Threatening Morality: Religious and Political Opposition to Science in the United States

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Recent research suggests that religious opposition to science in the United States is rooted in a belief that science threatens morality. We test this claim using a survey of United States adults (n = 3,763). Regression results indicate that the religious are more likely than the nonreligious to believe that science breaks down people's understanding of right and wrong, which we call moral opposition to science. However, the strength of this relationship varies by political ideologies. While moral opposition to science is relatively high among conservatives regardless of religiosity, secular and religious liberals differ widely in their beliefs about science's moral meaning. In fact, moral opposition to science among religious liberals is nearly as high as it is among secular conservatives. These findings accentuate the moral dimension of the science–religion interface and they underscore the importance of religion for understanding political opposition to science.

Keywords: science, politics, United States, public opinion.

INTRODUCTION

The portrayal of science and religion as incompatible ways of knowing is an enduring cultural image (Hardin et al. 2018). Yet, while this assumption of epistemological conflict often surfaces in philosophical and scientific discourse (Dawkins 1996; Plantinga 2011), there is little evidence that the public shares this view. Instead, public perceptions of conflict between science and religion are limited to a narrow set of issues (Ecklund and Scheitle 2017). Moreover, when there is perceived conflict, the tension seems to reflect moral not intellectual divides (Evans 2018). To some, the cultural values associated with science appear to threaten the moral values often associated with religion. As a result, opposition to science among religious people is thought to arise from concerns about scientists' economic and social agendas rather than a rejection of scientific knowledge or methods.

Recasting the science-religion interface as a site of moral rather than intellectual conflict has far-reaching implications for the cultural authority of science. It suggests that acceptance of and opposition to science reflects cultural dispositions instead of accumulations of knowledge. It also implies that scientific authority is rooted in social identities and interpreted in relation to alternative sources of cultural authority. Some of the earliest sociological analyses of science recognized its unique normative structure (Merton [1942] 1973). However, much less is known about the values that publics associate with science. Recent theoretical advances lay the foundation for a new understanding of science, religion, and morality. However, empirical tests of the moral conflict thesis are scarce and often based on indirect measures (Evans 2013; O'Brien and Noy 2015).

Conservative political values are another source of opposition to science in the United States. Like religion, political conflict with science often rests on disagreements over values not facts

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(Mann and Schleifer 2020). However, religious liberals occupy a peculiar space at the intersection of two social fields. A liberal political disposition suggests favorable attitudes about science, yet a religious worldview suggests otherwise. Past studies establish that religiosity and conservative political beliefs are each associated with less confidence in science (Evans 2013; Gauchat 2012; Mann and Schleifer 2020; Sherkat 2017). This article examines how religious and political beliefs relate specifically to the moral values people attribute to science. We are especially interested in understanding how religious and political beliefs work in tandem to steer opposition to science.

We investigate these issues using data from the World Values Survey (WVS), which includes a probability sample of United States adults. The survey contains a question that asked whether science breaks down people's sense of right and wrong, which we use to test whether opposition to science rests on moral concerns. Our analysis addresses two questions. First, are religious people in the United States more likely than the nonreligious to view science as a moral threat? Second, does political ideology moderate the relationship? We find that religiosity and conservative political beliefs are each associated with the belief that science breaks down people's sense of right and wrong, a belief we call moral opposition to science. However, the effect of religiosity depends substantially on political ideology. While moral opposition to science is high among conservatives regardless of religiosity, secular and religious liberals differ widely in their beliefs about science's moral meaning. In fact, moral opposition to science among religious liberals is nearly as high as it is among secular conservatives. We argue that these patterns reflect the unique tension felt by religious liberals, whose religious and political identities lie at the intersection of competing value systems. Overall, these results add to mounting evidence that the science-religion interface is a site of moral conflict. They also illustrate that support for science on the political left is not as uniform as it is often assumed.

BACKGROUND

The Cultural Authority of Science and Religion

We analyze science and religion as systems of material resources, factual knowledge, and cultural values and practices that guide people's belief and behavior in numerous realms of life (Gieryn 1999). Our approach is consistent with theories that view science, religion, and other domains as social fields with epistemic and social authority (Fligstein and McAdam 2012). As sources of information and values, fields help individuals plan and justify behavior. Fields such as science and religion function independently but are nested among other areas of cultural production within a broader social context. Moreover, the status of actors within fields is often defined in contrast to status in orthogonal fields (Bourdieu 1991). Consequently, intersecting fields may provide individuals with competing sources of cultural authority. For example, when central actors in science and religion, such as prominent scientists and theologians, define their authority over issues such as human origins in opposition to the other, they fuel a perception that science and religion conflict. Politics is another field where actors' status is inversely related to status in intersecting fields. For example, by cultivating a perception of anticonservative bias in science, political elites in the United States have successfully undermined trust in science among conservatives (Gauchat 2012).

Science and religion both are highly differentiated and the meanings they provide to individuals may differ by disciplines and denominations. The goal of this article is to establish whether science *in general* is associated with a moral meaning and whether that meaning is shaped by religious beliefs. A long tradition of social scientific research examines science and religion at a similarly general level. For example, Weber's ([1930] 2002) classic analysis of rationalization provided a generalized framework for understanding scientific and religious worldviews in modern societies. Modernization and secularization theories likewise focus on science and religion

as general institutions and sources of cultural authority rather than discrete disciplines or faith traditions (Habermas 1981; Inglehart and Baker 2001). These theories prioritize different sources of change in the relationship between science, religion, and society, but they share an assumption that science and religion represent opposing ways of knowing about the world. While these theories correctly anticipated rationalization and bureaucratization, they seemingly underestimated the durability of religion. Despite declining participation in organized religion (Voas and Chaves 2016), the share of intensely religious people in the United States has been stable (Schnabel and Bock 2017). And 90 percent of adults in the United States believe in God or some other higher power (Pew Research Center 2018).

