity (e.g., frequency of religious attendance, frequency of prayer, etc.), a few studies have also looked at specific religious beliefs. For example, Jelen and Lockett (2014) find that belief in the authority of the Bible leads to higher general skepticism toward controversial science topics, including global warming.

The most famous theory with regard to religious beliefs and environmentalism is known as the “Lynn White Thesis.” White argued that Biblical beliefs regarding human dominion caused adherents to reject environmental protection (1967). In support of White’s thesis, Eckberg and Blocker (1996) find that both belief in human dominion and Biblical literalism more generally is associated with lower support for environmental policies and individual actions. Further, Barker and Bearce (2012) find that those who believe in “Christian end-times theology are less likely to support policies designed to curb global warming” as compared to other Christians in the United States (267). They conclude that the perception that the world will end soon decreases one’s perspective of the possible length of future. Thereby, those who adhere to end-of-day theology are more likely to support policies beneficial in the short term than over an extended period of time. In contrast, Boyd (1999) finds no relationship between the literal interpretation of the Bible and environmental views.

There is a dearth of literature at the intersection of affect, religious ideology, and climate skepticism. Therefore, we seek to rely on broader scholarship on the impact of religion on emotions. In examining specific religious beliefs and emotions we were unable to find work directly connected to the belief in human dominion or end-times theology. Work on the relationship between Biblical literalism more broadly suggests that certain beliefs do affect one’s emotional state; belief in “divine forgiveness” is correlated with lower levels of anxiety, while the perception that people are “basically evil” is associated with higher anxiety (Flannelly 2017).

Our Contribution

Our research note extends past scholarship in important ways. First, we use a unique data set gathered from climate skeptics rather than the general population. This allows us to explore the nuances of climate skepticism at greater depth than data sets that include people with different perspectives on climate change. Second, we examine the effects of (1) the frequency of religious service attendance (“religiosity”) and (2) specific religious beliefs that intersect with climate change (what we call “religious ideation” including the “belief in human dominion”) on the nature of climate change skepticism. This allows us to both determine which variable is more useful to the analysis of climate skepticism and to understand how religious affinity and its various manifestations impact climate science skepticism, adding important inroads into scholarly

understandings of the role of religion in shaping perceptions of climate change.

Drawing from extant literature on religion and climate change skepticism, we test a series of hypotheses. In particular, based on the prior literature discussed above, we expect that when examining the relative effects of religiosity and religious beliefs on climate skepticism:

H1: Among climate skeptics, specific religious beliefs (religious ideation and/or belief in human dominion) will have a stronger positive effect on the belief that climate change is a hoax (i.e., conspiracy ideation) than religiosity.

H2: Among climate skeptics, specific religious beliefs (religious ideation and/or belief in human dominion) will have a stronger negative effect on trust in climate science than religiosity.

H3: Among climate skeptics, specific religious beliefs (religious ideation and/or belief in human dominion) will have a stronger negative effect on environmental concern and support for pro-environmental policy than religiosity.

H4: Among climate skeptics, specific religious beliefs (religious ideation and/or belief in human dominion) will lower the intensity of emotion-based reactions to climate change more than religiosity.

METHODS

Data Collection

For this study we conducted an online survey of adult climate change skeptics living in Idaho, Washington, and Oregon. The survey was distributed via Qualtrics, a firm that specializes in representative online surveys. The University of Idaho Institutional Review Board approved the survey procedure before data collection began. Our final survey sample, representative of U.S. census data for gender and education, consists of 1,000 complete responses.¹

To identify respondents who are skeptical of climate change we used two screening questions, asking whether respondents believe: “(1) “climate change is happening” and (2) “climate change is caused by human activities” (response categories: yes=1; no=2; not sure=3). Respondents who said that they believed climate change was happening *and* it was caused by human activities were screened out using a Qualtrics filter which prevented this group from taking the survey. This limited our final sample (N=1,000) to those who expressed uncertainty regarding the realities and anthropogenic causes of climate change (i.e., climate skeptics). Skeptics identified using this screening procedure then

proceeded to answer our full survey, which consisted of 45 questions on their climate/environmental beliefs, related attitudes, and sociodemographic characteristics.

Key Independent Variables

Our study consists of three main independent variables measuring specific religious beliefs (termed “religious ideation” and “belief in human dominion”) and religiosity. We developed these measures using factor analysis as described below and operationalized as follows:

- I. *Religious ideation*: We measured religious ideation by creating a 3-item scale that captures participants’ intersecting beliefs about climate change and religion: “Climate change indicates God’s will,” “Climate change is the end-of-days as predicted in the Book of Revelation,” and “Climate change is punishment for our sins.” Participants responded on a Likert scale where “strongly disagree”=1 to “strongly agree”=7 (Cronbach’s $\alpha=0.78$).
- II. *Belief in human dominion*: We measured belief in human dominion by using the item “Humans were meant to rule over the rest of nature.” Participants responded on a Likert scale from “strongly disagree”=1 to “strongly agree”=7.
- III. *Religiosity*: We measured religiosity by asking respondents how often they attend religious services, with response categories ranging from never (1) to more than once a week (7). Frequency of religious attendance is a popular measure of religiosity in environmental sociology and studies of climate skepticism (e.g., Ecklund et al 2017; McCright and Dunlap 2011).

While we used a single-item ordinal scale to measure religiosity, for religious beliefs, we ran a principal component analysis (PCA) with Varimax rotation on four religious belief items from our survey. Three items loaded on Factor 1 constituting our *religious ideation* scale. We treat the remaining item, “belief in human dominion,” as a single-item belief measure (See Table 1 for item wording and frequency distributions for all four religious belief items.) It is important to note here that due to issues with multicollinearity, we do not consider religious sect as a measure of religious affinity in the current study.

Dependent Variables

Our study consists of several outcome variables: conspiracy ideation, (dis)trust in climate science, environmental concern, pro-environmental policy support, and four key emotion-based responses to climate change,

as well as several key predictors and controls that are informed by relevant prior literature.

