

Moral Concerns and Policy Attitudes: Investigating the Influence of Elite Rhetoric

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A growing body of research documents the crucial role played by moral concerns in the formation of attitudes and a wide range of political behaviors. Yet extant models of moral judgment portray a direct linkage between moral intuitions and policy attitudes, leaving little room for the influence of political context. In this article, we argue that political rhetoric plays an important role in facilitating the connection between moral intuitions and political attitudes. Using a unique combination of media content analysis of the stem cell debate and individual-level measures of the public's moral foundations, we examine the role of rhetoric in linking a person's moral foundations to his or her attitudes. Our results show that individuals who are the most likely to have been exposed to political rhetoric have the strongest connection between their moral foundations and their attitudes on the issue. We also find that rhetoric was persuasive on this moralized issue and present suggestive evidence that it was most persuasive among those who endorsed the relevant moral foundation.

Keywords elite rhetoric, Moral Foundations Theory, stem cell research, framing, persuasion

Abortion, gay marriage, and stem cell research stand apart from other political issues. Whether they are described as “moral,” “easy,” or “social,” these topics are distinctive because of the close connection between a person’s issue stance and his or her moral beliefs (e.g., Biggers, 2011; Carmines & Stimson, 1989; Mooney, 2001). This connection has important consequences for the way people think, feel, and behave: Individuals are more politically engaged on moral issues, but they harbor punitive feelings toward and are more intolerant of attitudinally dissimilar others (Ryan, 2014; Skitka & Bauman, 2008). Attitudes on these topics also are resistant to influence, and have been linked to changes in partisan identification (Adams, 1997; Carmines & Stimson, 1989; Carsey & Layman, 2006). It seems clear that moral issues are different than “ordinary” issues, but scholars know little about how a person’s moral intuitions become related to their political attitudes.

One influential perspective from psychology, Moral Foundations Theory (MFT), portrays moral judgment as the product of *automatic* intuitions (Haidt, 2001). According to MFT, moral intuitions can be categorized into five domains or

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“foundations”: care/harm, fairness/cheating, authority/subversion, loyalty/betrayal, and sanctity/degradation (Graham et al., 2011; Haidt & Joseph, 2004). Liberals and conservatives endorse different moral foundations, with liberals prioritizing care and fairness, and conservatives supporting all five foundations more or less equally (Graham, Haidt, & Nosek, 2009; also see Weber & Federico, 2013). These “differing moral sensitivities” (Ditto & Koleva, 2011) underpin partisan differences on a range of issues such as the death penalty, abortion, gun control, immigration, flag burning, and euthanasia (Koleva, Graham, Iyer, Ditto, & Haidt, 2012). Indeed, on this view, “individuals are psychologically prepared . . . to adopt some policy positions more easily than others” (Koleva et al., 2012, p. 184).

Yet this account seems incomplete. There have been dramatic changes in public opinion on issues such as gay marriage and the death penalty, shifts that some scholars attribute to elite rhetoric (Baumgartner, De Boef, & Boydston, 2008; Baunach, 2012). Likewise, there is evidence that people are responsive to rhetoric appealing to their particular moral intuitions. While standard moral appeals on environmental issues polarize liberals and conservatives, those differences all but vanish when the issue is reframed in terms of sanctity considerations, which resonate more with conservatives (Feinberg & Willer, 2013; also see Haider-Markel & Joslyn, 2001; Kidwell, Farmer, & Hardesty, 2013; Winterich, Zhang, & Mittal, 2012). This nascent body of work suggests an important role for moral rhetoric, but many questions remain unanswered. Most critically, we do not know whether naturally occurring elite rhetoric triggers the public’s moral intuitions. Moral appeals have the intended effect in a laboratory setting, but in the real world people may avoid counter-attitudinal messages (e.g., Mutz, 2006), they may reinterpret such messages in a way that supports their original attitude (e.g., Brewer, 2002), or they may fail to encounter elite rhetoric at all (Arceneaux, Johnson, & Cryderman, 2013; Zaller, 1992).¹

We conduct the first examination of the relationship between naturally occurring elite rhetoric and the public’s moral foundations on the issue of stem cell research. Following from the well-accepted idea that elite debate influences the considerations underlying a person’s opinion (e.g., Brewer, 2003; Zaller, 1992, pp. 80–85), we argue that rhetoric activates considerations relating to specific moral foundations, thereby facilitating the connection between a person’s moral intuitions and their policy attitudes. This *moralization* of the public’s policy preferences has political significance because of the tendency for moral issues to “powerfully arouse certain negative emotions, engender hostile opinions, and inspire punitive action” (Ryan, 2014, p. 380).

Combining data on real-world rhetoric and individual-level measures of stem cell opinion and the moral foundations, we analyze the effect of the care foundation, which dominated elite debate on this issue. Generally speaking, the care foundation motivates individuals’ dislike of the pain and suffering of others. During the debate over stem cell research, elites appealed to the care foundation when talking about the importance of preventing suffering among the sick (the “pro” argument) or the need to protect nascent life (the “con” argument). Our empirical analysis shows, first, that there was a strong relationship between a person’s position on the care foundation and his or her stem cell attitudes, but only among individuals who were likely to have been exposed to past political rhetoric. Second, moral rhetoric had persuasive effects on public opinion; though consistent with previous research on this topic, pro rhetoric was more persuasive than con rhetoric. Finally, we examine who was persuaded by the elite debate and find suggestive evidence that moral rhetoric was most persuasive among respondents who endorsed the care foundation. Taken together, our results indicate that political rhetoric is crucial to understanding how the public’s moral intuitions become related to their policy attitudes.

The Existing Literature

Haidt (2001, p. 818) describes *moral intuition* as “the sudden appearance in consciousness of a moral judgment . . . without any conscious awareness of having gone through steps of searching, weighing evidence, or inferring a conclusion.” When applied to the political realm, Haidt’s social intuitionist model implies that connections between a person’s moral intuitions and their political attitudes also arise automatically. This perspective on moral judgments coheres with well-established findings from psychology—e.g., automaticity (Bargh, 1994), dual attitudes (Wilson, Lindsey, & Schooler, 2000), and motivated reasoning (Kunda, 1990), to name just a few. Yet in emphasizing the automatic nature of moral judgments, this perspective has almost entirely neglected political context. Haidt (2001, 2003) acknowledges that persuasion may occur when new moral intuitions are triggered in a listener, but persuasion is one of the least developed topics of the social intuitionist model. In particular, it is difficult to explain why politicians would target certain audiences with moral appeals or why they would ever deliberate publicly.

