

The role of race and ethnicity in climate change polarization: evidence from a U.S. national survey experiment

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Abstract Research suggests that public divides on climate change may often be rooted in identity processes, driven in part by a motivation to associate with others with similar political and ideological views. In a large split-ballot national survey experiment of 2041 U.S. adults, we explored the role of a non-partisan identity—racial/ethnic majority and minority status—in climate change opinion, in addition to respondents’ political orientation (i.e., ideology and party affiliation). Specifically, we examined respondents’ climate beliefs and policy support, identification with groups that support environmental causes (“environmentalists”), and the sensitivity of these beliefs to other factors known to predict issue polarization (political orientation and issue framing). Results revealed that across all opinion metrics, non-Whites’ views were less politically polarized than those of Whites and were unaffected by exposure to different ways of framing the issue (as “global warming” versus “climate change”). Moreover, non-Whites were reliably less likely to self-identify as environmentalists compared to Whites, despite expressing existence beliefs and support for regulating greenhouse gases at levels comparable to Whites. These findings suggest that racial and ethnic identities can shape core climate change beliefs in previously overlooked ways. We consider implications for public outreach and climate science advocacy.

As climate change has come to be widely accepted as a social problem (Shaman et al. 2013), research exploring the role of group dynamics in climate beliefs and policy support has proliferated in recent years. Much of this work has focused on political orientation. In the United States, where climate issues have been highly politicized for more than a decade (Krosnick et al. 2000), numerous studies demonstrate that conservatives and Republicans report less concern about climate change and lower support for mitigation policies relative to liberals and Democrats (McCright and Dunlap 2011b; see also Hamilton 2011). Comparatively fewer studies have investigated how identities beyond political orientation shape public

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opinion on climate change (see Bliuc et al. 2015; Pearson and Schuldt 2015; Pearson et al. 2016), a surprising omission given that members of disadvantaged groups—including racial and ethnic minorities, the elderly, and the poor—experience negative environmental impacts at disproportionately greater levels, which may impact how they process environmental risks (Mohai 2008). Moreover, given current projections that the U.S. is on track to become a majority-minority nation by 2050 (US Census Bureau 2010) and with similar projections for Europe and Australasia (UN Development Programme 2009), understanding how race and ethnicity shape climate engagement in pluralistic societies is increasingly critical for understanding how large and growing segments of the public engage with the issue. Amid these shifting demographics, the present study considers the ways that racial/ethnic minority versus majority status shapes public opinion on climate change as well as related social perceptions, including identification as an environmentalist and perceptions of the beliefs of scientists, variables that are attracting growing attention among social scientists and policy experts.

Social scientists have long acknowledged the fundamental human motivation to behave in ways that signal and maintain one's acceptance as a valued group member (e.g., Goffman 1959; Tajfel and Turner 1979). In the U.S., Whites and racial and ethnic minorities have been found to differ on the importance they attach to their racial/ethnic identification, with minorities showing greater preference for pluralistic identities that recognize their groups' distinctiveness within mainstream society (Dovidio et al. 2005). In addition, research suggests that minority racial and ethnic identification predicts support for a range of national policy issues (e.g., education policy, unemployment spending), over-and-above socioeconomic factors (Chong and Rogers 2005; Kinder and Winter 2001). Moreover, subgroup concerns and a sense of shared fate can exert a stronger influence on non-Whites' political mobilization and policy support than party affiliation (e.g., Democrat vs. Republican) and political ideology (liberal vs. conservative; Kinder and Sanders 1996). Thus, when it comes to climate change, members of minority groups may be relatively more motivated by subgroup concerns—such as their greater susceptibility to environmental hazards and negative climate impacts—as opposed to more general values-related orientations such as political ideology and party affiliation that are widely assumed to guide public opinion on this issue.

Indeed, previous studies have found that, compared to U.S. Whites, non-Whites show *greater* levels of risk perception and concern about climate change (Flynn et al. 1994; Leiserowitz and Akerlof 2010; McCright 2008; Speiser and Krygman 2014), findings that have been interpreted by climate scholars (McCright and Dunlap 2011a) in light of the literature on the “white male” effect in the risk literature, which documents lower risk perceptions among this group (as compared to non-Whites and women) across a variety of risk domains (Finucane et al. 2000; Kahan et al. 2007; Palmer 2003). In the present study, we build on these past efforts by focusing specifically on the perspectives of racial/ethnic minorities. In particular, we hypothesized that the unique concerns of minority relative to majority group members may be reflected in a weaker role of political orientation as a predictor of the climate beliefs of U.S. non-Whites as compared to Whites.