Table 1: Religious Belief Items (Percentage Distributions, N=1,000)

| Item | Disagree | Neutral | Agree |
|--|----------|---------|-------|
| Climate change indicates God's will | 49.0% | 33.1% | 17.9% |
| Climate change is end-of-days as predicted in the Book of Revelation | 57.7% | 29.4% | 12.9% |
| Climate change is punishment for our sins | 70.3% | 21.1% | 8.6% |
| Humans were meant to rule over the rest of nature | 28.8% | 31.8% | 39.4% |

The first main outcome – *conspiracy ideation* – is measured using responses to the question “Do you think climate change is a hoax?” with three response categories: yes=1, no=2, not sure=3. We treat conspiracy ideation as a dummy variable (yes=1 and no/not sure=0). This is an important outcome measure to consider as prior work suggests that about a quarter of climate change skeptics in the U.S. explicitly endorses the belief that climate change is a hoax (Sarathchandra and Haltinner 2020). Accordingly, skeptics who adhere to this belief are more likely to be older, politically conservative, more educated, more religious, and disproportionately men, compared to non-conspiracy adhering counterparts. In our sample, 24.5 percent of respondents agreed that climate change is a hoax. Further investigation of this belief and its potential connections to religion is important given that both are rooted in ideological belief systems (Haltinner and Sarathchandra 2021a).

Second, *(dis)trust in science* is a 14-item, validated scale, measuring distrust in climate science and scientists created using principal component analysis (PCA) and Cronbach's alpha ($\alpha=0.93$) (Sarathchandra and Haltinner 2021). Participants expressed whether they agree on the items using a 1-7 Likert scale where “strongly disagree”=1 to “strongly agree”=7.

Third, *environmental concern* is a 16-item scale that measures respondent's average environmental concern, created using PCA and Cronbach's alpha ($\alpha=.96$) (Haltinner and Sarathchandra 2020). Items were rank ordered on a 1-7 Likert scale where “not at all concerned”=1 to “very concerned”=7. See Table SM1 for survey item wording and descriptive statistics.

Fourth, *pro-environmental policy support* is a 13-item scale created to measure the average support for pro-environmental policy initiatives among climate skeptics. Survey items ranged from support for investments in solar and wind energy, and government regulations for air and water pollution, to public school curriculums including issues related to the environment and human caused climate change. Three items (expanding offshore drilling, cutting funding for the EPA, and withdrawing from the Paris Climate Treaty) were reverse coded so that higher values indicate more support. Participants expressed their support on a 1-7 Likert scale where “not at all support”=1 to “support a great deal”=7 (Cronbach’s $\alpha=.87$). See Table SM2 for survey item wording and descriptive statistics.

Finally, to measure *emotion-based responses to climate change* we asked our survey participants to indicate the extent to which they feel the following emotions when thinking about climate change: worry, dread, sadness, and grief (“While thinking about the concept of climate change, to what extent do you feel the following emotions?”). Participants expressed their degree of emotional responses on a 1-7 Likert scale where “not at all”=1 to “an extreme amount”=7. In our analytical models below we treat worry, dread, sadness, and grief as four discrete emotions, building on prior research on climate change emotions which employ similar discrete emotion scales (e.g., Haltinner, Ladino, and Sarathchandra 2021).

Other Covariates and Analytical Strategies

Our analysis also employs several other key theoretically informed predictors and control variables (Table 2). Political ideology is measured on a 7-point scale from very liberal (1) to very conservative (7), and gender is measured as men=1 and women/other=0. Age is measured with eight categories: 18-19=1 to 80 or older=8. Income is measured with five categories: \$0-\$24,999=1 to \$100,000 and above=5. Education is measured by the highest degree earned: less than high school diploma or equivalent=1 to doctoral degree=8. See Table 2 for these measures and associated frequency distributions.

We first examined frequency distributions and descriptive statistics for our outcome, predictor, and control variables. We then ran regression diagnostics and multicollinearity tests. Subsequently we used a series of multivariate linear regressions and logistic regressions to examine the extent to which religiosity and specific religious beliefs affect our outcome variables, i.e. conspiracy ideation, distrust in climate science, pro-environmentalism and emotion-based responses among climate skeptics

(while controlling for relevant socio-demographic variables). All models reported use the same covariates. Analyses was performed with IBM SPSS 24.

FINDINGS

Sample Characteristics

While 49 percent of participants in our sample identified as men, 49.9 percent identified as women and 1.1 percent identified as neither men nor women. Eighty-nine percent identified as white, 4.7 percent as Asian, 3.8 percent as Native American, 2.7 percent as Black, 1 percent as Native Hawaiian/Pacific Islander, and 0.6 percent as Arab-American. The remaining participants identified as another race. Twenty percent of participants were younger than 30. Twenty-five percent were between 30 and 49; 35 percent between 50-69, and 20 percent were older than 70.

Our participants came from a variety of political, educational, and economic backgrounds. Approximately 42 percent identified as slightly to very conservative, 42.6 percent as moderate, and 15.6 percent as slightly to very liberal. Thirty-one percent of our respondents had no college education, 30 percent had some college or an Associate's degree, 20 percent had a Bachelor's degree, and 19 percent had advanced degrees. Fifty-three percent of our participants earned less than \$50,000 in total annual household income, 29 percent earned between \$50,000 and \$100,000, while 18 percent earned over \$100,000 annually. See Table 2 for a summary of sociodemographic variables, with mean and standard deviations reported for items included in the regression analyses in continuous form.

In terms of religion, a majority of participants in our sample selected the "none" category as their religious affiliation. Nearly 20 percent identified as mainline Protestant, 18.1 percent as evangelical Christian, 12.6 percent as Catholic, and 4.4 percent as Mormon. While 8.6 percent of our respondents identified as atheist or agnostic, 13 percent identified with other religions.

Further, approximately 42 percent of our participants indicated that they "never" attend religious services, 17 percent stated that they attend religious services "more than once a week," 12 percent attend religious services "about once a year," while another 12 percent attend these services "a few times a year." In terms of our three "religious ideation" measures, approximately 18 percent of respondents in our sample agreed "climate change indicates God's will," 13 percent agreed "climate change is the end-of-days as predicted in the Book of Revelation," and 9 percent

agreed “climate change is punishment for our sins” (Table 1). While 39.4 percent of respondents agreed that humans were meant to rule over the rest of nature, 28.8 percent disagreed with this statement, and 31.8 percent neither agreed nor disagreed.