In addition, existing work implicitly assumes there are no individual differences in the strength of the relationship between particular foundations (e.g., care) and specific attitudes (e.g., support for stem cell research). Indeed, Koleva and colleagues (2012, p. 192) report that they looked for but found *no* subgroup differences in how the foundations relate to policy attitudes. Such a finding is consistent with a fundamental tenet of the social intuitionist model—namely, that moral judgment is the result of an automatic response to an eliciting situation (Haidt, 2001). But the notion that there is no individual-level variation in how a moral foundation affects policy opinions is incompatible with models of attitude formation in political science. According to that research, people use information from the political environment to translate their predispositions into support for specific policy attitudes and some individuals are better equipped to do this than others (Zaller, 1992; also see Barker, 2005, or Nisbett & Goidel, 2007).

Moreover, the “eliciting situation” in Haidt’s (2001) account may itself be partially constructed and manipulated by political elites. For example, Feinberg and Willer (2013) show that changing the content of a moral appeal—emphasizing sanctity instead of care considerations—dramatically reduced differences in the environmental attitudes of liberals and conservatives. A related study in marketing demonstrates that appealing to particular moral foundations can change which ideological groups donate to a charity (Winterich et al., 2012). Thus, differences between liberals and conservatives may not be an inevitable feature of human psychology; rather, they may be influenced by the rhetoric used to link the public’s moral foundations to specific attitudes.

Our Case and Hypotheses

Stem cell research is a prototypical moral issue (Mintrom, 2008; Mooney, 2001; Nisbet, Brossard, & Kroepsch, 2003), pitting the potential benefits of life-saving research against the destruction of nascent human life. In line with the social intuitionist model, Nisbet (2005, p. 93) has linked opposition to stem cell research to what he calls the “Yuck Factor”: “A ‘visceral repugnance’ and ‘emotional opposition’ felt by many members of the public when they first hear about biomedical research involving human embryos.” Nisbet’s characterization is consistent with past work showing a relationship between a disgust response and socially conservative attitudes (Terrizzi, Shook, & Ventis, 2010; Inbar, Pizarro, & Bloom, 2009; Inbar, Pizarro, Iyer, & Haidt, 2011), as well as the contention that disgust forms the basis of the sanctity foundation (Graham, Haidt, & Nosek, 2009; Horberg, Oveis,

Keltner, & Cohen, 2009). Thus, apart from any exposure to elite debate, the response of many people to the topic of stem cell research is likely to be an intuitive one: “Most individuals probably have difficulty articulating why they might oppose embryonic research; they just know it when they feel it” (Nisbet, 2005, p. 93; also see Koleva et al., 2012).

Two aspects of elite debate were noteworthy for the dynamics of public opinion on this issue. First, in contrast to the “visceral repugnance” many people felt toward stem cell research, the public had a weaker grasp of the connection between the policy and considerations related to care and suffering.² Therefore, proponents had to educate the public about the benefits of stem cell research, such as its potential to save lives (e.g., by developing cures for Parkinson’s, Alzheimer’s, diabetes, and spinal injuries). The other notable feature of the debate concerned opponents’ rhetoric, which was divorced from the moral intuitions that naturally seemed to motivate opposition to stem cell research (i.e., the sanctity foundation; Koleva et al., 2012). In other words, when it came to the language of the debate, rhetoric on *both* sides was based on the care foundation (Clifford & Jerit, 2013). Proponents appealed to the public’s compassion for those suffering from diseases that could be alleviated by stem cell research, while opponents argued against the research on the grounds that it caused harm to developing life. Perhaps as a result of their decision to emphasize care rather than sanctity language, opponents had a weaker set of arguments. When exposed to equal amounts of proponent and opponent moral rhetoric on stem cell research, the public became more supportive of the research (Clifford & Jerit, 2013).

We expect that the politically engaged would have been the most likely to be exposed to prior elite rhetoric and thus the most likely to connect their moral foundations to their attitudes on stem cell research. In the context of our case, elite discourse was dominated by care language. Thus, we expect the care foundation to have a larger (positive) effect on support for stem cell research among the politically engaged than among the politically unengaged (H1). In other words, the stronger set of care arguments employed by proponents of stem cell research should activate the care foundation in support of the research, but only among those who were likely to be exposed to the rhetoric.

According to MFT, individuals differ in their receptivity to specific features of the social environment. Those high in the care foundation are particularly sensitive to the suffering of others, while those high in the sanctity foundation are particularly sensitive to degrading or disgusting acts. As a result, individuals should vary in their responsiveness to moral rhetoric, which aims to trigger specific moral intuitions. In the Feinberg and Willer (2013) study, reframing environmental problems in terms of the sanctity foundation elicited a disgust response, causing conservatives to hold more pro-environmental attitudes. Likewise, research from political science and communications shows that value frames resonate most with those who endorse the relevant value (Barker, 2005; Shen & Edwards, 2005). Following that logic, we expect that pro-stem cell rhetoric will be most effective at persuading those who endorse the care foundation (H2).

However, and as noted earlier, elites on both sides of the stem cell issue appealed to the care foundation (Clifford & Jerit, 2013). While proponents used such appeals to discuss the life-saving benefits of the research, opponents used care arguments to highlight the harm done to nascent life in order to conduct the research. Thus, we further expect that anti-stem cell care appeals will be most effective at persuading individuals high in the care foundation to *oppose* the research (H3). Taken together, H2 and H3 imply that moral rhetoric on both sides of the debate will be most persuasive among individuals who endorse the care foundation.

