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What is This?

The Moral Roots of Environmental Attitudes

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Abstract

Americans' attitudes about the environment are highly polarized, but it is unclear why this is the case. We conducted five studies to examine this issue. Studies 1a and 1b demonstrated that liberals, but not conservatives, view the environment in moral terms and that this tendency partially explains the relation between political ideology and environmental attitudes. Content analyses of newspaper op-eds (Study 2a) and public-service announcements (Study 2b) found that contemporary environmental discourse is based largely on moral concerns related to harm and care, which are more deeply held by liberals than by conservatives. However, we found that reframing proenvironmental rhetoric in terms of purity, a moral value resonating primarily among conservatives, largely eliminated the difference between liberals' and conservatives' environmental attitudes (Study 3). These results establish the importance of moralization as a cause of polarization on environmental attitudes and suggest that reframing environmental discourse in different moral terms can reduce the gap between liberals and conservatives in environmental concern.

Recent decades have seen ever-increasing polarization on environmental issues, with liberals positioning themselves as guardians of the environment and conservatives generally opposing reforms intended to protect the environment (e.g., Dunlap, Xiao, & McCright, 2001; Feygina, Jost, & Goldsmith, 2010; McCright & Dunlap, 2011). One reason for this polarization may lie in differing perceptions of whether environmental concern is a moral issue; such views may emerge from the type of moral rhetoric with which environmental concerns are typically discussed. In the studies reported here, we investigated the possibility that liberals, but not conservatives, view environmental issues in moral terms because of a tendency for these issues to be discussed in terms of harm- and care-based morality, moral concerns that resonate more with American liberals than with American conservatives (Graham, Haidt, & Nosek, 2009). Furthermore, we explored the possibility that conservatives are more likely to adopt proenvironmental positions if these positions are discussed in moral terms that resonate with their moral commitments.

Morality and Environmental Attitudes

A multidisciplinary body of research attests to the powerful sway that moral concerns have over individuals' attitudes and behavior (Chen, Pillutla, & Yao, 2009; Lakoff, 1996). When a person's attitudes are rooted in morality, they become intertwined with intuition and emotion (Haidt, 2001). The individual is assured that such an attitude is correct, responding viscerally to counterattitudinal challenges (Mullen & Skitka, 2006). Morality is especially influential in the formation of political attitudes. Moral convictions and the emotions they evoke shape political attitudes (Emler, 2003; Mullen & Skitka, 2006; Skitka, Bauman, & Sargis, 2005) and spark increased political engagement (Marietta, 2008). Past studies have demonstrated that moral convictions are strong predictors of voting preferences and turnout in presidential elections for both liberals and conservatives (Morgan, Skitka, & Wisneski, 2010; Skitka & Bauman, 2008).

Specific to environmental attitudes, past research suggests that perceiving environmental issues in moral terms is related to the valence and strength of individuals' environmental attitudes (e.g., Stern, Dietz, Abel, Guagnano, & Kalof, 1999). Such research, often grounded in the Schwartz norm-activation model (S. H. Schwartz, 1977), demonstrates that the more individuals recognize the consequences of environmental

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degradation and the more they feel personally responsible for such degradation, the more they view proenvironmental behavior as moral (e.g., Van Liere & Dunlap, 1978). Additionally, individuals who score higher on self-transcendent values (i.e., placing the interests of other people ahead of their own) are more likely to feel moral obligations toward the environment (Karp, 1996; Schultz & Zelezny, 1998).

Messaging, Appeals, and Framing

Because morality plays such an influential role in attitude formation, it is not surprising that moral appeals can be a powerful tool for persuasion. Studies show that moral appeals convince individuals to restrain selfishness, for example, by complying with tax laws (R. D. Schwartz & Orleans, 1967) and cooperating in social-dilemma situations (Chen et al., 2009; Martichuski & Bell, 1991). Likewise, moral appeals increase the likelihood that individuals will donate blood (Ferrari & Leippe, 1992). In the realm of politics in particular, moral appeals are a central tool used by political actors on both sides of the political spectrum to present their positions more favorably (e.g., Lakoff, 1996).

