A Troublesome Belief?
Social Inequality and Belief in Human Biological Differences

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Abstract. In A Troublesome Inheritance, Nicholas Wade speculated that biological differences might help explain inequality of outcomes between human groups. Reviewers suggested that Wade's speculations might encourage xenophobia, so this study examines correlates of the belief that group-level social inequalities can be explained at least in part by group-level biological differences. Data from the General Social Survey suggested that respondents who believed in biological differences between blacks and whites reported more progressive social views regarding interracial marriage, immigrants, and sex roles when the respondent also reported belief that humans evolved from earlier species, suggesting that persons who perceive biological differences to have resulted from divinely-guided processes might adopt more rigid attitudes toward social relations and social inequalities than persons who perceive biological differences to have resulted from natural processes.

Keywords: inequality; genetics; race; sex; biology; evolution

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In A Troublesome Inheritance: Genes, Race and Human History (2014), former New York Times science writer Nicholas Wade speculated that genetic differences caused by evolutionary mechanisms such as natural selection and genetic drift might help explain some of the variation in outcomes between human groups of different ancestries. Reviewers characterized Wade's book as "racist" (Gelman 2014) and as "making the standard case for academic racism" (Smith 2014) and suggested that Wade's speculations might foster harm:

> Wade's book isn't bad because of scientific errors (although it has its share of them), but because it offers a comprehensive thesis – one with serious social implications, including the possibility of encouraging xenophobia – without the scientific evidence to support it. (Coyne 2014)

Recent research suggesting the heritability of political attitudes and behaviors (e.g., Alford et al. 2005, Fowler et al. 2008, Hatemi et al. 2010, Klemmensen et al. 2012, and Dawes et al. 2014) has joined older research suggesting the heritability of socially-relevant traits such as intelligence (Bouchard et al. 1990) and aggression (Miles and Carey 1997). Increased public awareness of such research suggesting a biological component for trait differences – and thus outcomes – at the individual level might lead to increased belief in a biological component for trait differences and outcomes at the group level (see Sternthal et al. 2009, cited in Dar-Nimrod and Heine 2011), thus inviting analysis of the possible attitudinal consequences of an increased belief in between-group biological differences.

Using data from the 1973 Bay Area Survey, Apostle et al. (1983) investigated perceptions of racial differences, explanations for racial differences, and how these explanations correlated with prescriptions to address perceived racial differences in outcomes. Apostle et al. identified five pure modes of explanation for racial differences, presented here in order from most to least sympathetic toward policy prescriptions to reduce differences in outcomes between blacks and whites: a radical explanation, in which black disadvantage is perceived to be due to contemporary discrimination by whites; an environmental explanation, in which black disadvantage is perceived to be due to past discrimination such as slavery; a supernatural explanation, in which racial differences are perceived to be due to God; a genetic explanation, in which blacks are perceived to be naturally inferior; and an individualist explanation, in which blacks are perceived to be in control of outcomes.

The study reported below updated and extended Apostle et al. (1983) to investigate in a national sample whether social and policy attitudes correlate with the belief that biological differences cause at least part of the between-group variation in socially-relevant outcomes. Apostle et al. suggested that explanation modes can be extended to other groups (p. 220), so the analysis studied beliefs regarding whites, blacks, Asians, Hispanics, immigrants, and women.

Human Biodiversity

The term "human biodiversity" (HBD) has been used to refer to biological variation between and among humans (see Marks 1995, Sailer 2010). Belief in HBD is uncontroversial in obvious contexts at the individual level, such as within-group variation in traits such as height, and is uncontroversial in obvious contexts at the group level, such as sex differences in reproductive organs; however, HBD is more controversial for explaining group-level variation that has clear environmental influences, such as using race or ethnicity in medical diagnoses (Burchard et al. 2003) or for helping to explain racial variation in athleticism (Entine 2008, Epstein 2013) and intelligence (Herrnstein and Murray 1994, Lynn and Vanhanen 2002).

Belief in HBD is heterogeneous, and one important dimension of heterogeneity is whether perceived biological differences arise from natural or supernatural forces. Biological differences in natural HBD are presumed to have resulted from evolutionary forces such as sex selection acting within human population groups and natural selection acting upon human population groups that have reproduced in isolation or relative isolation; these evolutionary forces are presumed to have resulted in biological differences between groups and between sexes on certain traits; and these between-group and between-sex trait differences are presumed to have caused at least some of the between-group and between-sex differences in outcomes. Natural HBD is reflected in this passage from Charles Darwin (1871):

> ...without the higher powers of the imagination and reason, no eminent success in many subjects can be gained. But these latter as well as former faculties will have been developed in man, partly through sexual selection, – that is, through the contest of rival males, and partly through natural selection, that is, from success in the general struggle for life; and as in both cases the struggle will have been during maturity, the characters thus gained will have been transmitted more fully to the male than to the female offspring.

