Social Problems, 2016, 63, 21–45
doi: 10.1093/socpro/spv028
Advance Access Publication Date: 8 January 2016
Article

OXFORD

Are Smart People Less Racist? Verbal Ability, Anti-Black Prejudice, and the Principle-Policy Paradox

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ABSTRACT

It is commonly hypothesized that higher cognitive abilities promote racial tolerance and a greater commitment to racial equality, but an alternative theoretical framework contends that higher cognitive abilities merely enable members of a dominant racial group to articulate a more refined legitimizing ideology for racial inequality. According to this perspective, ideological refinement occurs in response to shifting patterns of racial conflict and is characterized by rejection of overt prejudice, superficial support for racial equality in principle, and opposition to policies that challenge the dominant group's status. This study estimates the impact of verbal ability on a comprehensive set of racial attitudes, including anti-black prejudice, views about black-white equality in principle, and racial policy support. It also investigates cohort differences in the effects of verbal ability on these attitudes. Results suggest that high-ability whites are less likely than low-ability whites to report prejudicial attitudes and more likely to support racial equality in principle. Despite these liberalizing effects, high-ability whites are no more likely to support a variety of remedial policies for racial inequality. Results also suggest that the ostensibly liberalizing effects of verbal ability on anti-black prejudice and views about racial equality in principle emerged slowly over time, consistent with ideological refinement theory.

KEYWORDS: racial attitudes; prejudice; affirmative action; group conflict; verbal ability.

Cognitive ability—broadly defined as a set of mental skills that allow an individual to learn from experience, adapt to new situations and solve problems, understand and manipulate abstract concepts, and use knowledge to act on the environment—is widely held to have a profoundly liberalizing influence on racial attitudes (Adorno et al. 1950; Allport 1958; Bobo and Licari 1989; Deary, Batty, and Gale 2008; Dhont and Hodson 2014; Hodson and Busseri 2012; Kanazawa 2010; Schoon et al. 2010). According to the "enlightenment perspective," higher cognitive ability promotes tolerance of racial out-groups and a sincere commitment to racial equality. Indeed, several studies now provide evidence that higher cognitive ability is associated with lower anti-black prejudice, lower

A previous version of this article was presented at the 2013 American Sociological Association Annual Meeting in New York. This research was supported by the National Science Foundation Graduate Research Fellowship under Grant No. DGE 0718128 and by the National Institute of Child Health and Human Development under Grant Nos. T32 HD007339 and R24 HD041028 to the Population Studies Center at the University of Michigan. Direct correspondence to: Geoffrey T. Wodtke, Department of Sociology, University of Toronto, 725 Spadina Avenue, Toronto, ON M5S SJ4, Canada. E-mail: geoffrey.wodtke@utoronto.ca.

authoritarianism, greater tolerance of out-groups, and greater support for egalitarian values among whites (Bobo and Licari 1989; Deary et al. 2008; Hodson and Busseri 2012; Kanazawa 2010).

The "ideological refinement perspective," by contrast, contends that cognitively sophisticated members of a dominant racial group are no more committed to racial equality than their peers with lower ability (Jackman 1978, 1981, 1994; Jackman and Muha 1984). They are, however, better equipped to understand, analyze, and act on their group interests; to develop effective legitimizing ideologies for extant inequalities; and to articulate an astute defense of their social position. According to this perspective, high-ability members of a dominant group avoid overtly prejudicial views about subordinate groups because these attitudes have the potential to inflame intergroup relations and provoke challenges to the status quo. Instead, they placate subordinate group members by avoiding these inflammatory attitudes and by offering superficial support for racial equality in principle. But given their keen awareness of group interests, dominant group members with higher cognitive ability are no more likely to support concrete efforts to overcome the inequalities from which they benefit.

The ideological refinement perspective also contends that the effects of cognitive ability on racial attitudes are related to the evolving nature of intergroup conflict. When subordinate group members are more compliant parties to unequal social relations, overtly prejudicial attitudes that highlight supposedly categorical distinctions between races may be readily used by dominant group members to justify their social position. On the other hand, when a subordinate group aggressively challenges their unequal social position, prejudicial attitudes may come to be perceived as derogatory and their expression risks further inflaming dominant-subordinate relations. This perspective therefore anticipates that the liberalizing effects of cognitive ability on anti-black prejudice emerged slowly over time, and particularly after the civil rights movement, as black resistance to their subordinate status increasingly threatened extant relations of racial inequality in the United States.

Prior studies provide important evidence on the association between cognitive ability and racial attitudes, but they are limited by their focus on a single racial attitude domain—overt prejudice—and by their inattention to differences across time in the effects of cognitive ability on these attitudes. Reliance on measures of racial attitudes that do not examine a constellation of views on prejudice, principles of equality, and policy remediation of inequality, and that are used with a narrow range of birth cohorts or in time-invariant analyses, precludes testing of more complex hypotheses from the ideological refinement perspective about the link between cognitive ability and dynamic, multidimensional racial ideologies.

This study provides new evidence on the enlightenment and ideological refinement perspectives by investigating the effects of one particular dimension of cognitive ability—namely, verbal ability, defined as the subset of skills related to understanding and analyzing language-based information—on a more comprehensive set of racial attitudes and by investigating cohort differences in these effects. Specifically, it analyses the effects of verbal ability on not only anti-black prejudice but also on views about racial segregation in principle, perceptions of discrimination, and support for a variety of racial policies. With a more extensive set of attitude measures from birth cohorts spanning most of the twentieth century, this study provides a more rigorous investigation into whether verbal ability promotes a commitment to racial egalitarianism or whether it instead promotes a more refined legitimizing ideology for racial inequality.

I begin by discussing the theoretical and empirical foundations of the enlightenment and ideological refinement perspectives. In these sections, I outline the core premises and propositions of each theory, review prior studies that have attempted to assess these different frameworks, and develop a set of hypotheses that is used to adjudicate between them. Then, with data on whites' attitudes from the 1972-2010 waves of the General Social Survey (GSS), I estimate total and cohort-specific effects of verbal ability on anti-black prejudice, attitudes toward racial segregation, and racial policy support.

Results from these analyses indicate that whites with higher verbal ability, compared to those with lower ability, are less likely to report negative prejudicial attitudes toward blacks, are more likely to

support racial integration in principle, and are more likely to acknowledge discrimination against blacks. But despite these liberalizing effects, whites with higher verbal ability are generally no more likely to support open housing laws, government aid for blacks, tax incentives for businesses to locate in largely black areas, and targeted spending on predominantly black schools, and they are significantly less likely to support school busing programs and preferential hiring policies, compared to their counterparts with lower verbal ability. Furthermore, results suggest significant cohort differences in these effects. The liberalizing impact of verbal ability on anti-black prejudice and on views about racial equality in principle are much less pronounced, and in some instances completely absent, among cohorts born well before the civil rights movement. Nontrivial effects of verbal ability on these attitudes emerge only among more recent birth cohorts. These findings are difficult to reconcile with the enlightenment perspective and are more consistent with the ideological refinement perspective, although I also consider several alternative explanations for this pattern of effects.