Furthermore, research on message framing supports the logic of *segmentation*, the idea that different groups of people will be more or less persuaded by different messages. Framing involves presenting an issue in different ways to alter preferences or choices (for a review, see Levin, Schneider, & Gaeth, 1998), but how effective a frame is can depend on the characteristics of the people exposed to the message (e.g., Boote, 1981). Looking at moral suasion in particular, research shows that moral arguments resonate differently depending on one's stage of moral development (Holland, 1976). This past research suggest that moral appeals about environmental issues tend to be more successful than nonmoral appeals about environmental issues, but especially when the moral principles invoked resonate with the individuals targeted by the appeal.

Moral Foundations and Political Attitudes

Moral-foundations researchers have investigated the similarities and differences in morality among individuals across cultures (Haidt & Josephs, 2004). These researchers have found evidence for five fundamental domains of human morality, which they labeled "harm/care" (concerns about the caring for and protection of other people), "fairness/reciprocity" (concerns about treating other people fairly and upholding justice), "in-group/loyalty" (concerns about group membership and loyalty), "authority/respect" (concerns about hierarchy, obedience, and duty), and "purity/sanctity" (concerns about preserving purity and sacredness often characterized by a disgust reaction).

Recent research has demonstrated that liberals and conservatives possess different moral profiles regarding the five moral foundations. Overall, liberals endorse the harm/care and fairness/reciprocity domains more than conservatives do. Conversely, conservatives endorse in-group/loyalty, authority/respect, and purity/sanctity more than liberals do (Graham et al., 2009). Graham et al. (2009) found robust evidence that these different moral profiles manifest themselves in the different moral language used by liberals and conservatives.

The Present Research

In the present research, we applied research on moral foundations to the study of moral suasion and environmental attitudes. Drawing on past research on moral appeals and moral foundations, we hypothesized that liberals express greater levels of environmental concern than do conservatives in part because liberals are more likely to view environmental issues in moral terms. We argue that these differences result from a tendency for harm- and care-based moral arguments, bases of moral reasoning that are more compelling to liberals than to conservatives, to dominate environmental rhetoric. This reasoning suggests that the association between liberalism and environmental concern is not a necessary one. Rather, whether or not individuals embrace proenvironmental attitudes should be partly determined by the type of moral appeals they are exposed to. Thus, we hypothesized that exposing conservatives to proenvironmental appeals based on moral concerns that uniquely resonate with them will lead them to view the environment in moral terms and be more supportive of proenvironmental efforts. We conducted five studies to test these claims.

Study 1

Although past research has shown that liberalism and perceiving environmental issues in moral terms are both robust predictors of proenvironmental attitudes (e.g., McCright & Dunlap, 2011; Van Liere & Dunlap, 1978), no research has directly tested the possibility that environmental polarization is driven in part by a tendency for liberals to perceive environmental issues in moral terms and for conservatives to view such issues from a nonmoral perspective. In Studies 1a and 1b, we tested this possibility.

Study 1a

Method. One hundred eighty-seven participants (61 male, 126 female) were recruited from 15 different U.S. cities via regional craigslist.org Web sites. Recruitment advertisements offered a chance to win a $50 gift certificate in exchange for participation.

After completing a demographic questionnaire that included a single-item measure of political ideology ranging from 1 (*extremely liberal*) to 7 (*extremely conservative*), $M =$ 2.93, $SD = 1.31$, participants read one of three vignettes describing an average day of a target individual. The vignettes were identical, describing a day's activities for the target. The

one difference was whether or not, after eating his lunch, the target chose to recycle his plastic water bottle (recycle condition) or throw it away as garbage (not-recycle condition). In the control condition, there was no mention of this bottle. Participants then rated the target on how moral they perceived him to be overall on a scale from 1 (*not moral at all*) to 6 (*extremely moral*).[1]