1 Method

To test the above hypotheses, we analyzed data from a survey of 2041 U.S. adults fielded August 25 to September 5, 2012, by GfK Knowledge Networks. Respondents accepted an invitation sent to 3070 participants in GfK's KnowledgePanel® to participate in a Web survey in return for cash-redeemable points or Internet access (response rate: 66.5 %, margin of error:

+/- 2 %). Due to the goals of the original survey, which focused on the beliefs of political partisans, the sample was restricted to respondents who had previously identified as Democrat ($n = 974$ or 47.7 %) or Republican ($n = 1067$ or 52.3 %). Given previous work showing higher levels of environmental concern among Blacks, Hispanics, and Asians (Leiserowitz and Akerlof 2010; Washington Post-ABC News 2009) as well as underrepresentation of these groups in environmental organizations, relative to Whites (Taylor 2014), we combined racial and ethnic minority categories to examine the role of minority versus majority status after confirming that minority subgroups showed little difference on our key climate belief metrics.

The final sample was 75.6 % White ($n = 1,542$) and 24.4 % Non-White ($n = 497$) (i.e., 8.5 % Black, non-Hispanic; 4.5 % Other, non-Hispanic; 9.2 % Hispanic; 2.2 % 2 or more races, non-Hispanic). Mean age was 50.6 years ($SD = 16.6$ years) and the sample was 51.0 % female and 49.0 % male. Median household annual income was \$60,000 to \$74,999 and educational attainment was distributed as follows: 7.8 % *Less than high school*; 29.3 % *High school diploma or equivalent*; 28.3 % *Some college*; 34.6 % *Bachelor's degree or higher*. Overall, the sample leaned slightly conservative on the seven-point political ideology scale that ran from 1 = *Extremely liberal* to 7 = *Extremely conservative* ($M = 4.24$, $SD = 1.52$), and consistent with previous observations, non-Whites were substantially more likely to identify as Democrats (74 %) than Republicans (26 %) (compared to 46.0 % vs. 54.0 % for Whites, respectively) and were less conservative, on average, as compared to Whites ($M = 3.85$, $SD = 1.55$ vs. $M = 4.37$, $SD = 1.48$).

Climate beliefs and policy support The survey included three belief items commonly featured in climate polling, namely, personal belief that climate change exists (1 = *Definitely has not been happening* to 7 = *Definitely has been happening*) (Krosnick et al. 2000), perceptions of the scientific consensus (*Most scientists believe it is occurring*; *Most scientists believe it is NOT occurring*; *Most scientists are unsure*) (the latter two categories were combined to create a binary variable following past research; see Malka et al. 2009), and support for regulating greenhouse gases (*The federal government should regulate*; *The federal government should NOT regulate*) (Washington Post-ABC News 2009). In addition to their frequent use in national polling, these specific belief items were selected in order to assess key theoretical constructs that feature prominently in the literature on climate change public opinion. For instance, scholars have argued that one's acceptance that climate change is happening operates as a foundational belief that drives support for legislation aimed at mitigating the threat (Krosnick et al. 2000). In addition, individuals' perceptions about the beliefs of others ("meta-beliefs"), particularly about scientists, have emerged as important determinants of personal climate change beliefs and policy support in national opinion polling (see Ding et al. 2011; van der Linden et al. 2015). An item from GfK's standard demographic profile assessed environmentalist self-identification (*Would you describe yourself as an environmentalist? Yes, definitely; Yes, somewhat; No*; recoded as Yes/No), and overall, 55.2 % identified as an environmentalist "definitely" or "somewhat" (see supplemental materials for question wording).