COGNITIVE ABILITY AND THE ENLIGHTENMENT PERSPECTIVE

That lower cognitive ability is linked to prejudicial attitudes is something of a cultural truism in the United States, and variants of the enlightenment perspective have motivated nearly all recent research on the attitudinal effects of cognitive ability (Costello and Hodson 2014; Deary et al. 2008; Hodson and Busseri 2012; Kanazawa 2010; Schoon et al. 2010). This perspective is premised on the view that racial prejudice is the direct efflux of a narrow-minded, uninformed, and inegalitarian world outlook. Prejudice is defined as antipathy toward an out-group "based upon a faulty and inflexible generalization" (Allport 1958:9). In other words, prejudice and negative intergroup attitudes result directly from individual ignorance and mental rigidity. Based on this conception of intergroup negativism, the hypothesis that higher cognitive ability breaks down prejudice and promotes more egalitarian racial attitudes naturally follows.

More concretely, the enlightenment perspective contends that higher cognitive ability reduces intergroup negativism and promotes a sincere commitment to racial equality for a number of specific reasons. First, higher cognitive ability facilitates a more complete understanding of the complex causes of intergroup inequality and a deeper awareness of the dangers of prejudice (Hodson and Busseri 2012; Schuman et al. 1997). Second, it enables individuals to adopt multiple perspectives and process information from different points of view (Deary et al. 2008; Hodson and Busseri 2012). Third, it allows individuals to process large amounts of information without relying on rigid simplifying ideologies that emphasize categorical and hierarchical absolutes (Deary et al. 2008; Hodson and Busseri 2012). Finally, more advanced cognitive abilities are thought to engender a "genuine concern for the welfare of genetically unrelated others and [a] willingness to contribute larger proportions of private resources for the welfare of such others," possibly as a result of evolutionary adaptations and constraints (Kanazawa 2010:38).

Similarly, the enlightenment perspective also posits that individuals with lower cognitive ability gravitate toward authoritarian ideologies, which offer a psychological sense of stability and order. Authoritarian ideologies are thought to provide a cognitive lens for distilling complex social information without the expenditure of significant mental energy. By emphasizing resistance to change, simple answers, and strict boundaries between groups, authoritarian ideologies promote prejudicial attitudes and staunch resistance to efforts aimed at attenuating group-based inequalities (Adorno et al. 1950; Hodson and Busseri 2012).

An emerging body of empirical evidence is largely consistent with the claims of enlightenment theory. Several studies document strong negative associations between "general intelligence" (i.e., a weighted average of scores from several batteries of cognitive ability tests) and a composite measure of racial prejudice based on scaled responses to statements about personal comfort with being around other races (Deary et al. 2008; Hodson and Busseri 2012). Similarly, higher verbal ability is associated with greater tolerance of nonconformist groups (Bobo and Licari 1989). These effects persist even

after controlling for the potentially confounding influence of education and parental socioeconomic status. Evidence also suggests that the negative association of cognitive ability with prejudicial attitudes is mediated by authoritarian and liberal political ideologies, where those with low cognitive ability are more likely to endorse authoritarian views and less likely to endorse liberal views (Kanazawa 2010), which in turn predict higher levels of prejudice. The enlightenment perspective posits that these effects are genuine and do not merely reflect reluctance to express prejudicial views based on greater attentiveness to social norms among those with higher ability (Hodson and Busseri 2012).

Although these studies provide important evidence about the relationship between cognitive ability and racial attitudes, they are not without limitations. First, previous studies have thus far focused on but one of many different dimensions of intergroup attitudes: overt racial prejudice. This narrow focus provides an incomplete assessment of the link between cognitive ability and complex racial ideologies. Second, previous studies are based primarily on data from a narrow range of cohorts born during or after the 1950s or on time-invariant analyses, which precludes an investigation of potential heterogeneity in the attitudinal effects of cognitive ability among individuals socialized at different points in time. Several older studies (e.g., Adorno et al. 1950; O'Connor 1952; Rokeach 1951) document negative bivariate correlations between cognitive ability and the so-called "E scale"—a broad composite measure of ethnocentric, nationalistic, and isolationist attitudes—among small convenience samples of adults born in the 1920s and 1930s. These correlations, however, are generally quite weak, and several of the convenience samples with the highest ability levels also exhibit the highest levels of ethnocentrism, leading the authors to conclude that "the present results do contradict seriously one of the commonly held theories of prejudice and fascism, namely, that they are supported out of simple stupidity, ignorance or confusion" (Adorno et al. 1950:216). These findings suggest the importance of investigating temporal heterogeneity in the attitudinal effects of cognitive ability.

In a related literature dealing with the effects of education on racial attitudes, evidence also indicates that focusing exclusively on racial prejudice while ignoring attitudes toward racial equality in principle and toward racial policies may generate overly simplified conclusions. For example, a large body of evidence indicates that, compared to whites with lower levels of education, highly educated whites are more likely to reject negative stereotypes, to endorse norms of racial equality, and to accept racial integration in principle, but are no more likely to support affirmative action policies (Glaser 2001; Jackman 1978, 1994, 1996; Jackman and Muha 1984; Schaefer 1996; Schuman et al. 1997; Wodtke 2012). Although education and cognitive ability are closely related, they are fundamentally distinct concepts with unique and separable effects on intergroup attitudes (Bobo and Licari 1989; Hodson and Busseri 2012; Kanazawa 2010). No prior studies investigate the effects of cognitive ability on a multidimensional set of racial attitudes net of the potentially confounding influence of education.

GROUP CONFLICT AND IDEOLOGICAL REFINEMENT

Ideological refinement theory was originally developed to better understand the effects of education on intergroup attitudes (Jackman 1978, 1981, 1994; Jackman and Muha 1984), but several of its core arguments can be adapted to generate hypotheses about the effects of cognitive ability on racial attitudes. This perspective is premised on group conflict theory (Blumer 1958; Bobo 1988; Bobo, Kluegel, and Smith 1997; Bonilla-Silva 2006; Jackman and Muha 1984; Tilly 1978). Group conflict involves a competition over status, power, and resources in which distinct social groups attempt, not only to gain these desired values, but also to "affect, change, or injure rivals" (Bobo 1988:91). The dominant group controls a disproportionately large share of the desired resources, while subordinate groups lack commensurate status, power, and resources. Dominant and subordinate group members have objective interests that emerge from the shared advantages or disadvantages linked to their position in the social hierarchy. At a simple level, members of the dominant group have an objective interest in maintaining their advantaged social position, and subordinate group members have an interest in challenging their disadvantaged social position.