Table 2: Sociodemographic Characteristics

| Characteristic | Full Sample Mean (SD) % (Frequency) (N=1,000) |
|--|---|
| Gender | |
| Women | 49.9% (499) |
| Men | 49.0% (490) |
| Not reported | 1.1% (11) |
| Political ideology (very liberal=1 to very conservative=7) | 4.5 (1.50) |
| Age (18-19=1 to >80=8) | 4.5 (2.04) |
| Education (less than high school diploma or equivalent=1 to doctoral degree=8) | 3.7 (1.83) |
| Race | |
| White | 89.0% |
| Non-white | 11.0% |
| Income (\$0-\$24,999=1 to \$100,000 and above=5) | 2.7 (1.41) |
| Religiosity (never attend religious services=1 to attend services more than once a week=7) | 3.0 (2.19) |
| Religion | |
| Evangelical Christian | 18.1% (181) |
| Catholic | 12.6% (126) |
| Mormon | 4.4% (44) |
| Mainline Protestant | 19.1% (191) |
| Atheist/Agnostic | 8.6% (86) |
| None | 24.2% (242) |
| Other | 13.0% (130) |
| Religious ideation (strongly disagree=1 to strongly agree=7) | 2.8 (1.38) |
| Belief in human dominion (strongly disagree=1 to strongly agree=7) | 4.2 (1.73) |

Conspiracy Ideation

When examining the effects of religion on conspiracy ideation (the likelihood of endorsing the belief that climate change constitutes a “hoax”), we find that religiosity is associated with a higher likelihood of conspiracy ideation, but with a small positive effect ($B=0.08$, $p<.05$). In contrast, the relationship between religious ideation and conspiracy ideation is not significant. However, belief in human dominion does emerge as a

statistically significant predictor with a comparatively stronger positive effect on the outcome measure ($B=0.15$, $p<.01$) holding constant religious ideation, religiosity, and other pertinent socio-demographic variables. In fact, every one-degree increase of human dominion belief is associated with a 1.16 times higher likelihood of adhering to a climate change conspiracy. Results indicating a potentially stronger effect of the belief in human dominion over religiosity provides some support for our first hypothesis (H1) (Table 3).

Table 3: Binary Logistic Regression Explaining Conspiracy Ideation

| Predictors | B | SE | Exp(B) | 95% CI for Exp(B) |
|-------------------------------|-----------------------|-----------|---------------|--------------------------|
| Religiosity | 0.08 ($p=.040$) | 0.04 | 1.08 | 1.03 – 1.17 |
| Religious ideation | -0.02 ($p=.753$) | 0.06 | 0.98 | 0.87 – 1.11 |
| Belief in human dominion | 0.15 ($p=.005$) | 0.05 | 1.16 | 1.05 – 1.29 |
| Liberal-conservative ideology | 0.46 ($p<.001$) | 0.06 | 1.58 | 1.40 – 1.78 |
| Age | 0.02 ($p=.690$) | 0.05 | 1.02 | 0.93 – 1.12 |
| Gender (men=1) | 0.58 ($p<.001$) | 0.17 | 1.78 | 1.28 – 2.46 |
| Education | 0.11 ($p=.051$) | 0.05 | 1.12 | 1.02 – 1.23 |
| Race (white=1) | 0.10 ($p=.714$) | 0.28 | 1.11 | 0.97 – 1.30 |
| Constant | | | -5.10 | |
| -2 Log likelihood | | | 956.65 | |
| Nagelkerke R-square | | | 21.6% | |
| N | | | 1,000 | |

Trust in Climate Science

There is no significant relationship between religiosity and trust in climate science among climate change skeptics in our sample. However, we do see that religious ideation leads to a small positive effect on distrust ($B=0.08$, $p=.001$) while belief in human dominion emerges as a statistically significant predictor with a comparatively larger effect ($B=0.14$, $p<.001$), when controlling for religiosity and other relevant and theoretically important covariates such as political ideology, gender, race, education and age (Table 4 – Model 1). Results also show that, among skeptics, men and those who are politically conservative are more likely to be

distrustful of science, consistent with prior literature (Sarathchandra and Haltinner 2021). Overall, this model explains approximately 21 percent of the variability in our outcome measure, distrust in science.

Contrary to prior work that shows negative effects of religiosity on trust in science (McPhetres and Zuckerman 2018; Chan 2018), we did not find a significant effect of religiosity when accounting for potential effects of religious ideation and human dominion. These results further suggest that climate skeptics potentially behave differently than the broader public. They also suggest the value of taking specific religious beliefs (beyond religiosity) into consideration when examining how religion manifests in climate skepticism.

Our findings show that even when frequency of religious attendance and other theoretical predictors of climate skepticism are held constant, the underlying specific beliefs related to climate change (e.g., climate change indicates God's will, is punishment for our sins, or is a sign of the end-of-days) do affect skeptics' trust in climate science. This extends existing scholarship that looks at other religious beliefs (belief in biblical authority, Jelen and Lockett 2014) and suggests there is important nuance to discover in the relationship between religious beliefs and scientific trust.

Pro-Environmentalism

Our analysis also examined the effects of the above religion measures on two measures of pro-environmentalism: environmental concern (Table 4 – Model 2) and pro-environmental policy support (Table 4 – Model 3). Neither religiosity nor religious ideation have significant effects on environmental concern when controlled for other theoretically important predictors of environmental views and climate skepticism. Rather, political ideology (conservatism) ($B=-0.11$, $p<.001$), gender (men) ($B=-0.35$, $p<.001$), and education ($B=0.06$, $p<.05$) emerge as significant predictors of environmental concern among climate skeptics. The only religion measure that emerges as a statistically significant predictor of environmental concern is the belief in human dominion ($B=-0.07$, $p=.011$) with a small negative effect of this belief on concern for the environment.

However, with regard to pro-environmental policy support, belief in human dominion and religious ideation both have small negative effects ($B=-0.07$, $p<.01$ and $B=-0.08$, $p<.05$) while religiosity was not a significant predictor of environmental policy support (Table 4 – Model 3). Political ideology (conservatism) ($B=-0.21$, $p<.001$) and education ($B=0.12$, $p<.001$) also emerge as significant predictors of policy support among

climate skeptics. These findings are largely in line with our hypothesis 2 and 3 (H2 and H3): specific religious beliefs (religious ideation and/or belief in human dominion) are more pertinent and have a stronger negative effect on trust in climate science and pro-environmentalism compared to religiosity. Overall, the models for environmental concern and pro-environmental policy support only account for approximately 6 percent and 9 percent of the variability in the respective outcomes, much lower than that for distrust in science reported above (21 percent).

