

Ideologically Motivated Reasoning in Response to Information about Genetics and Race

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ABSTRACT

Previous researchers have established that political conservatives are more likely than liberals to say that perceived differences between blacks and whites may be rooted in genetics. This empirical relationship likely stems in part from the fact that genetic causes justify conservative, small government policy and environmental causes justify liberal, interventionist policy. While this is well-understood, few scholars have sought to understand whether conservatism follows from a tendency to locate the causes of socioeconomic problems “in the person” (and liberalism from a tendency to locate such causes “in the situation”) or whether, due to motivated reasoning, a tendency to identify causes as in the person or situation follows from a person’s preexisting ideological stance. In this paper, we seek to understand whether the latter phenomenon occurs with respect to genetic explanations for perceived race differences. We uncover several patterns suggestive of motivated reasoning. Drawing on survey evidence, we find that liberal-conservative differences are greater among those who pay close attention to news about genetics. Drawing on survey-experimental evidence, we find that exposure to information about genetic or environmental causes of racial difference, particularly ambiguous information, polarizes political ideologues. These findings shed light on how media communications about the causes of racial difference and political ideology can interact to polarize ideologues on beliefs about racial difference.

Our fundamental traits have a firm biological basis....And the more we discover how firmly ingrained our abilities, attitudes, and behaviors tend to be, the less plausible leftist social-intervention programs become.

— Jason Richwine, *The American Conservative* (October 2009)

[Poverty] is created anew in each generation. But not by heredity...by circumstances. Today, millions of American families are caught in circumstances beyond their control. Their children will be compelled to live lives of poverty, unless the cycle is broken. President Johnson's War on Poverty has this one goal. To provide everyone a chance to grow and make his own way.

—“Poverty” ad created by the Lyndon Johnson presidential campaign (1964)

Throughout America's history, there have been many instances of politics and genetic explanations for perceived racial differences intertwining. In the nineteenth century, the institution of slavery was justified by arguments that African Americans were well-suited to servitude because of various innate differences from whites (Gould [1981] 1996; Kinder and Sanders 1996). The eugenics movement, embraced by conservatives and progressives alike, was based on the belief that a wide range of people “of color” were biologically inferior (Black 2003; Paul 1998).

While the most egregious politicized arguments about the origins of race differences (some real and many only perceived) are many decades removed from today, such arguments have not altogether disappeared from academic, or public, discourse. For example, *The Bell Curve*, written by Richard Herrnstein and Charles Murray and published in 1994, argues that intelligence largely determines one's success in life, and that intelligence is largely genetic in origin. The authors go on to discuss the fact that black and poor Americans' IQs are lower on average than others', also suggesting that this gap is permanent. One implication, although not explicitly stated, seems to be that differences in life chances between blacks and whites are driven by genes, with intelligence as

the mediating factor. The authors make explicit political recommendations, including the recommendation that welfare and reproductive policies be changed in order to decrease the number of children born to lower class (i.e., lower IQ) women (548-9).

If this book seems political in nature, the swift public reaction was even more so (see Jacoby and Glauberman 1995). President Bill Clinton was “outraged by the thrust of the book” (Swanson 1995). *The New Republic* and the *National Review* devoted entire issues to commentary on *The Bell Curve*, with commentary in the former, liberal-leaning magazine almost uniformly negative and in the latter, conservative-leaning magazine mainly defensive of Herrnstein and Murray. Commentators on both sides recognized the political implications of Herrnstein and Murray’s work, and many accused the other side of political bias. For example, in the *National Review*, Daniel Seligman argued that liberal critics were a “howling mob” and wanted *The Bell Curve*’s ideas suppressed because they were “too threatening to their own egalitarian ideologies, which typically depend on arguments for human malleability” (1994, 60-1). In *The New Republic*, Henry Louis Gates, Jr. argued that the timing of *The Bell Curve* was no coincidence—it was meant to justify cooling enthusiasm for public investment in black achievement. “If differences of intelligence...are *natural*, are genetic, are ordained by God, then why bother?” (1994, 10).¹

In recent decades, the politicization of arguments regarding the causes of political, social, and economic inequality has been referred to as the “nature vs. nurture” debate (Segerstråle 2000). Particularly when it comes to socioeconomic inequality, common wisdom suggests that political conservatives are more likely than liberals to argue that inequality is due to innate differences between persons and that political liberals are more likely than conservatives to argue that

¹ While trends emerged, responses were not uniform according to ideological leanings of publications, e.g., *The New York Times Book Review* published a largely favorable review.

inequality stems from structural barriers or discrimination. The intense debate over *The Bell Curve* offers anecdotal support for that common wisdom, and we discuss additional empirical support for it below. The *Bell Curve* debate also suggests that one of the more contentious areas of the nature vs. nurture debate is in the arena of race, the subject of this paper.

We join others in arguing that the configuration of the political debate over the causes of racial inequality—with conservatives more likely than liberals to argue that the causes of inequality rest “in the person”—is not accidental. Attribution theory suggests there is a logical link between policy preferences and beliefs about the causes of social problems (Heider 1958; Weiner, Osborne, and Rudolph 2011). We describe those specific linkages in detail below. However, attribution theory stops short of being able to answer an important causal question underlying the link between political ideology and causal beliefs: Which causes the other? An interpretation grounded in expectations for rational thinking would suggest that persuasive factual evidence for either genetic or environmental influences on perceived racial differences would influence a person’s policy preferences. However, as the *Bell Curve* debate participants suspected—although, only of their opponents!—motivated reasoning may also be at work, and may even drive the relationship.

The purpose of this paper is to explore whether politically motivated reasoning about genetic explanations for perceived racial differences occurs among ordinary citizens today. Drawing on work by Taber and Lodge (e.g., 2006), among others, we argue that what the public believes about the causes of racial differences depends not only on information flows to which a person is exposed but also on the interaction of those flows with a person’s preexisting views. People are likely to accept information that bolsters their values and corresponds with preexisting beliefs; on the other hand, people are likely to reject information that undermines their values or conflicts with preexisting beliefs. In addition, exposure to contradictory information can cause boomerang effects,

an outcome of individuals' efforts to shore up threatened views. Finally, motivated reasoning is most common among knowledgeable individuals because they are more likely to (a) be exposed to relevant information and (b) discern the political cues embedded in that information.