Data and Methods

To examine the effect of rhetoric on people's moral intuitions about stem cell research, we draw upon two novel sources of data, both collected for other purposes. The opinion data comes from people who voluntarily filled out surveys on the Your Morals Web site (<http://www.yourmorals.org>). The rhetoric data are part of a more extensive content analysis analyzed in Clifford and Jerit (2013). The end result is an unusually rich source of information about the issue of stem cell research at the elite and mass levels, allowing us to extend previous empirical work on Moral Foundations Theory. To our knowledge, this is the first study utilizing foundation-level data on political rhetoric and the public's moral dispositions.

Information from the Your Morals Web site was collected on a daily basis starting in September 2007. After registering with the site and providing basic demographic information, respondents were able to take any number of surveys on the Web site, each covering different focal topics. For the purposes of this study, we include respondents who completed the Moral Foundations Questionnaire and a survey on political attitudes, which included a forced-choice question measuring attitudes toward funding stem cell research.³ We include all 13,332 observations collected between this time period and the end of our content analysis, which concluded at the end of 2010.

The unusual nature of the sample deserves some discussion. Our motivation for using data from the Your Morals Web site comes from several advantages it has over alternative data sources (for related discussion, see Kertzer, Powers, Rathburn, & Iyer, 2014). First, the Your Morals data offer variation over time, with responses covering a range of more than three years. Second, the data include the Moral Foundations Questionnaire, a 30-item scale that is rarely included in nationally representative samples. Finally, with more than 13,000 respondents, it yields a comparatively large sample size. Taken together, these features allow us to analyze how particular subgroups of the population respond to naturally occurring rhetoric over time.

The main disadvantage of these data is that the sample is not nationally representative. Analysis of demographic characteristics shows that respondents tended to be highly educated, liberal, secular, and politically engaged.⁴ Nevertheless, the sample is more diverse than many common convenience samples on demographic variables such as age and education. Volunteer-based Internet samples, such as this one, have become increasingly common in social science research and can provide high-quality survey data (Gosling, Vazire, Srivastava, & John, 2004). In fact, because respondents are motivated by their own interest in the topic, as opposed to monetary or extra-credit incentives, there may be fewer concerns about survey satisficing.

Finally, although we are using an opt-in sample, there is little concern that media coverage of the stem cell issue caused participants to take the survey. The title of the questionnaire containing the stem cell research item was described as a "Political Attitudes Questionnaire." Thus, respondents would have been unaware that the survey asked about stem cell attitudes until they had already committed to taking it.⁵

As for the data on elite debate, we used LexisNexis to identify stories related to stem cell research in the *New York Times* (*NYT*) over the same period of time (2007 to 2010). We chose to examine rhetoric as it was reported in the news because "the mass media have been the chief arena where [elite actors] have struggled to define the stem cell debate in terms that favor policies consistent with their own particular logic or rules" (Nisbet, 2005, p. 92). By contrast, we do not analyze Congressional testimony because few people are directly exposed to it; they instead respond to political events as constructed by news outlets.⁶

All *New York Times* stories containing the phrase “stem cell” in the full text of the article were retrieved as a part of the content analysis. Once the universe of potentially relevant stories was captured, coders read the stories and discarded duplicates, content summaries, and articles making only tangential references to stem cell research. When it came to coding the substance of the debate, we relied on Jesse Graham and Jonathan Haidt’s Moral Foundations Dictionary (Graham, Haidt, & Nosek, 2009), which lists the words and word stems associated with each of the foundations. Based on both empirical and logical grounds, we considered the care and sanctity dimensions the most relevant to stem cell research. Thus, our content analysis focused on words related to these two foundations as well as a short list of “general” moral words from the Moral Foundations Dictionary. We confirmed that words related to the other foundations rarely appeared in our news stories by content analyzing a small number of randomly selected articles. Table 1 provides a list of the words in each coding category.

For each care, sanctity, and general moral word that was identified, coders determined whether the target word invoked a consideration for or against stem cell research (e.g., “reducing human suffering” or “all life is sacred”). Thus, the rhetoric data consist of weekly counts of pro and con arguments associated with care, sanctity, and general moral words from September 2007 to December 2010 ($N = 626$). These two data sets were merged so that respondents were matched with data corresponding to the number of pro and con stem cell arguments made during the week they took their political attitudes survey (i.e., respondents answering the questionnaire during any given week had the same values on the rhetoric variables).

The timing of our study followed a period in which there were several anti-stem cell research developments at the national level. Although bills expanding stem cell research were passed in the U.S. House of Representatives and Senate in the spring and summer of 2007, President George W. Bush ultimately vetoed the legislation. Bush’s action was followed by an executive order encouraging ethical research on stem cells. It was not until the fall campaign and the election of President Barack Obama that the debate over stem cell research reached a turning point. In March 2009, President Obama lifted the Bush administration’s limits on human embryonic stem cell research through an executive order. Thus, although much of the debate over stem cell research had played out by 2007, the time frame of our study does capture some key events, including President Obama’s executive order.

Figure 1 places the respondents in a scatterplot according to the levels of pro and con rhetoric appearing in the mass media during the time they filled out the survey. As the figure illustrates, most individuals completing the Your Morals questionnaire were doing so when there was little or no moral rhetoric. Nevertheless, there is variation in both pro and con rhetoric that we attempt to capitalize on in the empirical analysis.

Empirical Results

In the analyses reported next, we predict support for the federal funding of stem cell research as a function of individual-level characteristics and contemporaneous counts of pro and con moral arguments.⁷ The dependent measure is a dichotomous variable, with a value of 1 representing respondents who say the federal government should fund research and 0 representing respondents opposed to the funding (“don’t know” responses are excluded from analysis; see note 3 for question wording). As for the independent variables, political engagement was measured with a 3-point item asking, “How interested are you in

Table 1
Moral words used in content analysis of stem cell rhetoric

Care	
suffer	harm
protect	compassion (compassionate)
empathy (empathetic)	hurt
care (caring)	kill (killer, killing)
safe (safety, safely)	endanger
benefit	cruel
guard	brutal
preserve (preserving)	abuse (abusing, abusive)
save	damage (damaged, damaging)
alleviate	wound
ravage (ravaging)	exploit (exploiting)
abandon	agony
destroy	sympathy (sympathetic)
Sanctity	
sacred	gross
integrity	repulsive (repulsed)
decent (decency, indecent)	defile
defilesanctity (sacrosanct)	taint
disgust	stain
depraved (depravity)	tarnish
profane (profanity)	debase (debasement)
degrade (degradation)	desecrate (desecration)
wicked	
General	
righteous	offend (offensive, offense)
moral (immoral, morality)	transgress
ethic	conscience
value	conviction
principle	violate (violation)
wrong	evil