The notion that science and religion represent incompatible ways of knowing—the conflict thesis—is especially evident in philosophical, theological, and scientific debates about whether scientific and religious knowledge are reconcilable (Dennett 1995; Lewis 1947). Some insist that science and religion are fundamentally incongruent (Dawkins 1996). Others maintain that conflict is limited to a few issues (Plantinga 2011). These scholars reach different conclusions about the scope of conflict between science and religion but seem largely to agree on its basis. Specifically, these accounts cast the science-religion interface as a site of epistemological conflict. Some limit the rift to specific knowledge claims, for example, about evolution, while others extend it to entire epistemes (Evans 2018). Regardless of this distinction, the narrow and wide versions of the conflict thesis each conclude that tension between science and religion rests on disagreement over factual knowledge.

Despite the persistence of the conflict narrative, there is little evidence that the public thinks about science and religion as broadly incompatible. Instead, recent studies find that perceived conflict between science and religion is much more limited than is often presumed (Longest and Ueker 2021). In fact, more people in the United States believe that science and religion can support one another than believe that they conflict with one another (Ecklund and Scheitle 2017). Research on the role of religion in organized science (Ecklund et al. 2019) and medicine (Cadge 2012) also suggests that the conflict thesis mischaracterizes the relationship between science and religion.

Not only is perceived conflict between science and religion less widespread than often assumed, when there is perceived conflict it is often about morals rather than knowledge (Evans 2018). While conflict about human origins arguably focuses on intellectual disagreement, much of the recent tension between science and religion reflects cultural conflict. For example, divides between scientific and religious elites concerning bioethics, gender, sexuality, and the environment each center on normative not epistemological issues (Alumkal 2017).

Survey questions that directly measure science's moral meaning are rare, but existing studies of public opinion in the United States are suggestive of the moral conflict thesis. For example, Evans (2013) found that while religious people tend to recognize that stem cell researchers are scientifically knowledgeable, they also tend to think that these scientists should be excluded from public policy decisions. Evans concludes that religious opposition to stem cell research is based on normative concerns not intellectual ones. Likewise, our earlier work found that many religious people reject scientific theories of human origins despite being knowledgeable about uncontested areas of science (O'Brien and Noy 2015). We interpret this to mean that survey questions about human origins are better measures of cultural worldviews than scientific knowledge. Although these studies do not directly measure the moral dimensions of science, they offer tentative support for the moral conflict thesis. Nevertheless, a more robust test requires a more direct measure of the perceived moral meaning of science.

The Politicization of Science and Religion

Research on the politicization of science also suggests that publics associate science with normative values. Social scientists have long recognized the unique institutional values of science (Merton [1942] 1973). However, the political meaning of science in the United States changed

dramatically near the end of the 20th century. Fueled by opposition to regulatory science among economic elites and growing anti-intellectualism at the grassroots, conservative political elites began a coordinated effort to link organized science to a liberal policy agenda (Gross et al. 2011; Oreskes and Conway 2011). The campaign to politicize science was evident in conservative political discourse of the era, which fixated on the supposed cultural threat from experts (Bonikowski and Gidron 2015). These efforts to politicize science have succeeding in undermining trust in science among rank-and-file conservatives for the past several decades (Gauchat 2012).

As science was tethered to liberal values, organized religion became embedded in right-wing politics (Steensland and Wright 2014). Conservative Christians led the way, but political values once associated with Conservative Christianity now appeal broadly to religious Americans (Delehanty et al. 2018). As conservative politics became entrenched in organized religion, many liberals defected from religious organizations (Hout and Fischer 2014). The politicization of religion and of science are analytically distinct but they reflect a common trend in U.S. political culture. Not only did science and religion gain new normative meanings near the turn of the 21st century, they also took on opposing meanings as they became proxies in a wider cultural conflict between modern, liberal values and traditional, conservative ones (O'Brien and Noy 2020). Indeed, despite liberals' low church attendance, an overwhelming majority of them believe in God. And, despite conservatives' mistrust in scientists, most conservatives appreciate the practical benefits of science (Mann and Schleifer 2020). Altogether, the politicization of science and religion further suggests that conflict between the two rests on values not knowledge.

To summarize, existing studies of the science-religion interface are limited in at least three ways. First, attitudes about the moral meanings of science and religion are typically observed indirectly. This is because surveys have conventionally focused on knowledge claims made by scientists instead of the moral implications of scientists' work. Second, studies that have explored the moral interplay between science and religion are often case- or domain-specific (Evans 2010, 2013). These studies document the ethical concerns of some religious people about certain areas of biomedical research. Yet, it is not clear whether these patterns extend to the institution of science itself. Third, although past studies suggest that religiosity and conservative political beliefs are each sources of opposition to science, we do not know whether their impact is additive or interactive. On the one hand, a liberal political disposition may outweigh religious concerns about the moral consequences of science. If so, then political liberals may see little moral threat posed by science, regardless of their religiosity. And there may be little difference in moral opposition to science between religious and secular conservatives. This would suggest that political values are more indicative than religiosity of moral opposition to science. On the other hand, religious concerns about science may offset a liberal political disposition. If so, then religious liberals may be unsettled by the moral effects of science despite their more favorable political orientation. And religiosity may amplify conservative opposition to science such that religious conservatives are even more opposed than secular conservatives to science. This would suggest that religious values are the more powerful predictor of moral worldviews. It would also signal that liberals are not as uniformly supportive of science as some assume.

