

Factual or Moral Persuasion in the United States? Evidence from the Papal Encyclical on Climate Change

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Abstract

How do elite cues shape public opinion? We assess two ways in which such cues may be influential: by changing citizens' factual beliefs about the world (the "factual channel") or by triggering a moral reevaluation (the "moral channel"). We study this issue in the context of the papal encyclical on climate change, in which Pope Francis attempted to persuade Catholics that there is a scientific consensus around climate change and that protecting the environment is a moral and religious obligation. Exploiting panel data from the United States before and after the encyclical, we find that both mechanisms played a role: Catholics who regularly attended church became disproportionately more likely to believe both that global warming was happening and that climate change was a religious issue. The pope's influence on Catholic policy preferences, however, operated only through the factual channel.

Introduction

On June 18, 2015, Pope Francis became the first pope to dedicate an encyclical to the environment. The encyclical, titled “Laudato Si,” or “Praised Be to You,” declared that climate change “represents one of the principal challenges facing humanity in our day.” In it, the pope called for a wholesale transformation of individual lifestyles and of the political and economic systems of the world’s industrialized countries. “There is an urgent need,” Francis announced, “to develop policies so that, in the next few years, the emission of carbon dioxide and other highly polluting gases can be drastically reduced” (Francis, 2015).

Laudato Si was a call to action: Francis urged ordinary people to mobilize for change and argued that skeptics needed an “ecological conversion.” The encyclical was widely discussed in services around the world. Christiana Figueres, the UN’s top climate official, proclaimed that it would “have a major impact,” affirming “the moral imperative of addressing climate change in a timely fashion in order to protect the most vulnerable” (Carrington, 2015). One papal biographer described Laudato Si as “a game-changer” that “could release a whole new form of people power” (Ivereigh, quoted in Kirchgaessner 2015). Conservatives, for their part, criticized the encyclical as an inappropriate form of political meddling.

But in the twenty-first century, how much weight does the pope’s moral authority actually carry? And, more broadly, what can studying this particular intervention tell us about how elite cues shape public opinion—particularly where, as in the case of climate change, the public contests both the facts at issue and their moral significance? We suggest that there are two possibilities: one is that elites influence public opinion by changing the public’s perception of the *facts at issue*: in the case of climate change, for example, by convincing people that carbon emissions are actually rising, that human actions are in fact raising global temperatures, and so on. The other possibility is that elites exercise influence by changing how people view the *normative significance* of particular facts—again in the case of climate change, by persuading people that they have a moral or religious obligation to act.

We find that both of these mechanisms played a role in the aftermath of Laudato Si. Drawing

on panel data from before and after the publication of the encyclical, we find that it had significant—and substantial—effects: American Catholics who regularly attended church became more likely to believe action on climate change was necessary, more convinced that climate change was a religious issue, and more likely to express confidence in the scientific evidence for global warming.

Next, we assess which of these mechanisms played a larger role in shaping public opinion. Although the pope changed Catholic opinion about both the *facts* and the *moral significance* of climate change, the former channel was more effective. Put simply, convincing Catholics of the scientific reality about climate change appears to have generated greater support for climate action than urging them to embrace a more ecological interpretation of their religious duties.

These findings have several important implications, not only for the political influence of the papacy, but also for how elite cues shape political behavior more generally. It is clear, contrary to recent reports that the pope is a “forgotten figure,” that his political influence remains robust ([Horowitz, 2019a](#)). What’s more, the example of *Laudato Si* suggests that policy preferences on climate are more responsive to changes in people’s factual beliefs about the world than to shifts in their understanding of their moral or religious duties. These findings are of particular importance in an era of increased polarization, where scientific issues are often seen as partisan. The response to COVID-19—which was characterized by sharp partisan divides over the seriousness of the disease—provides an especially salient recent example, as does the subject of this paper: American attitudes toward climate change—a topic that, despite its importance, has so far been the subject of a “relatively scant” literature in political science ([Egan and Mullin 2017](#); see, for example, [Bechtel, Genovese and Scheve \(2019\)](#) and [Druckman and McGrath 2019](#)).