We expect that these basic theoretical premises operate with respect to explanations for racial differences as they would in any other politicized domain, and we test our expectations with two nationally representative datasets. We begin with survey data, examining whether left-right political ideology is more predictive of a person's beliefs about the causes of racial difference among those who pay close attention to information on genetics in the media. We indeed find such a pattern. However, while the pattern is strongly suggestive of motivated reasoning, the associational nature of the data casts some doubt on our causal inferences. Therefore, we next turn to data from a survey experiment to test our causal hypotheses more carefully. In these data, we again find evidence of motivated reasoning, with ideologues polarizing in response to information related to the causes of racial differences, particularly when that information is somewhat ambiguous, leaving more room for (politically biased) interpretation.

Theoretical Framework

Group Differences, Attributions, and Politics

A great deal of racial inequality exists in the contemporary United States. For example, average income and wealth are considerably lower, and unemployment rates higher, among African Americans as compared to whites; black Americans do not graduate from high school and attend college at the same rate (Massey 2008); and black Americans are more likely to be involved with the criminal justice system (Alexander 2010). Most would agree that black inequality represents a compelling social problem in the U.S. Attribution theorists argue that, when faced with problems

like this one, people often search for a solution. However, the solution perceived as best from a pragmatic as well as a moral perspective depends in large part on what one understands the *cause* of the problem to be (Heider 1958; Weiner, Osborne, and Rudolph 2011).

Weiner et al. (2011) argue that causes of social problems, such as poverty, fall into three categories, and each category has implications for what a person might consider to be an acceptable solution to the problem in question. The first category is “locus of control,” i.e., whether a cause is internal (“personal”) or external (“situational”) to an actor. If individuals are to blame for a problem, then they are perceived as having the capability and moral responsibility to change their lives. The second category of causal attribution type is controllability. An important caveat to the above is that specific types of internal, or personal, causes are perceived as *removing* individual control. For example, if a person’s genes are thought to be the reason for a problematic characteristic or behavior, then others are actually *less* likely to hold that person responsible (Dar-Nimrod and Heine 2010) and more likely to feel pity and provide help (Weiner, Perry, and Magnusson 1988). The third, final category is stability, and it is related to the previous category. A lack of control at the individual or societal level is perceived as resulting in stability, i.e., an inability for change to occur (Weiner et al. 1988). Although there are many reasons why a problem may be beyond an individual or society’s control, most relevant to this article is the perception that genes control behavior. Problems driven by biological causes are particularly likely to be perceived as being uncontrollable and, therefore, immutable (Dar-Nimrod and Heine 2010; Weiner et al. 1988).

Based on attribution theory, what empirical relationships should we expect between political ideology and explanations for racial inequality? We might begin by summarizing key differences between political conservatism and liberalism in the United States. Political conservatism is associated with a desire for small government and a lack of government

intervention in the lives of the nation's citizenry, whereas political liberalism is associated with a desire for government intervention to address societal problems. This general difference is most apparent with respect to political, social, and economic inequality. Liberals tend to be more interested than conservatives in government initiatives aimed at helping the disadvantaged and have been particularly interested in using government to promote equality for racial and ethnic minorities (Brewer and Stonecash 2007; Campbell, Converse, Miller, and Stokes 1960).

Given these ideological differences, there would seem to be good reason to expect conservatives to embrace personal explanations for inequality and for liberals to embrace situational ones. If the cause of a problem is located "in the person," then government is not responsible morally and, from a pragmatic perspective, is less able to correct the problem. However, whether or not conservatives should embrace the specific "in the person" causal explanation of genes (or, more generally, biology) is less clear. On the one hand, genetic causes are believed by many to result in immutable characteristics (Dar-Nimrod and Heine 2011; Jayaratne et al. 2009).² This suggests that change is impossible and, thus, government intervention to address inequality is likely to end in failure (Lewontin, Rose, and Kamin 1984; see Hofstadter [1944] 1992 for a historical perspective). As Gates suggests in the introduction, if those who are lower on the socioeconomic ladder are so because they are perceived to be *inherently* lower in IQ, for example, then there would seem to be less reason to spend tax payers' dollars on education and job

² This is considered to be a fallacy by most experts in genomics for a variety of reasons, ranging from the existence of complicated interactions between DNA and other entities, including the environment, to the fact that many scientific claims about genetic causes are actually claims about the causes of population-level variance rather than mean levels of a characteristic.

training.³ On the other hand, genetic causes *also* imply a possible exemption from personal responsibility, generating sympathy and suggesting help-giving may be the appropriate response.

The empirical relationship between political ideology and genetic explanations for socioeconomic inequality—and, more specifically, racial inequality—has been the subject of considerable inquiry. First, those with conservative policy preferences tend to locate the causes of problems generally “in the person” and those with liberal policy preferences tend to locate the causes of problems generally “in society” (see Morgan, Mullen, and Skitka 2010 and Weiner et al. 2011 for reviews). More specific to the subject of our inquiry, proponents of conservative policy are more likely than others to blame blacks and the poor—as opposed to structural inequalities or discrimination—for the fact that they experience more negative life outcomes relative to others on average (Hunt 2007; Kinder and Sanders 1996; Kluegel and Smith 1986). Finally, with respect to genetic (and biological) explanations more narrowly, historical research indicates that political conservatives have “essentialized” race and class—arguing that on-average group differences are both considerable and innate—more often than liberals (Gould [1981] 1996; Hofstadter [1944] 1992; Kevles 1985; Lewontin, Rose, and Kamin 1984; Segerstråle 2000). While there is a surprising dearth of empirical evidence on *contemporary* attitudes, Suhay and Jayaratne (2013) find that political conservatives in the U.S. are indeed at least somewhat more likely than liberals to argue that perceived race and class differences are caused by genetic differences.

³ A related perceived implication of genetic causes is the idea is that differences due to nature are necessarily good—because they reflect the “wisdom of nature” or stem from God’s will. Thus, they should be allowed to continue (Dar-Nimrod and Heine 2011; Lewontin et al. 1984).