However, in supernatural HBD, between-group and between-sex biological differences are presumed to have resulted from divinely-guided processes that might have been evolutionary (theistic evolution), might have resulted from a Creator designing differences in humans (intelligent design), or might have resulted from a God causing biological differences between human sexes and between races at some point in history, such as in the Garden of Eden and at the Tower of Babel. Supernatural HBD is reflected in this remark from professional football player Reggie White in 1998:

> Why did God create us differently?...When you look at the black race, black people are very gifted in what we call worship and celebration....White people were blessed with the gift of structure and organization...Hispanics are gifted in family structure...When you look at the Asians, the Asian is very gifted in creation, creativity and inventions...And you look at the

> Indians, they have been very gifted in the spirituality. When you put all of that together, guess what it makes. It forms a complete image of God.

The key distinction between natural HBD and supernatural HBD is whether perceived biological differences have been divinely guided so that these differences and their consequences can be perceived to have been purposeful and to have a continuing purpose. Believers in supernatural HBD are expected to be less progressive regarding sex and race differences due to a belief that sex and race differences reflect biological differences that have a purpose intended by God. But believers in natural HBD are expected to be more progressive regarding sex and race differences due to a belief that sex and race differences reflect natural differences have no contemporary purpose and had no larger purpose in the past other than survival and adaptation.

The Blank Slate

The blank slate belief is reflected in the following quote from John B. Watson in 1924:

> Give me a dozen healthy infants, well-formed, and my own specified world to bring them up in and I'll guarantee to take any one at random and train him to become any type of specialist I might select – doctor, lawyer, artist, merchant-chief, and, yes, even beggar-man and thief, regardless of his talents, penchants, tendencies, abilities, vocations, and race of his ancestors (p. 82).

The core idea of the blank slate belief is that all healthy humans – and thus any subset of healthy humans – begin with the same potential, so that human inequality is unnatural. But, as Apostle et al. (1983) noted, there are multiple types of blank slate belief: an individualist blank slate belief perceives inequality to result from internal forces, so that persons and groups that lag behind are responsible for their own disadvantage; but an environmental/radical blank slate belief perceives inequality to result from external forces, so that persons and groups that lag behind are not responsible for their own disadvantage.

The key distinction between such "internal" and "external" blank slate beliefs is whether differences in outcomes are the fault – and thus the responsibility – of the persons or groups with lesser outcomes: therefore, compared to persons with an external blank slate belief, persons with an internal blank slate belief are expected to be less progressive regarding sex and race differences due to a belief that sex and race differences in outcomes reflect internal shortcomings of the disadvantaged groups.

Research Design

Analyses were conducted with release 1 of the cumulative cross-sectional dataset of the 1972-2014 General Social Survey. Cases with a non-substantive response for an included model item were listwise deleted. Models were estimated in Stata 11 and weighted with the command: svyset vpsu [pw=wtssall], strata(vstrat) singleunit(centered); the singleunit option is necessary because standard errors will not otherwise be reported due to strata

with a single sampling unit, and the centered option is the option that produces the largest standard error (Samuels 2011). Models were estimated with a least squares regression. To foster comparison across models, each non-dichotomous dependent variable and control variable was standardized so that its mean was zero and standard deviation 1. To avoid racial confounding, the sample was restricted to white respondents. Statistical significance was assessed at the 0.05 level with a two-tailed test.

Explanatory beliefs

Respondents were sorted into one of five explanatory belief categories based on responses regarding evolution and explanations for black disadvantage. Belief in human evolution was coded by combining responses from different items asked in different years. The item for 1993, 1994, 2000, and 2004 asked for a response to the statement that "Human beings developed from earlier species of animals"; responses were coded 1 for definitely true or probably true and coded 0 for probably not true and definitely not true. The item for 2006 to 2014 asked respondents to classify as true or false the statement that "Human beings, as we know them today, developed from earlier species of animals"; responses were coded 1 for true and 0 for false. The 2012 GSS included a split ballot in which some respondents were asked to classify as true or false the statement that "According to the theory of evolution, human beings, as we know them today, developed from earlier species of animals"; this item was not used in coding belief in human evolution because the item measured only awareness of the theory of evolution. Note that the GSS included items measuring belief in genetic causes of individual-level phenomena, but these items were not used because belief in HBD includes belief in a biological basis for group differences.