Table 4: Unstandardized Coefficients from OLS Regression Models Explaining Distrust in Science, Environmental Concern, and Pro-environmental Policy Support

| Predictors | Model 1 Distrust in science | | Model 2 Environmental concern | | Model 3 Pro-environmental policy support | |
|-------------------------------|--------------------------------|--------------|----------------------------------|---------------|---|---------------|
| | <i>B</i> | 95% CI | <i>B</i> | 95% CI | <i>B</i> | 95% CI |
| Religiosity | 0.01 (<i>p</i> =.742) | -0.02 – 0.04 | -0.02 (<i>p</i> =.272) | -0.07 – 0.02 | 0.01 (<i>p</i> =.780) | -0.04 – 0.05 |
| Religious ideation | 0.08 (<i>p</i> =.001) | 0.03 – 0.13 | -0.03 (<i>p</i> =.422) | -0.09 – 0.04 | -0.08 (<i>p</i> =.027) | -0.14 – -0.01 |
| Belief in human dominion | 0.14 (<i>p</i> <.001) | 0.09 – 0.17 | -0.07 (<i>p</i> =.011) | -0.12 – -0.01 | -0.07 (<i>p</i> =.008) | -0.12 – -0.01 |
| Liberal-conservative ideology | 0.20 (<i>p</i> <.001) | 0.16 – 0.24 | -0.11 (<i>p</i> <.001) | -0.17 – -0.05 | -0.21 (<i>p</i> <.001) | -0.27 – -0.15 |
| Age | 0.02 (<i>p</i> =.156) | -0.01 – 0.06 | 0.04 (<i>p</i> =.092) | -0.01 – 0.09 | 0.05 (<i>p</i> =.058) | -0.00 – 0.09 |
| Gender (men=1) | 0.25 (<i>p</i> <.001) | 0.13 – 0.37 | -0.35 (<i>p</i> <.001) | -0.52 – -0.18 | -0.12 (<i>p</i> =.180) | -0.30 – 0.06 |
| Education | 0.03 (<i>p</i> =.130) | -0.01 – 0.06 | 0.06 (<i>p</i> =.013) | 0.01 – 0.12 | 0.12 (<i>p</i> <.001) | 0.06 – 0.17 |
| Race (white=1) | 0.04 (<i>p</i> =.667) | -0.15 – 0.24 | -0.24 (<i>p</i> =.089) | -0.51 – 0.04 | 0.04 (<i>p</i> =.758) | -0.24 – 0.32 |
| F | 35.00 | | 7.51 | | 12.07 | |
| Sig. | <.001 | | <.001 | | <.001 | |
| Adjusted R ² | 21.4% | | 6.1% | | 9.5% | |
| N | 999 | | 999 | | 999 | |

Emotions Related to Climate Change

Our analysis also considered four emotion-based reactions to climate change and how they are associated with religion (Table 5). We find that religiosity has no effect on worry, dread, sadness, and grief related to climate change when holding constant specific religious beliefs and other theoretically important covariates. Religious ideation has a positive effect on dread ($B=0.10$, $p<.01$) as well as sadness ($B=0.09$, $p<.05$) and grief ($B=0.12$, $p=.001$) – the higher the degree of religious ideation, the higher

the degree of experiencing these emotional states related to climate change. On the other hand, belief in human dominion has a small negative effect on all four emotional states we tested for, such that those who believe humans are meant to rule over nature are less likely to experience worry, dread, sadness, or grief related to climate change (H4). As far as other variables in the models are concerned, we find that conservative political ideology and age lowers emotion-based reactions to climate change, and men are less likely to experience these negative emotional states in comparison to women and people who do not identify as men or women. Overall, our religion-based models for worry, dread, sadness, and grief explain roughly 10 percent to 15 percent of the variability in the said emotion states related to climate change.

It is worth noting that, taken together, our linear regression models have adjusted R-squared values ranging from 6.1 percent to 21.4 percent (Tables 4 and 5). While some of these R-squared values are low, given the models include theoretically pertinent covariates and test relative effects of religion using three different constructs of religion, we find the overall results across models to be substantively compelling, which we turn to below.

DISCUSSION

Our analysis presents important findings with regard to the way that both religiosity and religious beliefs interact with factors such as conspiracy ideation, demographic variables, pro-environmentalism, emotional responses to climate change, and trust in science among climate change skeptics. Overall, we find that while religiosity is positively associated with the belief that climate change is a hoax, it is not associated with trust in science, pro-environmentalism, or emotions related to climate change. In contrast, religious beliefs (religious ideation and belief in human dominion) are significant predictors of conspiracy ideation, trust in science, pro-environmentalism, and emotional states related to climate change.

Table 5: Unstandardized Coefficients from OLS Regression Models Explaining Emotion-based Reactions to Climate Change

| Predictors | Worry | | Dread | | Sadness | | Grief | |
|--------------------------|----------------------------|---------------|----------------------------|---------------|----------------------------|---------------|----------------------------|---------------|
| | <i>B</i> | 95% <i>CI</i> | <i>B</i> | 95% <i>CI</i> | <i>B</i> | 95% <i>CI</i> | <i>B</i> | 95% <i>CI</i> |
| Religiosity | 0.02 (<i>p</i> =.341) | -0.02 – 0.07 | 0.05 (<i>p</i> =.049) | 0.01 – 0.09 | 0.03 (<i>p</i> =.211) | -0.02 – 0.08 | 0.04 (<i>p</i> =.105) | -0.01 – 0.09 |
| Religious ideation | 0.06 (<i>p</i> =.094) | -0.01 – 0.14 | 0.10 (<i>p</i> =.008) | 0.03 – 0.17 | 0.09 (<i>p</i> =.022) | 0.01 – 0.17 | 0.12 (<i>p</i> =.001) | 0.05 – 0.19 |
| Belief in human dominion | -0.09 (<i>p</i> =.006) | -0.15 – -0.02 | -0.09 (<i>p</i> =.007) | -0.14 – -0.02 | -0.10 (<i>p</i> =.004) | -0.16 – -0.03 | -0.09 (<i>p</i> =.005) | -0.14 – -0.02 |
| Liberal-conservative | -0.26 (<i>p</i> <.001) | -0.33 – -0.19 | -0.24 (<i>p</i> <.001) | -0.33 – -0.19 | -0.25 (<i>p</i> <.001) | -0.33 – -0.19 | -0.20 (<i>p</i> <.001) | -0.27 – -0.13 |
| Age | -0.15 (<i>p</i> =.002) | -0.20 – -0.09 | -0.13 (<i>p</i> <.001) | -0.18 – -0.07 | -0.07 (<i>p</i> =.010) | -0.13 – -0.02 | -0.12 (<i>p</i> <.001) | -0.17 – -0.06 |
| Gender (men=1) | -0.28 (<i>p</i> =.005) | -0.47 – -0.08 | -0.23 (<i>p</i> .011) | -0.43 – -0.04 | -0.33 (<i>p</i> =.002) | -0.53 – -0.12 | -0.16 (<i>p</i> =.113) | -0.35 – 0.04 |
| Education | 0.04 (<i>p</i> =.228) | -0.02 – 0.09 | 0.01 (<i>p</i> =.786) | -0.05 – 0.06 | 0.01 (<i>p</i> .800) | -0.05 – 0.07 | 0.01 (<i>p</i> =.819) | -0.05 – 0.06 |
| Race (white=1) | -0.11 (<i>p</i> =.471) | -0.42 – 0.19 | 0.16 (<i>p</i> =.298) | -0.14 – 0.47 | 0.03 (<i>p</i> =.870) | -0.29 – 0.35 | 0.01 (<i>p</i> =.928) | -0.29 – 0.32 |
| F | 22.26 | | 19.43 | | 15.34 | | 15.34 | |
| Sig. | 0.000 | | 0.000 | | 0.000 | | 0.000 | |
| Adjusted R ² | 14.5% | | 12.9% | | 10.3% | | 10.3% | |
| N | 999 | | 999 | | 999 | | 999 | |