According to this perspective, negative intergroup attitudes are not merely consequences of a narrow-minded, uninformed, and inflexible world outlook. Rather, prejudicial attitudes are viewed as elements of racial ideologies developed to legitimize extant relations of inequality. Dominant groups routinely develop norms, values, and beliefs that serve their interests. This ideology is developed without contrivance. It flows naturally from the desire of dominant group members to impose a sense of order on patterns of social interaction and to view the unequal social relations from which they benefit as appropriate and equitable (Jackman and Muha 1984:759). Racial prejudice and negative stereotypes, then, are not "anachronistic expressions of deficiencies in socialization or personality" (Jackman and Muha 1984:759). Instead, they are thought to be part of dominant group efforts to reproduce their advantaged social position.

The ideological refinement perspective contends that higher cognitive abilities are unlikely to promote a genuine commitment to racial equality because these abilities do not liberate dominant group members from the interests imposed by intergroup conflict. On the contrary, advanced cognitive abilities are anticipated to promote a heightened awareness of group interests and to provide the intellectual means for articulating a more sophisticated defense of those interests. They equip dominant group members "to promote their interests more astutely—indeed, to become state-of-the-art apologists for their group's social position" (Jackman and Muha 1984:752).

The means by which dominant groups attempt to maintain unequal social relations are linked to the nature of intergroup conflict. When subordinate group members are more compliant parties to unequal social relations, the dominant group may justify these inequalities in terms of the supposedly distinct qualities of the groups involved. However, when subordinate group members are more resistant parties to unequal social relations, legitimizing ideologies based on assertions of categorical group differences may become imbued with derogatory implications and "inject dangerous venom" into a potentially explosive dominant-subordinate relationship (Jackman and Muha 1984:759). If resistance from subordinate group members begins to threaten extant relations of inequality, the dominant group seeks to mollify their discontent while making as few concrete concessions as possible. To this end, they may avoid inflammatory assertions of categorical group differences but still attempt to undercut subordinate group efforts to restructure relations of inequality by drawing on seemingly race-neutral values, such as respect for individual rights and meritocracy, to deny the validity of group rights and group-based remediation policies (Jackman 1994; Jackman and Muha 1984).

Individualism and meritocratic values provide dominant group members with an ostensibly principled means to deny the validity of group-based redistributive policies and transform them into weaker policies aimed at equal treatment and opportunity enhancement. Within a highly imbalanced intergroup competition over resources, however, the provision of equal individual rights and meritocratic standards conveys a major competitive advantage to the dominant group and works to perpetuate their advantaged position (Parkin 1971). Moreover, advanced cognitive abilities are not thought to promote a truly race-neutral commitment to individualism and meritocracy; rather, dominant group members with higher abilities are anticipated to selectively draw on race-neutral values to delegitimize only those policies that directly challenge their social position.

In sum, ideological refinement theory posits that advanced cognitive abilities do not engender a sincere commitment to racial equality, as hypothesized by enlightenment theory, but instead promote a more refined defense of extant racial inequalities and sophisticated ideational resistance to measures that challenge these inequalities, particularly when subordinate group activism poses a threat to the dominant group's advantaged position. This defense is characterized by avoidance of overt prejudice, superficial endorsement of racial equality in principal, and opposition to concrete efforts aimed at remediating racial inequality (Jackman and Muha 1984).

The ideological refinement perspective is related to several other theories that address temporal, but not cognitive, differences in whites' racial attitudes. For example, symbolic racism theory (Kinder and Sears 1981), racial resentment theory (Kinder and Sanders 1996), laissez-faire racism theory (Bobo et al. 1997), and color-blind racism theory (Bonilla-Silva 2006) all argue that a new form of

racism—not captured by conventional measures of overt prejudice—emerged among whites in response to shifting norms and new patterns of intergroup conflict during the second half of the twentieth century. These new forms of racism differ from each other in subtle ways, but they all involve some type of resistance to efforts at ameliorating racial inequality based on seemingly principled values instead of overtly prejudicial attitudes. These "new racism" theories, however, do not provide explicit hypotheses about the effects of cognitive ability on racial attitudes. Ideological refinement theory compliments and extends these perspectives by specifying a role for cognitive ability in the emergence of new forms of racism.

HYPOTHESES

Based on the foregoing theoretical discussion, several hypotheses can be derived about the effects of verbal ability on racial attitudes. This study focuses specifically on the effects of *verbal* ability because the GSS does not regularly measure the constellation of mental skills that compose the broader concept of cognitive ability. Although the enlightenment and ideological refinement perspectives focus more generally on cognitive ability, the subset of mental skills that make up verbal ability is intimately related to this broader concept and thus expected to have similar effects on racial attitudes (Miner 1957; Wolfle 1980).

The enlightenment hypothesis anticipates that higher verbal ability among whites is associated with rejection of anti-black prejudice, support for racial equality in principle, acknowledgement of discrimination, and support for policies designed to overcome discrimination and realize racial equality in practice. The ideological refinement hypothesis, on the other hand, contends that whites with higher levels of verbal ability, compared to their peers with lower ability, are more likely to reject prejudicial attitudes, support racial equality in principle, and acknowledge discrimination; however, unlike the enlightenment hypothesis, verbal ability is expected to have no effect, or perhaps even a negative effect, on support for racial policies. Because opportunity-enhancing policies, such as race-targeted investment in education, are more consistent with individualistic values and are less threatening to whites' social position than are redistributive policies, such as workplace racial preferences, support for the latter is expected to be particularly low among whites with higher verbal ability.

With respect to cohort differences in the effects of verbal ability, enlightenment theory does not provide explicit predictions. Most of the mechanisms thought to transmit the liberalizing effects of verbal ability involve intricate mental processes, such as the ability to organize complex information without relying on rigid hierarchical schema. These mental processes should operate, at least to some degree, independently of shifting patterns of intergroup conflict. Furthermore, if racial prejudice is ultimately based on faulty and inflexible modes of information processing, then individuals with higher verbal ability should still be less prone to this type of erroneous processing regardless of the normative environment during their early socialization. Finally, the enlightenment perspective suggests that the liberalizing impact of verbal ability on prejudicial attitudes does not merely reflect differential sensitivity to social norms, which implies that this effect should be robust across time periods with different normative environments. Thus, based on enlightenment theory arguments, it is reasonable to infer that the liberalizing effects of verbal ability on racial attitudes should be relatively invariant across cohorts born at different points in the twentieth century. Although the overall level of prejudice may change with time, those with higher ability are anticipated to be much less prejudiced than those with lower ability among all cohorts considered in this analysis.