Issue framing experiment In addition to assessing these climate-related beliefs, the survey employed a split-ballot experimental design in which respondents were randomly assigned to one of two versions of the questionnaire, which was worded either in terms of "global warming" ($n = 1022$) or "climate change" ($n = 1004$), the latter of which has previously been shown to reduce polarization of climate beliefs among political partisans (Schuldt et al. 2011;

for additional discussions, see Akerlof and Maibach 2011; Baumer et al. 2016; Leiserowitz et al. 2014; Lorenzoni et al. 2006; Villar and Krosnick 2011; Whitmarsh 2008). For the present purposes, this experimental variable allowed us to test whether the effect of global warming versus climate change issue framing might have differential effects (i.e., lead to greater or lesser political polarization) for Whites and non-Whites in the sample. Specifically, we reasoned that to the extent that non-Whites are less inclined to view climate change through a partisan lens, they may show less sensitivity to issue framing as a function of their political orientation. Finally, GfK provides post-stratification weighting to adjust for sample deviations from census demographic data. We report on the weighted data here to better approximate the U.S. adult population and, in addition to political ideology and party affiliation, we statistically control for other demographic variables previously shown to predict environmental beliefs, namely, gender, educational attainment, and annual household income.

2 Results

Compared to liberals, conservatives expressed reliably lower levels of personal existence belief ($b = -.43, p < .001$) and less support for federal regulation of greenhouse gas emissions ($b = -.53, p < .001$); likewise, Republicans ($M = 4.52, SD = 1.84$) reported lower levels of belief than did Democrats ($M = 5.57, SD = 1.51$) ($F(1941) = 189.85, p < .001$), consistent with prior observations (McCright and Dunlap 2011b). We found no significant difference in the personal existence beliefs of Whites ($M = 5.09, SD = 1.75$) and non-Whites ($M = 5.12, SD = 1.73$) or in their support for mitigation policy (71.2 % vs. 73.2 %, respectively).

Recall that, to the extent that non-Whites' climate beliefs are based, in part, on more immediate concerns related to the heightened vulnerability of their groups to environmental hazards (Mohai 2008), we hypothesized that minorities' beliefs would be less strongly related to political ideology and less sensitive to different ways of framing the issue (i.e., as "global warming" or "climate change"). We chose to focus primarily on the role of political ideology (liberalism-conservatism) in the expressed climate change beliefs of Whites and non-Whites for both theoretical and methodological reasons. First, as compared to effects of party affiliation (i.e., identifying as a Republican or Democrat), political ideology has consistently been shown to exert independent and stronger effects on personal beliefs about climate change in analyses of Gallup survey data spanning two decades of U.S. national polling (i.e., from 1990 to 2010) (Guber 2013) (see also McCright and Dunlap 2011a). Moreover, given that political ideology (liberal-conservative) and party affiliation (e.g., Democrat vs. Republican) are typically correlated in contemporary U.S. politics (as indeed they are in the present dataset, Spearman's ρ (1956) = 0.52, $p < .001$), here, we follow an analytical strategy used in past research exploring effects of race and political orientation in climate change public opinion (see Dietz et al. 2007) by focusing on political ideology alone to avoid the use of highly correlated predictor variables. Additionally, party affiliation may mask important differences among members within a given party, a particularly important factor to consider when examining political polarization among members of racial and ethnic minority groups, who are substantially more likely to identify as Democrat, but may, nevertheless, show considerable variability in their ideological beliefs on many issues (see Pew 2014). Nevertheless, the present results remain substantively unchanged when party affiliation is substituted for ideology in our models, as we detail below.

Political polarization among white and non-white minority groups Consistent with past observations (e.g., Guber, 2013; McCright and Dunlap 2011a, 2011b), political ideology (liberalism-conservatism) emerged as a significant predictor of all three climate beliefs we assessed, such that conservative ideology predicted lower personal existence beliefs ($b = -0.44, t(2024) = -18.39, p < .001$), lower likelihood of perceiving a scientific consensus ($\rho(1928) = -0.26, p < .001$), and less support for policies aimed at reducing greenhouse gas emissions ($\rho(1932) = -0.32, p < .001$).