DATA

We examine moral opposition to science using data from a national sample of United States adults included in the WVS (Inglehart et al. 2020). The dependent variable we use was included in survey waves 6 and 7, which were fielded in the United States in 2011 and 2017. Although the WVS is an international study, we focus on the United States because of the cultural specificity of the politicization of science and religion, which likely shapes how people perceive science's moral meaning (Evans 2018).

Respondents were identified using stratified random sampling. Surveys were administrated online and by phone in English and Spanish. In these two survey waves, the completion rate in the United States was 57 percent, for a total of 4,828 completed surveys. Missing data were handled in two ways. First, we used listwise deletion to remove cases that were missing information on variables of interest. We present findings from these analyses below (n = 3,763). Second, we used a combination of listwise deletion and multiple imputation. After deleting cases with missing information on the dependent variable, we used the chained method to impute missing values on independent variables (n = 4,691). Conclusions from analyses using imputed data are consistent with those from analyses of observed data.

These data are well suited to achieve this article's aims for two reasons. First, they contain the best available measure of the moral meaning of science, and therefore, provide the best opportunity to assess the moral conflict thesis. Second, these data offer a large, probability sample of United States adults with ample variation in religious and political beliefs, which can support strong conclusions about the relationships of interest.

METHODS

We first examined descriptive patterns to determine whether moral opposition to science differs between the religious and the nonreligious and between political liberals and conservatives. We then estimated ordinary least squares regressions to determine whether descriptive patterns remain after controlling for other variables and to conduct tests of statistical significance. We used interactions to determine whether religious differences are moderated by political ideologies. We used predicted values, delta-method standard errors, and tests of second differences to interpret regression results. We used Stata software (release 16) to conduct statistical analyses.

MEASURES

Dependent Variable

The dependent variable is a measure of *moral opposition to science*. Survey respondents were asked how much they agreed or disagreed with the statement "One of the bad effects of science is that it breaks down people's ideas of right and wrong." Responses were measured on a 10-point scale of (1) "completely disagree" to (10) "completely agree." Higher scores therefore indicate greater moral opposition to science. Table 1 summarizes the dependent variable and other variables used in the analysis.

While the dependent variable is only a partial measure of the moral values associated with science, it offers a chance to study how people think about science in relation to a core dimension of morality—the difference between right and wrong. Additional survey questions about specific areas of science, such as bioethics or public health, or different dimensions of morality, such as fairness or loyalty, would also provide valuable insight into the meanings publics attach to science. If this investigation finds that religiosity or political ideology is associated with the belief that science breaks down people's understanding of right and wrong, it would only underscore the need for new, more direct measures of the moral dimensions of science.

Independent Variables

The independent variables of interest are respondents' religiosity and their political ideology. Religiosity is measured using several survey items. One item asked about *the importance of religion in respondents' life*, ranging from (1) "not at all important" to (4) "very important." A second item measured *frequency of attendance at religious services*, ranging from (1) "never" to

Table 1: Descriptive statistics for variables of interest

Variable	Mean/proportion	Std. Dev.	Min.	Max.
Moral opposition to science	4.33	2.64	1	10
Importance of religion	2.81	1.12	1	4
Attendance at religious services	3.50	2.25	1	7
Prayer frequency	5.14	2.68	1	8
Religious person				
Atheist	.08	…	0	1
Not a religious person	.32	…	0	1
Religious person	.60	…	0	1
Belief in God	.80	…	0	1
Political beliefs	5.47	2.44	1	10
Republican voter	.35	…	0	1
Democratic voter	.45	…	0	1
Other voter	.20	…	0	1
No religious affiliation	.40	…	0	1
Catholic	.21	…	0	1
Protestant	.25	…	0	1
Other religious affiliation	.15	…	0	1
Black	.09	…	0	1
White	.70	…	0	1
Other race	.21	…	0	1
Income	5.12	1.90	1	10
College degree	.41	…	0	1
Female	.47	…	0	1
Age	45.84	16.81	18	93
Resides in south	.24	…	0	1

Notes: Table contains descriptive information for variables used in the analysis. "Std. Dev." is standard deviation, "Min." is minimum, "Max." is maximum. Source: World Values Survey (n = 3,763).

(7) "more than once a week." A third item measured *prayer frequency*, ranging from (1) "never" to (8) "several times a day." A fourth item is a binary variable asking whether respondents *believe in God*. A fifth item asked whether respondents think of themselves as (1) *an atheist*, (2) *not a religious person*, or (3) *a religious person*. Polychoric correlations among these variables are strong, ranging from .61 to .83.[1] Although these measures capture overlapping dimensions of religiosity, they are conceptually distinct. For example, praying several times daily signals a different aspect of religiosity than simply professing a belief in God. We therefore analyze these five variables separately. Nevertheless, the moral conflict thesis suggests that each measure of religiosity may be associated with the belief that science breaks down people's ability to understand right from wrong.

To test whether political belief moderate religious differences in moral opposition to science, we examine self-reported political ideology. It is measured on a 10-point left–right interval scale. Analyses of a categorical transformation of this item led to similar conclusions.