Words (and illustrative word stems) come from Jesse Graham and Jonathan Haidt's Moral Foundations Dictionary. The words "save," "alleviate," "agony," "sanctity," "degrade," "conscience," "conviction," and "violate" do not appear in the Moral Foundations Dictionary. We added them because they were consonant with words in the care, sanctity, and general word lists and seemed especially relevant to the topic of stem cell research.

politics? Not much interested, somewhat interested, or very much interested?" The models also included measures of age, gender, and frequency of church attendance.⁸ Because our study covered a three-year period, some respondents filled out the Your Morals survey during periods of no media coverage of stem cell research, while others answered the questionnaire when there was a moderate amount of news coverage of the issue.

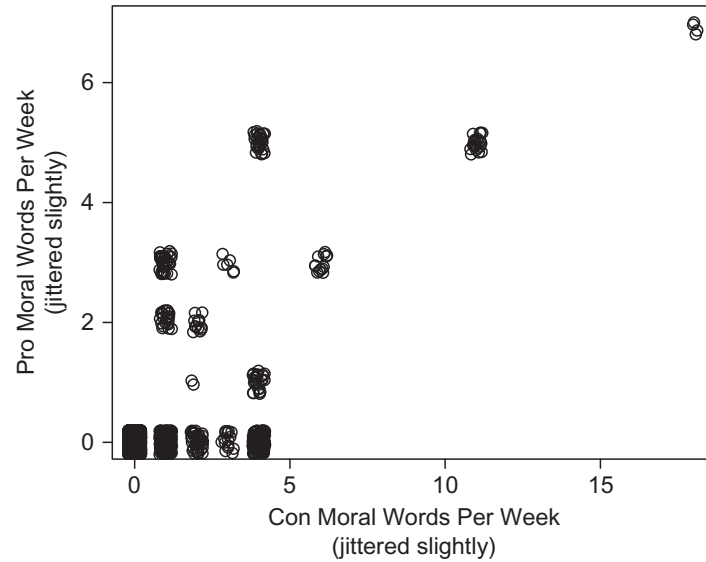


Figure 1. Prevalence of pro and con rhetoric during week of individual survey responses. *Note:* The figure displays individual respondents according to the levels of pro and con rhetoric appearing in the media during the week in which they filled out the political attitudes survey. Time period ranges from September 2007 to the end of 2010.

All of the results derive from logistic regression models that focus on various subsets of the data (e.g., the politically engaged) and that rely on different model specifications. However, each model controls for respondents' age, gender, and religiosity, as well as their scores on all five moral foundations. The non-linearity in the logit model and the product terms make it challenging to draw inferences from the model coefficients. For this reason, we do not directly interpret the model coefficients (Berry, DeMeritt, & Esarey, 2010) and instead focus on the quantity of interest (i.e., the probability of supporting stem cell research) and the relevant marginal effects as key explanatory variables change (King, Tomz, & Wittenburg, 2000). The full results of the models are shown in Table A1 in the Appendix.

We begin by examining H1, which states that the impact of the care foundation on stem cell opinion should be larger (more positive) among the most politically interested. This is an essential first step in establishing the effect of moral rhetoric. By the time our survey began, stem cell research had already received extensive media coverage for several years, much of it highlighting considerations related to the care foundation. Because the politically engaged are the most likely to have been exposed to prior elite discourse, they should be the most likely to connect the care foundation to their attitudes on stem cell research. We explore this hypothesis with a model predicting stem cell opinion as a function of the controls discussed earlier and dummy indicators representing those “somewhat” and “very much” interested in politics (“not much interested” is the excluded category). To test H1, we also include interaction terms between each interest dummy variable and the care foundation (see Table A1, Model 1).

The top row of Figure 2 displays the predicted probability of supporting stem cell research (with 90% confidence intervals) across levels of Care.⁹ The top left-hand panel displays the care-opinion relationship for respondents who are not interested in politics. Among these respondents, shifting care from the twenty-fifth percentile to the seventy-fifth percentile leads to a 12 percentage point decrease in support for stem cell research, though