Turning to the question of whether these associations between political ideology and climate beliefs vary by race/ethnicity, further analysis revealed that political ideology was a stronger predictor of all three of these climate beliefs among Whites than non-Whites (for example, see Fig. 1). First, an ordinal least squares model in which personal existence belief (1 to 7 scale) was regressed onto race/ethnicity, political ideology, and their interaction term (controlling for the aforementioned covariates) revealed a significant interaction, $b = .24, t = 4.87, p < .001$. The nature of this interaction was such that whereas the familiar and negative relationship between political conservatism and personal existence beliefs was observed for both groups, simple slopes analysis revealed that this relationship was weaker among non-Whites ($b = -.28, t = -6.97$) than among Whites ($b = -.52, t = -17.60$) (Fig. 2). Second, a logistic regression model in which the binary variable for belief about the scientific consensus (*Scientists believe vs. Scientists believe/are unsure*) was regressed onto the aforementioned predictor variables again revealed a significant interaction between race/ethnicity and political ideology, $b = .23, OR = 1.27, p = .001$. An examination of this interaction revealed that the relationship between political ideology and beliefs about the scientific consensus was again weaker among non-Whites ($\chi^2(685) = 54.55$) than among Whites ($\chi^2(1354) = 138.99$). For instance, whereas 89.6 % of White liberals (including leaners) reported that most scientists believe that the phenomenon is happening, this figure fell to 77.0 % among non-White liberals. Third, a logistic regression in which support for regulating greenhouse gas emissions was regressed onto the same predictor variables again revealed a significant interaction between race/ethnicity and political ideology, $b = .31, OR = 1.37, p < .001$. Consistent with the patterns noted above, further analysis revealed a weaker relationship between policy support and political ideology among non-Whites ($\chi^2(661) = 44.97$) than among Whites ($\chi^2(1351) = 204.16$). For instance, whereas 89.9 % of White liberals expressed support for curbing these emissions, this figure that fell to 82.6 % among non-White liberals.¹

We next conducted a parallel series of analyses substituting party affiliation for ideology in the three models described above. When party affiliation is substituted for ideology (consistent with analyses reported by Dietz et al. 2007), our main findings remained unchanged. In every case, mirroring the pattern we observed for ideology, party affiliation was a weaker predictor of the climate change beliefs of non-Whites as compared to Whites, sometimes showing approximately half of the predictive power among non-Whites in our sample (for personal existence beliefs: $b_{\text{non-Whites}} = 0.98, t = 6.74$ vs. $b_{\text{Whites}} = 1.25, t = 13.94$; for perceptions of the scientific consensus: $b_{\text{non-Whites}} = 0.65, OR = 1.92$ vs. $b_{\text{Whites}} = 1.28, OR = 3.60$; and for support for regulating greenhouse gases: $b_{\text{non-Whites}} = 0.80, OR = 2.22$ vs. $b_{\text{Whites}} = 1.55, OR = 4.69$).

¹ All interactive effects of race/ethnicity and political ideology on climate beliefs remain significant when controlling for party affiliation (Republican, Democrat) and other background variables known to predict environmental beliefs (i.e., gender, education, and income). Moreover, they emerge despite comparable variability in political ideology within both groups ($SD = 1.47$ vs. $SD = 1.55$, respectively; Range: 1–7 for both groups) (see Table 1 and Table 2).