The ideological refinement perspective, by contrast, suggests that the link between verbal ability and racial attitudes is contingent upon the state of dominant-subordinate relations, which implies a combination of period and cohort differences in the attitudinal effects of verbal ability. Specifically, as blacks challenged their subordinate position throughout the twentieth century, culminating in the sweeping reforms associated with the civil rights movement, ideological refinement theory anticipates that whites—and cognitively sophisticated whites in particular—adapted to these challenges by

softening their prejudicial attitudes, but not their opposition to racial policies, in an effort to placate black discontent while making as few concessions as possible. Thus, during the time frame examined in this study, ideological refinement theory predicts that verbal ability has a minimal impact on anti-black attitudes among older cohorts born well before the civil rights movement and a strong negative impact on the same attitudes among more recent birth cohorts.

This study focuses on cohort differences in the effects of verbal ability on racial attitudes because prior research indicates that these attitudes are formed during an early period of political socialization and are relatively invariant thereafter (Alwin, Cohen, and Newcomb 1991; Alwin and Krosnick 1991; Sears and Funk 1999). This suggests that cohort variability in these effects is substantially greater than period variability. In addition, the GSS simply lacks the data needed for a rigorous analysis of period differences in the attitudinal effects of verbal ability. Because it was not fielded until well after the civil rights movement, the GSS lacks the most appropriate comparison group—individuals interviewed before the 1950s and 1960s—needed to estimate the hypothesized period differences.

METHODS

Data

I use data from white respondents to the 1972-2010 waves of the GSS (Smith et al. 2011). The GSS is a repeated cross-sectional survey based on a series of independent nationally representative samples. It was conducted annually from 1972 to 1994, except in 1979, 1981, and 1992, and biannually thereafter. As an omnibus national opinion survey, the GSS collects information on a broad range of topics, including respondent demographics, racial attitudes, policy support, and cognitive abilities. Some of the core questions in the GSS are asked of all respondents in every wave of the survey, while other items are asked of only a random subset of respondents or are only included in the survey periodically. The 1972-2010 independent cross-sections contain information on a total of 44,873 white respondents, but because the GSS uses a rotational split-ballot design, sample sizes vary by outcome and are smaller in most analyses (see Table 2 for details).[1] I focus on white respondents because the GSS does not collect information on the requisite variables from sufficiently large samples of non-white groups.

Variables

The response variables used in this analysis fall into several interrelated attitude domains: anti-black prejudice, views about black-white equality in principle, perceptions of discrimination, and opinions toward both redistributive and opportunity-enhancing racial policies. Part A of the Online Appendix[2] provides the exact questions used to measure each response variable.

The first set of response variables measure several dimensions of anti-black prejudice. Two of these items ask respondents to rate the work ethic and intelligence of blacks on seven-point scales spanning "lazy" ("unintelligent") to "hard-working" ("intelligent"). Values on these scales are collapsed into binary variables coded 1 for an anti-black response (i.e., a score less than 4, the neutral response category), and 0 otherwise. In addition, I use two items that probe attitudes about living in a neighborhood where half the residents are black and about a family member marrying a black person. Responses on the five-point favorability scales are coded as binary variables equal to 1 if a respondent reports being "somewhat" or "very much" opposed to living in a racially integrated neighborhood (or to racial intermarriage), and 0 otherwise.

1 This sample includes a small number of ethnic Hispanics who racially identify as white. The GSS did not include questions about Hispanic ethnicity until the 2000 survey wave, which precludes an analysis focusing only on non-Hispanic whites because they cannot be consistently identified over time. Where appropriate, I control for Hispanic ethnicity among respondents interviewed in 2000 or later to attenuate possible biases due to the introduction of a Spanish language questionnaire.

2 See Online Appendix.

To measure views about black-white equality in principle, I focus on two survey items. The first item asks respondents to evaluate the statement that "white people have a right to keep blacks out of their neighborhoods." This item is recoded into a binary variable indicating that the respondent feels "white people do not have a right to segregate their neighborhoods," with the value 1 denoting a response of "disagree strongly" or "disagree slightly" on the original four-point scale, and 0 representing a response of "agree strongly" or "agree slightly." The second item asks whether respondents think black and white students should attend the same schools or separate schools. This item is coded as a binary variable, with 1 indicating a response of "same schools" and 0 indicating a response of "separate schools."

In addition to measuring respondents' views about racial equality in principle, I also measure perceptions of racial discrimination using two questions that ask whether blacks are discriminated against "a lot," "some," "only a little," or "not at all" in the labor and housing markets. These variables are recoded dichotomously such that 1 represents a response of "a lot" or "some," and 0 represents "only a little" or "not at all."

The last set of response variables measures support for different policies designed to redress racial segregation, discrimination, and other inequalities. The GSS asks respondents about their support for several different redistributive policies, including special government aid for blacks, school busing programs, and racial preferences in employment. The GSS also asks respondents about several policies that are better described as opportunity enhancing rather than redistributive, including open housing laws, tax incentives for employers to locate near predominantly black neighborhoods, and targeted spending on education in predominantly black schools. The different response scales used to measure opinions about these policies are each recoded into binary variables, with 1 denoting a favorable attitude toward the policy in question and 0 representing a neutral or unfavorable attitude.

Where appropriate, the stereotype, principle, and policy response variables were also coded and analyzed as ordinal outcomes. In addition, anti-black stereotypes were measured and analyzed as stereotype difference scores, which give the difference between a respondent's attitude toward blacks and his or her attitude toward whites. Ordinal logistic regression models of these outcomes yield results similar to those based on the binary coding scheme described previously. For simplicity, I focus on results from the more parsimonious models of binary outcomes, which also neatly capture the distinction between negative and non-negative responses crucial for testing the enlightenment and ideological refinement perspectives. Results from more complex ordinal logistic regression models are reported in Part B of the Online Appendix and discussed briefly in the results section where appropriate.

Verbal ability is the explanatory variable of interest in this study. To measure this concept, the GSS regularly administers an abbreviated version of the Gallup-Thorndike Verbal Intelligence Test (GTVIT), a short vocabulary test developed for use in survey research (Thorndike 1942). This test consists of ten vocabulary questions in which respondents are asked to choose the one word out of five possible matches that comes closest in meaning to a reference word. Correct responses are summed to yield a final score that ranges from 0 to 10. The GTVIT has been widely used in time-series analyses of verbal ability (e.g., Alwin 1991; Alwin and McCammon 1999;Yang and Land 2006, 2008) and in studies of political attitudes (e.g., Bobo and Licari 1989; Kanazawa 2010). Before 1988, the GTVIT was administered every other year to the full sample. Since then, the test has been administered every year to a random subset of the full sample. In multivariate analyses below, test scores are standardized to have zero mean and unit variance.