Our findings regarding religiosity and conspiracy ideation extend existing scholarship which suggests that attending religious events is inversely correlated with conspiracy ideation (Freeman and Bentall 2017; Furnham 2013; Lobato et al. 2014). Our findings show that, among climate skeptics, as religiosity increases – regardless of their specific religious beliefs – so too does one’s likelihood to believe that climate change is a hoax.

This finding could be explained by our unique population of climate skeptics. It could be the case that, as McCright and Dunlap (2011) find, skeptics already have higher than average levels of religiosity and, therefore, the relationship among this population changes. It could also be the case that skeptics are simply unique regarding the interactions between their religiosity or religious beliefs and conspiracy ideation, as seen in our results wherein belief in human dominion trumps religiosity in its relative effect on conspiracy ideation. Further research could tell us why these effects occur.

A second possible explanation for our finding that religiosity is positively associated with conspiracy ideation is that there are more powerful spurious variables that impact the relationship between religiosity and conspiracy ideation within our unique sample. While our analytical models control for several additional predictors of conspiracy ideation – political ideology, gender, age, race, and education – other potential factors such as geographical location and economic status (not included in our models due to multicollinearity), may be at play here. As such, our work presents an opportunity for future research into the relationship between religion and conspiracy ideation regarding climate change. We also note that the effect size of religiosity on conspiracy ideation is marginal but contend that this is substantively important given that our model controls for other pertinent religious beliefs and demographic variables.

Our finding that religious ideation is not significantly associated with conspiracy ideation extends existing scholarship on this topic. Extant research suggests that belief in conspiracies is only associated with religious beliefs when they closely align (Oliver and Wood 2014). In the case of climate skeptics, belief that climate change is a hoax is not directly tied to ideas of end-times or God punishing humans and thus we do not see an association between these beliefs.

While the magnitude of the statistically significant effect of belief in human dominion is small, these findings are also substantively compelling. It diverges a bit from Oliver and Wood’s contention that religious beliefs

and conspiracy theories must align to be associated. Human dominion, the belief that humans can dominate and control nature and/or are superior to the natural world, is not directly associated with the perception that climate change indicates the end-times, that it is punishment for sins, nor that it is God's will. As far as demographic measures are concerned, our model for conspiracy ideation suggests that men and conservatives are more likely to believe that climate change is a hoax, compared to women and liberals, a finding that has been affirmed elsewhere in the literature (Sarathchandra and Haltinner 2020).

Beyond conspiracy beliefs, our findings on pro-environmentalism indicate that climate change skeptics behave in similar ways to the general population with regards to environmentalism. We find that religiosity is not associated with environmentalism, mirroring the work of Boyd (1999) and reflecting the broader contradictory findings in the literature. However, like Eckberg and Blocker's (1996) and Guth et al.'s (1995) studies among the general population, we find belief in human dominion and religious ideation (including a belief that climate change indicates the end-of-days) to be associated with a decrease in environmentalism among skeptics.

Existing research does not examine the relationship between emotions, religion, and climate change skepticism. Therefore, our findings are important in future consideration of these intersections in social science research.

Our findings differ from what is predicted in existing literature on religiosity and emotions, outside of the realm of climate change. This research suggests that increased church attendance is associated with fewer fear-based emotions (Feifel and Nagy 1981). It may be the case that for religious skeptics, emotional responses to climate change are already mitigated by their disbelief.

The significant relationship with regards to religious ideation and increased levels of dread, sadness, and grief is likely a result of the nature of these beliefs. Our religious ideation variable measured the belief that climate change is God's will, that it indicates the end-of-days, and that it is punishment for human sins. The fact that skeptics would feel dread, sadness, and grief over these indicators is logical. Unfortunately, using quantitative data, we cannot explain the causes of people's expressed dread, sadness, or grief. Therefore, it is possible that the positive association between religious ideation and dread, sadness and grief aren't measuring fear of climate change nor sadness for a dying planet but,

instead, are measuring fear and grief over what they believe to be an impending Biblical apocalypse.

Similarly, our finding that belief in human dominion is negatively associated with worry, dread, sadness and grief is also explained by the nature of the population and belief structure itself. It makes sense that one who perceives humans as ruling over earth would not experience negative emotions over climate change.

Beyond religion, we see that – even within the population of skeptics – age, political ideology, and gender are significantly connected to emotional responses to climate change. Younger people, those who identify as politically progressive, and women are more likely to feel negative emotions associated with climate change as opposed to older skeptics, political conservatives, and men. This suggests that the population of climate skeptics – despite their skepticism – behave similarly to the broader population regarding emotions. For example, people who hold conservative ideology tend to hold more rigid understandings of gender roles (Lye and Waldron 1997). Within this system, men are expected to be stoic and express little emotion, especially related to fear (Fischer 1993). Men, too, make up a disproportionate number of people skeptical about climate change (McCright and Dunlap 2011). Therefore, it is possible that some of the challenge in exploring emotions among climate skepticism is a result of gendered expectations regarding emotional performance.

Finally, our analysis demonstrates that our religion-based models are better suited for understanding science distrust among skeptics, rather than environmentalism. Prior research indicates surprisingly high levels of environmental concern among climate change skeptics, while these groups continue to question the science behind climate change (e.g. Haltinner and Sarathchandra 2021b) which potentially explains some of the variability in the above model fit statistics. Prior work also indicates confounding effects of religion on environmentalism which may shed some light on why our models better explain science distrust than environmentalism. For example, Goldberg et al. (2019) found that Christians express less skepticism of climate change when reminded of Christian stewardship of the environment. These aspects require further attention. Future research should also consider other potentially important predictors and covariates such as religious sect, geography, and economic factors.