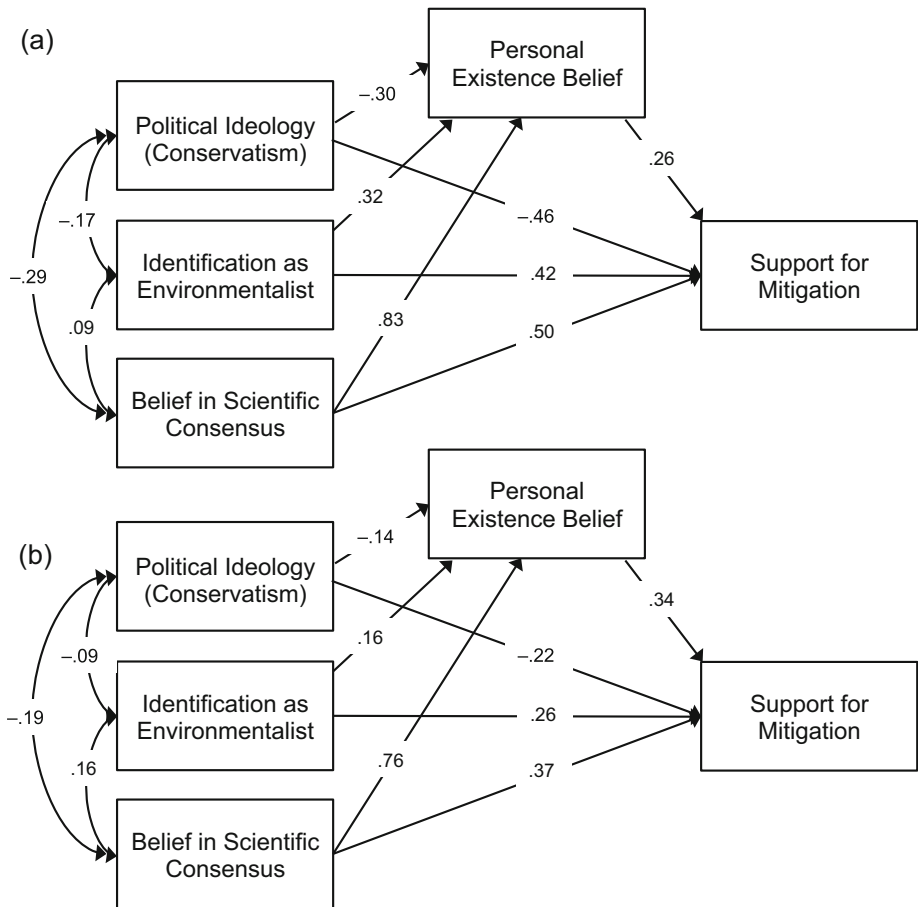


Fig. 1 Path models showing relationships among key variables for White (a) and non-White respondents (b). Path estimates are bootstrap-corrected unstandardized coefficients representing direct effects, controlling for main effects of all other predictor variables. Double-arrow paths represent correlations among predictor variables, partialling out the third predictor variable. Personal existence belief and political ideology (conservatism) were mean-centered; environmentalist identification and belief in scientific consensus were effect coded (-1 and $+1$). All correlations are significant at $p < .05$

Framing effects across race/ethnicity Recall that the survey featured an embedded framing experiment, allowing us to examine whether any effect of labeling the phenomenon as “global warming” or “climate change” on reported existence beliefs differed across Whites and non-Whites in our sample. Indeed, this was the case. Whereas Whites reported significantly less belief in the existence of “global warming” relative to “climate change,” consistent with past findings (Schuldt et al. 2011) ($M_{cc} = 5.26$ vs. $M_{gw} = 4.92$, $F(1, 1937) = 14.33$, $p < .001$, $d = 0.19$), non-Whites showed no such effect ($M_{cc} = 5.16$ vs. $M_{gw} = 5.08$, $F < 1$, ns).

Additional race/ethnicity differences A logistic regression analysis revealed that, overall, non-Whites perceived less scientific consensus relative to Whites (66.8 % vs. 71.1 %, $OR = 1.23$, 95 % CI: 1.03 to 1.50, $\chi^2(2013) = 7.64$, $p < .05$). Nevertheless, consistent with recent findings in the climate change public opinion literature (Ding et al. 2011; van der Linden et al. 2015),

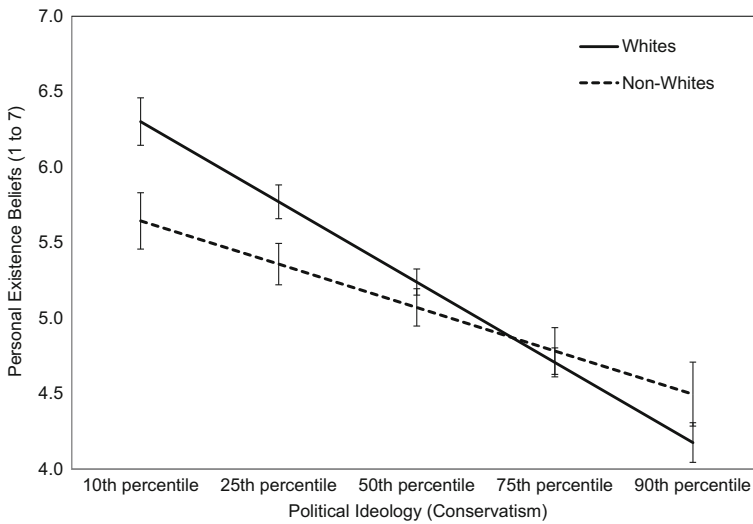


Fig. 2 Relationship between political ideology and personal existence beliefs for White and non-White respondents. Error bars represent 95 % confidence intervals

perceived scientific consensus remained a strong predictor of personal existence beliefs and support for mitigation efforts for both Whites and non-Whites (Fig. 1).