Motivated Reasoning

A variety of literature clearly indicates that there likely exists a correlation between political ideology and the belief (or rejection of the belief) that genes and perhaps other biological causes contribute to racial inequality. What is less clear is why that association exists. While it is reasonable to expect that laypeople's exposure to information about the causes of inequality subsequently shapes their policy preferences, academics who have analyzed the nature-nurture debate have instead tended to view its participants through the lens of "motivated reasoning" (e.g., Hofstadter [1944] 1992; Lewontin et al. 1984). Generally speaking, the motivated reasoning framework suggests that preexisting values often color our interpretation of the facts (Lodge and Taber 2000; Skitka, Mullen, Griffin, Hutchinson, and Chamberlin 2002; Taber and Lodge 2006). Lodge and Taber (2005) write: "Those holding strong attitudes actively counterargue contrary facts, figures, and interpretations while uncritically accepting attitudinally congruent information" (476).

Somewhat counterintuitively, this tendency is particularly strong among more knowledgeable individuals, who are (a) more exposed to relevant information (and, thus, more likely to have the opportunity to practice motivated reasoning) and (b) able to discern the political and other value cues embedded in information that may be missed by a less sophisticated person. More intuitively, the tendency to engage in motivated reasoning is also likely stronger when the meaning of the information to which one is exposed is ambiguous (see LaMarre, Landreville, and Beam 2009), giving a person more leeway than usual in interpreting what is being argued.

While the evidence for motivated reasoning across many domains—political and otherwise—is strong, clear evidence of motivated reasoning in the domain of genetic explanations for inequality, and genetic explanations for racial inequality in particular, is hard to find. Most

relevant is a study by Ramsey, Achter, and Condit (2001). They examined experimental evidence that demonstrated that racially prejudiced and nonprejudiced individuals selectively incorporated into their belief systems evidence on genetic and environmental causes of racial inequality from *The Bell Curve* that would bolster their priors. More generally, Morgan, Mullen, and Skitka (2010) show that people indeed search hard for causal attributions that will bolster their political values.

Hypotheses

Based on the above literature, we offer and test four hypotheses:

1. Liberals will be less likely than conservatives to say that they believe that perceived race differences are due to genetics (or, more generally, are innate).
2. These liberal-conservative differences will be greater among those who pay close attention to news about genetics.
3. Generally speaking, exposure to information about genetic or environmental causes of racial difference will polarize political ideologues.
4. Relatively ambiguous information on genes and race (i.e., information which can be interpreted as arguing for, or against, fundamental genetic differences between races) will be most likely to polarize political ideologues.

To test these hypotheses, we examine data from two nationally representative studies.

Study 1

Methods

The first study is a large, nationally representative survey of black and white Americans conducted in 2001 by researchers at the University of Michigan (N = 1200).⁴ Note that all variables included in the analyses and discussed below have been re-coded to range from 0 to 1. The independent variable we use is a standard five-point political ideology scale, with liberalism coded at the high end. The dependent variable asks respondents to estimate the role of genetics in explaining perceived racial differences on five characteristics: intelligence, mathematical ability, drive, a tendency toward violence, and athletics.⁵ The resulting *Genetic Attribution for Race Differences* (GARD) scale (Cronbach's alpha = .824) is coded 0 if the respondent believes that genes play absolutely no role in any of the five perceived differences and 1 if the respondent believes that genes account for "just about all" of the perceived racial differences in these five traits. (See Appendix A for exact wording of questions.) Finally, we expect that exposure to information about

⁴ Respondents were selected using two separate sampling methods. A main sample was obtained utilizing random-digit-dialing (RDD) methods, drawing from the continental United States (whites N = 600, blacks N = 58; AAPOR Adjusted Response Rate 3 = 31.89). In addition, an oversample of black respondents (N = 542; AAPOR Adjusted Response Rate 3 = 32.94) was obtained using RDD methods within targeted population areas of higher black density from across the United States. Although the response rate was lower than ideal, surveys with similar response rates have been shown to be representative (Pew Research Center for the People & the Press 2004). Respondents were interviewed over the phone by professionally trained interviewers. Interviews averaged 40 minutes in length. Each respondent received \$15 compensation (or \$20 for refusal conversions). Within each household, adult respondents were randomly selected. See Suhay and Jayaratne 2013 for additional sample details.

⁵ These traits were examined for two reasons. First, many Americans believe them to vary by race and class (Herrnstein and Murray 1994; Hunt 2007; Kinder and Kam 2009). Second, generally speaking, these traits have been frequently attributed to genetics in public discourse (Alper et al. 2002; Parens, Chapman, and Press 2006).

genetics in the media will moderate the effect of ideology on the dependent variable. This moderating variable is as follows: “Over the past few months, how often have you read or heard news stories about genetics in newspapers, magazines, or on TV?” Those who answered “often” (approximately one-third) were coded into the “high exposure” category (1), and those who answered “sometimes,” “rarely,” or “never” were coded into the “low exposure” category (0). The statistical models also include standard controls (religiosity, household annual income, educational attainment, age, gender, and whether the respondent self-identifies as primarily black or white) and are weighted for race, education, and age. (The sample is already representative for gender.)

Results

Using OLS regression, Table 1 includes four subtly different models. In the first column, we regress the GARD scale on ideology (liberalism), exposure to genetics news, and the control variables. As our first hypothesis predicts, liberalism is negatively associated with the GARD scale. However, if we estimate this model separately for low and high media exposure individuals (see Models 2 and 3), it is apparent that the negative association between liberalism and the dependent variable is concentrated among those in the high exposure group. The coefficient on liberalism is substantively large and statistically significant ($b = -.18$, $p < .001$, two-tailed), while the coefficient on liberalism is nearly zero in the low exposure model ($b = .006$) with a standard error roughly six times its size.

[Table 1 here]

In the fourth model we formally test whether the coefficients on liberalism in the low exposure and high exposure models are significantly different from one another. Thus, we regress the GARD scale

onto ideology (liberalism), exposure to genetics news, *their interaction*, and the control variables.⁶

Here, the negative and significant coefficient value associated with the interaction term ($b = -0.19$, $p < .001$, two-tailed) confirms that the effect of ideology among respondents with high exposure to genetics news is significantly greater (in the expected direction) than among respondents with low exposure.⁷ In short, liberalism is *more* negatively associated with the dependent variable among high media exposure than low media exposure individuals.