Results. We conducted a multiple regression analysis, entering dummy-coded variables representing experimental condition, political ideology (continuous), and the interaction of each dummy-coded variable with political ideology as predictors of morality ratings. The analysis yielded a significant difference between the Not-Recycle Condition × Ideology interaction and both the Control Condition × Ideology, $\beta = -0.19$, $p = .05$, and the Recycle Condition × Ideology interactions, $\beta = -0.21$, $p < .05$ (see Fig. 1). Simple-slopes analyses revealed that more liberal participants (1 *SD* below the mean) in the not-recycle condition rated the target as significantly less moral ($M = 3.59$) than did their liberal counterparts in either the recycle condition ($M = 4.54$), $b = 0.95$, $p < .001$, or the control condition ($M = 4.31$), $b = 0.72$, $p < .001$. We found no significant differences across conditions for more conservative participants (1 *SD* above the mean), $ps > .15$.

Study 1b

Method. Four hundred seventy-six undergraduate students (138 male, 338 female) participated in Study 1b for course credit. As part of an online attitudes survey, participants
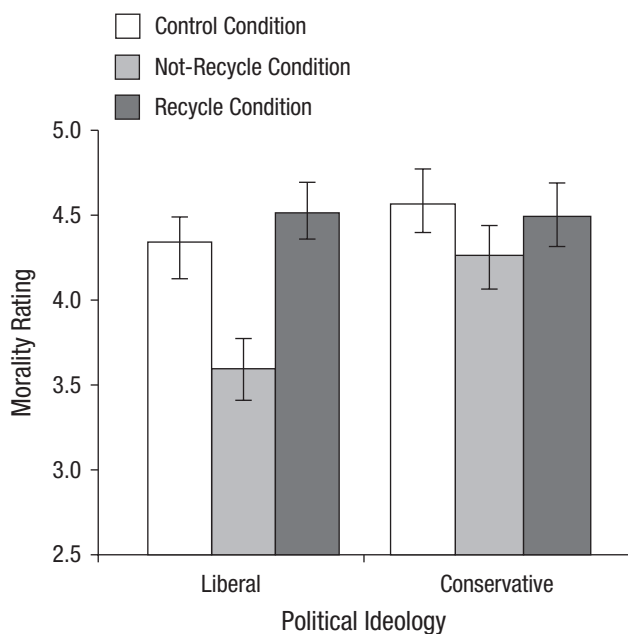
reported their political ideology using the same scale as in Study 1a, $M = 3.05$, $SD = 1.25$, and then indicated how important it was to behave in an environmentally friendly way on a scale from 1 (*not at all*) to 6 (*extremely*). Participants were then asked to explain their answer by writing two to three sentences on the topic. Coders blind to study hypotheses coded participant responses on how much each response involved "moral reasons" and "perceptions of right and wrong"; these items were averaged together to form a morality composite ($\alpha = .93$).

Results. Correlational analyses yielded a significant association between liberalism and the morality composite ($r = .14$, $p < .01$), and between liberalism and proenvironmental attitudes ($r = .28$, $p < .001$); these findings parallel the results of past studies (e.g., Feygina et al., 2010; McCright & Dunlap, 2003). A mediation analysis (Preacher & Hayes, 2008) revealed that perception of the environment as a moral issue was a significant partial mediator of the relationship between liberalism and environmental attitudes (95% confidence interval = [−0.07, −0.02]). The findings from Studies 1a and 1b, therefore, support our claim that liberals but not conservatives view environmental issues in moral terms and that this helps explain liberals' stronger proenvironmental attitudes.

Study 2

Why do liberals but not conservatives perceive environmental issues in moral terms? We argue that one factor likely driving this discrepancy is that environmental issues are typically discussed in terms of harm- and care-based moral concerns—moral values endorsed more strongly by liberals than by conservatives. To test this hypothesis, we conducted content analyses of the types of moral rhetoric used in both recent public-service announcements (Study 2a) and newspaper op-eds (Study 2b). We explored the extent to which the arguments made in these media messages employed the five moral foundations, hypothesizing that harm- and care-based morality would be the most commonly employed moral domain.