Although it is narrowly designed to measure but one dimension of cognitive ability—specifically, crystallized verbal ability, or the collection of language-based information acquired through experience and stored in memory (Cattell 1963; Thorndike 1942)—the GTVIT is capable of revealing important information about the relationship between the broader construct of cognitive ability and racial attitudes for several reasons. First, tests of verbal ability are highly correlated with more comprehensive assessments of cognitive ability. For example, John Miner (1957) assembled 36 different

studies that compared vocabulary tests with measures of "general intelligence" and found a median correlation of .83. Consistent with these findings, Lee Wolfle (1980) reported a correlation of .71 between the GTVIT and the more comprehensive Army General Classification Test. Second, in 1994, the GSS also included an abbreviated version of the "similarities" subtest from the Wechsler Adult Intelligence Scale-Revised (WAIS-R), which measures another dimension of cognitive ability—namely, abstract reasoning ability (Wechsler 1981). Reliability-adjusted correlations between this measure and the GTVIT range from .59 to .61 in the GSS (Huang and Hauser 1998). More importantly, parallel analyses of the relationship between the WAIS-R "similarities" subtest and racial attitude items included in the 1994 wave of the GSS yield results that are very similar to those based on the GTVIT. These ancillary findings are summarized in Part C of the Online Appendix. Thus, despite its simplicity and limited focus on verbal ability, the GTVIT possesses favorable psychometric properties and appears to be a reasonable proxy measure for the more general construct of cognitive ability, at least for the purposes of this analysis.

The control variables included in multivariate analyses are age, period, cohort, gender, region, respondent education, mother's education, father's education, and father's occupational prestige.[3] Age is measured in years, and period is expressed as the survey year. Cohort is equal to the decade in which a subject was born, which ranges from 1880 to 1990 in the full time series. Measuring cohort in decades rather than single years, while retaining single-year measurements of age and period, overcomes the under-identification problem in age-period-cohort models (Yang and Land 2006, 2008).[4] In some analyses, cohort is treated not only as a control variable but also as a moderating variable for the effect of verbal ability on racial attitudes (effect moderation occurs when one variable dampens or amplifies the effect of another variable). Gender is dummy coded, 1 for female and 0 for male. Region is expressed as a series of dummy variables for residence in the "East" (excluded category), "South," "Midwest," and "West." A respondent's education, as well as that of his or her mother and father, is measured as years of completed schooling. Father's occupational prestige scores come from the Hodge-Siegel-Rossi rating system, which assigns scores based on respondent estimates of the relative social standing of different occupations (Siegel 1971).[5] For all variables, missing values due to item-specific nonresponse are simulated using multiple imputation with ten replications, and all reported estimates are based on the combined results (Rubin 1987).[6]

Analyses

I estimate logistic regression models for the effects of verbal ability on anti-black prejudice, views about racial equality in principle, perceptions of discrimination, and support for different racial

3 Analyses of racial attitudes often control for measures of political ideology or partisanship. I avoid this practice because these variables are mediators, rather than confounders, for the effect of verbal ability on racial attitudes (Hodson and Busseri 2012; Kanazawa 2010), and controlling for mediators may induce bias in effect estimates due to over control of intermediate pathways and endogenous selection (Elwert 2013). Respondent education is likely both a mediator and a confounder because verbal ability simultaneously affects success in school and is also affected by schooling. This study lacks the longitudinal data needed to control only for the confounding influence, and not the mediating role, of education. Robustness checks that treated education solely as a mediator and ignored its confounding influence by excluding it from all regression equations yield estimates for the effects of verbal ability that are similar to those reported in the main text.

4 By including single-year measures for age and period together with a multi-year measure of cohort in all regression equations, this analysis uses a version of the fixed-effects specification for age-period-cohort models proposed by Yang and Land (2008). Experimentation with different specifications indicated that a linearity constraint on the age, period, and cohort fixed effects provides a suitable fit to the data. All results are based on this specification.

5 The GSS did not include questions about mother's occupation until later waves of the survey. Thus, mother's occupational prestige cannot be consistently measured for all sample members and is excluded from the analysis.

6 Multiple imputation is a procedure in which missing data are replaced with $m > 1$ values simulated from a set of multivariate regression models (Royston 2005). Each of the m simulated data sets is then analyzed separately using standard methods, and the results are combined to produce estimates and standard errors that account for the uncertainty of missing data. Multiple imputation is preferable to listwise deletion and single imputation methods because it avoids loss of statistical power, is unbiased under a weaker set of assumptions about the missing data mechanism, and does not overstate the precision of estimates.

policies, controlling for the factors described previously. To investigate potential non-monotonicity in the effects of verbal ability on racial attitudes, I fit models with linear, quadratic, cubic, and tertile dummy variable specifications for verbal ability. In most cases, the more complex specifications with nonlinear terms do not significantly improve model fit, so I focus on results from the specification with only a linear term for verbal ability. In models of redistributive policy attitudes, however, the effects of verbal ability are non-monotonic. Thus, for these attitudes, I also report results from a specification based on dummy variables encoding tertiles of the verbal ability distribution. This specification provides a fit to the data comparable to polynomial specifications but is much easier to interpret. Together, these analyses permit an investigation of the net effects of verbal ability on racial attitudes and allow for an examination of differences in these effects across attitude domains.

To investigate cohort differences in the effects of verbal ability on racial attitudes, I estimate more complex logistic regression models that additionally include interaction terms between cohort and verbal ability.[7] Experimentation with a variety of specifications for the cohort by ability interaction indicated that a single cross-product term generally provided the best balance between goodness of fit and model parsimony. To facilitate interpretation of these interactions, I plot the estimated proportion of respondents that hold a particular racial attitude by verbal ability level and cohort for selected response variables.

Some of the response variables considered in this analysis were only included in a single wave of the GSS and therefore lack the time-series data structure needed to properly examine cohort differences in the attitudinal effects of verbal ability. In particular, questions about perceptions of racial discrimination, tax incentives for employers, and race-targeted spending on schools were only asked in the 1990 survey. Analyses of cohort differences are limited to those response variables that were regularly included in the GSS over time.

RESULTS

Sample Characteristics

The first column in Table 1 summarizes demographic and socioeconomic characteristics for the total sample. Overall, the sample is 56 percent female, and the average respondent is 46.5 years old, completed 12.9 years of schooling, and correctly answered about 6 out of 10 verbal ability test questions. Descriptive statistics also indicate that a cohort analysis of effect heterogeneity spanning most of the twentieth century is well supported in the GSS. The right-hand columns of Table 1 present sample characteristics separately by tertiles of the verbal ability distribution, revealing stark differences between these groups. High-ability respondents in the third tertile are more likely to be female and are also typically older, have higher levels of education, and come from more advantaged families.

Anti-Black Prejudice and the Principle-Policy Paradox

The first column of Table 2 presents descriptive statistics about anti-black prejudice, views on segregation and discrimination, and racial policy attitudes for the total sample. Several patterns are evident in these data. First, prejudicial attitudes about blacks' work ethic are more prevalent than prejudicial attitudes about blacks' intelligence. Second, white respondents are more likely to support opportunity-enhancing policies, such as open housing laws, than they are to support redistributive policies, such as racial preferences. This pattern of differential policy support likely reflects the greater consistency of opportunity-enhancing policies with individual rights and the lower threat posed by

7 To investigate the robustness of cohort-moderated effects of verbal ability, I also estimated models that additionally included interaction terms between cohort and respondent's years of education. Estimates for the moderated effects of verbal ability from these more flexible specifications are very similar to those based on the more parsimonious models reported in the main text. This indicates that changes in the attitudinal effects of verbal ability across cohorts cannot simply be reduced to the potentially confounding effects of education.