We can use these model estimates to compute the predictive margins in order to better understand the nature of this interaction effect. Figure 1A presents the predictions resulting from Model 4 in Table 1. The figure makes clear that high exposure conservatives are little different from low exposure individuals; rather, it is high exposure moderates and liberals who are considerably less likely to express genetic racial beliefs than their low exposure counterparts. This suggests that moderates and liberals who were paying attention to media messages regarding genetics at this time moved away from genetic explanations for perceived racial differences in response. Follow-up analysis with ideology coded as a series of dummy variables (see Figure 1B) indicates that this effect is approximately linear, with high-exposure respondents increasingly less likely to endorse genetic explanations for perceived racial differences at each point on the ideology (liberalism) variable.

[Figure 1 here]

⁶ Note that, because of the interaction term, the media exposure and liberalism “main effects” are each evaluated when the other variable is 0 (among those with low exposure to genetics or those who are “very conservative”).

⁷ Note that every cell of the ideology X media exposure interaction variable contains a sufficient number of observations for reliable estimation. See the cross-tabulation in Appendix A.

Discussion

Results from Study 1 generally reflect our expectations. First, liberals were less likely than conservatives to say that genes contributed to perceived racial differences. Second, this ideological difference was only apparent among those who said they paid close attention to information about genetics available in the media. This said, the liberal-conservative difference that emerged among the high media exposure group was somewhat lopsided, in that moderates and liberals were significantly lower on the GARD scale than their low exposure counterparts, whereas conservatives in the two groups were nearly identical in their responses.

It is possible that the reason for this difference is that the particular character of information flows at the time of the study (in 2001) created this unequal pattern (Zaller 1992). The debate over the *Bell Curve* had wound down by this point. Arguably the most salient media message at the time on genes and race was the discovery that most human genes are shared across races and that there is much more variation within racial populations than between them. The pattern we observe in the data may reflect (a) high exposure political liberals readily accepting this racially progressive media message, and (b) high exposure political conservatives readily rejecting it but *not* polarizing further due to the lack of a strong countervailing message.

We turn next to experimental evidence. These additional data offer several advantages. First, relative to the associational data in Study 1, data from a controlled experiment allow us to make more certain causal inferences regarding the interactive effect of political ideology and information about the causes of racial difference. Second, Study 1 relies on self-reported exposure to news related to genetics, whereas Study 2 tests the effects of actual exposure. Third, the new data allow us to test whether the former pattern of results is maintained in a more contemporary

dataset. Fourth, and finally, the experimental data in Study 2 allow us to further explore the extent to which polarization effects can vary depending on the unique character of information flows.

Study 2

Methods

The second study was included in the American National Election Survey (ANES) Web Panel of 2008-9. In Wave 16, 733 respondents were randomly selected to participate in a framing experiment in which they were randomly assigned to read one of four news articles (or no news article in the case of the control group) and respond to a series of questions.⁸ The articles all reported on research purportedly conducted by Bruce Firman of Columbia University and published in *Nature Genetics*. The first article (Race as Genetic Reality) argues that differences in skin color and facial morphology commonly associated with race are in fact correlated with important genetic differences between races. The second article (Race as Social Construction) argues that there is more genetic variation within than between races and that therefore DNA is not responsible for racial differences in behavioral traits, such as intelligence. The third article (Racial Ancestry Test) is more ambiguous in its racial implications. It indicates that people can trace their racial heritage through their DNA, but that those who do so frequently find that they are of mixed racial ancestry. The fourth article (Racial Differences in Heart Disease) reports on research suggesting that the reason why African Americans are more prone to heart attacks than whites is because of genetic differences. The full text of these articles is available in Appendix B. Each of the treatment groups is represented in the analyses below by a dummy variable (1 = received treatment, 0 = did not receive treatment).

⁸ Phelan, Link, and Feldman (2013) recently published a prominent article on these data. We differ from these authors in our attention to different dependent variables and to the moderating role of political ideology.

Note that all variables included in the analyses and discussed below have been re-coded to range from 0 to 1. In this study, ideology is measured with a seven-point scale, and the variable is coded with liberalism at the high end.⁹ The dependent variable is a scale made up of averaged responses to four questions similar to those asked as a part of Study 1: Whether respondents believe that economic inequality associated with race is due to (1) “less in-born ability to learn” and (2) “less in-born drive to succeed” among African Americans; (3) whether African Americans’ greater involvement with the judicial system is “due to genetic differences between blacks and whites in their tendency toward violence”; (4) whether African Americans’ dominance in many sports is due to “genetic differences between blacks and whites” ($\alpha = .747$). Again, 0 represents the belief that none of these differences are innate, and 1 represents the belief that all are innate. Complete question wording is available in Appendix B.

Results

We begin by regressing the GARD scale on liberalism and a group of standard control variables (religious activity, education, income, age, gender, and race/ethnicity) for each experimental group separately. See Table 2. These simple analyses demonstrate clearly that liberalism is (a) more negatively associated with the dependent variable when participants are exposed to information related to genes and racial differences (compare Model 1 to the other four models), and (b) most negatively associated with the dependent variable when participants are exposed to *ambiguous* genetic information (compare Models 2 and 3 to Models 4 and 5).

⁹ Respondents’ ideology was collected in Waves 1, 2, 6, 10 and 11. For each participant in the experiment, we collected every valid answer he or she gave to the ideological identification question across these five waves. Our ideology variable includes the respondent’s answer in the wave that was closest to Wave 16. Out of the 717 participants in the experiment, 687 values for the ideology variable came from Wave 11 (November 5 to December 15 2008), 22 came from Wave 10 (October 2 to November 3 2008), and 8 came from Wave 6 (June 5 to August 11 2008).

[Table 2 here]

As in the previous analysis, it is important to assess whether the differences in the ideology coefficients across the different experimental groups are statistically significant. To do so, we analyze the pooled data. See Table 3. First, we regress the GARD scale on the treatment group dummy variables (the control group is the excluded group) *without interaction terms included* so that we can assess the true main effects of the treatments (see Model 1). Somewhat surprisingly, the treatments in and of themselves do not have direct effects on the dependent variable. Second, we add interactions between the four treatment groups and liberalism to the model (see Model 2).¹⁰ This model makes it clear that any treatment effects are in fact indirect effects—the treatments change the relationship between ideology and the dependent variable. Relative to the control group, three of the four treatments (all but the “Race is Real” article) appeared to polarize participants by political ideology (at least $p < .05$ in the three treatment groups). As expected, the coefficients on the interaction terms containing the two ambiguous articles are the largest.¹¹

[Table 3 here]

If we graph the predictive margins in the same manner as we did in Study 1 (see Figure 2), we observe two types of patterns. First, if we compare Figure 2A (Control) to Figure 2C (Race as Social Construction), we see that moderates and liberals appear to be responding to the treatment by changing their beliefs, but conservatives are not (they are more likely to resemble control group conservatives). However, a different pattern emerges in Figures 2D and 2E, depicting estimates

¹⁰ While article exposure is randomized in the experimental design, the moderator ideology is an observed variable. This is why control variables are included in the analyses of experimental data.