Study 2a

Method. We searched youtube.com for videos that presented persuasive messages regarding the environment but did not sell a product or advertise a company. Our search used the keywords *global warming, pollution, climate change, environmentalism, environment, environmentalist*, and all possible combinations of these words. We then limited our search, retaining only videos that had a minimum of 10,000 views, were professionally made, and were no more than 2 min long. Using these criteria, we collected 66 total videos. Three coders then indicated whether each video was a persuasive message (i.e., was clearly intended to influence viewers' environmental attitudes), and we retained only the 51 videos that fit this criterion.

Fig. 1. Results from Study 1a: mean morality rating as a function of political ideology (liberal = 1 *SD* below the mean; conservative = 1 *SD* above the mean) and experimental condition. Error bars represent ±1 *SEM*.

Five coders blind to study hypotheses coded the 51 videos, indicating the extent to which each video was grounded in the five moral domains. Each rating was made on a 7-point scale ranging from 0 (*not at all*) to 6 (*extremely*). We formed composite scores across coders for each of the five moral domains (average $\alpha = .73$).

Results. A repeated measures analysis of variance in which we entered scores for all five of the moral domains yielded a significant omnibus effect, $F(4, 200) = 14.00$, $p < .001$. Comparisons between the harm/care moral domain and the four other domains yielded significant differences, which reveals that the content of the videos reflected harm/care moral content ($M = 3.66$) more than fairness/reciprocity content ($M = 2.43$), $F(1, 50) = 36.82$, $p < .001$; in-group/loyalty content ($M = 2.69$), $F(1, 50) = 14.67$, $p < .001$; authority/respect content ($M = 2.23$), $F(1, 50) = 25.57$, $p < .001$; or purity/sanctity content ($M = 2.21$), $F(1, 50) = 53.90$, $p < .001$.

Study 2b

Method. We identified the 402 newspaper op-eds printed between January 1, 2009, and March 1, 2011, in the *New York Times, Wall Street Journal*, and *USA Today* that contained the keywords *environment, climate change, global warming*, or *pollution*. We then eliminated any articles that were not specifically relevant to the ecological environment (e.g., articles that talked about the "political environment") or were not designed to persuade readers about some position on an environmental issue (e.g., energy conservation, climate change, pollution). This resulted in a total of 232 articles remaining.

Seven coders blind to study hypotheses indicated the extent to which each of the 232 articles used rhetoric grounded in the five moral domains. Each rating was made on a 7-point scale ranging from 0 (*not at all*) to 6 (*extremely*). We formed composite scores across coders for each of the moral domains (average $\alpha = .73$).

Results. A repeated measures analysis of variance comparing scores for all five of the moral domains yielded a significant omnibus effect, $F(4, 924) = 66.45$, $p < .001$. Simple comparisons showed that the op-eds contained more moral content related to the harm/care domain ($M = 2.47$) than to the fairness/reciprocity domain ($M = 2.14$), $F(1, 231) = 22.54$, $p < .001$; in-group/loyalty domain ($M = 1.44$), $F(1, 231) = 29.35$, $p < .001$; authority/respect domain ($M = 1.83$), $F(1, 231) = 91.96$, $p < .001$; or purity/sanctity domain ($M = 1.24$), $F(1, 231) = 352.69$, $p < .001$.

Discussion

Content analyses of environmental rhetoric from both video and print media revealed that such rhetoric resides primarily within the harm/care moral domain. This finding is consistent with our reasoning that contemporary environmental discourse typically emphasizes moral values that resonate more with liberals than with conservatives, which suggests one possible mechanism driving the stronger proenvironmental attitudes of liberals relative to conservatives. Our findings also suggest that the tendency for liberals to exhibit higher levels of environmental concern than conservatives is likely not a necessary one. Rather, it may be possible to foster proenvironmental attitudes in conservatives by exposing them to moral rhetoric that falls within a moral domain that they more strongly endorse than liberals do. In Study 3, we tested this possibility.