The items about explanations for black disadvantage were:

> On the average [Negroes / Blacks / African-Americans] have worse jobs, income, and housing than white people. Do you think these differences are...
> 1. Mainly due to discrimination?
> 2. Because most [Negroes / Blacks / African-Americans] have less in-born ability to learn?
> 3. Because most [Negroes / Blacks / African-Americans] don't have the chance for education that it takes to rise out of poverty?
> 4. Because most [Negroes / Blacks / African-Americans] just don't have the motivation or will power to pull themselves up out of poverty?

There were 3,702 cases coded white with substantive responses to the evolution item and the four black disadvantage items. Sample sizes across years were 677 cases in 1993, 575 cases in 1994, 469 cases in 2000, 547 cases in 2006, 828 cases in 2008, 208 cases in 2010, 101 cases in 2012, and 527 cases in 2014. The supernatural HBD belief category had 230 cases (6% of the total); cases were classified into this category if the respondent rejected the theory of evolution but accepted the idea that black disadvantage was due at least in part to blacks having less inborn ability to learn; no white respondent coded into the

supernatural HBD belief category reported disbelief that God exists. The natural HBD belief category had 183 cases (5% of the total); cases were classified into this category if the respondent accepted the theory of evolution and accepted the idea that black disadvantage was due at least in part to blacks having less inborn ability to learn.

The internal blank slate belief category had 1,665 cases (42% of the total); cases were classified into this category if the respondent rejected the idea that black disadvantage was due at least in part to blacks having less inborn ability to learn but accepted the idea that blacks do not have the motivation or will power to pull themselves up out of poverty. The external blank slate belief category had 1,320 cases (34% of the total); cases were classified into this category if the respondent rejected the idea that black disadvantage was due at least in part to blacks having less inborn ability to learn, rejected the idea that blacks do not have the motivation or will power to pull themselves up out of poverty, but accepted the discrimination and/or the education explanation for black disadvantage.

The remaining 534 cases (14% of the total) were placed into an unclassified belief category, indicating that the respondents had not accepted any of the four reasons for black disadvantage. Respondents who selected multiple explanations were classified as follows: any respondent who selected the inborn ability to learn explanation was classified into one of the HBD categories; any remaining respondent who selected the motivation or will power explanation was classified into the internal blank slate belief category.

Dependent variables

Dependent variables were created to measure opposition to policies designed to help blacks, opposition to interracial marriage involving whites and members of other races, opposition to living in a half-black neighborhood, support for reducing the number of immigrants to America, negative views of immigrants and immigration, and preference for traditional sex roles. Items used for the negative views of immigrants and immigration dependent variable were asked only in 1994. See the appendix for more detail on coding of the dependent variables.

Control variables

Models included control variables for: sex; age, measured from 18 to over 88; education, measured as the highest year of school completed, from 0 to 20; self-reported ideology, measured on a seven-point scale from extremely liberal to extremely conservative; frequency of prayer, measured on a six-point scale from never to several times per day; science knowledge, based on a six-item test; and fixed effects for the year of the survey. Controls for self-reported ideology, frequency of prayer, and science knowledge were included to help reduce the possibility that any observed differences between explanatory belief categories were due to differences in political ideology, religiosity, or science knowledge. See the appendix for details on the science knowledge test. Models for the negative views of immigrants and immigration dependent variable did not include the science knowledge test because the science knowledge test was not included in the 1994 GSS.

Results

Results for white respondents are presented visually in Figure 1, based on regressions with the unclassified explanatory belief category as the omitted belief category. Dependent variables are coded so that the left end of the scale indicates more progressive views, so the general pattern is that, for the four included explanatory belief categories, the external blank slate belief is the most progressive explanatory belief and the supernatural HBD belief is the least progressive explanatory belief. The natural HBD belief and the internal blank slate belief typically fall between extremes and close to each other, a pattern that is clearer in Table 1, which presents results for an omnibus scale of the dependent variables, excluding the immigration item asked only in 1994.

[Figure 1 about here]

Model 1 in Table 1 reports coefficients and standard errors for the model with the full set of controls, and Model 2 reports coefficients and standard errors for the model without controls for self-reported ideology, frequency of prayer, and scores on the science knowledge test; similarities between results for the models indicate that patterns are not influenced by the presence of the omitted controls. The natural HBD belief is the omitted category of explanatory belief in Table 1. Dependent variables in the figure and table are standardized, so the 0.51 coefficient in model 1 for supernatural HBD indicates that, compared to persons categorized as having a natural HBD belief, persons categorized as having a supernatural HBD belief are estimated to fall 0.51 standard deviations to the more progressive end of the omnibus scale.

[Table 1 about here]

Figure 2 presents results for the omnibus scale, for the four included explanatory beliefs in a model excluding the unclassified explanatory belief; results indicate that the external blank slate belief is the most progressive explanatory belief and the supernatural HBD belief is the least progressive explanatory belief, with natural HBD and the external blank slate belief in the middle.