Elite Cues and the Papacy

In recent years, political scientists have largely overlooked the political role of the papacy. Scholars have long viewed religion as an important factor in voting behavior ([Lijphart, 1979](#), [Roemer, 1998](#), [Rose and Urwin, 1969](#)), and they tend to agree that religious institutions exert significant influence

on voters' ideology.¹ But few researchers have examined the papacy, and in particular the political effects of religious leaders' pronouncements. Some research finds that the pope is more likely to issue political statements or release political tweets during international crises, but these papers do not examine the broader consequences of these papal interventions.² For an institution that boasts more than a billion followers, this relative paucity of research is remarkable; it confirms, as one scholar has recently urged, that "comparative politics needs to take religion more seriously" (Grzymala-Busse 2012). In the absence of systematic evidence, meanwhile, journalists have speculated that the pope wields little political influence in the twenty-first century, as the influence of institutional religion wanes.

One of the most powerful ways in which the pope can shape the beliefs of religious Catholics is through the release of an encyclical. Encyclicals are letters, or teachings, distributed from the pope to the clergy and laity of the church, and *Laudato Si* was Francis' second since becoming pope (the first, *Lumen Fidei*, or the Light of Faith, was the completion of one started by his predecessor). They are considered authoritative: faithful Catholics are expected to embrace their teachings sincerely (although some, more specific, assertions in them can be categorized as "prudential judgments").

Laudato Si had two primary goals. On the one hand, it sought to change citizens' factual beliefs about the world (we dub this "the factual channel"): to make them embrace what the pope described as "a very solid scientific consensus . . . that we are presently witnessing a disturbing warming of the climatic system." But it also sought to trigger a moral reevaluation (what we call "the moral channel")—to encourage "committed and prayerful Christians" to view their obligations to the environment as a religious and moral duty. Throughout the encyclical, Francis advocated for "integral ecology," emphasizing the need for "A sense of deep communion with the rest of nature." "Living our vocation to be protectors of God's handiwork is essential to a life of virtue," he declared. "It is not an optional or a secondary aspect of our Christian experience" (Francis,

¹See Harris (1994), Inglehart and Norris (2004), Davis and Robinson (2006) and Masoud, Jamal and Nugent (2016). There is also a growing experimental literature on the effects of religious rhetoric on politics; see, for example, Albertson (2011); Bloom, Arian and Courtemanche (2015); Glazier (2013).

²See Genovese (2015) and Genovese (2019).

2015).

A priori, the extent to which the encyclical—and papal rhetoric more broadly—will affect politics is unclear. On the one hand, there are theoretical grounds to expect the pope to wield some influence. Religious leaders should play a similar role to other political leaders, who can shape mass public opinion and political behavior (Lupia, 1994, Zaller et al., 1992). Religious leaders, as Margolis (2018) writes, can act as “liaisons between the social and political worlds, providing voters with cues as to how their identifications with particular groups should translate into political preferences and activities” (1). Previous work finds that religious leaders can influence their followers’ attitudes by priming certain religious values and by shaping their followers’ willingness to mobilize for collective action (Djupe and Calfano, 2013, McClendon and Riedl, 2015, Rink, 2018, Sheikh, 2012).

Indeed, citizens often pay more attention to religious leaders than they do to politicians, and the Catholic Church—arguably more so than other Christian denominations—has long emphasized its political relevance (Martin 1999). What’s more, the structure of Catholicism, with a single universal representative with the apparent ability to issue binding declarations for 1.2 billion people and with its emphasis on the need for mediation between God and the faithful (in contrast to Protestantism), should increase the impact of the pope’s policy preferences on the political attitudes and behaviors of Catholics.

At the same time, however, institutional religion has lost some of the influence it once enjoyed: the pope’s “voice does not seem to carry as far in the world as it once did” (Horowitz, 2019b). In the United States in particular—a highly polarized country characterized by strong party identification—one might expect the pope’s political weight to be sharply curtailed. Although Catholics may follow the pope’s lead on religious and doctrinal issues, they may well disregard his interventions into contemporary politics—and especially on an issue as politicized as climate change, where Americans are likely to be especially attentive to party cues. All of this suggests that this may be a hard case for elite influence.