Study 3

Building on the idea that the moral domain invoked in advocating for an issue shapes who will support it, we tested in Study 3 whether presenting conservative individuals with proenvironmental messages couched in terms of purity and sanctity, compared with a similar message based in concerns of harm and care, would increase their proenvironmental attitudes. We hypothesized that conservative participants exposed to the purity message would demonstrate greater environmental concern than their conservative counterparts exposed to the harm message or than their counterparts in a neutral condition.

Method

Participants. Three hundred eight participants (82 male, 220 female, 6 did not indicate gender) were recruited for Study 3 using the same recruitment strategy as in Study 1a.

Procedure. Participants completed a demographic questionnaire, including the political ideology measure from Study 1a, $M = 3.06$, $SD = 1.32$. The computer program randomly assigned each participant to a harm/care-, purity/sanctity-, or neutral-message condition. Participants in the harm/care and purity/sanctity conditions read a persuasive message modeled after a newspaper op-ed. These messages utilized words typical of their respective moral domains (Graham et al., 2009). The harm/care message described the harm and destruction humans are causing to the environment and emphasized how important it is for people to care about and protect the environment. Participants in the purity/sanctity condition read about how polluted and contaminated the environment has become and how important it is for people to clean and purify the environment. Additionally, three small pictures were presented with the persuasive messages. The purity/sanctity pictures showed a cloud of pollution looming over a city, a person drinking contaminated water, and a forest covered in garbage. The harm/care pictures showed a destroyed forest of tree stumps, a barren coral reef, and cracked land suffering from drought. Importantly, both messages ended positively, providing information regarding what people can do to improve the environment (Feinberg & Willer, 2011). Participants in the neutral condition read an apolitical message on the history of neckties.

After reading the message, participants indicated how much they felt five emotions, including disgust. We included the disgust measure because past research shows that perceptions of moral violations within the purity/sanctity domain tend to elicit a disgust response, especially in conservatives, and because disgust plays an important role in conservative moral judgments (Horberg, Oveis, Keltner, & Cohen, 2009; Inbar, Pizarro, & Bloom, 2009). Participants then completed a 3-item measure of proenvironmental attitudes (e.g., "It is important to protect the environment"; α = .79), a 5-item measure of support for proenvironmental legislation (e.g., "In general, I would support government legislation aimed at protecting the environment"; α = .91), and a 3-item measure of belief in global warming (e.g., "I believe that humans are causing global warming"; α = .93).

Results and discussion

Disgust. In line with our hypothesis that the proenvironmental message in the purity/sanctity condition would elicit disgust, results showed that participants in this condition felt more disgust ($M = 3.33$) than did participants in either the harm/care condition ($M = 2.79$), $t(305) = 2.13$, $p < .05$, or the neutral condition ($M = 0.80$), $t(305) = 9.88$, $p < .001$. We also tested whether the purity/sanctity manipulation induced greater disgust in conservative participants than in liberal participants. We conducted a multiple regression analysis looking at participants in the harm/care and purity/sanctity conditions, entering experimental condition, political ideology (continuous), and the interaction of the two as predictors of reported disgust. This analysis yielded a significant interaction, $β = −35$, $p < .001$.

Simple-slopes analyses examining reported disgust among more conservative participants (1 *SD* above the mean) revealed that these participants in the purity/sanctity condition reported feeling more disgust than did their counterparts in the harm/care condition, $b = −1.61$, $p < .001$. There was no significant difference between the two conditions for more liberal participants ($b = 0.49$, $p = .19$). Overall, exposure to our purity/sanctity message induced greater disgust than did exposure to our harm/care or neutral messages, and this effect was stronger for more conservative participants.