[Figure 2 about here]

Potential Problems in the Analysis

There are several potential problems with this analysis. The measure of belief in HBD was suboptimal, incorporating a belief in socially-relevant biological differences for only one difference (race) on only one dimension (economics). Moreover, it is likely that social desirability among respondents reduced the size of membership in the HBD belief categories, but such social desirability bias should be expected to bias results for the HBD categories toward the less progressive end of the dependent variable scales, based on the expectation that persons afraid to admit to belief in HBD are likely persons who would take a softer position on the dependent variable items.

A second potential coding problem concerns theistic evolution, which can be placed into the natural HBD belief category or the supernatural HBD belief category; the GSS items

unfortunately did not permit sufficient nuance to separate theistic evolutionary beliefs into belief that God has purposefully directed evolution (more similar to supernatural HBD) and belief that God created the universe but has not provided direction to evolution (more similar to natural HBD). The present study classified believers in theistic evolution into the natural HBD belief category, so – to the extent that this coding is a misclassification – the bias would be toward reducing differences in outcomes between the HBD belief categories.

Another problem with the analysis is that the cross-sectional nature of the data does not permit strong causal inference. Suhay and Jayaratne (2013) cautioned against presuming that belief in genetic differences is causally prior to social attitudes, based on the finding that conservatives were more likely to use genetic differences to explain social inequalities but liberals were more likely to use genetic differences to explain sexual orientation; Suhay and Jayaratne concluded that "[t]hese patterns suggest that conservative and liberal ideologues will tend to endorse genetic explanations where their policy positions are bolstered by 'naturalizing' human differences" (497). Thus, the analysis reported above can establish at most only a correlation between explanatory beliefs and social and political attitudes.

Moreover, the analysis was limited to white respondents because there were relatively few non-whites coded into the HBD belief categories: for example, no dependent variable had more than an overlap of 41 black respondents coded as natural HBD, thus creating wide confidence intervals in regressions involving only black respondents. Point estimates in unreported analyses with only black respondents suggested that supernatural HBD belief might operate differently among black respondents, but an analysis of black responses deserves more data and more careful theorization about explanatory beliefs among blacks, especially given that belief in HBD was operationalized with an item about blacks' ingroup.

Discussion

Haidt (2009) proposed that "[t]he most offensive idea in all of science for the last 40 years is the possibility that behavioral differences between racial and ethnic groups have some genetic basis." Believers in human biodiversity (HBD) do not categorically exclude genetic differences in explaining at least part of observed race and sex differences in socially-relevant outcomes, so it is not surprising that HBD has been characterized as racist (Erasmussimo 2013, Myers 2014): in particular, the belief that racial differences in certain outcomes is attributable to blacks having less inborn ability to learn has been classified as "old-fashioned racial prejudice" (Virtanen and Huddy 1998), "classical racism" (Federico and Sidanius 2002), and "racism" (Renfro et al. 2006); even attributing black outperformance in athletics to biological differences has been viewed negatively, as a white legitimizing myth (Sheldon et al. 2007: 34-35).

But Brown et al. (2009) called it a "mistake" to equate old-fashioned prejudice with "genetic thinking about racial categories" (p. 5), noting that "belief in genetic difference does not necessarily imply black inferiority or white superiority" (p. 7). Contemporary belief in HBD differs from old-fashioned prejudice at least in the sense that old-fashioned prejudice is associated with a naïve white supremacism that perceives whites to be superior to all other racial groups on all important traits, while a belief common in

contemporary HBD circles is that statistical evidence indicates that persons of European descent fall between persons of East Asian descent and African descent on many socially-relevant traits, such as mean intelligence levels and mean sociability (Rushton 1995, Rushton and Jensen 2005: 265). Construing contemporary belief in HBD as a white legitimizing myth is more difficult when believers in HBD place East Asians and Africans at the positive end of a continuum for many important traits.

However, some research has found that belief in HBD does positively correlate with old-fashioned prejudice: Jayaratne et al. (2006) and Brown et al. (2009) reported evidence that white respondents' belief in black-white genetic differences positively correlated to old-fashioned prejudice and modern anti-black prejudice. But belief that a group difference is genetic in origin does not necessarily predict prejudice against that group: belief in a genetic origin for sexual orientation positively correlated with lower levels of prejudice against gays and lesbians (Jayaratne et al. 2006) and was the strongest predictor of positive feelings about gays and lesbians and of support for pro-gay policies (Haider-Markel and Joslyn 2008).