Table 1. Sample Characteristics

Variable	*Total Sample*	*Verbal Ability Tertiles*		
		1st	*2nd*	*3rd*
Region, percent				
East	19.8	17.1	18.9	24.5
South	32.9	38.3	32.2	27.2
Midwest	27.3	27.6	28.6	25.2
West	20.0	16.9	20.3	23.2
Sex, percent				
Male	44.1	47.3	42.3	42.6
Female	56.0	52.7	57.8	57.4
Cohort, percent				
$\leq$ 1929	24.1	28.0	20.6	24.1
1930-1949	29.7	25.8	28.8	35.9
1950-1969	36.6	35.8	39.6	33.6
$\geq$ 1970	9.6	10.4	11.1	6.5
Age, mean	46.5	46.7	45.0	48.3
Education, mean	12.9	11.2	13.1	14.9
Father's education, mean	10.4	9.0	10.7	11.8
Mother's education, mean	10.7	9.5	10.9	11.8
Father's occ. status, mean	42.2	39.0	42.4	45.7
Verbal ability score, mean	6.3	4.0	6.4	8.8
N	21,695	7,387	8,340	5,968

Notes: Data come from white respondents to the 1972-2010 waves of the General Social Survey that included the verbal ability test. Results are combined estimates from ten multiple imputation data sets.

opportunity-enhancing policies for whites' access to desired resources. Third, these data reveal a disconnect between views on racial segregation and discrimination, and attitudes toward policies designed to remedy these problems. For example, although 88.8 percent of white respondents say that blacks and whites should attend the same schools, only 23.2 percent support school busing programs designed to integrate segregated districts. Similarly, 71.4 percent of white respondents acknowledge that blacks face "some" or "a lot" of discrimination in the labor market, but only 11.8 percent support racial preferences in employment.

The right-hand columns of Table 2 present descriptive statistics on racial attitudes separately for tertiles of the verbal ability distribution. With respect to anti-black prejudice, whites with higher cognitive ability are less likely than those with lower ability to report prejudicial attitudes toward blacks. For example, 45.7 percent of whites in the first tertile of the verbal ability distribution report that "blacks are lazy," while 38.8 percent and 28.8 percent of whites in the second and third tertiles, respectively, report the same attitude. A similar pattern holds for attitudes about blacks' intelligence, opposition to black neighbors, and opposition to racial intermarriage.

Attitudinal differences across verbal ability levels are also evident with respect to views on racial segregation and discrimination. Results indicate that high-ability whites are more likely than low-ability whites to reject residential segregation in principle, support school integration in principle, and acknowledge racial discrimination in the labor and housing markets. For example, 63.1 percent of whites in the first tertile of the verbal ability distribution report that "whites have no right to segregate neighborhoods," while 75.5 percent of whites in the second tertile and 84.9 percent of whites in the third tertile report the same view.

Although high-ability whites are much less likely to report prejudicial attitudes against blacks and much more likely to support racial equality in principle compared with low-ability whites, Table 2 reveals only small differences across verbal ability levels in support for redistributive policies designed to realize racial equality in practice. In several cases, whites with higher verbal ability are actually less likely than low-ability whites to support these policies. For example, 27.0 percent of whites in the first tertile of the verbal ability distribution support school busing programs, while only 22.4 percent of whites in the third tertile support this policy. Table 2 also suggests a non-monotonic, U-shaped association between verbal ability and redistributive policy attitudes, where whites in the second tertile of the verbal ability distribution tend to be the least supportive of these policies.

By contrast, the pattern of support for opportunity-enhancing policies across verbal ability levels is somewhat different. The unadjusted estimates in Table 2 indicate that whites with higher ability tend to be more supportive of open housing laws, tax incentives for businesses to locate near black areas, and race-targeted spending on schools than whites with lower ability. These results suggest that the effects of cognitive ability on racial policy support may hinge on whether the policy adopts an opportunity enhancing versus redistributive approach to remediating racial inequality. In several cases, however, the unadjusted association between cognitive ability and support for opportunity-enhancing policies appears to be quite modest.

In sum, whites with higher verbal ability are less likely to report prejudicial attitudes toward blacks, more likely to endorse racial equality in principle, and more likely to acknowledge labor market discrimination against blacks, but they are no more likely than whites with lower verbal ability to support redistributive policies and only somewhat more likely to support fairly benign opportunity-enhancing policies. As a result, the principle-policy paradox—that is, the disconnect between attitudes

Table 2. Anti-Black Prejudice, Views on Segregation and Discrimination, and Racial Policy Attitudes

Variable	*Total Sample*		*Verbal Ability Tertiles*		
	N	*Percent*	*1st*	*2nd*	*3rd*
Anti-black prejudice					
Blacks are unintelligent	5,705	18.3	22.6	18.5	13.2
Blacks are lazy	6,493	38.1	45.7	38.8	28.8
Oppose having black neighbors	5,705	29.3	35.0	28.9	23.5
Oppose black-white intermarriage	5,705	37.5	46.7	36.9	28.0
Attitudes toward segregation and discrimination					
Whites have no right to segregate nhoods	8,465	73.6	63.1	75.5	84.9
Blacks and whites should attend same schools	3,935	88.8	81.6	91.2	95.8
Blacks face labor market discrimination	779	71.4	65.0	71.1	79.3
Blacks face housing market discrimination	779	72.7	69.3	71.7	78.0
Racial policy attitudes (redistributive policies)					
Support government aid for blacks	9,882	13.2	12.6	10.9	17.3
Support school busing programs	12,026	23.2	27.0	20.1	22.4
Support racial preferences in employment	6,938	11.8	15.2	8.2	13.1
Racial policy attitudes (opportunity-enhancing policies)					
Support open housing laws	10,637	52.2	48.2	53.5	55.4
Support tax incentives for business in black areas	400	44.2	39.5	40.9	54.0
Support spending more on black schools	400	65.5	59.3	62.0	77.5

Notes: Data come from white respondents to the 1972-2010 waves/ballots of the General Social Survey that included racial attitude items and the verbal ability test. Results are combined estimates from ten multiple imputation data sets.

toward racial equality in principle and attitudes toward policies designed to realize racial equality in practice—is more pronounced among high-ability whites than among low-ability whites.