One notable omission from the WVS is a measure of conservative and liberal religious ideologies. Some of the differences between conservative and liberal faith traditions are likely captured by the indicators of religiosity we examine. For example, Evangelical Christians are more likely

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[1] The correlation matrix included a binary variable for religious person versus else.

than Mainliners to attend church frequently and to say that religion is very important to them. Still, these data cannot support conclusions about liberal and conservative religious worldviews. While religious conservatism is entangled with political conservatism in the United States, the two fields are not analogous and the left-right divides we discuss below refer to political ideologies not religious ones.

Control Variables

Regression models control for several other variables that may be associated antiscience attitudes. First, religious identities are measured with categories for *Protestant*, *Catholic*, *Orthodox*, *Jewish*, *Muslim*, *Hindu*, *Buddhist*, *members of other religions*, and *those unaffiliated with religion*. Because of the small number of respondents who are Buddhist, Hindu, Jewish, Muslim, or Orthodox, these faith traditions are combined into a single category. Because of the importance of the Republican party in organizing opposition to science in the United States, regressions include categories for *Republican voters*, *Democratic voters*, and *others*.[2] Education is measured as a binary variable that equals 1 for those who completed a *bachelor's degree or higher*. Gender is measured as a binary variable that equals 1 for *female*. Race is measured using categories for *black*, *white*, and *other races*. Those coded as black include the categories black African, black non-Hispanic, and black respondents. Those coded as white include the categories white/Caucasian, white non-Hispanic, and white respondents. Because of the small number of nonblack and nonwhite respondents in the sample, all other respondents are included in a single category. Unfortunately, respondents' ethnicity cannot be distinguished from their race in these data. Income is measured as household *income deciles*. *Age* is measured in years. Because of the unique cultural resistance to science in the American South, embodied by movements such as creationism, studies of science attitudes typically control for *residence in a Southern state* (Gauchat 2012; Sherkat 2017). We do so here with a binary variable. Finally, regression models include a binary variable for *survey wave* because the analysis pools data from two survey waves.

RESULTS

The purpose of this article is to investigate whether religiosity is associated with moral opposition to science and if so, whether the link is moderated by political beliefs. As a first step, Figure 1 contains the bivariate relationships between moral opposition to science and five indicators of religiosity. The lines in the graph are local polynomial smooths, which are essentially moving averages of the dependent variable across the ranges of ordinal and interval independent variables. The bars in the graph are mean levels of the dependent variable across nominally measured independent variables. Panels A through E show that each measure of religiosity has the anticipated positive relationship with moral opposition to science. And Panel F shows a similar, positive relationship between conservative political beliefs and opposition to science. More specifically, religious people and political conservatives are more concerned than the nonreligious and liberals that science breaks down people's sense of right and wrong.

Figure 2 begins to examine the interaction between religion and politics. It shows the relationship between religiosity and opposition to science separately for liberals and conservatives.[3]

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[2]This variable comes from a survey question that asked, "If there were a national election tomorrow, for which party on this list would you vote?" Response options in the United States were the Democratic Party, the Republican Party, the Libertarian Party, the Green Party, another party, an independent candidate, and would not vote.

[3]This graph categorizes people based on their political beliefs to illustrate descriptive differences between liberals and conservatives although regression analyses use the untransformed 10-point left-right scale. In Figure 2, liberals include

Figure 1
Unadjusted moral opposition to science
Notes: Graph contains local polynomial smooths and mean levels of moral opposition to science across religiosity (Panels A through E) and political ideology (Panel F). Source: World Values Survey (n = 3,763).
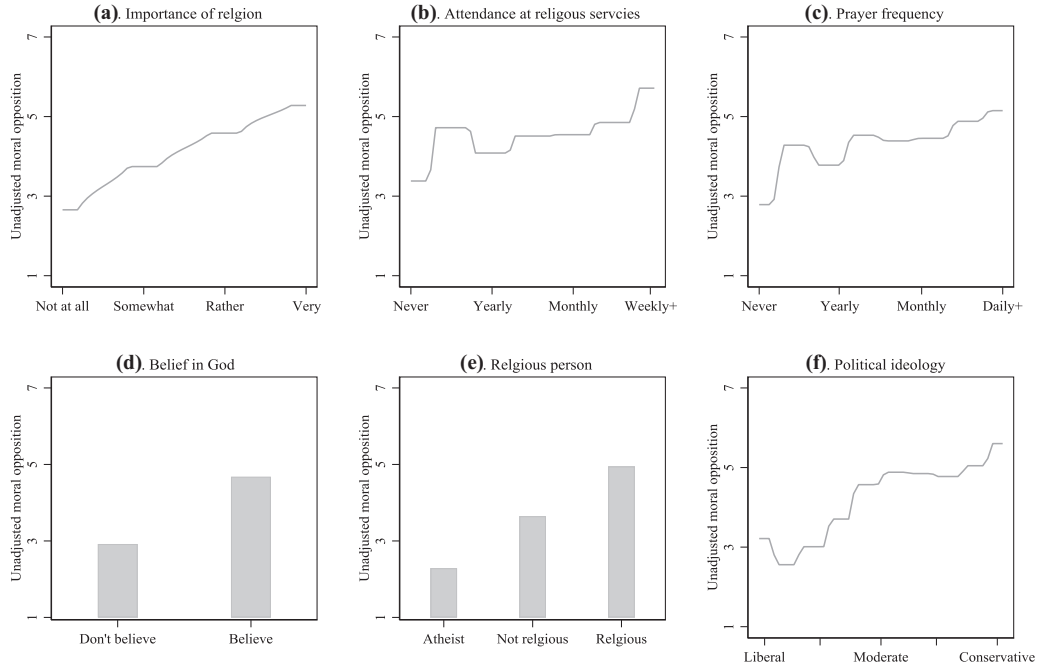
While moral opposition increases alongside each measure of religion for both groups, the difference between the religious and nonreligious is larger among liberals than conservatives. In fact, opposition to science among religious liberals is nearly as high as it is among secular conservatives. Altogether, while Figure 1 provides evidence that religiosity and conservative political beliefs each fuel moral opposition to science, Figure 2 suggests that religious differences are moderated by political beliefs.