Finally, we also examined respondents’ identification with groups that support environmental causes (“environmentalists”), in light of growing evidence that minority groups remain substantially underrepresented within environmental advocacy groups and also perceive more social barriers to entering environmental organizations (Taylor 2007, 2014). Specifically, we hypothesized that non-Whites would be less likely to personally identify as an environmentalist as compared to Whites. This was indeed the case: non-Whites were less likely to identify as an environmentalist (either “definitely” or “somewhat”) than were Whites (49.3 % vs. 55.8 %, $OR = 1.30$, 95 % $CI: 1.08$ to 1.56 , $\chi^2(2038) = 7.64$, $p < .01$). This difference remained significant when controlling for political ideology, gender, educational attainment, and annual

Table 1 Zero-order rank correlations (Spearman’s rho, ρ) among variables, by racial/ethnic identification (Whites vs. non-Whites)

Variable	Whites					Non-Whites				
	1.	2.	3.	4.	5.	1.	2.	3.	4.	5.
1. Environmentalist self-identification	–	.25	.15	.29^b	–.20^c	–	.23	.17	.16	–.11
2. Personal existence belief		–	.52	.44	–.45^a		–	.45	.38	–.25
3. Perceived scientific consensus			–	.38	–.31^b			–	.35	–.19
4. Policy support				–	–.46^a				–	–.26
5. Ideology 1 = Extremely liberal to 7 = Extremely conservative					–					–
Max. Observations (n)	1291	1286	1280	1274	1293	662	657	649	653	663

Note: All values significant at $p < .01$ (two-tailed). Boxed values denote differences between Whites and non-Whites at ^a $p < .001$, ^b $p < .01$, and ^c $p < .10$ levels (two-tailed)

Table 2 Results of models regressing each climate opinion metric on Race/Ethnicity, Political Ideology, and their interaction term, controlling for covariates

	Model 1: Personal existence belief		Model 2: Perceived scientific consensus		Model 3: Policy support	
	<i>B</i> (SE)	<i>t</i>	<i>B</i> (SE)	<i>OR</i>	<i>B</i> (SE)	<i>OR</i>
<i>Race/Ethnicity</i> (ref = Whites)	-0.10 (.08)	-1.30	-0.41 (.11)	0.66***	-0.18 (.12)	0.84
<i>Political Ideology</i> (conservatism)	-0.40 (.03)	-16.10***	-0.41 (.04)	0.66***	-0.50 (.04)	0.61***
<i>Race/Ethnicity x Ideology</i> (ref = Whites)	0.24 (.05)	4.85***	0.23 (.08)	1.26**	0.31 (.08)	1.37***
<i>Education</i>	0.07 (.02)	3.31**	0.09 (.03)	1.09**	0.07 (.03)	1.07*
<i>Household Income</i>	0.00 (.00)	0.13	0.24 (.01)	1.03*	0.01 (.01)	1.01
<i>Gender</i> (ref = Males)	-0.14 (.07)	-2.02*	0.02 (.10)	1.02	-0.18 (.11)	0.84
<i>Condition</i> (ref = global warming)	0.30 (.07)	4.26***	0.51 (.10)	1.67***	0.11 (.11)	1.11
Constant	4.52 (.22)	20.99***	-0.57 (.31)	0.57	0.45 (.32)	1.57
Model <i>R</i> ²	.17		.10		.12	
<i>Number of Observations</i> (<i>n</i>)	2025		2009		2006	

Note: All outcome variables ordered such that higher values correspond to more supportive beliefs. Race/Ethnicity was coded +0.5 = non-Whites and -0.5 = Whites and Political Ideology (1 = *Extremely liberal* to 7 = *Extremely conservative*) was mean-centered prior to computing interaction terms. Education was a 14-category variable ranging from 1 = *No formal education* to 14 = *Professional or Doctorate Degree*; Household Income was a 19-category variable ranging from 1 = *Less than \$5,000* to 19 = *\$175,000 or more* (per year). OLS regression coefficients are reported for Model 1 and logistic regression coefficients are reported for Models 2 and 3

* $p < .05$; ** $p < .01$; *** $p < .001$

household income. Moreover, whereas White liberals (71.8 %) and White Democrats (66.5 %) were substantially more likely to identify as environmentalists, environmental identification did not differ appreciably from 50 % among non-Whites liberals and Democrats (53.8 % and 51.3 %, respectively).