Environmental attitudes and policy preferences. To examine how couching environmental messages in specific moral domains affected liberal and conservative environmental attitudes, we conducted a multiple regression analysis, entering dummy-coded variables representing the neutral and harm/care conditions, political ideology (continuous), and the interaction of each dummy-coded variable with political ideology as predictors of scores on the proenvironmental-attitudes composite. This analysis revealed a significant difference between the Purity/Sanctity Condition × Ideology interaction and both the Harm/Care Condition × Ideology, $β = −0.29$, $p < .001$, and the Neutral Condition × Ideology interactions, $β = −0.17$, $p < .05$ (see Fig. 2).
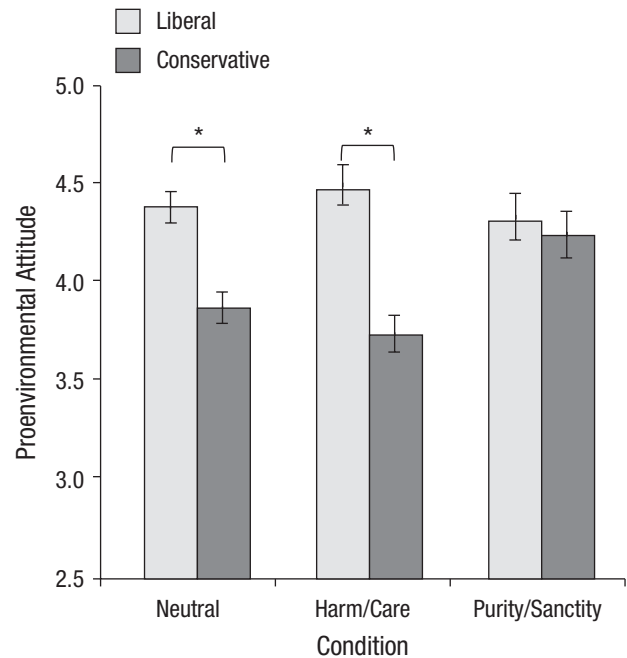

Fig. 2. Results from Study 3: mean proenvironmental attitude as a function of moral-messaging condition and political ideology (liberal = 1 *SD* below the mean; conservative = 1 *SD* above the mean). Asterisks indicate significant differences between groups (*p* < .001). Error bars represent ±1 *SEM*.

Simple-slopes analyses comparing more conservative participants' scores in each condition revealed that conservatives in the purity/sanctity condition scored significantly higher than did their counterparts in the harm/care condition, $b = −0.60$, $p < .001$, or in the neutral condition, $b = −0.39$, $p < .01$. Parallel analyses comparing more liberal participants' (1 *SD* below the mean) scores in each condition yielded no significant differences (all *p*s > .24). Further analyses comparing more conservative participants with more liberal participants within each condition revealed significant differences within the harm/care condition, $b = −0.26$, $p < .001$, and the neutral condition, $b = −0.41$, $p < .001$. However, within the purity/sanctity condition, there was no significant difference, $b = −0.03$, $p = .67$.

Following the same statistical strategy, we found parallel results in predicting participants' support for proenvironmental legislation. Specifically, more conservative participants in the purity/sanctity condition reported greater support than did their counterparts in either the harm/care, $b = −0.56$, $p < .001$, or neutral conditions, $b = −0.29$, $p = .07$. Also, there were clear differences between liberal and conservative participants within the harm/care, $b = 0.51$, $p < .001$, and neutral conditions, $b = −0.33$, $p < .001$, but within the purity/sanctity condition, the two groups were statistically equivalent, $b = −0.10$, $p = .18$.

We found parallel results regarding belief in global warming. Conservative participants reported greater belief in global warming when exposed to the purity/sanctity message than to the harm/care, $b = −0.64$, $p < .001$, or neutral message, $b = −0.42$, $p < .05$. However, we found significant differences

between liberal and conservative participants within each of the experimental conditions (harm/care: $b = 0.63$, $p < .001$; neutral: $b = −0.45$, $p < .001$; purity/sanctity: $b = −0.24$, $p < .01$), though liberal and conservative participants were clearly more similar within the purity/sanctity condition.