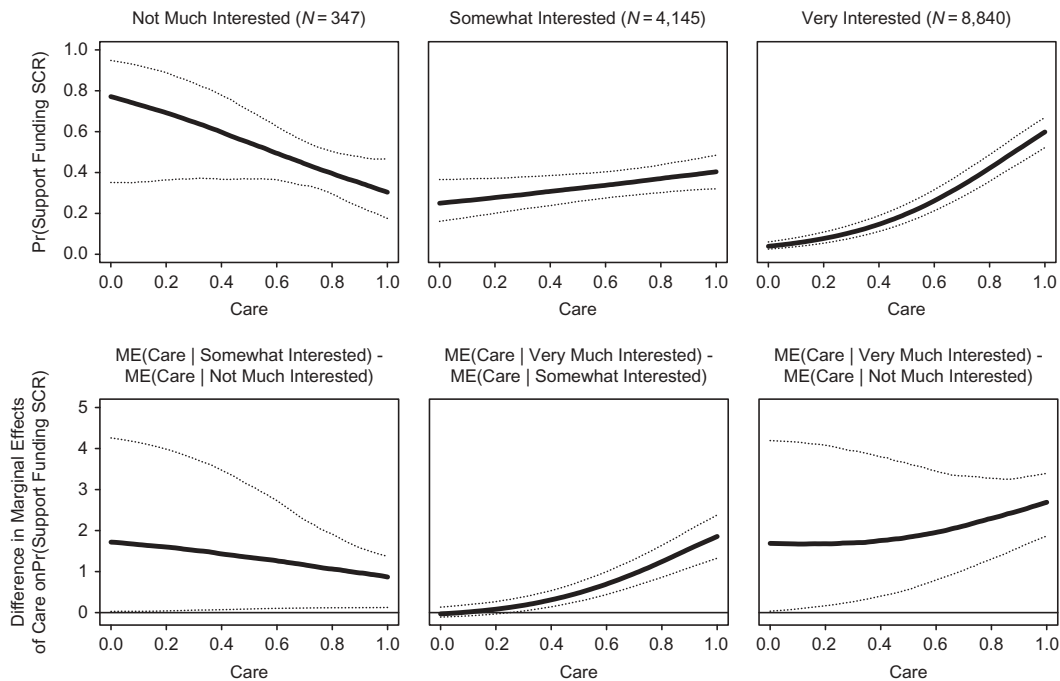


Figure 2. Political interest moderates the effect of the care foundation on stem cell attitudes. *Note:* The upper row displays the predicted probability of supporting stem cell research across individual values on the care foundation among those not interested in politics (left), somewhat interested (middle), and very interested (right). The bottom row displays the difference in the marginal effects of care between different levels of political interest. Dashed lines represent 90% confidence intervals.

the effect is indiscernible from zero. Moving to the top middle panel, the slope of the line becomes positive for the somewhat interested, with an identical shift in the value of the care foundation leading to a statistically significant increase of four percentage points. Finally, the top right-hand panel shows that care has a dramatic positive effect on support among those who are very interested in politics. Among these respondents, a shift in care from the twenty-fifth percentile to the seventy-fifth percentile leads to a 19-point increase in support for stem cell research.

So far, the pattern of results supports H1, but an examination of the marginal effects is needed to determine whether these effects are significantly different from one another. The bottom left-hand panel shows the difference between the marginal effect of care among those not interested and those somewhat interested in politics as care varies. Across the full range of care, the difference in marginal effects is positive and statistically significant, indicating that care has a larger marginal effect among the moderately interested than among the uninterested. The middle panel shows a comparison between the marginal effects of care among the somewhat and the very interested. The difference in marginal effects is again positive and statistically significant across nearly the full range of care. Finally, the last panel shows a comparison of marginal effects between the very interested and the uninterested. Again, the difference is positive and statistically significant across the full range of care. Taken together, the results show that the effect of the care foundation on stem cell attitudes varies considerably by one's level of political interest, with the effect of care increasing with one's political engagement. Insofar as the politically engaged were the most likely to be exposed to elite rhetoric, the pattern in [Figure 2](#) suggests that elite

rhetoric facilitated the connection between the care foundation and attitudes toward stem cell research.

However, an alternative explanation for the pattern in [Figure 2](#) is that politically engaged respondents are more likely to connect their moral foundations to policy attitudes, irrespective of their level of exposure to political rhetoric. According to this alternative account, we should observe a similar relationship between respondent interest and the sanctity foundation (the other key predictor of stem cell attitudes). Our argument does *not* predict that we would observe such an interaction because mentions of the sanctity foundation rarely appeared in news coverage of the stem cell debate (Clifford & Jerit, 2013). Auxiliary analyses (results shown in [Figure A1](#) in Appendix) show no evidence of an interaction between interest and sanctity, lending further credence to the claim that the rhetorical environment facilitated the relationship between the care foundation and stem cell attitudes.

Next we analyze the effects of contemporaneous moral rhetoric on public opinion. We begin by replicating one of the key findings from Clifford and Jerit (2013)—i.e., that moral rhetoric is persuasive in the aggregate. The opinion data in that study were limited to a handful of cross-sectional surveys fielded throughout the debate, none of which included measures of the five foundations. Using the Your Morals data, we improve upon that analysis, predicting stem cell attitudes as a function of the individual-level controls described earlier and variables representing pro and con moral rhetoric. The analysis is restricted to politically interested respondents, allowing us to ignore the interaction between care and interest and to focus on the individuals most likely to be exposed to elite rhetoric. Thus, the statistical model is simplified considerably while still retaining the 63% of the sample that reported being very interested in politics (see [Table A1](#), Model 2).¹⁰

Because this model does not include a product term, we can draw conclusions about the direction and significance of the effects based on the statistical significance of the model coefficients. The pro rhetoric coefficient is positive and statistically significant ($p < .05$), indicating that pro arguments were effective at persuading the public in the expected direction. Similarly, the coefficient on con rhetoric is negative and statistically significant ($p < .05$), suggesting that opposing arguments were effective at dissuading the public from supporting the research. The next series of analyses examines the effects of various combinations of pro and con rhetoric.¹¹

We first consider the effect of con rhetoric when there is no pro rhetoric to counter it. (We do not examine the effect of pro rhetoric in the absence of con rhetoric, as this case did not appear in our data; see [Figure 1](#)). The upper-left panel of [Figure 3](#) shows the predicted probability of supporting stem cell research at varying levels of con-stem cell rhetoric. In the absence of opposing rhetoric, a shift from 0 to 5 con words per week leads to an estimated decrease in support of 18 percentage points. The lower-left panel of [Figure 3](#) shows the marginal effect of con rhetoric. The marginal effect and its 90% confidence interval lie entirely below zero, demonstrating that an increase in the number of arguments significantly decreases support across the full range of con rhetoric.

The upper-right panel shows predicted probabilities when pro and con rhetoric increase in equal increments. The slope is positive, suggesting that when pro and con arguments were matched head-to-head, pro rhetoric won the battle for public support. As both pro and con rhetoric increase from 0 to 5, the net effect is a 20-point increase in support for stem cell research, representing a dramatic reversal of the effects of con rhetoric alone. The lower-right panel of [Figure 3](#) displays the marginal effect of competing pro and con rhetoric. The figure shows that an increase in the level of competing arguments leads to greater probability of supporting stem cell research, though this effect falls just short of statistical significance.¹²