The analysis reported above followed Apostle et al. (1983) by separating belief in HBD into belief in supernatural HBD directed by God and belief in natural HBD resulting from evolutionary mechanisms. Important differences emerged between the two types of HBD: compared to persons categorized as believing in supernatural HBD, persons categorized as believing in natural HBD were estimated to be more supportive of racial intermarriage, to have more positive views of immigrants and immigration, and to have less preference for traditional sex roles.

The progressiveness of the natural HBD belief relative to the supernatural HBD belief conflicts with patterns reported in the Apostle et al. (1983) analysis of the 1973 Bay Area Survey, with sampling and cross-time change as likely sources of difference between the two studies. But the relative progressiveness of the natural HBD belief makes sense if supernatural HBD reflects a belief that race and sex differences result from a divine purpose and thus need not or should not be changed, while natural HBD reflects a belief that race and sex differences result from a happenstance naturalistic processes that had no larger purpose than adaptation to foster survival. The potential rigidity of the supernatural HBD belief is reflected in the statement of a trial judge in the Loving case involving Virginia laws to punish marriages between white persons and colored persons:

> Almighty God created the races white, black, yellow, malay and red, and he placed them on separate continents. And, but for the interference with his arrangement, there would be no cause for such marriage. The fact that he separated the races shows that he did not intend for the races to mix. (Cited in the 1967 US Supreme Court decision in Loving v. Virginia)

Progress in genetic research might implicitly foster more widespread belief in HBD, and books such as A Troublesome Inheritance might explicitly foster more widespread belief in HBD, so it is important to understand the consequences of belief in HBD on social attitudes.

Research reported above indicated heterogeneity in the potential consequences, with natural HBD often associated with more progressive views than supernatural HBD and with similar views to the internal blank slate belief. Therefore, predicting change in social attitudes based on an increased belief in a biological basis for race and sex differences depends on the particular change in belief: change from an external blank slate belief is expected to lead to less progressive views overall, change from a supernatural HBD belief is expected to lead to more progressive views overall, and change from an internal blank slate belief is expected to be an overall wash.

One important area for future research is the cognitive correlation between belief in HBD and policy preferences. Belief in HBD might suggest certain policies, but belief in HBD does not necessarily compel particular policy preferences; for example, Sailer (2010) noted that the belief that genetic differences cause between-sex and between-race variation in elite sprinter speed can be used to support segregation of 100-meter-dash contestants by sex but does not need to be used to support segregation of 100-meter-dash contestants by race.

Belief that biological differences have caused observed differences in group outcomes could be interpreted as a strong justification for remedial and affirmative action programs that address group differences, based on the principle that such programs are necessary to produce equal opportunities. Belief in natural HBD might be especially persuasive for conservatives, who typically oppose remedial and affirmative action programs but support the principle of equality of opportunity. However, increased belief in HBD might also produce negative outcomes, such as stronger stereotyping, so more research is needed with better measures to better understand the causes and consequences of belief in HBD.

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Appendix

Dependent variable measurement

1. Opposition to policies designed to help blacks was measured with these items: (1) "Some people say that because of past discrimination, blacks should be given preference in hiring and promotion. Others say that such preference in hiring and promotion of blacks is wrong because it discriminates against whites. What about your opinion – are you for or against preferential hiring and promotion of blacks?" Responses were coded on a four-point scale from strongly support to strongly oppose. (2) "Some people think that [Blacks/Negroes/African-Americans] have been discriminated against for so long that the government has a special obligation to help improve their living standards. Others believe that the government should not be giving special treatment to [Blacks/Negroes/African-Americans]. Where would you place yourself on this scale, or haven't you made up your mind on this?" Responses were coded on a five-point scale from no special treatment to special treatment. (3) "We are faced with many problems in this country, none of which can be solved easily or inexpensively. I'm going to name some of these problems, and for each one I'd like you to tell me whether you think we're spending too much money on it, too little money, or about the right amount. [...] Are we spending too much, too little, or about the right amount on [improving the conditions of Blacks / assistance to blacks]?" Responses were coded as too much, about right, and too little. These three items were used to create a scale, which had a Cronbach's alpha of 0.63 for white respondents coded into one of the five explanatory belief categories; observations were retained only if the respondent issued substantive responses on at least two items; scale items were standardized before summation. Data for this dependent variable overlap with the explanatory belief categories in years 2006, 2008, 2010, 2012, and 2014.

2. Opposition to interracial marriage between whites and members of other races was measured with a set of items of the form: "How about having a close relative or family member marry a(n) [white/black/Asian American/Hispanic American] person?" Responses were coded on a five-point scale from strongly favor to strongly oppose; responses to the white item were subtracted from the [black/Asian American/Hispanic American] item. Data for this dependent variable overlap with the explanatory belief categories in years 2006, 2008, 2010, 2012, and 2014.