¹¹ The differences in coefficients across the two sets of interactive variables (unambiguous vs. ambiguous information) may not be statistically significant. We will formally test this in the next iteration of this paper.

from the ambiguous conditions (Ancestry Test and Heart Disease). Here we finally observe a classic polarization pattern: relative to the control group, treated liberals are less likely to say race differences are due to genetics and conservatives are somewhat *more* likely to say so.

[Figure 2 here]

Discussion

Generally speaking, the findings from this experimental study support the relevant hypotheses. In three of four cases, exposure to information about genetic (or environmental) causes of racial differences tended to increase differences between liberals and conservatives on the GARD scale (Hypothesis 3). In addition, information with more ambiguous implications led to greater polarization (Hypothesis 4). Turning to the Figures: As we noted when discussing the results, a “true” polarization pattern emerged in response to ambiguous information, with both liberals and conservatives moving toward the poles, suggesting that both ideological groups were able to find information that could be interpreted in a biased way. This pattern handsomely supports our fourth hypothesis. Interestingly, the pattern of results in response to the Race as Social Construction treatment—with liberals, but not conservatives, responding to the stimulus—repeats the same pattern from Study 1. In both studies, in response to one-sided political information flows, the ideological opposition does not “boomerang” but simply appears to dismiss the evidence.

General Discussion & Conclusion

The findings generally support our contention that ideologically motivated reasoning influences the reception of information about the causes of perceived race differences. The survey provides evidence that this process appears to have been operating across the general population in the late 1990s and early 2000s. The main weakness of this approach, however, is clear: causal hypotheses

cannot be carefully tested with cross-sectional survey data, leaving us with circumstantial but not truly persuasive evidence. The experiment provides that evidence, showing that the effects of exposure to information about the causes of racial differences are moderated by ideology.

One somewhat unexpected pattern observed in both studies was that moderates and liberals appeared to be persuaded by progressive information on genes and race while conservatives' beliefs did not change one way or the other. The lack of a boomerang effect among conservatives, predicted by motivated reasoning theory, deserves additional attention. Future iterations of this paper will address this issue as well as important counterarguments to our conclusions. For example, given the well-known correlation between political ideology and racial prejudice, one might ask whether "liberalism" and "conservatism" in our studies have the effects they do because they are serving as proxies for prejudice. Thus, future drafts of this paper will include prejudice and its interactions with the relevant variables in the models.

Although our work is not yet done, we have thus far found good evidence for the role of motivated reasoning with respect to beliefs about racial differences. While this does not break new ground with respect to motivated reasoning theory, to our knowledge this is the first study to apply this theory in a rigorous way to thinking about the causes of racial difference. Furthermore, incorporating this psychological model into the literature on race and politics is likely to yield further fruit. It is a short leap from genetic explanations for racial differences to racism, and some would argue there is no leap at all. Thus, our study sheds light on how media communications and political ideology can interact to polarize ideologues on some of the most contentious beliefs and issues in American politics today.

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Tables

Table 1: Effect of Ideology, and Ideology X Media Exposure, on GARD Scale

Independent Variables	Model 1	Model 2	Model 3	Model 4
	No interaction	Low Exposure	High Exposure	Interaction
Media Exposure	-0.045 ** (0.016)			0.043 (0.033)
Liberalism	-0.062 * (0.029)	0.006 (0.037)	-0.177 *** (0.043)	0.006 (0.037)
Media Exp*Liberalism				-0.190 *** (0.055)
Religiosity	0.001 (0.027)	-0.027 (0.035)	0.040 (0.038)	-0.005 (0.026)
Education	-0.047 (0.035)	-0.043 (0.045)	-0.057 (0.052)	-0.045 (0.035)
Income	0.065 (0.035)	0.068 (0.044)	0.072 (0.053)	0.069 * (0.034)
Age	0.188 *** (0.035)	0.249 *** (0.044)	0.066 (0.052)	0.188 *** (0.035)
Female	-0.009 (0.016)	0.013 (0.019)	-0.047 (0.024)	-0.005 (0.015)
Black	-0.020 (0.014)	-0.017 (0.018)	-0.012 (0.024)	-0.016 (0.014)
Constant	0.170 *** (0.033)	0.121 *** (0.040)	0.222 *** (0.053)	0.137 *** (0.034)
N	1042	697	345	1042
R ²	0.070	0.081	0.130	0.086

* p<.05; ** p<.01; ***p<.001, two-tailed test

Standard deviations are reported within parentheses.

Table 2: Relationship between Ideology and GARD Scale across Five Treatment Groups

Independent Variables	Model 1 Control Group	Model 2 Race as Genetic Reality	Model 3 Race as Social Construct	Model 4 Racial Ancestry Test	Model 5 Racial Differences in Hearth Disease
Liberalism	0.066 (0.081)	-0.061 (0.064)	-0.144 * (0.062)	-0.207 ** (0.071)	-0.200 *** (0.048)
Religiosity	0.035 (0.068)	-0.09 (0.062)	0.059 (0.062)	0.025 (0.076)	0.037 (0.056)
Education	-0.169 (0.089)	-0.15 (0.108)	-0.154 * (0.07)	-0.109 (0.087)	-0.073 (0.072)
Income	-0.045 (0.086)	-0.084 (0.131)	-0.034 (0.119)	-0.207 * (0.094)	-0.134 (0.085)
Age	0.002 (0.002)	0.000 (0.001)	0.001 (0.001)	0.003 * (0.001)	0.000 (0.001)
Female	-0.141 ** (0.047)	-0.052 (0.042)	0.032 (0.038)	0.010 (0.041)	-0.019 (0.038)
Black	-0.423 (0.239)	-0.084 (0.132)	-0.127 (0.114)	-0.027 (0.094)	-0.157 * (0.080)
Hispanic	-0.094 (0.106)	0.017 (0.065)	0.026 (0.081)	0.006 (0.087)	-0.054 (0.080)
Other	0.324 (0.234)	0.038 (0.133)	0.069 (0.102)	-0.038 (0.076)	0.048 (0.063)
Born in US	0.114 (0.076)	0.053 (0.092)	0.028 (0.082)	-0.155 (0.082)	-0.102 (0.089)
Constant	0.274 (0.145)	0.552 *** (0.157)	0.314 * (0.144)	0.583 *** (0.127)	0.623 *** (0.154)
N	91	145	139	151	145
R ²	0.238	0.079	0.136	0.220	0.207

* p<.05, ** p<.01, *** p<.001, two-tailed test

Standard deviations are reported within parentheses.