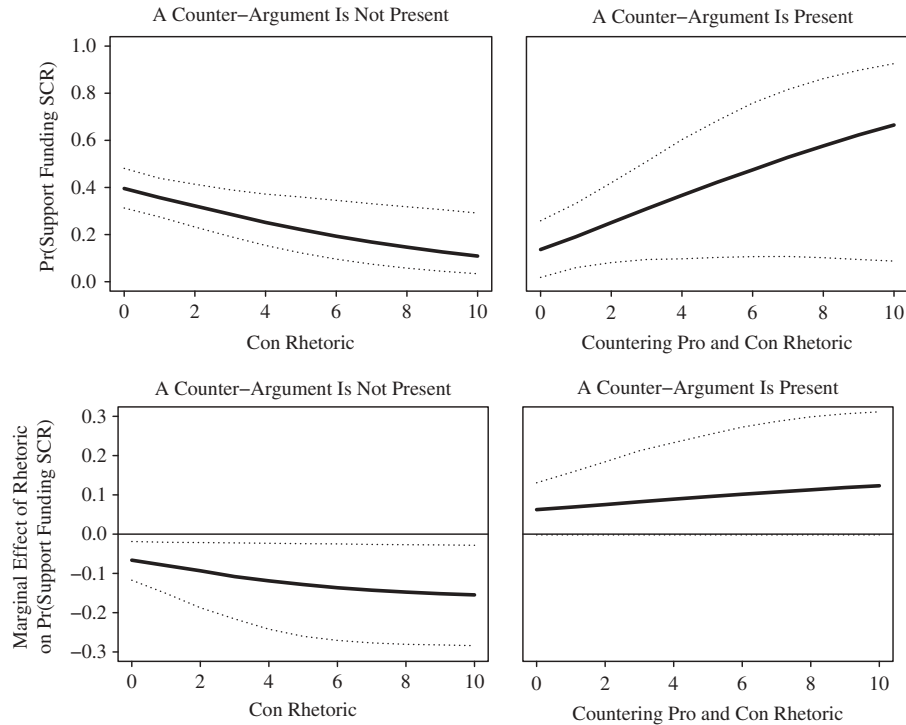


Figure 3. Persuasive effects of rhetoric on stem cell attitudes. *Note:* The top row displays the predicted probability of supporting stem cell research at varying levels of con rhetoric (left) and pro and con rhetoric (right). The bottom row shows the marginal effect of rhetoric across varying levels of rhetoric. Dashed lines represent 90% confidence intervals.

Having replicated the finding that moral rhetoric is persuasive, we now examine *who* is persuaded. According to H2, pro rhetoric (which appealed almost exclusively to the care foundation) should have an effect primarily among those scoring high on the care foundation. Similarly, since con rhetoric largely appealed to the care foundation, H3 holds that it should also be most effective at persuading those high in the care foundation. In order to test this hypothesis, we build on the previously reported model by including interactions between the care foundation and pro rhetoric and the care foundation and con rhetoric (see Table A1, Model 3).

Figure 4 shows the predicted probability of support across the range of care as the rhetorical environment varies. The leftmost panel displays the probabilities in the absence of any rhetoric, showing the expected increase in support as the endorsement of care increases. The middle panel shows this same plot in the presence of con rhetoric, but no pro rhetoric. As expected, the movement occurs primarily among those who endorse the care foundation, with these individuals decreasing their support for stem cell research. Finally, the rightmost panel displays the probability of support in the presence of both pro and con rhetoric. Respondents high in care become more supportive of the research in the presence of competing rhetoric than when exposed only to con rhetoric, while respondents low in care appear unresponsive. Moreover, respondents high in care appear to be more supportive of stem cell research when exposed to competing rhetoric than no rhetoric (though the difference between the rightmost and leftmost panels is not statistically significant). This last pattern is consistent with our earlier finding that competing rhetoric leads to a net increase in support for SCR, and that this effect emerges primarily among individuals high in the care foundation.¹³

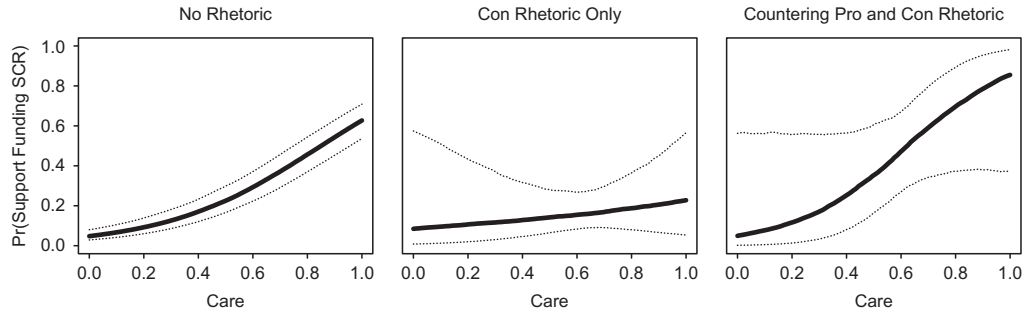


Figure 4. The effect of the care foundation across rhetorical environments. *Note:* The figure shows the predicted probability of supporting stem cell research across the range of the care foundation in differing rhetorical environments. The left panel holds pro and con rhetoric both at 0 words per week. The middle panel holds con and pro rhetoric at 5 and 0 words per week, respectively. The right panel holds both pro and con rhetoric at 5 words per week. Dashed lines represent 90% confidence intervals.

Overall, the findings from [Figure 4](#) are consistent with H2 and H3. In addition, we estimated the marginal effects of rhetoric at low (twenty-fifth percentile) and high (seventy-fifth percentile) endorsement of the care foundation (results reported but not shown). Although we do not have the statistical power to make firm conclusions, con rhetoric is estimated to have a moderate effect (13-point reduction in support) among those low in care while it leads to a substantively large effect (28-point reduction in support) among those high in care. Similarly, competing pro and con rhetoric together have a moderate effect at low values of care (18-point increase in support) and a larger effect at high values of care (24-point increase). Taken together, our findings suggest that naturally occurring rhetoric is most persuasive when it appeals to an individual's moral foundations.¹⁴

Conclusion

A growing body of work illustrates the “powerful sway” (Feinberg & Willer, 2013, p. 56) moral concerns have over individuals' attitudes and behavior (e.g., Koleva, Graham, Iyer, Ditto, & Haidt, 2012; Ryan, 2014; Skitka & Bauman, 2008). Yet, scholars are only beginning to investigate the role of the political environment—and political rhetoric, in particular—in determining whether a topic takes on the status of a “moral issue.” According to Nisbet, Markowitz, and Kotcher (2012, p. 32), “research does not exist on how different framing strategies map to specific moral foundations and how this connection might apply differentially across segments of the public.” We contend that rhetoric activates considerations relating to specific moral foundations, thereby facilitating the connection between a person's moral intuitions and their policy attitudes.