To test whether these descriptive patterns are statistically significant and whether they remain after adjusting for other differences among respondents, we estimated ordinary least squares regressions of moral opposition to science on religiosity, political ideology, and controls. Table 2 summarizes the regression results. Model 1 focuses on the main effects of religiosity and conservative political beliefs. It shows that each measure of religiosity has a positive, statistically significant relationship with moral opposition to science, all else equal. Likewise, conservative political beliefs are associated with greater opposition to science, other differences aside. Several control variables also have significant effects. College-educated people, younger people, whites, and Democratic voters report less opposition to science compared to people without a college education, older people, people of color, and non-Democratic voters, net of other differences. These patterns are consistent with past research on perceptions of science and lend support to the validity of the model.

To illustrate regression results, Figure 3 plots predicted opposition to science across the ranges of religiosity and political ideology. Predicted values of the outcome are computed for

those who responded 1–3 on the 10-point scale. Conservatives include those who responded 8–10. Slight adjustments to category boundaries do not affect conclusions.

Table 2: Ordinary least squares regressions of moral opposition to science on religiosity, political ideology, and controls

	Importance of religion		Attendance at religious services		Prayer Frequency		Belief in God		Religious person	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Political beliefs	.17* (.02)	.39* (.05)	.19* (.02)	.29* (.03)	.19* (.02)	.31* (.04)	.20* (.02)	.25* (.04)	.18* (.02)	.26* (.03)
Importance of religion	.56* (.04)	.96* (.09)								
Importance of religion * political beliefs		−.08* (.01)								
Religious attendance			.18* (.02)	.35* (.05)						
Religious attendance * political beliefs				−.03* (.01)						
Prayer frequency					.17* (.02)	.28* (.04)				
Prayer frequency * political beliefs						−.02* (.01)				

(*Continued*)

Table 2: (Continued)

	Importance of religion		Attendance at religious services		Prayer Frequency		Belief in God		Religious person	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Believe in God							.91* (.11)	1.20* (.21)		
Believe in God*political beliefs								−.06 (.04)		
Atheist									−.79* (.16)	−.57 (.30)
Religious person									.84* (.10)	1.54* (.21)
Atheist*political beliefs										−.03 (.07)
Religious person*political beliefs										−.13* (.04)
Other voter	.40* (.11)	.34* (.11)	.43* (.11)	.41* (.11)	.43* (.11)	.41* (.11)	.41* (.11)	.40* (.11)	.45* (.11)	.42* (.11)
GOP voter	.43* (.11)	.39* (.11)	.48* (.11)	.48* (.11)	.46* (.11)	.45* (.11)	.46* (.11)	.47* (.11)	.46* (.11)	.46* (.11)
Catholic	.23* (.12)	.16 (.12)	.43* (.12)	.38* (.12)	.40* (.12)	.36* (.12)	.47* (.11)	.46* (.11)	.28* (.12)	.26* (.12)
Protestant	.22 (.12)	.19 (.11)	.46* (.12)	.43* (.12)	.44* (.11)	.43* (.11)	.58* (.11)	.58* (.11)	.36* (.11)	.36* (.11)
Other religion	.33* (.13)	.29* (.13)	.53* (.13)	.50* (.13)	.55* (.13)	.54* (.13)	.69* (.12)	.69* (.12)	.50* (.12)	.48* (.12)
Black	.98* (.15)	.89* (.15)	1.23* (.15)	1.19* (.15)	1.15* (.15)	1.10* (.15)	1.28* (.15)	1.27* (.15)	1.18* (.15)	1.15* (.15)

(*Continued*)

Table 2: (Continued)

	Importance of religion		Attendance at religious services		Prayer Frequency		Belief in God		Religious person	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Other race	.46*	.43*	.54*	.53*	.51*	.49*	.55*	.55*	.53*	.51*
	(.10)	(.10)	(.10)	(.10)	(.10)	(.10)	(.10)	(.10)	(.10)	(.10)
Income	−.01	.00	−.03	−.03	−.01	−.01	−.02	−.02	−.01	.00
	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)
College degree	−.87*	−.84*	−1.04*	−1.02*	−.96*	−.94*	−.94*	−.93*	−.92*	−.91*
	(.08)	(.08)	(.08)	(.08)	(.08)	(.08)	(.08)	(.08)	(.08)	(.08)
Female	.20*	.21*	.29*	.29*	.20*	.21*	.28*	.28*	.25*	.26*
	(.08)	(.08)	(.08)	(.08)	(.08)	(.08)	(.08)	(.08)	(.08)	(.08)
Age	−.02*	−.02*	−.01*	−.01*	−.02*	−.02*	−.01*	−.01*	−.02*	−.02*
	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)
Resides in south	−.06	−.05	−.05	−.05	−.04	−.04	−.01	−.01	−.02	−.01
	(.09)	(.09)	(.09)	(.09)	(.09)	(.09)	(.09)	(.09)	(.09)	(.09)
Survey wave 7	−.39*	−.40*	−.41*	−.41*	−.41*	−.41*	−.34*	−.34*	−.36*	−.36*
	(.08)	(.08)	(.08)	(.08)	(.08)	(.08)	(.08)	(.08)	(.08)	(.08)
Constant	2.58*	1.52*	3.24*	2.71*	3.03*	2.46*	2.90*	2.68*	3.44*	3.03*
R^2	.22	.23	.21	.21	.21	.21	.21	.21	.22	.22