Empirical Analysis

To assess the causal impact of papal rhetoric on attitudes toward climate change, we examine nationally representative panel survey data conducted in two waves: in early March 2015, before the pope released his encyclical, and again in October 2015, some three months after.³ Throughout the analyses that follow, our outcomes of interest are changes in attitudes toward climate change, and we assume that any other time trend or temporal difference other than the pope’s intervention did not disproportionately affect regularly attending Catholics. Given this empirical strategy, we expect that many of our results are biased downwards: the “control group” (non-Catholics and Catholics who did not regularly attend church) was also exposed to the “treatment” (the papal intervention on climate change), which may have also increased their support for climate action.⁴

We begin by testing whether Francis’ intervention increased support among Catholics for actions taken to address climate change. The dependent variable is the change in perception that action on climate change is necessary between the pre- and post-encyclical waves.⁵ As Table A1 shows, Catholics who attended church at least once a week—those most likely to be exposed to information about the encyclical and to take the pope’s religious teachings seriously—became disproportionately more likely to support action on climate change, an effect size that is positive and significant at the .05 level. To at least some extent, then, the encyclical “worked”: the pope’s major intervention on climate change moved Catholic public opinion in the direction of his substantive policy preferences.

But through what channels did the pope’s influence flow? As discussed above, the encyclical sought to change citizens’ factual beliefs about the world (the factual channel) and to prompt

³For more on this survey, see [Myers et al. \(2017\)](#).

⁴Indeed, we find a strong positive time trend for the “control group” in terms of their belief that global warming is happening, their belief that climate is a religious issue, and their support for policy action on climate change, suggesting that papal rhetoric may also have influenced the control group. A survey question in the first wave asks respondents how much they trust or distrust Pope Francis as a source of information about global warming (on a 1-4 scale); attending Catholics scored a 2.83 on the scale, which was not significantly higher than the average for respondents outside of this group, which was 2.53.

⁵Specifically, the survey question asked “Do you think each of the following [The U.S. Congress, President Obama, corporations and industry, citizens themselves] should be doing more or less to address global warming?” Possible answers range from 1 (“Much less”) to 5 (“Much more”), and we averaged answers for the four actors mentioned.

an ethical and religious reevaluation (the moral channel). Did the pope change Catholic opinion through both of these channels?

We begin by testing the moral channel, asking whether Francis' intervention changed Catholic beliefs about whether global warming is a religious issue. The dependent variable is the change in perception that global warming is a religious issue between the pre- and post-encyclical waves.⁶ As Table A2 shows, we find support for the moral channel: Catholics who attend church at least once a week became disproportionately more likely to view global warming as a (major) religious issue ($p = .067$).

Next, we test the factual channel: did the pope's encyclical strengthen Catholics' confidence in the reality of global warming?⁷ As column 1 in Table A3 shows, we find the pope's encyclical had little effect on the overall Catholic population's beliefs about the empirical realities of climate change. But we would not expect the encyclical to have much effect on the views of Catholics who already trust the conclusions of climate science; the encyclical's impact should be most concentrated among climate skeptics. Indeed, when we subset to skeptics—those who believed global warming was not happening in the first wave of the survey—weekly Catholic church attendance predicts changing beliefs about whether climate change is happening in the aftermath of the encyclical. As the coefficient in column 2 indicates, Catholics who attended church weekly and were skeptical of climate change in the original wave of the survey became disproportionately more certain that climate change was happening ($p = .079$).

We have shown that in the immediate aftermath of the pope's most high-profile intervention in the politics of climate change, American Catholics who regularly attended church became more likely to believe action on climate change was necessary, more convinced that climate change was a religious issue, and more likely to express confidence in the scientific evidence of global warming.

⁶The survey question asks, "In your opinion, do you think global warming is... a religious issue?" Answers are coded on a three point scale (no, minor issue, major issue). We control for college education, gender, race, age, party category (Republican, Democrat, Independent, where the baseline is "Other" and "No party/not interested in politics").

⁷For the dependent variable, we use answers to the question: "Do you think that global warming is happening?" If respondents answered yes, they were then asked "How sure are you that global warming is happening?" If no, "How sure are you that global warming is not happening?" Answers run from "Extremely sure global warming is not occurring," which we code as 1, to "extremely sure global warming is occurring," which we code as a 9; we code respondents in the 1 to 4 range as "skeptics."

In other words, Catholics updated both their moral and their factual views.

But which of these mechanisms proved more influential in generating support for climate change policy? In Figure 1, we test the relative importance of these two channels among attending Catholics (the results, as we show in the appendix, are almost identical for the whole survey population). The dependent variable is the change in perceptions of the necessity of action on climate change. The independent variables include change in perception that global warming is a religious issue (the moral channel, left panel) and change in certainty that global warming is happening (the factual channel, right panel). As the relative gradients in the two panels of figure 1 show, the factual channel was more influential than the moral one in influencing Catholic preferences on climate policy; convincing Catholics of the scientific consensus about climate change appears to have been more important than pushing them to embrace an interpretation of Christianity that places at its heart a religious obligation to protect the environment.