CONCLUSION

Our results present a nuanced look at the microcosm of climate change skeptics and how their religious beliefs correspond with their levels of conspiracy ideation, trust in science, environmentalism, and emotions regarding climate change. Skeptics differ in important ways from the broader public with regards to the relationship between religiosity/religious ideation and conspiracy ideation. Yet, they behave in similar ways to the general population with regards to religious ideation, religiosity and our other outcome variables (trust in science, pro-environmentalism). There is not enough existing research on the intersection of emotions, religion, and climate change to evaluate the consistency of our findings vis-à-vis the general American public.

On the question of whether religiosity or religious beliefs serve as a better variable for analysis of climate change skepticism, we conclude that religious ideation offers more robust scrutiny. While, in our study, religiosity is a positive predictor of the belief that climate change is a hoax, it is not associated with trust in science, pro-environmental concerns or policy support, nor emotions related to climate change. In contrast, religious beliefs (religious ideation and belief in human dominion) are significant predictors of conspiracy ideation (human dominion is associated with an increase in belief that climate change is a hoax); trust in science (both religious ideation and belief in human dominion are associated with greater distrust in science); pro-environmentalism (human dominion is associated with lower levels of environmental concern; both religious ideation and human dominion predict lower levels of support for pro-environmental policy); and emotion (human dominion is associated with lower levels of worry, dread, sadness, and grief while religious ideation correlates with higher levels of dread, sadness and grief).

Of particular interest is our finding that skeptics behave differently than the general population with relation to the ways that religion interacts with conspiracy ideation. Existing research contends that religion is associated with conspiracy ideation when the underlying ideologies are associated. However, we find that belief in human dominion is associated with the perspective that climate change is a hoax. The relationship between dominion ideologies and conspiracy theories presents opportunity for greater analysis.

Our work also shows the importance of considering the relationship between emotion, religion, and belief about climate change. While there is a rich intellectual tradition examining affect and perspectives on climate change (see *Environmental Humanities*, especially Norgaard 2011; Wang

et al. 2018; Stoknes 2015), it does not (yet) include an analysis of the way that religion operates in this space.

Our research further suggests a need to reconceptualize the relationship between religion and climate change skepticism. We find that operationalizing religion as a unidimensional “frequency of religious service attendance” measure is insufficient to capture the complex relationship between religion and climate skepticism. Researchers should pay close attention when conceptualizing and operationalizing predictors of skepticism, particularly when targeting specific and unique populations. While we found that religious ideation, including belief in human dominion, matters more than religiosity for self-declared skeptics, it is plausible that a different manifestation of religion works better as a predictor for other unique sub-populations such as environmental activists or faith leaders. Future research should consider other specific religious beliefs and unique population sub-groups in their analyses.

Our survey sample suggests that greater investigation into religious sect among climate skeptics as compared to the general population is also warranted. According to the Pew Research Center (2019), 20 percent of the American public is Catholic, yet only 12.6 percent of our sample identifies as such. Further, they find that 43 percent identify as Protestant, compared to our sample’s 37.2 percent. Instead, we find higher numbers of religiously unaffiliated individuals (24.2 percent vs. a national level of 17 percent) and Latter-day Saints (4.4 percent vs. a national level of 1.6 percent; Haltinner and Sarathchandra 2020). Our atheist/agnostic population is close to the national average at 9 percent (Table 2). Given that white Catholics and white Protestants are disproportionately likely to be skeptical of climate change (Pew Research Center 2015), we would expect higher populations of these groups in our sample. This finding warrants further examination including considerations of self-selection bias in online survey research.

ENDNOTES

¹ As a firm specializing in online surveys, Qualtrics aggregates data from certified panel providers. These aggregate panels allow researchers to obtain representative samples based on various sociodemographic factors of interest. However, Qualtrics samples are not probability samples. As an aggregate survey panel, our sample was recruited by Qualtrics via web portals, e-mails, and in-app notifications. Respondents were compensated based on predetermined criteria such as length of survey and complexity of acquiring a specific targeted population, as agreed between the panel providers and individual respondents. As an additional quality control measure, we added a speeding

check, i.e. median time to completion of 20 minutes (measured as one-third of the median time taken to complete the survey in our pilot round). Those who did not meet this speeding criterion were automatically removed from the final sample. For more details on our survey and specific panel procedure, see Haltinner and Dilshani (2021b). For more details on Qualtrics panel services, quality control, and validation methods, see ESOMAR (2021).

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the authors.

FUNDING

This research was funded by the CLASS Humanities Excellence Endowment from the University of Idaho.

REFERENCES

- Barker, David C., and David H. Bearce. 2012. "End-times Theology, the Shadow of the Future, and Public Resistance to Addressing Global Climate Change." *Political Research Quarterly* 66(2):267-279. <https://doi.org/10.1177/1065912912442243>.
- Bénabou, Roland, Davide Ticchi, and Andrea Vindigni. 2015. "Forbidden Fruits: The Political Economy of Science, Religion, and Growth." *National Bureau of Economic Research*. Technical Paper. doi:10.3386/w21105.
- Boyd, Heather. 1999. "Christianity and the Environment in the American Public." *Journal for the Scientific Study of Religion* 38:36-44. <https://doi.org/10.2307/1387582>.
- Carlisle, Juliet, and April Clark. 2018. "Green for God: Religion and Environmentalism by Cohort and Time." *Environment and Behavior* 50(2):213-241. <https://doi.org/10.1177/0013916517693356>.
- Chan, Esther. 2018. "Are the Religious Suspicious of Science? Investigating Religiosity, Religious Context, and Orientations Towards Science." *Public Understanding of Science* 27(8):1-18. <https://doi.org/10.1177/0963662518781231>
- Clements, John, Aaron McCright, and Chenyang Xiao. 2014. "Green Christians? An Empirical Examination of Environmental Concern Within the U.S. General Public." *Organization and Environment* 27(1):85-102. <https://doi.org/10.1177/1086026613495475>.
- Eckberg, Douglas, and T. Jean Blocker. 1996. "Christianity, Environmentalism, and the Theoretical Problem of