Disgust mediation. Finally, we tested whether the effects of the Message × Ideology interaction on environmental attitudes was due to differences in feelings of disgust. A mediated moderation analysis (Muller, Judd, & Yzerbyt, 2005) revealed that disgust responses partially mediated the relationship between the interaction and each of our dependent variables (Sobel $zs > 2.38$, $ps < .05$). This finding suggests that one reason why the purity/sanctity condition led conservatives to report more proenvironmental attitudes was because they moralized the issue more than in the other conditions, as indicated by their greater reported experience of the moral emotion of disgust in this condition.

Overall, the results of Study 3 supported our hypothesis that framing environmental messages in terms of the moral value of purity fosters an increase in proenvironmental attitudes in conservatives. Indeed, our findings suggest that reframing environmental messages in terms of purity and sanctity can reduce or even eliminate the differences in liberal and conservative environmental attitudes.

General Discussion

The present research examined the role that moral perceptions play in driving the differences between liberal and conservative Americans' views of environmental issues. Studies 1a and 1b established that liberals view environmental issues in moral terms, whereas conservatives do not, and this view partly explains the effect of political ideology on environmental attitudes. Study 2 supported our claim that moral rhetoric about the environment is typically grounded in a moral foundation that liberals endorse more than conservatives do. Study 3 showed that presenting conservatives with proenvironmental messages couched within a particularly conservative moral domain led them to adopt more proenvironmental attitudes, comparable to those of liberals. Exposure to a harm/care message, on the contrary, did not affect the environmental attitudes of liberal or conservative participants, which is consistent with our claim that contemporary messages are already largely based in this domain. These results suggest that political polarization around environmental issues is not inevitable but can be reduced by crafting proenvironmental arguments that resonate with the values of American conservatives.

Along those lines, our research indicates that different frames regarding climate change can account for polarization among Americans on this issue. For instance, Hoffman's (2011) content analyses of newspaper editorials found that believers and deniers of climate change frame the issue so differently that the two sides talk past each other, which likely contributes to the growing animosity each side feels toward the other (Bazerman & Hoffman, 1999; Chambers, Baron, & Inman, 2006).[2] The current research suggests that reframing environmental issues in different moral terms offers one way to improve communication between opposing sides. Indeed, Study 3 fits within a growing body of research demonstrating the effectiveness of targeted messaging in evoking proenvironmental attitudes in individuals who would otherwise be skeptical or apathetic (Feinberg & Willer, 2011; Feygina et al., 2010).

The current research may also help explain why many Christian groups, though traditionally conservative, have become proponents of the environment in recent years (Wardekker, Petersen, & van der Sluijs, 2008). Many of these groups perceive environmental degradation as a desecration of the world God created and a contradiction of moral principles of purity and sanctity, which motivates adherents to take proenvironmental stances. More generally, most of the world's religions emphasize humanity's role as stewards of the earth charged with keeping pure and sacred God's creation (Wardekker et al., 2008). Thus, reframing moral rhetoric around the environment to fit with this religious tenet might be persuasive to many religious individuals, a possibility that could be explored in future research.

In addition, although Study 3 provides evidence that moral reframing can successfully sway environmental attitudes, future research should investigate further why this reframing was so effective. It may be that messages based on moral considerations endorsed by the message's recipient are more credible and logical to the recipient than messages based on other considerations. Alternatively, the reframed message may lead readers to perceive the source of the message as someone who is similar to them. The conservative participants in the purity/sanctity condition of Study 3 may have perceived the source of the message as a fellow conservative, which made them more receptive to the message. Overall, then, the current research provides many avenues for future investigation of the role of morality and moral suasion as both a cause of and a solution for environmental polarization.

Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

Notes

1. Females tend to be more environmentally concerned and liberal than males. To ensure gender was not driving our results, we reanalyzed the data from our studies, controlling for gender, and obtained statistically equivalent results.

2. In line with Hoffman (2011), the authors of the op-eds we analyzed in Study 2b utilized different frames depending on whether they expressed belief or skepticism on the environmental issue. Those expressing belief were more likely to use a solution-oriented frame (70%) than a diagnostic frame (30%). Skeptical authors, however, almost exclusively used a diagnostic frame (88%), with only a small number (12%) using a solution-oriented frame.

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