3 Discussion

Together, these findings suggest that public opinion about climate change may be less rooted in political orientation for U.S. racial and ethnic minorities relative to Whites. Most strikingly, we find that political ideology, a variable that strongly predicts opinion polarization on climate change (McCright and Dunlap 2011b), is substantially less predictive of the climate beliefs and policy support of non-Whites relative to Whites. This pattern held for all three opinion metrics that we examined—personal existence belief, belief in scientific consensus, and support for mitigation policy—despite comparable variability in political ideology among groups. We also find that non-Whites are less likely to identify as environmentalists and to perceive a scientific consensus on climate change, despite expressing personal existence beliefs and support for mitigation policies at levels comparable to those of Whites.

We also note some limitations of the present study. First, to maximize statistical power for detecting politicization effects, the sample was restricted to survey panelists who had previously identified as a Democrat or Republican, and therefore, caution should be exercised in

generalizing these results to the broader American public that includes non-partisans. In addition, for reasons of economy, the survey assessed only a subset of climate-related beliefs; thus, confidence in our findings would be bolstered if this pattern were observed on other conceptually related beliefs (e.g., support for renewable energy and international climate treaties) as well as over time, to gain insight into the stability of these effects. Similarly, space constraints guided our choice of measures used in past research (e.g., our single-item measure of perceived scientific consensus; Malka et al. 2009) that may be unable to capture more nuanced beliefs (e.g., the belief that some scientists think the phenomenon is happening while others do not).

Together, the present results complement and extend past research on the role of racial/ethnic group membership in public opinion on climate change (e.g., Flynn et al. 1994; McCright and Dunlap 2011a) and the burgeoning literature on the politicization of climate science, as well as science more generally (e.g., Bolsen and Druckman 2016; Oreskes and Conway 2011; Suhay and Druckman 2015) by suggesting an important qualification to the role of political orientation in public opinion on climate change. In particular, our results suggest that, consistent with their unique perspectives on environmental risks, racial and ethnic minorities' views on climate change and its mitigation may be less ideologically-driven compared to those of Whites.² These findings have important implications for minority outreach and climate mobilization efforts. For instance, a willingness to identify and align oneself with advocacy groups (e.g., “environmentalists”) may be less indicative of the climate beliefs of racial and ethnic minorities, who remain underrepresented in mainstream environmental organizations (Taylor 2014). Researchers and practitioners would, therefore, be wise not to mistake non-Whites' lower identification as “environmentalists” with a lack of knowledge or concern about climate and sustainability issues. Similarly, strategic messaging that targets ideological disagreements and partisan divisions may be relatively ineffective for these groups. In contrast, messages that signal greater inclusivity by featuring persons of color in prominent environmental leadership positions may be more effective for engaging groups that remain substantially underrepresented in the environmental sector (see *Green 2.0's* “Leadership at Work” initiative). A failure to consider how racial and ethnic minorities engage with the issue of climate change may also undermine efforts to develop novel mitigation solutions in light of known benefits of social diversity for group decision making (see Pearson and Schuldt 2014).

More generally, the now widely accepted view of climate change as a social problem points to the need for additional research that seeks to understand the complex social factors that impact how different groups understand and engage with the issue (Pearson et al 2016). Future research should examine whether these effects extend to other disproportionately impacted groups (e.g., the poor) as well as to contexts beyond the U.S. Nevertheless, the present findings suggest that racial and ethnic minorities represent key “bridge” audiences for overcoming partisan disagreements and the politicization of climate change, and for building decision making coalitions that are critically needed to develop more effective and socially-informed climate policies.

² We note that other researchers have similarly focused on effects of political ideology in the context of race (e.g., McCright and Dunlap 2011a and McCright and Dunlap 2011b). However, these studies did not examine interaction effects between race and political orientation among non-Whites (a direct test of differential political polarization), and importantly, they did not examine support for climate policies, indirect effects (e.g., via scientific consensus), or experimental effects of different issue frames – the focus of the present study.

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