Net Effects of Verbal Ability on Racial Attitudes

Table 3 contains results from multivariate logistic regression models that provide estimates of verbal ability effects on anti-black prejudice and views about segregation and discrimination, net of the confounding influence of gender, education, family background, and so on. The first column reports log odds ratios that give the additive effect of a one standard deviation increase in verbal ability on the log odds of a particular attitudinal response, holding other variables in the model constant. To ease interpretation, the second and third columns of Table 3 also report odds ratios and marginal effects (i.e., average partial derivatives), respectively. Note that one standard deviation on the verbal ability test is equal to about two correct answers.

The upper panel in Table 3 contains estimates for the net effects of verbal ability on anti-black prejudice. These estimates indicate that whites with higher ability are significantly less likely than comparable whites with lower ability to report prejudicial attitudes against blacks. For all four prejudicial attitudes considered in this analysis, a one standard deviation increase in verbal ability is estimated to reduce the odds of reporting a negative attitude toward blacks by about 20 to 25 percent. This equates to an average decrease of about 4 to 5 percentage points in the probability of reporting a negative attitude toward blacks for a one standard deviation increase in verbal ability. These results indicate that verbal ability has a substantial negative effect on anti-black prejudice.

It is important to note, however, that results reported in Part B of the Online Appendix suggest that the effects of verbal ability on anti-black prejudice are somewhat more complex than is indicated by these binary logistic regression models. Partial proportional odds models of prejudicial attitudes measured using their original ordinal response scales suggest that the effects of verbal ability differ substantially across the range of response values. Specifically, these estimates indicate that high-ability whites gravitate toward the middle, or neutral, response category, while low-ability whites are more likely to provide extreme responses on either side of the attitude scale. Despite these irregularities, results from ordinal logistic regression models also indicate that high-ability whites, but not low-ability whites, avoid explicitly anti-black responses.

Table 3. Effects of Verbal Ability on Anti-Black Prejudice and Attitudes toward Segregation and Discrimination

Variable	*LOR (SE)*	*OR (SE)*	*Marginal Effects (SE)*
Anti-black prejudice			
Blacks are unintelligent	−.252 (.044)***	.778 (.035)***	−.036 (.006)***
Blacks are lazy	−.205 (.033)***	.815 (.027)***	−.046 (.007)***
Oppose having black neighbors	−.225 (.038)***	.798 (.030)***	−.043 (.007)***
Oppose black-white intermarriage	−.285 (.040)***	.752 (.030)***	−.053 (.007)***
Attitudes toward segregation and discrimination			
Whites have no right to segregate nhoods	.331 (.034)***	1.392 (.047)***	.055 (.005)***
Blacks and whites should attend same schools	.407 (.065)***	1.502 (.097)***	.033 (.005)***
Blacks face labor market discrimination	.297 (.101)**	1.346 (.136)*	.057 (.019)**
Blacks face housing market discrimination	.203 (.107)†	1.225 (.132)†	.039 (.020)†

Notes: Data come from white respondents to the 1972-2010 waves/ballots of the General Social Survey that included racial attitude items and the verbal ability test. Effect estimates are based on logistic regression models that control for age, period, cohort, geographic region, education, father's education, mother's education, and father's occupational status. Results are combined estimates from ten multiple imputation data sets.

$^{\dagger}p < .10$ $^{*}p < .05$ $^{**}p < .01$ $^{***}p < .001$ (two-sided tests of no effect)

The lower panel in Table 3 contains estimates for the net effects of verbal ability on attitudes about racial segregation and discrimination. These estimates indicate that verbal ability generally has statistically significant and substantively large positive effects on support for residential and school integration in principle and on acknowledgment of racial discrimination. For example, a one standard deviation increase in verbal ability is estimated to increase the odds of reporting that "whites have no right to segregate their neighborhoods" by about 40 percent. This equates to an average increase of about 6 percentage points in the probability of reporting that "whites have no right to segregate their neighborhoods" associated with a one standard deviation increase in verbal ability.

Table 4 contains estimates for the net effects of verbal ability on attitudes toward redistributive and opportunity-enhancing racial policies. Despite the strong liberalizing impact of verbal ability on anti-black prejudice, views about racial equality in principle, and perceptions of discrimination, estimates for the net effects of verbal ability on racial policy attitudes indicate that whites with higher ability are generally no more likely than comparable whites with lower ability to support remedial policies for racial inequality.

The upper panel of Table 4 presents estimates from models of redistributive policy attitudes. Results based on the simple specification with a linear term for verbal ability suggest that its effects on support for redistributive policies are either close to zero or negative, net of other factors. For example, according to these estimates, a one standard deviation increase in verbal ability reduces the odds of supporting school busing programs and workplace racial preferences by about 15 to 20 percent.

Table 4. Effects of Verbal Ability on Racial Policy Attitudes

Variable	*LOR (SE)*		*OR (SE)*		*Marginal Effects (SE)*	
Redistributive policy attitudes						
Support government aid for blacks						
Linear term specification	.051	(.038)	1.052	(.040)	.006	(.004)
Dummy variable specification						
2nd ability tertile (versus 1st tertile)	−.260	(.080)***	.771	(.062)***	−.029	(.009)***
3rd ability tertile (versus 1st tertile)	.214	(.088)*	1.239	(.110)*	.024	(.010)*
Support school busing programs						
Linear term specification	−.191	(.027)***	.826	(.022)***	−.032	(.004)***
Dummy variable specification						
2nd ability tertile (versus 1st tertile)	−.515	(.058)***	.597	(.035)***	−.087	(.010)***
3rd ability tertile (versus 1st tertile)	−.335	(.068)***	.715	(.048)***	−.056	(.011)***
Support racial preferences in employment						
Linear term specification	−.146	(.046)**	.865	(.040)***	−.015	(.005)**
Dummy variable specification						
2nd ability tertile (versus 1st tertile)	−.719	(.101)***	.487	(.049)***	−.074	(.010)***
3rd ability tertile (versus 1st tertile)	−.181	(.107)†	.835	(.089)†	−.018	(.011)†
Opportunity-enhancing policy attitudes						
Support open housing laws	.037	(.025)	1.038	(.026)	.008	(.006)
Support tax incentives for business in black areas	−.079	(.134)	.924	(.123)	−.018	(.030)
Support spending more on black schools	.133	(.146)	1.143	(.167)	.027	(.030)

Notes: Data come from white respondents to the 1972-2010 waves/ballots of the General Social Survey that included racial attitude items and the verbal ability test. Effect estimates are based on logistic regression models that control for age, period, cohort, geographic region, education, father's education, mother's education, and father's occupational status. Results are combined estimates from ten multiple imputation data sets.