Notes: Reference groups are: does not believe in God, not a religious person, Democratic voter, no religious tradition, male, white, no college degree, does not reside in south, and survey wave 6.
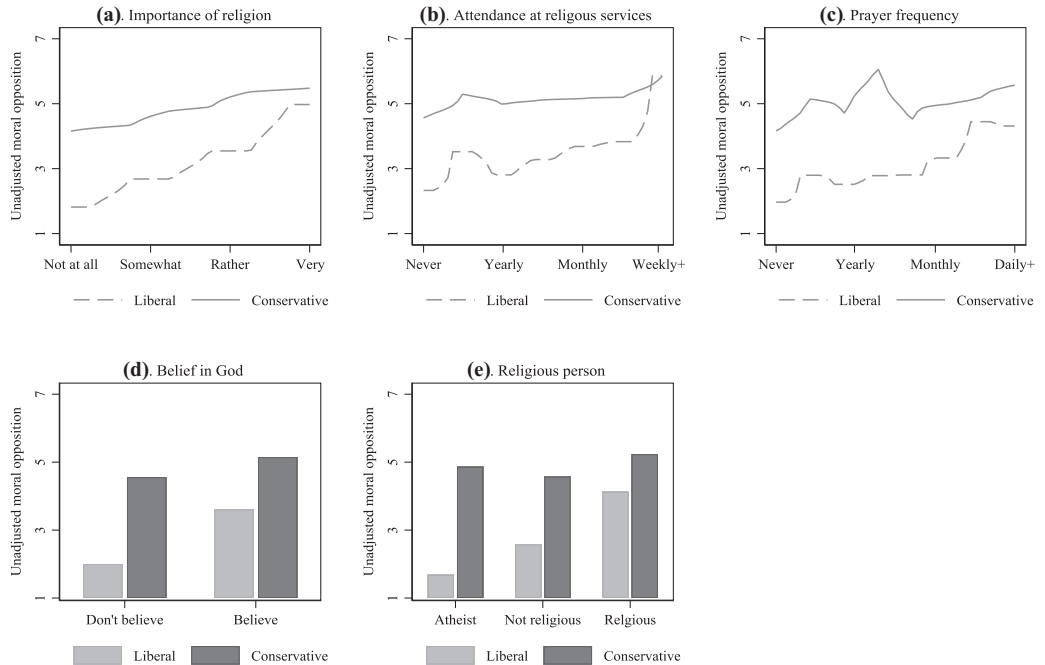
*p < .05.

Source: World Values Survey (n = 3,763).

Figure 2

Unadjusted moral opposition to science by religiosity and political beliefs

Notes: Graph contains local polynomial smooths and mean levels of moral opposition to science across religiosity separately for liberals and conservatives. Source: World Values Survey (n = 3,763).

each respondent using the observed values of the covariates, and then averaged across respondents. Panels A through e are based on Model 1 in Table 2 and show the main effects of religion and politics on moral opposition to science. Like the descriptive patterns in Figure 1, predicted values in Figure 3 show that religiosity and conservative political beliefs are each associated with moral opposition to science. For each indicator of religion, the difference between the most and least religious is statistically significant. So is the difference between those at opposite ends of the political spectrum. Overall, the regression results corroborate the bivariate patterns in Figure 1. They also signal that the relationships between religiosity, political beliefs, and opposition to science are robust to numerous controls.

The final step in the analysis is to examine the moderating effect of political beliefs on religious opposition to science in a regression context. Model 2 in Table 2 adds an interaction for religiosity and political beliefs. The negative coefficients for the interaction indicate that the effect of religiosity on moral opposition to science is tempered by conservative political beliefs. In other words, the relationships between moral opposition to science and religiosity are stronger among liberals than conservatives. The interaction term is significant for each indicator of religiosity except for belief in God although its direction is consistent with the other interactions. This may reflect that professing a belief in God is a relatively low threshold of religiosity. And, unlike the other religiosity items, this one does not capture intensity. It may therefore be less sensitive to underlying differences in religiosity and less predictive of social and political attitudes.

To illustrate the interaction between religion and politics, Figure 4 plots predicted opposition to science across the range of religiosity separately for liberals and conservatives. Once again, adjusted regression results closely resemble unadjusted descriptive patterns. Predicted opposition to science increases alongside each indicator of religiosity for those on the left and the right alike.