- Fundamentalism." *Journal for the Scientific Study of Religion* 35:343–355. <https://doi.org/10.2307/1386410>.
- Ecklund, Elaine Howard, Christopher P. Scheitle, Jared Peifer, and Daniel Bolger. 2017. "Examining Links Between Religion, Evolution Views, and Climate Change Skepticism." *Environment and Behavior* 49(9):985–1006. <https://doi.org/10.1177/0013916516674246>.
- ESOMAR Guide. 2021. "28 Questions to Help Buyers of Online Samples." Retrieved October 26, 2021. <https://esomar.org/code-and-guidelines/questions-for-users-and-buyers-of-online-sample>.
- Feifel, Herman, and Vivian T. Nagy. 1981. "Another Look at Fear of Death." *Journal of Consulting and Clinical Psychology* 49(2):278–286. <https://psycnet.apa.org/doi/10.1037/0022-006X.49.2.278>.
- Flannelly, Kevin J. 2017. *Religious Beliefs, Evolutionary Psychiatry, and Mental Health in America*. New York: Springer.
- Freeman, Daniel, and Richard P. Bentall. 2017. "The Concomitants of Conspiracy Concerns." *Social Psychiatry and Psychiatric Epidemiology* 52(5):595–604. <https://doi.org/10.1007/s00127-017-1354-4>.
- Furnham, Adrian. 2013. "Commercial Conspiracy Theories: A Pilot Study." *Frontiers in Psychology* 4:379. <https://doi.org/10.3389/fpsyg.2013.00379>.
- Galliford, Natasha, and Adrian Furnham. 2017. "Individual Difference Factors and Beliefs in Medical and Political Conspiracy Theories." *Scandinavian Journal of Psychology* 58:422–428. <https://doi.org/10.1111/sjop.12382>.
- George, Linda K., Christopher G. Ellison, and David B. Larson. 2002. "Explaining the Relationships Between Religious Involvement and Health." *Psychological Inquiry* 13(3):190–200. <https://www.jstor.org/stable/1449328>.
- Goldberg, Matthew H., Abel Gustafson, Matthew T. Ballew, Seth A. Rosenthal, and Anthony Leiserowitz. 2019. "A Social Identity Approach to Engaging Christians in the Issue of Climate Change." *Science Communication* 41:442–463. <https://doi.org/10.1177/1075547019860847>.
- Grzesiak-Feldman, Monika. 2007. "Conspiracy Thinking and State-Trait Anxiety in Young Polish Adults." *Psychological Reports* 100:199–202. <https://doi.org/10.2466/pr0.100.1.199-202>
- Guth, James L., John C. Green, Lyman A. Kellstedt, and Corwin E. Smidt. 1995. "Faith and the Environment: Religious Beliefs and Attitudes

- on Environmental Policy.” *American Journal of Political Science* 39(2):364-382. <https://doi.org/10.2307/2111617>.
- Haltinner, Kristin, and Dilshani Sarathchandra. 2020. “Adding the Church of Jesus Christ of Latter-day Saints to Analyses of Climate Change Skepticism: A Research Note.” *Sociological Inquiry* 92(1): 270-294. <https://doi.org/10.1111/soin.12394>.
- Haltinner, Kristin, and Dilshani Sarathchandra. 2021a. “The Nature and Nuance of Climate Change Skepticism in the United States.” *Rural Sociology* 86(4): 673-702. <https://doi.org/10.1111/ruso.12371>.
- Haltinner, Kristin, and Dilshani Sarathchandra. 2021b. “Predictors of Pro-environmental Beliefs, Behaviors, and Policy Support Among Climate Change Skeptics.” *Social Currents* <https://doi.org/10.1177/23294965211001403>.
- Haltinner, Kristin, Jennifer Ladino, and Dilshani Sarathchandra. 2021. “Feeling Skeptical: Worry, Dread, and Support for Environmental Policy Among Climate Change Skeptics.” *Emotion, Space and Society* 39. <https://doi.org/10.1016/j.emospa.2021.100790>.
- Haluza-DeLay, Randolph. 2014. “Religion and Climate Change: Varieties in Viewpoints and Practices.” *Wiley Interdisciplinary Reviews: Climate Change* 5(2):261-279. <https://doi.org/10.1002/wcc.268>
- Hand, Carl M., and Kent D. Van Liere. 1984. “Religion, Mastery-over-Nature, and Environmental Concern.” *Social Forces* 63(2):555-570. <https://doi.org/10.2307/2579062>.
- Jelen, Ted G., and Linda A. Lockett. 2014. “Religion, Partisanship, and Attitudes Toward Science Policy.” *SAGE Open* 4(1):2158244013518932. <https://doi.org/10.1177/2158244013518932>.
- Kanagy, Conrad L., and Fern K. Willits. 1993. “A ‘Greening’ of Religion?” *Social Science Quarterly* 74(6):674-683.
- Kanagy, Conrad L., and Hart Nelsen. 1995. “Religion and Environmental Concern: Challenging the Dominant Assumptions.” *Review of Religious Research* 37:33–45. <https://doi.org/10.2307/3512069>.
- Kellstedt, Paul, Sammy Zahran, and Arnold Vedlitz, A. 2008. “Personal Efficacy, the Information Environment, and Attitudes Toward Global Warming and Climate Change in the United States.” *Risk Analysis* 28(1):113–126. doi: 10.1111/j.1539-6924.2008.01010.x
- Krause, Neal, and R. David Hayward. 2013. “Emotional Expressiveness During Worship Services and Life Satisfaction: Assessing the Influence of Race and Religious Affiliation.” *Mental Health, Religion*