3. Opposition to living in a half-black neighborhood was measured with this item: "Now I'm going to ask you about different types of contact with various groups of people. In each situation would you please tell me whether you would be very much in favor of it happening, somewhat in favor, neither in favor nor opposed to it happening, somewhat opposed, or very much opposed to it happening? Living in a neighborhood where half of your neighbors were blacks?" Responses were coded on a five-point scale from strongly favor to strongly oppose. Data for this dependent variable overlap with the explanatory belief categories in years 2006, 2008, 2010, 2012, and 2014.

4. Support for reducing immigration was measured with the item: "Do you think the number of immigrants from foreign countries who are permitted to come to the United States to live should be increased a lot, increased a little, left the same as it is now, decreased a little, or decreased a lot?" Data for this dependent variable overlap with the explanatory belief categories in years 2006, 2008, 2010, 2012, and 2014.

5. Negative views of immigrants and immigration was constructed from these items that appeared on the 1994 GSS: (1) "What do you think will happen as a result of more immigrants coming to this country? Is each of these possible results very likely, somewhat likely, not too likely, or not at all likely? Higher economic growth"; (2) "...Higher unemployment"; (3) "...Making it harder to keep the country united"; (4) "Under current law, immigrants who come from other countries to the United States legally are entitled, from the very beginning, to government assistance such as Medicaid, food stamps, or welfare on the same basis as citizens. But some people say they should not be eligible until they have lived here for a year or more. Which do you think? Do you think that immigrants who are here legally should be eligible for such services as soon as they come, or should they not be eligible?" Responses were coded as eligible or not eligible. (5) "What about 'undocumented aliens,' that is, those who have immigrated to this country illegally? Should illegal immigrants be entitled to work permits, or not?" Responses were coded as Yes, entitled or No, not entitled; (6) "Should they be entitled to attend public universities at the same costs as other students, or not?" Responses were coded as Yes, entitled or No, not entitled; (7) "Should they be entitled to have their children continue to qualify as American citizens if born in the United States, or not?" Responses were coded as Yes, entitled or No, not entitled; (8) "Immigrants are getting too demanding in their push for equal rights." Responses were coded on a five-point scale from strongly agree to strongly disagree; (9) "The Irish, Italians, Jews, and many other minorities overcame prejudice and worked their way up. Today's immigrants should do the same without any special favors." Responses were coded on a five-point scale from strongly agree to strongly disagree. These nine items were used to create a scale, which had a Cronbach's alpha of 0.72 for white respondents coded into one of the five explanatory belief categories; observations were retained only if a respondent issued substantive responses on at least five items; scale items were standardized before summation. Data for this dependent variable overlap with the explanatory belief categories only in year 1994.

6. Preference for traditional sex roles was constructed from these items: (1) "Tell me if you agree or disagree with this statement: Most men are better suited emotionally for politics than are most women." Responses were coded on a two-point scale from disagree to agree; (2) "If your party nominated a woman for President, would you vote for her if she were qualified for the job?" Responses were coded as no or yes; (3) "It is much better for everyone involved if the man is the achiever outside the home and the woman takes care of the home and family." Responses were coded on a five-point scale from strongly agree to strongly disagree; (4) "A working mother can establish just as warm and secure a relationship with her children as a mother who does not work." Responses were coded on a five-point scale from strongly disagree to strongly agree; and (5) "A preschool child is likely to suffer if his or her mother works." Responses

were coded on a five-point scale from strongly disagree to strongly agree. These five items were used to create a scale, which had a Cronbach's alpha of 0.71 for white respondents coded into one of the five explanatory belief categories; observations were retained only if the respondent issued substantive responses on at least three items; scale items were standardized before summation. Data for this dependent variable overlap with the explanatory belief categories in years 2006, 2008, 2010, 2012, and 2014.