Figure 3

Adjusted moral opposition to science

Notes: Graph contains predicted values from ordinary least squares regressions of moral opposition to science on religiosity, political ideology, and controls. Dashed lines and error bars are 95% confidence intervals. Predictions are adjusted to show religious and political differences in moral opposition to science when control variables are held at their mean levels. Predictions are based on Model 1 in Table 2. Source: World Values Survey (n = 3,763).
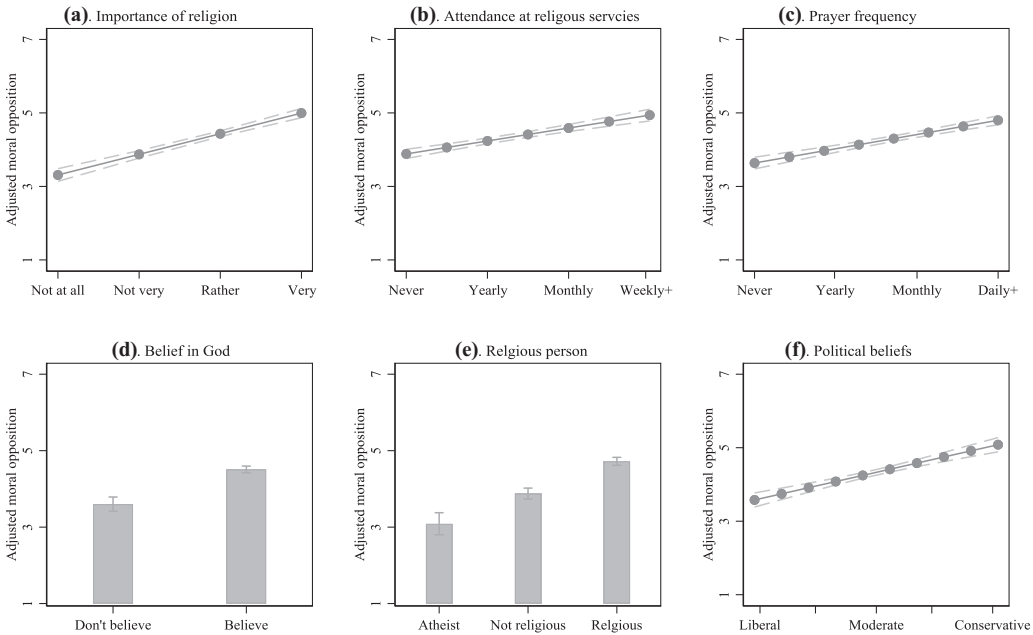

However, the change is more dramatic among liberals than conservatives. Second-difference tests confirm that the increase in opposition to science associated with religiosity is significantly larger for those on the left than the right for each indicator of religiosity except for belief in God. Yet, for all indicators of religiosity, the difference between religious liberals and secular liberals is significantly greater than the difference between religious liberals and secular conservatives. In fact, for two indicators of religiosity—the importance of religion (Panel A) and religious person (Panel E) variables—there is no statistically significant difference in opposition to science between religious liberals and secular conservatives. In other words, when religious liberals evaluate the moral consequences of science, they seem to have more in common with secular conservatives than with secular liberals.

In summary, our analysis yielded three key findings. First, moral opposition to science is higher among the religious than the nonreligious. This suggests that religious opposition to science stems at least partly from moral divides. Second, moral opposition to science is higher among conservatives than among liberals, which is consistent with a large body of research on the politicization of science. Third, the link between religiosity and moral opposition to science is stronger for liberals than conservatives, which may reflect overlap in conservative and religious opposition to science. Altogether, these results support the conclusion that science is associated with a moral meaning opposed by many religious and politically conservative people in the United States. Results also suggest that there is more variation in science attitudes among liberals than is sometimes acknowledged.

Figure 4

Adjusted moral opposition to science by religiosity and political beliefs

Notes: Graph contains predicted values from ordinary least squares regressions of moral opposition to science on religiosity, political ideology, their interaction, and controls. Dashed lines and error bars are 95% confidence intervals. Predictions are adjusted to show religious and political differences in moral opposition to science when control variables are held at their mean levels. Predictions are based on Model 2 in Table 2. Source: World Values Survey (n = 3,763).
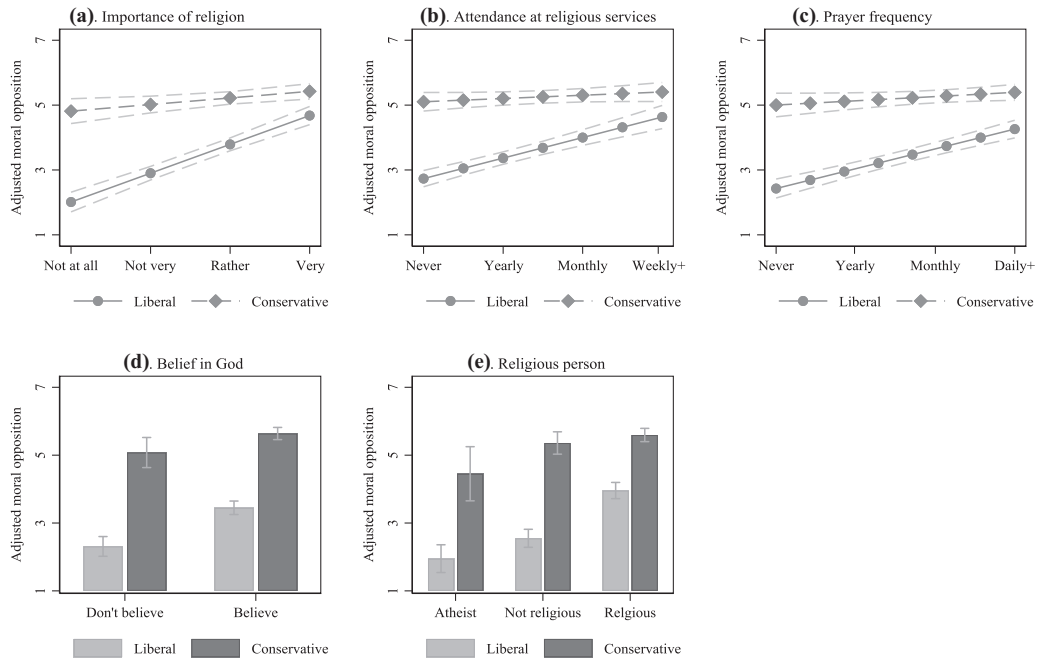
Conclusions