Taking advantage of a unique combination of data on the moral foundations at the elite and mass levels, we find support for our argument when applied to the issue of stem cell research. Our results first show that the impact of the care foundation on support for stem cell research was moderated by political engagement. Among those who were the least interested in politics and thus least likely to have been exposed to elite rhetoric, the care foundation had little discernible effect on stem cell attitudes. By contrast, the politically engaged had made a strong connection between the care foundation and their stem cell attitudes, with those high in the care foundation more likely to support stem cell research than those low in the foundation. Second, we examined the impact of rhetoric on stem

cell attitudes and found that pro and con moral rhetoric had the expected effects, moving citizens in favor of the targeted position. Yet the combination of pro and con rhetoric led to more supportive attitudes toward stem cell research, a pattern that mirrors the conclusion of previous research (Clifford & Jerit, 2013) and helps explain the temporal trend in favor of stem cell research. Finally, we examined *who* is most responsive to this rhetoric. Within the limits of our data, we observed an expected pattern in which individuals high in care were most strongly persuaded by pro and con rhetoric, which overwhelmingly targeted the care foundation.

Our findings have a number of important implications, beginning with the literature on polarization. Researchers have shown that as opinions on particular policies become tied to a person's moral beliefs, these policy attitudes shape factual beliefs about the policies themselves (Liu & Ditto, 2013). Not only are there vast differences in the public policies endorsed by opposing partisans, but these groups often disagree about the basic facts surrounding the issue. When it comes to hot-button political topics—climate change, gun control, fighting terrorism, and the like—the prospects for consensus seem dim. The present study suggests that one contributor to polarization on salient issues is the use of moral rhetoric by elites. Through their appeals to specific moral foundations, elites are able to “moralize” political issues, facilitating (and reinforcing) the connection between people's moral beliefs and their policy attitudes.

Although previous laboratory studies show that the careful construction of moral frames can bring ideological groups together (e.g., Feinberg & Willer, 2013), a different outcome played out in the debate over stem cell research in the United States. Elite rhetoric was dominated by care language, which meant that it resonated only with people who endorsed that foundation. While pro and con arguments had the expected effects among people who were high in the care foundation, no amount of pro rhetoric was able to persuade those who did not endorse it. Thus, one implication of our study is that unless rhetoric targets the particular foundations endorsed by opposing sides of an issue, it will be difficult to reach consensus among people with differing moral beliefs.

Finally, our work has implications for research on morality policy, a category of public policy associated with high levels of salience and participation but scant room for compromise (e.g., Mooney, 1999). Morality policy has been defined in a variety of ways, but two characteristics seem fundamental: people on opposing sides of these policies are divided by first principles, and the framing of morality policies often is as important as the content of the issue itself (Mooney 1999, 2001). Our findings support this view, demonstrating that political rhetoric helped create and sustain mass-level divisions on this issue by facilitating the connections between people's moral intuitions and their policy attitudes. Perhaps most importantly, our research introduces a theoretical framework for linking rhetoric with citizens' moral values—a necessary step for understanding how issues evolve as well as how they engage (and sometimes polarize) the public.

Notes

1. There is some evidence regarding the power of moral rhetoric in the electoral realm (e.g., Domke, Shah, & Wackman, 1998; Marrietta, 2009), but extant work has taken an undifferentiated view of moral language, overlooking variation in the types of moral frames as well as the differential impact moral language has on particular subsets of the mass public.

2. Evidence for this claim can be gleaned from studies showing that many people lacked the information that might have helped them make this linkage (e.g., knowing which type of stem

cell research—embryonic or adult—offers the greatest promise for discovering treatments for new diseases; e.g., Nisbet & Becker, 2014).

3. The question wording is based on language used by the Pew Research Center and Gallup Poll, and it reads: “Which statement about stem cell research comes closest to your view? The federal government should fund research that would use newly created stem cells obtained from human embryos. The federal government should NOT fund research that would use newly created stem cells obtained from human embryos.” The question included a “don’t know” option, but fewer than 5% of people selected that response and are thus excluded from analysis.

4. In our sample, more than two-thirds have a college degree, 71% are liberal, 51% say they never attend church, and 63% are very interested in politics. See Table A3 for further details.

5. The Your Morals Web site requires respondents to create an account and allows them to take studies at any time. As a result, some respondents filled out the Moral Foundations Questionnaire and the political attitudes survey on different days. We merged the opinion and rhetoric data on the basis of the date that a respondent completed the political attitudes survey. This was a logical choice given that the moral foundations are highly stable over time (Graham et al., 2011), and that we wish to explore how stem cell attitudes change in response to the political context.

6. Like others who have worked in this area (Nisbet, Brossard, & Kroepsch, 2003), we selected a prominent national newspaper because of the influence such papers have on the content and distribution of news in regional outlets around the country. In auxiliary analyses described elsewhere (Clifford & Jerit, 2013), the number of stories mentioning “stem cell” in the *NYT* was highly correlated with similar metrics in both *USA Today* and the *Washington Times*.

7. Models also were estimated using a one-week lag of rhetoric, but model fit was considerably worse according to the AIC and BIC. We also considered a model including lagged and contemporaneous rhetoric, but model fit was no better than the specification including only contemporaneous rhetoric (nor did any of the key findings change). Therefore, the simpler specification was used. We aggregate the elite data to consist of pro and con arguments, but rhetoric consisted overwhelmingly of arguments highlighting care considerations.

8. Previous research shows that church recruitment was crucial to opponents’ engagement with the issue (Goidel & Nisbet, 2006). We do not include an explicit control for self-reported ideology because it is thought to mediate the effects of the moral foundations on political attitudes (see Kertzer et al., 2014). The substantive conclusions of our models are the same irrespective of whether we include sociodemographic control variables. Weighting the data to more closely resemble the population on demographic variables using entropy balancing (Hainmueller, 2012) does not affect our substantive conclusions.