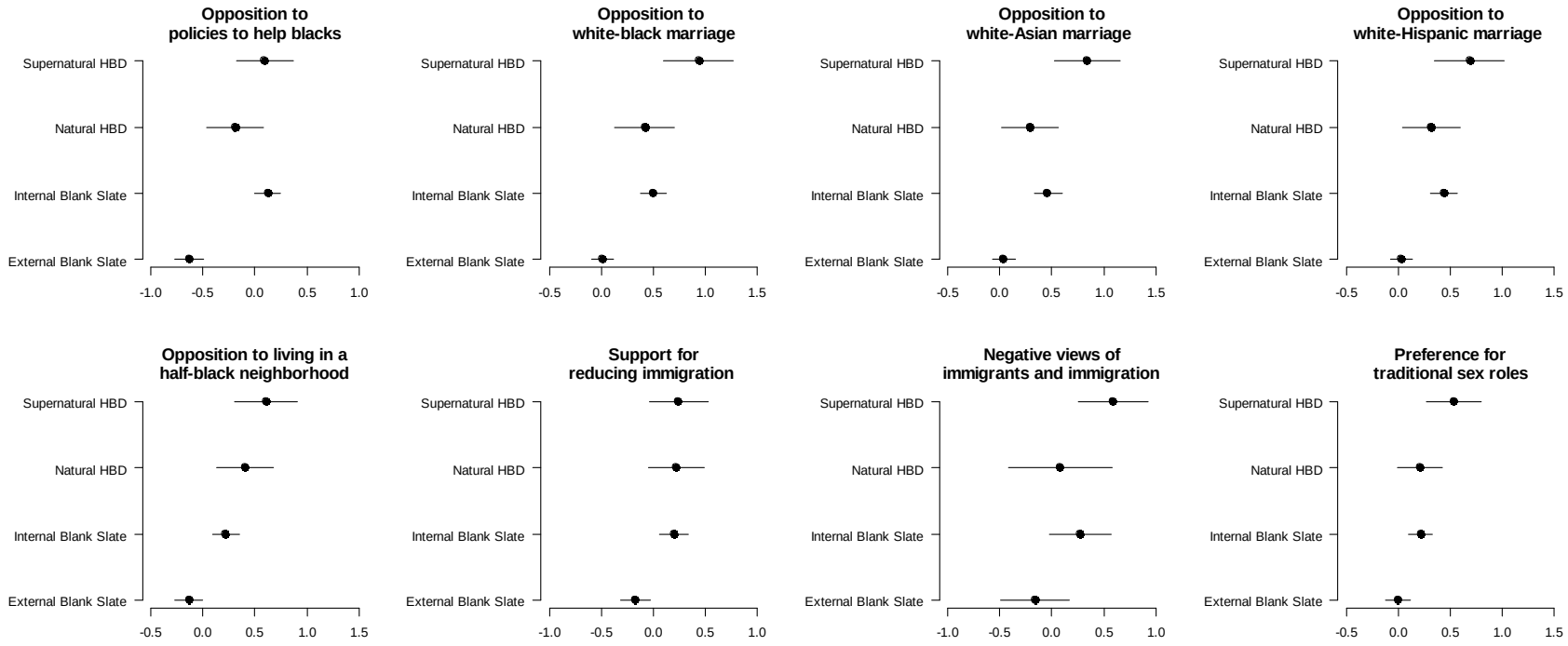
7. An omnibus scale was created from the dependent variable items except for the immigration scale that was available only in 1994. The scale had a Cronbach's alpha of 0.77 for white respondents coded into one of the five explanatory belief categories; observations were retained only if the respondent issued substantive responses on at least four items; scale items were standardized before summation. Data for this dependent variable overlap with the explanatory belief categories in years 2006, 2008, 2010, 2012, and 2014.

Science knowledge test

Science knowledge was measured with six items that appeared on the GSS from 2006 to 2014, with a non-substantive response such as don't know coded as an incorrect response; the six items, with introduction, were:

> Now, I would like to ask you a few short questions like those you might see on a television game show. For each statement that I read, please tell me if it is true or false. If you don't know or aren't sure, just tell me so, and we will skip to the next question. Remember true, false, or don't know.
> 1. First, the center of the Earth is very hot. Is that true or false?
> 2. All radioactivity is man-made. (Is that true or false?)
> 3. Lasers work by focusing sound waves. (Is that true or false?)
> 4. Electrons are smaller than atoms. (Is that true or false?)
> 5. Antibiotics kill viruses as well as bacteria. (Is that true or false?)
> 6. Now, does the Earth go around the Sun, or does the Sun go around the Earth?

For this study, the science knowledge test excluded items measuring an understanding of experimental design and probability; the test also excluded items measuring knowledge about the big bang, continental drift, and evolution, because these items tap religious belief instead of pure science knowledge (Roos 2012); the test excluded an item measuring the length of the time it takes the Earth to orbit the Sun because this question "double counted" the concept measured in the sixth item; the test excluded an item measuring knowledge of whether it is the father's gene that decides whether the baby is a boy or a girl, because that item was asked of fewer respondents that the six included items.



Data source: Release 1 of the cumulative cross-sectional dataset of the 1972-2014 General Social Survey. White respondents only. See LJ Zigerell. 2015. A Troublesome Belief? Social Inequality and Belief in Human Biological Differences. Working paper.