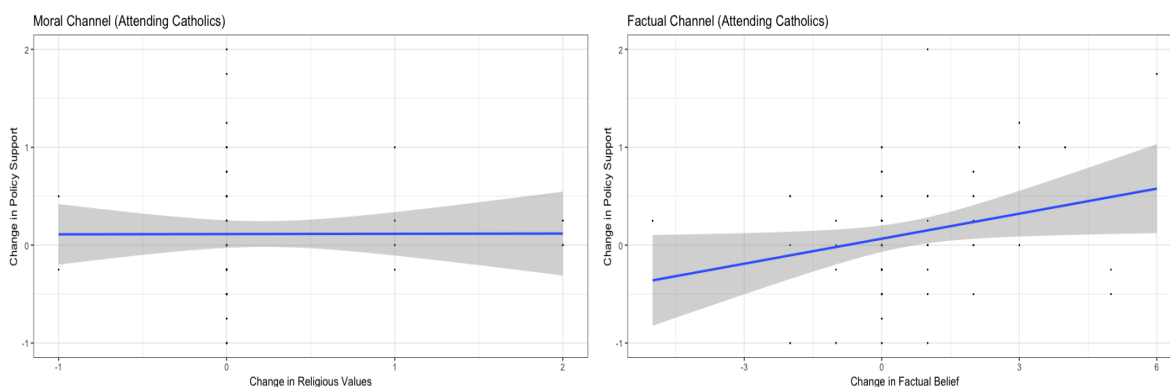


Figure 1: *Moral Channel Versus Factual Channel (Among Attending Catholics)*

Conclusion

Ultimately, our findings show that the pope’s political influence remains significant, and that reports claiming that Francis “may no longer have influence on a global stage where nationalists, populists and the far right dominate the political conversation” are premature ([Horowitz, 2019b](#)). Francis’ major intervention on climate change increased support for climate action among prac-

tising American Catholics, helped persuade them that climate change was a religious issue, and increased their confidence in the scientific evidence for global warming.⁸

These findings speak not only to the continued political relevance of the papacy, but also to broader questions about the mechanisms of elite influence. In many policy debates, the public contests both the facts at issue and their moral significance. Elites can shape public opinion on both these dimensions: they can change the public's perceptions of contested facts and mold how the public evaluates the moral significance of particular facts. Francis' intervention into climate politics succeeded in influencing Catholic public opinion through both these mechanisms, but only the former mechanism predicted support for climate action. Future research should determine the relative strength of the factual and moral channels in other issue areas.

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⁸Nor is the pope's influence confined to the United States. In an event study of the encyclical drawing on European Social Survey data (results presented in Table A4), we find that *Laudato Si* encouraged European Catholics to identify as environmentalists.

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Appendix

Main Results: United States

Table A1: Catholic Church Attendance and Change in Support for Addressing Climate Change

	<i>Dependent variable:</i>
	Change in Perception that Climate Action is Needed
Catholic	−0.108 (0.076)
Attendance	−0.075 (0.067)
Catholic: Attendance	0.270** (0.130)
Constant	0.035 (0.099)
Observations	884
R ²	0.011
Adjusted R ²	−0.0005
Residual Std. Error	0.788 (df = 873)
F Statistic	0.956 (df = 10; 873)

Note:

*p<0.1; **p<0.05; ***p<0.01

Controls include age, education, gender, ethnicity and partisanship.

Table A2: Catholic Church Attendance and Change in Belief Global Warming is a Religious Issue

	<i>Dependent variable:</i>
	Changing Perception Global Warming is a Religious Issue
Catholic	0.0001 (0.053)
Attendance	−0.011 (0.047)
Catholic: Attendance	0.168* (0.091)
Constant	0.032 (0.070)
Observations	889
R ²	0.023
Adjusted R ²	0.012
Residual Std. Error	0.554 (df = 878)
F Statistic	2.070** (df = 10; 878)

Note:

*p<0.1; **p<0.05; ***p<0.01

Controls include age, education, gender, ethnicity and partisanship.