9. Respondents scoring lower on the care endorse the foundation less strongly than respondents with higher scores.

10. Including the full sample and interaction terms does not substantively affect the conclusions.

11. We examine the shift from zero to five moral words (a week) because this range covers most of the data without including extreme values that were rarely observed.

12. The fact that similar patterns have been observed in analyses of nationally representative data (e.g., Clifford & Jerit, 2013) is reassuring as it suggests that the opt-in nature of the Your Morals sample does not affect our conclusions.

13. We observe similar patterns across ideological groups (liberals, moderates, conservatives), reducing the concern that liberals and conservatives were moving in opposite directions in response to elite rhetoric. There also is no evidence of an interaction between the care and sanctity foundations (e.g., in which the activation of one foundation inhibits or facilitates activation of the other).

14. The minimal variation in rhetoric throughout the time period of our study in combination with likely pretreatment effects (Druckman & Leeper, 2012; Fowler & Gollust, 2013) makes it difficult to make definitive claims about who is persuaded by moral rhetoric. Another weakness of the present study is that it does not examine the role of partisan cues (e.g., Bullock, 2011). However, our content analyses revealed that the preponderance of rhetoric on this topic lacked a partisan cue. Many of the claims and arguments that appeared in media coverage came from scientists, interest groups, church leaders, and journalists’ summaries of pro and con positions.

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Appendix

Figure A1 displays the predicted probability of supporting stem cell research across the sanctity foundation, as levels of political interest change (as discussed in the text). As is clear in the figure, higher values of sanctity lead to decreased support for stem cell research, but this effect is not conditional upon level of political interest.

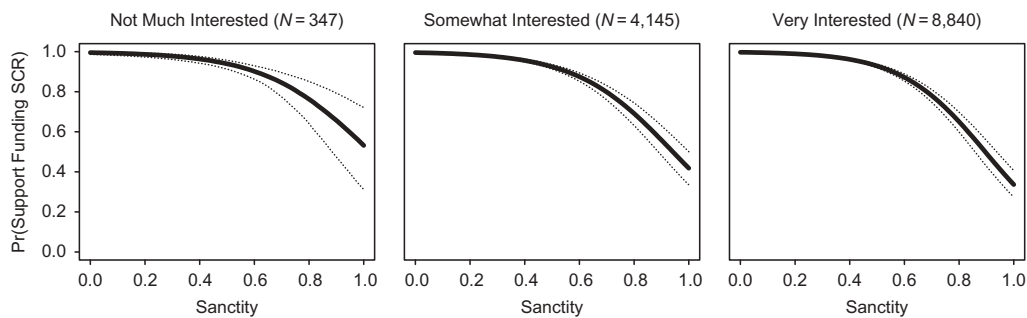


Figure A1. The effect of the sanctity foundation by respondent political interest. *Note:* The figure displays the predicted probability of supporting stem cell research across individual values on the sanctity foundation at each level of political interest. Dashed lines represent 90% confidence intervals.

Table A1
Effect of moral foundations and rhetoric on stem cell attitudes

	Model 1	Model 2	Model 3
Care foundation	3.61* (0.31)	3.50* (0.34)	3.52* (0.34)
Political interest - Not much	4.45* (1.06)		
Political interest - Some interest	2.10* (0.31)		
Care*Not much interest	-5.71* (1.43)		
Care*Some interest	-2.89* (0.45)		
Pro rhetoric		0.32* (0.14)	-0.12 (0.54)
Con rhetoric		-0.17* (0.07)	0.12 (0.30)
Care*Pro rhetoric			0.72 (0.86)
Care*Con rhetoric			-0.47 (0.46)
Fairness foundation	3.17* (0.29)	3.39* (0.37)	3.38* (0.37)
Loyalty foundation	0.00 (0.28)	-0.22 (0.36)	-0.23 (0.37)
Authority foundation	-1.40* (0.31)	-1.84* (0.40)	-1.85* (0.40)
Sanctity foundation	-6.20* (0.23)	-6.38* (0.30)	-6.38* (0.30)
Age	0.01* (0.00)	0.02* (0.00)	0.02* (0.00)
Male	0.04 (0.08)	0.09 (0.10)	0.09 (0.10)
Church attendance	-0.29* (0.02)	-0.24* (0.03)	-0.24* (0.03)
Intercept	1.03* (0.27)	1.24* (0.32)	1.24* (0.32)
N	13,332	8,840	8,840

Note. Cell entries are coefficients from logit models predicting support for stem cell research. Standard errors are in parentheses. Model 1 corresponds to the analyses reported in Figure 2 in the article. Model 2 goes with Figure 3 and Model 3 corresponds to Figure 4.

* $p < .05$.

Table A2
Correlations between the moral foundations

	Care	Fairness	Loyalty	Authority	Sanctity
Care	—				
Fairness	0.55	—			
Loyalty	-0.16	-0.24	—		
Authority	-0.25	-0.35	0.68	—	
Sanctity	-0.13	-0.30	0.58	0.68	—
Mean	0.68	0.71	0.46	0.46	0.32
SD	0.18	0.15	0.18	0.19	0.23

Note: All variables are scaled to range from 0 to 1.

Table A3
Sample characteristics of respondents

Gender	Male 59%	Female 41%						
Political Interest	Not much interested 4%	Somewhat interested 33%	Very much interested 63%					
Political Ideology	Liberal 56%	Slightly Lib. 15%	Neutral 11%	Slightly Cons. 6%	Conservative 11%			
Church Attendance	Never 51%	Once a year or less 4%	Few times a year 22%	Few times a month 9%	Almost every week 2%	One or more times a week 11%		
Education	Some high school 0%	Currently in high school 2%	Completed high school 3%	Some college or university 14%	Currently in college 8%	Completed college/univ. 28%	Some/currently in grad. School 10%	Completed grad. degree 33%
Race	White 84%	Black 1%	East Asian 2%	South Asian 1%	Mixed Race 6%	Latino 1%	Other 1%	Declined 4%

Note: Racial categories with less than 1% are omitted from the Table.