Table 3: Effects of Treatments, and Treatments X Ideology, on GARD Scale

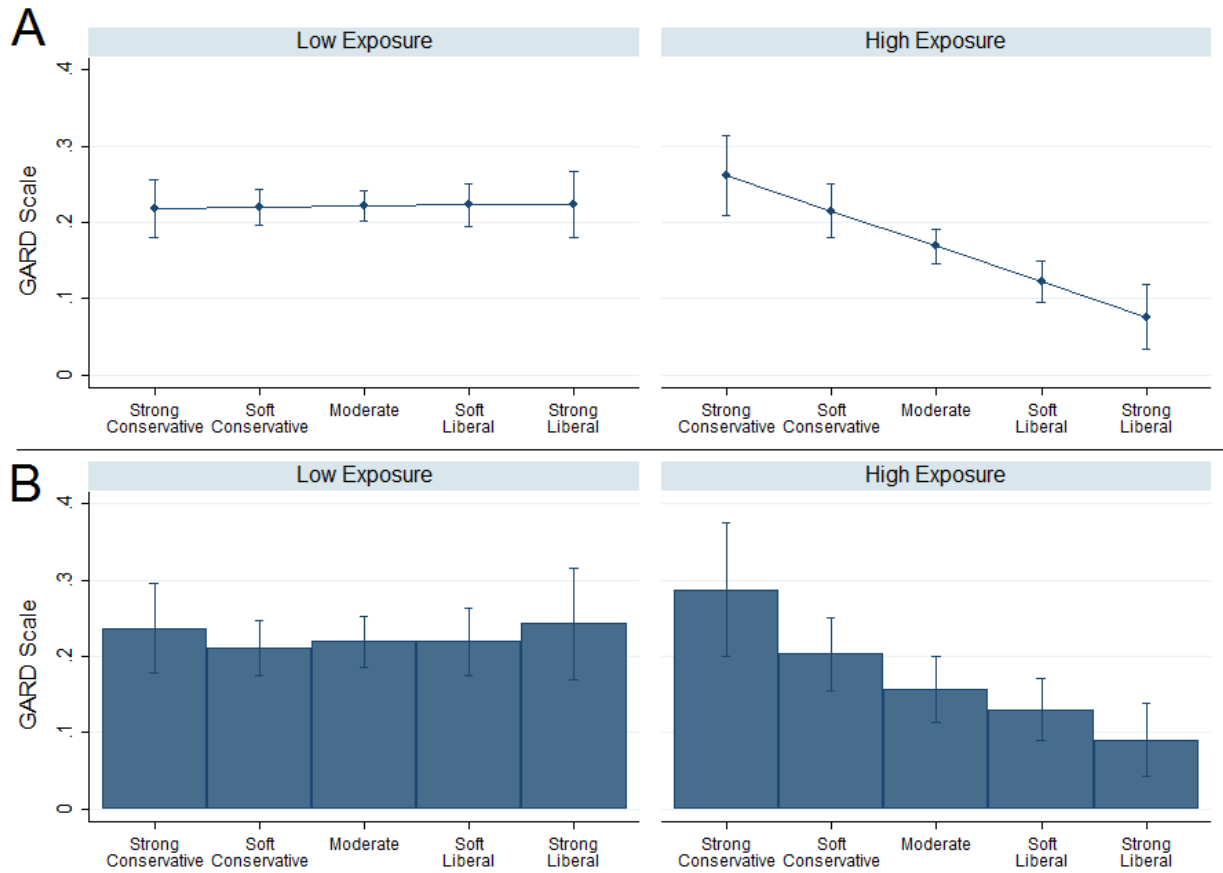
Independent Variables	Model 1	Model 2
	No interaction	With Interactions
Liberalism	-0.124 *** (0.028)	0.051 (0.072)
Vignettes (control gr. as reference)		
Race as Genetic Reality	0.023 (0.029)	0.055 (0.047)
Race as Social Construct	-0.048 (0.029)	0.029 (0.052)
Racial Ancestry Test	0.008 (0.028)	0.112 * (0.047)
Racial Diff. in Hearth Disease	-0.025 (0.028)	0.073 (0.046)
Genetic Reality*Liberalism		-0.081 (0.089)
Social Construct*Liberalism		-0.19 * (0.093)
Ancestry Tests*Liberalism		-0.256 ** (0.089)
Hearth Disease*Liberalism		-0.240 ** (0.081)
Religiosity	0.006 (0.027)	0.01 (0.028)
Education	-0.14 *** (0.037)	-0.136 *** (0.036)
Income	-0.09 (0.045)	-0.096 * (0.045)
Age	0.088 * (0.045)	0.081 (0.045)
Female	-0.02 (0.017)	-0.023 (0.017)
Black	-0.12 * (0.048)	-0.121 * (0.048)
Hispanic	-0.01 (0.040)	-0.016 (0.039)
Other	0.053 (0.044)	0.05 (0.044)
Born in US	-0.03 (0.041)	-0.04 (0.040)
Constant	0.501 *** (0.069)	0.464 *** (0.066)
N	671	671
R ²	0.121	0.137

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

Standard deviations are reported within parentheses.