Table A3: Catholic Church Attendance and Change in Certainty that Climate Change is Happening

	<i>Dependent variable:</i>	
	Change in Certainty Global Warming is Happening	
	Overall	Skeptics
Catholic	0.130 (0.144)	-0.170 (0.481)
Weekly Attendance	-0.083 (0.125)	-0.587* (0.325)
Catholic: Weekly Attendance	0.220 (0.245)	1.279* (0.723)
Constant	0.465** (0.187)	2.880*** (0.598)
Observations	889	181
R ²	0.015	0.144
Adjusted R ²	0.004	0.093
Residual Std. Error	1.489 (df = 878)	1.842 (df = 170)
F Statistic	1.378 (df = 10; 878)	2.854*** (df = 10; 170)

Controls include age, education, gender, ethnicity and partisanship. Note:

*p<0.1; **p<0.05; ***p<0.01

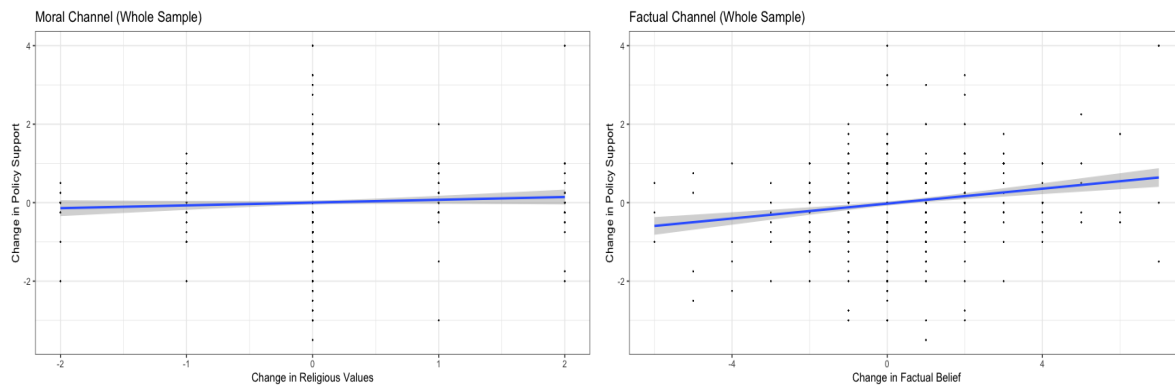


Figure 2: *Moral Channel Versus Factual Channel (Whole Sample)*

Europe

To examine the impact of the encyclical on Catholic opinion in Europe, we run an event study, drawing on Wave 7 of the European Social Survey.⁹ The survey prompts respondents to consider the extent to which they identify with environmentalism; the question reads: “Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. She/he strongly believes that people should care for nature. Looking after the environment is important to her/him.” We code the answers “Very much like me” as 6 and “Not like me at all” as 1.

The results are displayed in Table A4. Our main analysis focuses on the period covering 15 days before and after the encyclical, although our results are robust to using 10 and 20 day windows instead. Before the encyclical, there was no statistically significant relationship between Catholic identity and identification with environmentalism, but the encyclical has a statistically and substantively significant positive effect on Catholic identification with environmentalism (.3 points on the scale from 1 to 6). In the aftermath of the pope’s major intervention on climate change, Catholics in Europe followed the pope’s lead: they expressed greater support for environmental causes.

Table A4: Catholic Identity and Identification with Environmentalism

	<i>Dependent variable:</i>		
	Identification with Environmentalism		
	10 Days	15 Days	20 Days
Catholic	−0.030 (0.217)	0.061 (0.174)	0.102 (0.137)
Post-Encyclical	−0.122 (0.153)	−0.140 (0.119)	−0.109 (0.101)
Catholic: Post-Encyclical	0.262 (0.185)	0.262* (0.149)	0.217* (0.129)
Constant	4.659*** (0.308)	4.673*** (0.255)	4.668*** (0.200)
Country Fixed effects	Yes	Yes	Yes
Observations	553	815	1,140
R ²	0.048	0.043	0.038
Adjusted R ²	0.029	0.030	0.029
Residual Std. Error	0.939 (df = 541)	0.924 (df = 803)	0.908 (df = 1128)
F Statistic	2.484*** (df = 11; 541)	3.298*** (df = 11; 803)	4.100*** (df = 11; 1128)

Controls include age, education, gender and ethnicity.

*p<0.1; **p<0.05; ***p<0.01

⁹The country sample in this analysis is Hungary, Israel, Lithuania, Poland, and Portugal.