- & *Culture* 16(8):813-831.
<https://doi.org/10.1080/13674676.2012.721349>.
- Lewandoswky, Stephan, Klaus Oberauer, and Gilles Gignac. 2013. "NASA Faked the Moon Landing – Therefore, (Climate) Science Is a Hoax: An Anatomy of the Motivated Rejection of Science." *Psychological Science* 24(5):622-633.
<https://doi.org/10.1177/0956797612457686>.
- Lobato, Emilio, Jorge Mendoza, Valerie Sims, and Matthew Chin. 2014. "Examining the Relationship between Conspiracy Theories, Paranormal Beliefs, and Pseudoscience Acceptance Among a University Population." *Applied Cognitive Psychology* 28(5):617-625. <https://doi.org/10.1002/acp.3042>.
- McCright, Aaron. 2016. "Anti-Reflexivity and Climate Change Skepticism in the US General Public." *Human Ecology Review* 22(2):77-108.
<https://www.jstor.org/stable/24875159>.
- McCright, Aaron, and Riley Dunlap. 2011. "The Politicization of Climate Change and Polarization in the American Public's Views of Global Warming, 2001-2010." *The Sociological Quarterly* 52(2):155-194.
<https://doi.org/10.1111/j.1533-8525.2011.01198.x>.
- McPhetres, Jonathon, and Miron Zuckerman. 2018. "Religiosity Predicts Negative Attitudes Towards Science and Lower Levels of Science Literacy." *PloS one* 13(11):e0207125.
<https://doi.org/10.1371/journal.pone.0207125>.
- Oliver, J. Eric, and Thomas J. Wood. 2014. "Conspiracy Theories and the Paranoid Style(s) of Mass Opinion." *American Journal of Political Science* 58(4):952-966. <https://doi.org/10.1111/ajps.12084>.
- Pew Research Center. 2015. "Religion and Views on Climate and Energy Issues." Accessed July 9th, 2020.
(<https://www.pewresearch.org/science/2015/10/22/religion-and-views-on-climate-and-energy-issues/>)
- Pew Research Center. 2019. "In U.S., Decline of Christianity Continues at Rapid Pace." Accessed December 3rd, 2020
(<https://www.pewforum.org/2019/10/17/in-u-s-decline-of-christianity-continues-at-rapid-pace/>)
- Peifer, Jared, Simranjit Khalsa, and Elaine Howard Ecklund. 2016. "Political Conservatism, Religion and Environmental Consumption in the United States." *Environmental Politics* 25(4):661-689.
<https://doi.org/10.1080/09644016.2016.1159604>.
- Sarathchandra, Dilshani, and Kristin Haltinner. 2020. "How Believing Climate Change is a "Hoax" Shapes Climate Skepticism in the

- United States." *Environmental Sociology*.
<https://doi.org/10.1080/23251042.2020.1855884>
- Sarathchandra, Dilshani, and Kristin Haltinner. 2021. "A Survey Instrument to Measure Skeptics' (Dis)trust in Climate Science." *Climate* 9(2):18. <https://doi.org/10.3390/cli9020018>.
- Scheufele, Dietram A., Elizabeth Corley, Tsung-jen Shih, Kajsa Dalrymple, and Shirley Ho. 2009. "Religious Beliefs and Public Attitudes Toward Nanotechnology in Europe and the United States." *Nature Nanotechnology* 4(2):91-94.
<https://doi.org/10.1038/nnano.2008.361>.
- Stoknes, Per Espen. 2015. *What We Think about When We Try Not to Think about Global Warming: Toward a New Psychology of Climate Action*. Hartford, VT: Chelsea Green.
- Strawbridge, William J., Sarah J. Shema, Richard D. Cohen, and George A. Kaplan. 2001. "Religious Attendance Increases Survival by Improving and Maintaining Good Health Behaviors, Mental Health, and Social Relationships." *Annals of Behavioral Medicine* 23(1):68-74. https://doi.org/10.1207/s15324796abm2301_10.
- Tarakeshwar, Nalini, Aaron Swank, Kenneth Pargament, and Annette Mahoney. 2001. "The Sanctification of Nature and Theological Conservatism: A Study of Opposing Religious Correlates of Environmentalism." *Review of Religious Research* 42(4):387-404.
<https://doi.org/10.2307/3512131>.
- Wang, Jaesun, and Seoyong Kim. 2018. "Analysis of the Impact of Values and Perception on Climate Change Skepticism and Its Implication for Public Policy." *Climate* 6(4):99-127.
<https://doi.org/10.3390/cli6040099>.
- Wang, Susan, Zoe Leviston, Mark Hurlstone, Carmen Lawrence, and Iain Walker. 2018. "Emotions Predict Policy Support: Why It Matters How People Feel about Climate Change." *Global Environmental Change* 50: 25-40.
- White, Lynn, Jr. 1967. "The Historical Roots of Our Ecologic Crisis." *Science* 155:1203-1207.
- Zhou, Min. 2015. "Public Environmental Skepticism: A Cross-National and Multilevel Analysis." *International Sociology* 30(1):61-85.
<https://doi.org/10.1177/0268580914558285>.
- Zinnbauer, Brian James, and Kenneth I. Pargament. 2002. "Capturing the Meanings of Religiousness and Spirituality: One Way Down from a Definitional Tower of Babel." *Research in the Social Scientific Study of Religion* 13:23-54.

Supplementary Materials

Table SM1: Items Used in Environmental Concern Scale, N=1,000
Survey question: To what extent are you concerned about the following situations? not at all concerned=1 to very concerned=7 (Cronbach's $\alpha=0.96$)

| Survey item | Mean | Standard deviation |
|---|-------------|---------------------------|
| Coral bleaching | 4.22 | 1.78 |
| Plastic in the ocean | 5.15 | 1.75 |
| Drought | 4.43 | 1.75 |
| Heat waves | 4.04 | 1.76 |
| Stronger forest fires | 4.84 | 1.78 |
| Sea level rising | 4.07 | 1.80 |
| Ice caps melting | 4.08 | 1.86 |
| The expanding territory of vector-borne illnesses | 4.36 | 1.74 |
| Deforestation | 4.77 | 1.76 |
| Habitat destruction | 4.76 | 1.73 |
| Overpopulation | 4.56 | 1.94 |
| Air pollution | 4.86 | 1.69 |
| Animal species extinction | 4.68 | 1.79 |
| Monarch butterfly population loss | 4.14 | 1.77 |
| Bee population loss | 4.93 | 1.81 |
| Declining water quality | 4.86 | 1.78 |

Table SM2: Items Used in Pro-Environmental Policy Support Scale,
N=1,000

Survey question: To what degree do you support the following initiatives?
not at all=1 to a great deal=7 (Cronbach's $\alpha=0.87$)

| Survey item | Mean | Standard deviation |
|--|-------------|---------------------------|
| Investment in solar panel farms | 4.14 | 2.34 |
| Investment in wind turbine farms | 4.14 | 2.33 |
| Tax rebates for consumers who install renewable energy systems at home | 4.42 | 2.29 |
| (Lack of) support for expanding offshore drilling (recode) | 3.46 | 2.35 |
| Government regulations for fuel efficiency standards in new cars | 3.81 | 2.27 |
| Federal regulations for air pollution | 4.27 | 2.23 |
| Federal regulations for water pollution | 4.54 | 2.30 |
| (Lack of) support for Trump's move to cut funding to the EPA (recode) | 3.67 | 2.44 |
| (Lack of) support for Trump's move to leave the Paris Agreement (recode) | 2.84 | 2.50 |
| Cap and trade initiatives to limit CO2 production | 2.96 | 2.29 |
| Preservation of the National Parks | 5.17 | 2.23 |
| Public schools teaching about environmental issues in the classroom | 4.08 | 2.25 |
| Public schools teaching about human caused climate change in the classroom | 3.28 | 2.25 |