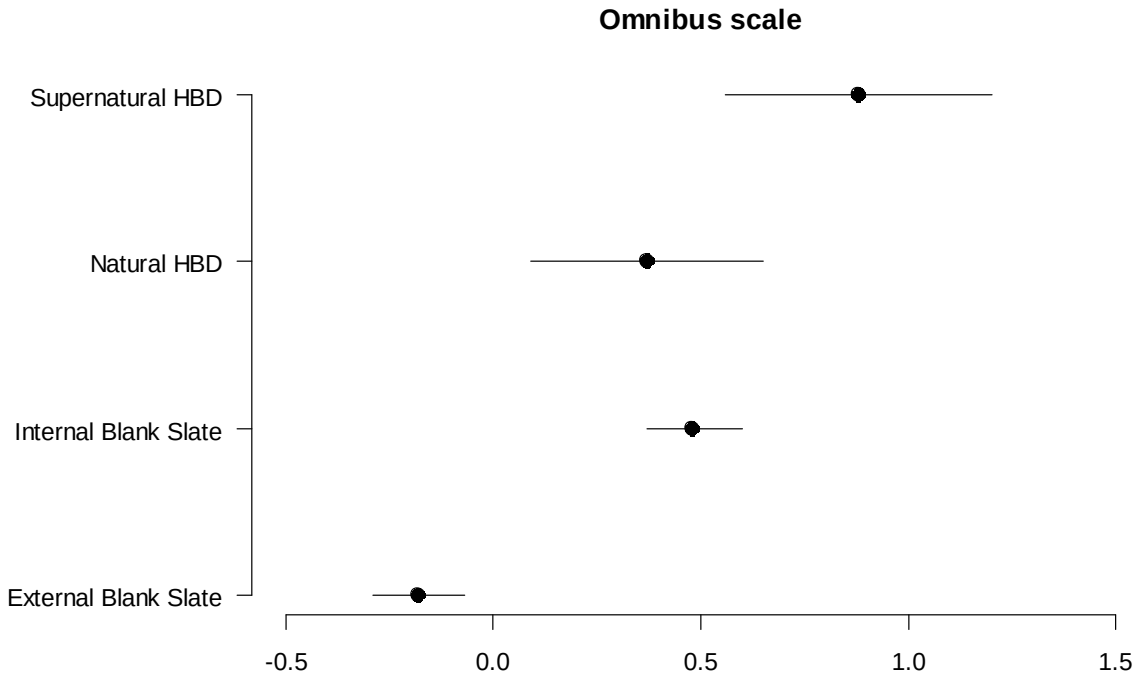
Figure 1

Note: Figure presents point estimates and 95% confidence intervals for models with the uncategorized explanatory belief as the omitted category. Dependent variables are measured on a standardized scale, with a mean of 0 and a standard deviation of 1. Lower values on the scale indicate more progressive views on race and sex. Results are for white respondents only.

Table 1

	(1)	(2)
	Omnibus dependent variable (whites only)	Omnibus dependent variable (whites only)
Supernatural HBD	**0.51*** **(0.20)**	**0.59*** **(0.19)**
Internal blank slate	0.11 (0.14)	0.16 (0.14)
External blank slate	**-0.56*** **(0.14)**	**-0.65*** **(0.14)**
Unclassified belief	**-0.37*** **(0.14)**	**-0.33*** **(0.14)**
Female	-0.06 (0.05)	-0.06 (0.04)
Age	**0.15*** **(0.02)**	**0.16**** **(0.02)**
Education	**-0.10*** **(0.02)**	**-0.12*** **(0.02)**
Conservatism	**0.22*** **(0.02)**	---
Frequency of prayer	0.04 (0.02)	---
Science knowledge	-0.03 (0.03)	---
Constant	0.02 (0.14)	0.03 (0.13)
Observations	2149	2199
R^2	0.314	0.257

Note: Dependent variable is a scale of the dependent variables excluding the immigration scale that was available only in 1994; the dependent variable is coded with lower values indicating more progressive views. Natural HBD is the omitted category of explanatory belief. Standard errors are in parentheses. Bold font and asterisks indicate coefficients that are statistically significant at $p<0.05$, with a two-tailed test. Fixed effects for the year of the survey were included in the model but not reported; the omitted year was 2014. Results are for white respondents only.



Data source: Release 1 of the cumulative cross-sectional dataset of the 1972-2014 General Social Survey. White respondents only. See LJ Zigerell. 2015. A Troublesome Belief? Social Inequality and Belief in Human Biological Differences. Working paper.

Figure 2

Note: Figure presents point estimates and 95% confidence intervals for models with the uncategorized explanatory belief as the omitted category. The dependent variable is the omnibus scale and is measured on a standardized scale, with a mean of 0 and a standard deviation of 1. Lower values on the scale indicate more progressive views. Results are for white respondents only.