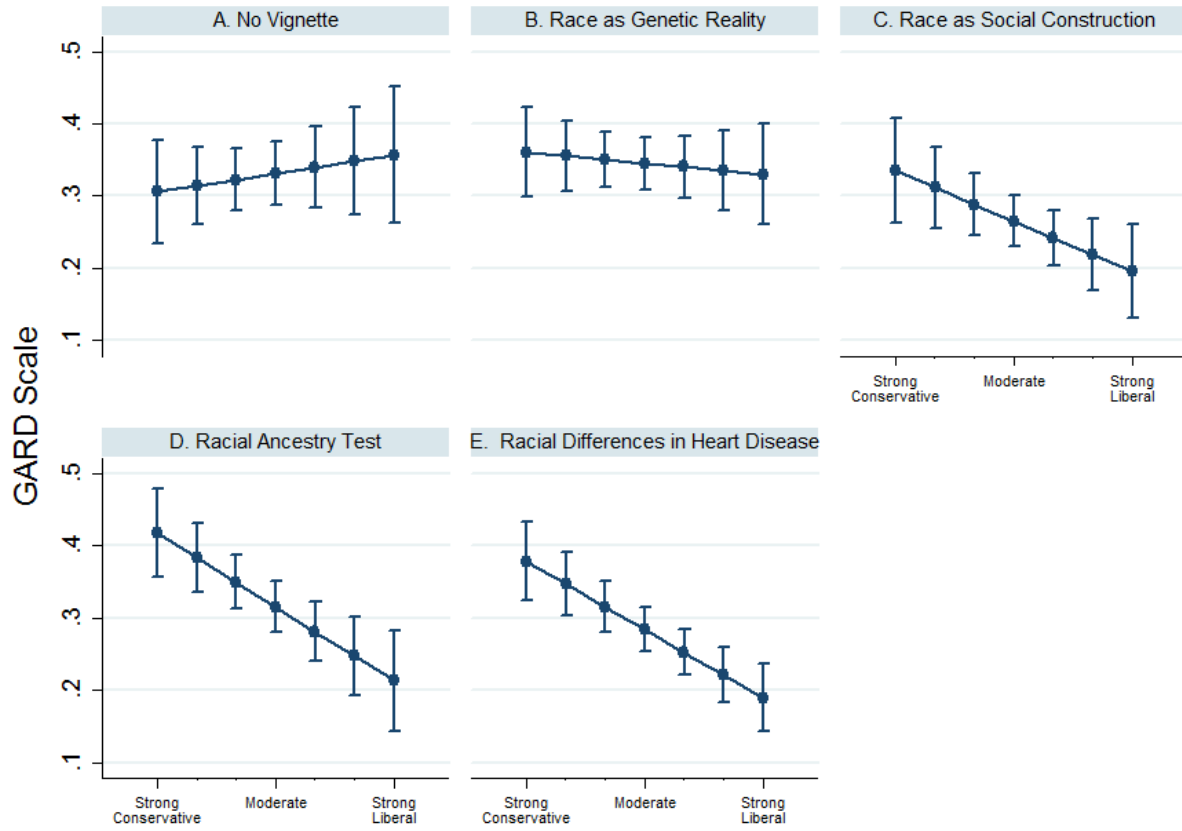
Figures

Figure 1: Interaction Effect between Ideology and News Exposure



Note: Predicted margins extracted using *margins* and *marginsplot* commands in Stata. In Figure 1A, ideology is coded as a continuous variable; in Figure 1B, it is coded with dummies.

Figure 2: Interaction Effect between Treatments and Ideology



Note: Predicted margins extracted using *margins* and *marginsplot* commands in Stata.

Appendix A: Study 1

Dependent Variable: Question Wording

Now I'd like to ask about some ways that [A: WHITES MIGHT TEND to differ from BLACKS] [B: BLACKS MIGHT TEND to differ from WHITES]. Again, people we've talked with have MANY different opinions on this, we just want to know what you HONESTLY think.

First, some people think [A: whites TEND to differ from Blacks] [B: blacks TEND to differ from whites] in how GOOD they are in ATHLETICS. Although there are MANY reasons why they might differ, do you think their genes or genetic make up has ANYTHING to do with THIS difference?

- 1 Yes
- 2 No
- 3 No difference [VOL]

In your opinion, how much of THIS difference between whites and Blacks is due to their genes? Would you say very little, some, a lot or just about all?

- 1 Very Little
- 2 Some
- 3 A lot
- 4 Just about all

Some people think [A: whites TEND to differ from Blacks] [B: blacks TEND to differ from whites] in their DRIVE TO SUCCEED. Do YOU think their genes have ANYTHING to do with THIS difference?

- 1 Yes
- 2 No
- 3 No difference [VOL]

How much of THIS difference between whites and Blacks do YOU think is due to their genes?

- 1 Very Little
- 2 Some
- 3 A lot
- 4 Just about all

Some people think [A: whites TEND to differ from Blacks] [B: blacks TEND to differ from whites] in how good they are in MATH. Do YOU think their genes have ANYTHING to do with THIS difference?

- 1 Yes
- 2 No
- 3 No difference [VOL]

How much of THIS difference do YOU think is due to their genes?

- 1 Very Little
- 2 Some
- 3 A lot
- 4 Just about all

Some people think [A: whites differ from Blacks] [B: blacks differ from whites] in their TENDENCY TO ACT VIOLENTLY. Do YOU think their genes have ANYTHING to do with THIS difference?

- 1 Yes
- 2 No
- 3 No difference [VOL]

How much of THIS difference do YOU think is due to their genes?

- 1 Very Little
- 2 Some
- 3 A lot
- 4 Just about all

Some people think [A: whites TEND to differ from Blacks] [B: blacks TEND to differ from whites] in INTELLIGENCE. Do YOU think their genes have ANYTHING to do with THIS difference?

- 1 Yes
- 2 No
- 3 No difference

How much of THIS difference do YOU think is due to their genes?

- 1 Very Little
- 2 Some
- 3 A lot
- 4 Just about all

Cross-tabulation of Ideology and Exposure to News about Genetics

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. tab ideo5 highexposure if predicted!=.
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ideo5	highexposure		Total
	Low Expos	High Expo	
Strong Liberal	69	45	114
Liberal	148	77	225
Moderate	218	98	316
Conservative	192	90	282
Strong Conservative	104	51	155
Total	731	361	1,092

Appendix B: Study 2

Dependent Variable: Question Wording

On average, black people in the U.S. have worse jobs, income, and housing than white people. There are many possible explanations for these differences. How much do you think these differences are...

...because most African Americans have less in-born ability to learn?