This investigation found that many in the United States believe that science breaks down people's understanding of right and wrong, and that this belief is more common among the religious than the nonreligious. However, the relationship between religiosity and moral opposition to science is generally stronger among political liberals than political conservatives. This may reflect the coupling of religious and conservative political identities in the United States. Moral opposition to science is only modestly higher among religious conservatives than it is among secular conservatives, because secular and religious conservatives independently view science as a normative threat. Instead, secular and religious liberals differ widely in their beliefs about the moral meaning of science. Moral opposition to science is lowest among secular liberals, which is consistent with their marginal social positions *vis-à-vis* religion and conservative politics. Yet, the level of moral opposition to science among religious liberals is more like that among secular conservatives than secular liberals. This suggests that religion weighs more heavily than politics on the moral outlooks of at least some liberals. These findings also underscore the importance of religiosity to understand political opposition to science and may help to account for liberal opposition to certain technologies, such as vaccines (McCoy 2020).

Strengthening ties between organized religion and conservative politics in the United States may raise questions about the ability to analyze religiosity and political ideology separately. However, the correlations between the measures of religiosity and political ideology we used are weak, ranging from .29 to .35. Moreover, nearly 75 percent of liberals in these data believe in God,

nearly 60 percent say that religion is either rather or very important to them, and nearly 50 percent consider themselves to be religious. So, while liberals are less religious than conservatives, on average, it is a mistake to overlook the importance of religion on the political left.

Results from this study add to mounting evidence of the need to reconceptualize science in the literature on science attitudes. Conventionally, research on public understanding of science has focused on the public's awareness of scientific concepts and methods as the basis of science attitudes (Evans and Durant 1995). While there is clear evidence that experience with science is associated with appreciation of science, the mechanism assumed by the deficit model has come under increasing scrutiny. For example, field theories suggest that perceptions of science reflect actors' social positions relative to science and other institutions, such as religion and politics (Bourdieu 1984). While both frameworks account for the correlation between experience with and appreciation of science, they point to starkly different strategies for reducing opposition to science. If opposition to science reflects cultural conflict, then teaching the public more scientific knowledge may do little to reduce opposition to scientists and scientific organizations. Instead, the more effective strategy for reducing opposition to science may be to address its moral implications and its relationship to other potential sources of values.

These results also suggest that the moral meaning of religion merits closer scrutiny. The weaker effect of religiosity on moral opposition to science among political conservatives may reflect the alignment of organized religion and conservative political values. Sociological research on religion often prioritizes religious traditions for understanding the beliefs and behaviors of religious people. However, this study suggests that at least some of the moral values associated with organized religion may extend across faith traditions. One explanation for this is the politicization of religion (Baker et al. 2020; Fischer and Hout 2014; Whitehead et al. 2018). Conservative Christians reshaped the institutional meaning of religion when they fused conservative political values with organized religion in the late 20th century (Steensland and Wright 2014). However, the effects of this union reverberated across faith traditions. Many Americans now associate conservative politics with organized religion rather than with specific faith traditions (Evans 2016). Similarly, this study found that religiosity is associated with moral opposition to science net of faith traditions, reinforcing further the importance of religion as a source of meaning independently of denominations.

Our discussion focused on the moderating effect of political ideology on religious differences. However, the findings could also be interpreted in terms of the moderating effect of religiosity on political differences. Religious beliefs are likely fundamental to people's moral worldviews. However, political ideologies may also be associated with deeply held normative dispositions. The most cautious reading of these results is therefore that religious and political beliefs interactively shape moral opposition to science. This dynamic view of the interface of religion, politics, and science is consistent with field theories of culture and cognition (Fligstein and McAdam 2012).

These findings advance the social scientific literature on science, religion, and politics in several ways, but the conclusions are limited by two notable features of the data. First, the dependent variable focused on the moral meaning of science in general terms. More specific measures of science's moral meaning would be ideal for better understanding where and why opposition to science is greatest. Given public resistance to certain environmental and medical technologies, it is especially important for future studies to consider the meanings publics associate with specific areas of science. Second, more fine-grained data on religious identities would be ideal for situating these findings alongside research on the politicization of religion. Most conspicuously, the data we analyze do not distinguish white Evangelical Protestants or conservative Catholics, groups that were central to the politicization of religion in the United States. Despite these limitations, this article provides the most comprehensive empirical analysis to date of how religious and political beliefs relate to the morality of science, and it demonstrates the viability of the moral conflict thesis for understanding antiscience attitudes. These results also highlight the need for additional data on these issues.

Science and religion are among the most influential sources of cultural authority in modern societies. This article provides evidence that the interface between the two is a site of cultural conflict and that religious opposition to science in the United States reflects a belief among some that science threatens traditional conceptions of morality. These results also suggest that the divide is likely to persist if science and religion remain associated with cultural values that many see as at odds with one another.

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