1. very much 2. some 3 not much 4. not at all

...because most African Americans have less in-born drive to succeed?

1. very much 2. some 3 not much 4. not at all

African-Americans are much more likely to be arrested, jailed and imprisoned in the U.S. than are whites. There are many possible explanations for these differences. How much do you think these differences are...

...due to genetic differences between blacks and whites in their tendency toward violence?

1. very much 2. some 3 not much 4. not at all

People of African descent dominate many sports, such as basketball, football and running events. There are many possible explanations for these differences. How much do you think these differences are...

...due to genetic differences between blacks and whites?

1. very much 2. some 3 not much 4. not at all

Independent Variable: Article Content

Race as Genetic Reality Article

Is Race Real? Genes Say 'Yes'

Most people would agree it is easy to tell at a glance if a person is Caucasian, African or Asian. A recent study suggests that the same racial groups we can identify do in fact correspond with broad genetic differences between groups.

Results of the study were published yesterday in the journal Nature Genetics. The study was conducted by Dr. Bruce Firman and other geneticists at Columbia University.

Dr. Firman says that racial differences exist because early humans in Africa spread throughout the world 40,000 years ago, resulting in geographical barriers that prevented interbreeding. On each continent, natural selection and the random change between generations known as genetic drift, caused peoples to diverge away from their ancestors, creating the major races.

The effects of this natural selection and genetic drift that have followed different pathways on each continent can be seen by looking at people from different racial groups as traditionally defined. Certain skin colors tend to go with certain kinds of eyes, noses, skulls and bodies.

When we glance at a stranger's face we use those associations to guess what continent, or even what country, he or his ancestors come from – and we usually get it right.

What Dr. Firman and his colleagues showed was that genetic variations that aren't written on our faces –that can be seen only in our genes – show similar patterns.

The researchers sorted by computer a sample of people from around the world into five groups on the basis of genetic similarity. The groups that emerged were native to Europe, East Asia, Africa, America and Australasia – the major races of traditional anthropology.

Hence, Dr. Firman says, "race matches the branches on the human family tree as described by geneticists."

Race as Social Construction Article

Is Race Real? Genes Say 'No'

Most people would agree it is easy to tell at a glance if a person is Caucasian, African or Asian. But a recent study suggests that it is not so easy to make these distinctions when one probes beneath surface characteristics and looks for DNA markers of "race."

Results of the study were published yesterday in the journal Nature Genetics. The study was conducted by Dr. Bruce Firman and other geneticists at Columbia University.

Analyzing the genes of people from around the world, the researchers found that the people in the sample were about 99.9 percent the same at the DNA level. "That means that the percentage of genes that vary among humans is around .01 percent, or one in ten thousand. This is a tiny fraction of our genetic make-up as humans," noted Dr. Firman.

The researchers also found that there is more genetic variation within each racial or ethnic group than there is between the average genomes of different racial or ethnic groups.

Why the discrepancy between the ease of distinguishing "racial" groups visually and the difficulty of distinguishing them at a genetic level?

Traits like skin and eye color, or nose width are controlled by a small number of genes. Thus, these traits have been able to change quickly in response to extreme environmental pressures during the short course of human history.

But the genes that control our external appearance are only a small fraction of all the genes that make up the human genome.

Traits like intelligence, artistic talent and social skills are likely to be shaped by thousands, if not tens of thousands of genes, all working together in complex ways. For this reason, these traits cannot respond quickly to different environmental pressures in different parts of the world.

This is why the differences that we see in skin color do not translate into widespread biological differences that are unique to groups and why Dr. Firman says "the standard labels used to distinguish people by 'race' have little or no biological meaning."

Racial Ancestry Test Article

Is it All Black and White? Genes Say 'No'

Most people think they know what race they belong to, and people tend to think of themselves as “100 percent” white or black or something else.

A recent study challenges that way of thinking.

Dr. Bruce Firman and other geneticists at Columbia University have developed a DNA test that measures a person’s racial ancestry.

Results of the study were published yesterday in the journal Nature Genetics.

The test shows what continent a person’s ancestors came from. These continents correspond to the major human population groups or races, those of “Native American, East Asian, South Asian, European, and sub-Saharan African” according to Dr. Firman.

If a person is of mixed race, the test shows the percentage of each race in a person’s genetic background.

It turns out that mixed ancestry is very common, said Dr. Firman. About 10 percent of European-Americans have some African ancestry, and African-Americans, on average, have about 17 percent European ancestry.

When people are told the results of their DNA test, they are usually quite surprised. Most learn that they share genetic markers with people of different skin colors.

Some “black” subjects in the study found that as much as half of their genetic material came from Europe and some from Asia. One “white” subject learned that 14 percent of his DNA came from Africa and 6 percent from East Asia. Very few were 100 percent anything.

“The main outcome is that we are breaking down an either-or classification,” Dr. Firman said. Instead of people being considered either black or white, the test shows a continuous spectrum of ancestry among African-Americans and others.

Racial Differences in Heart Disease Article

Genes May Cause Racial Difference in Heart Attacks

Doctors have long known that African Americans are prone to heart attacks. In fact, not only are African Americans more likely to suffer from heart attacks, their heart attacks are more likely to be fatal, compared to Caucasians.

A recent study suggests that genetics may help explain this racial difference.

Dr. Bruce Firman and other geneticists at Columbia University detected a version of a gene that raises the risk of heart attack in African-Americans by more than 250 percent. That means the gene more than doubles the risk of heart attack in African-Americans.

Results of the study were published yesterday in the journal *Nature Genetics*.

The gene identified by the researchers is called leukotriene A4 hydrolase. The gene is involved in inflammation.

Inflammation, which we commonly see as swelling, redness and pain, is the process by which the body responds to injury or infection. Inflammation is usually beneficial to health. But new evidence shows that inflammation plays a key role in causing heart attacks. Too much inflammation seems to damage the lining of artery walls and contribute to the buildup of fatty deposits (called plaque) inside the artery.

Plaques block the flow of blood through the arteries, leading to heart attacks. Inflammation can also cause plaques to burst, which scientists think is a cause of heart attacks.

Dr. Firman said that the gene they identified is much more strongly associated with heart attack in African-Americans than in Caucasians.

“These findings,” said Dr. Firman, “offer strong evidence that genetic factors are important in explaining the higher rates of heart attack in African Americans.”