$^{\dagger}p < .10$ $^{*}p < .05$ $^{**}p < .01$ $^{***}p < .001$ (two-sided tests of no effect)

These estimates, however, obscure a non-monotonic, U-shaped association between verbal ability and support for redistributive policies, where those in the middle of the verbal ability distribution are significantly less likely than both their higher and lower ability peers to report favorable attitudes toward these policies. This association is captured by models that parametrize the effects of verbal ability using tertile dummy variables. For example, estimates based on this specification indicate that whites in the second and third tertiles of the verbal ability distribution have about 50 percent and 20 percent lower odds, respectively, of supporting workplace racial preferences compared with whites in the first tertile. A similar pattern of effects is observed for attitudes toward school busing and government aid for blacks, although with respect to government aid, whites in the third tertile are actually more supportive of this policy than their low-ability counterparts in the first tertile. The magnitude of this effect, however, is substantively trivial, as an increase in verbal ability from the first to the third tertile is estimated to increase support for race-targeted government aid by an average of just 2 percentage points.

The non-monotonic pattern of effects on redistributive policy attitudes may reflect differences in the degree to which these policies threaten the socioeconomic position of whites with varying levels of ability. For example, this finding is consistent with previous research indicating that highly educated whites are not particularly threatened by racial preferences in employment because they are relatively insulated from competition in the labor market; they are, however, much more sensitive to racial preferences in college admissions because they perceive these policies to pose a more direct threat to the status attainment of their children (Glaser 2001). Similarly, high-ability whites may be better insulated from racial competition in the labor market; whites of middling ability may find themselves competing with blacks over jobs subject to racial preference policies more frequently; and low-ability whites may be disproportionately concentrated in low-wage labor markets where such policies are uncommon. In this situation, whites of average ability would exhibit the lowest levels of policy opposition, followed by their high- and low-ability counterparts, if these attitudes were to reflect variations in group threat. Nevertheless, although group threat likely varies non-monotonically with verbal ability among whites, this explanation remains speculative absent more detailed data.

The lower panel of Table 4 presents estimates from models of opportunity-enhancing policy attitudes, for which there is little evidence of non-monotonic effects. Even with respect to comparatively benign opportunity-enhancing policies like open housing laws and tax incentives to attract businesses to black areas, high-ability whites are no more supportive of these policies than similar whites with lower abilities. While point estimates suggest nonzero liberalizing effects of verbal ability on race-targeted education spending and open housing laws, these effects are substantively small and do not approach conventional significance thresholds.

Moderated Effects of Verbal Ability on Racial Attitudes by Birth Cohort

Table 5 presents estimates of cohort differences in the effects of verbal ability on anti-black prejudice and views about segregation and discrimination, controlling for age, period, demographic characteristics, education, and family background. These estimates come from more complex logistic regression models that include interaction terms between cohort and verbal ability. The interaction coefficients and standard errors in the left-hand columns of the table test whether the effects of verbal ability differ across cohorts. In the right-hand columns of the table, log odds ratios and Wald tests quantifying the net effects of verbal ability are reported for selected birth cohorts. These estimates identify the cohorts for which verbal ability has significant effects on racial attitudes.

Results from the cohort interaction models provide considerable evidence that the liberalizing effects of verbal ability on anti-black prejudice emerged primarily among more recent birth cohorts socialized during or after the civil rights movement. The cohort by ability interaction terms in models of prejudicial attitudes are generally significant and negative, indicating that the liberalizing effect of verbal ability is larger among more recent cohorts than among older cohorts. For example, among

Table 5. Moderated Effects of Verbal Ability on Anti-Black Prejudice and Attitudes toward Segregation and Discrimination by Birth Cohort

Variable	*Cohort × Ability Inter.*		*Verbal Ability Effects for Selected Cohorts (LORs)*			
	Coef	*(SE)*	*1910*	*1930*	*1950*	*1970*
Anti-black prejudice						
Blacks are unintelligent	−.003	(.002)	−.146	−.200***	−.253***	−.307***
Blacks are lazy	−.005	(.002)**	−.004	−.102*	−.201***	−.299***
Oppose having black neighbors	−.006	(.002)***	.016	−.105†	−.225***	−.345***
Oppose black-white intermarriage	−.006	(.002)**	−.045	−.163**	−.281***	−.398***
Attitudes toward segregation and discrimination						
Whites have no right to segregate nhoods	.004	(.001)**	.228***	.307***	.386***	.466***
Blacks and whites should attend same schools	−.001	(.003)	.422***	.406***	.390***	.374*
Blacks face labor market discrimination	NA	NA	NA	NA	NA	NA
Blacks face housing market discrimination	NA	NA	NA	NA	NA	NA

Notes: Data come from white respondents to the 1972-2010 waves/ballots of the General Social Survey that included racial attitude items and the verbal ability test. Estimates are from logistic regression models that control for age, period, cohort, geographic region, education, father's education, mother's education, and father's occupational status. Results are combined estimates from ten multiple imputation data sets.
$^{\dagger}p < .10$ $^{*}p < .05$ $^{**}p < .01$ $^{***}p < .001$ (two-sided tests of no effect)

the 1910 birth cohort, verbal ability is estimated to have no effect on prejudicial attitudes toward blacks, but among cohorts born in 1950 or later, verbal ability is estimated to have a large and highly significant negative effect. Results also suggest significant cohort differences in the impact of verbal ability on attitudes toward residential segregation, where effects are significantly larger for more recent cohorts than for cohorts born before 1950. There is little evidence of cohort differences in the effects of verbal ability on attitudes toward school segregation; however, the data used to estimate this particular cohort interaction model are somewhat limited because the response variable was only included in early waves of the GSS, precluding an analysis that incorporates more recent birth cohorts.

This pattern of effect moderation by cohort is depicted graphically in Figures 1 and 2, which illustrate the emergence of verbal ability effects over time for selected racial attitudes. The estimated probabilities in these figures are computed from the cohort interaction models with control variables set to their sample means. Figure 1 indicates that among cohorts born before 1950, differences in prejudicial attitudes about blacks' work ethic across verbal ability levels are fairly modest. Among cohorts born after 1950, considerable differences across verbal ability levels emerge, as high-ability whites became much less likely to report that "blacks are lazy" than comparable low-ability whites. Figure 2 shows a similar pattern of cohort differences in the effects of verbal ability on opposition to black neighbors. Cohorts born well before 1950 exhibit small differences by verbal ability level, and substantively large attitudinal differences emerge only among cohorts born in 1950 or later.

Table 6 presents estimates of cohort differences in the effects of verbal ability on racial policy attitudes. In contrast to prejudicial attitudes and views about segregation, there is little evidence that the effects of verbal ability on racial policy attitudes differ across birth cohorts. None of the interaction coefficients are statistically significant at conventional thresholds, and among all cohorts considered in this analysis, point estimates indicate that verbal ability has fairly similar effects on most policy attitudes.

In sum, among older cohorts, the effects of verbal ability on racial attitudes are less pronounced: at all ability levels, many respondents report prejudicial attitudes, some support racial equality in principle, and few support remedial policies for racial inequality. Among more recent cohorts, high-ability whites are significantly less likely than comparable low-ability whites to report negative racial stereotypes

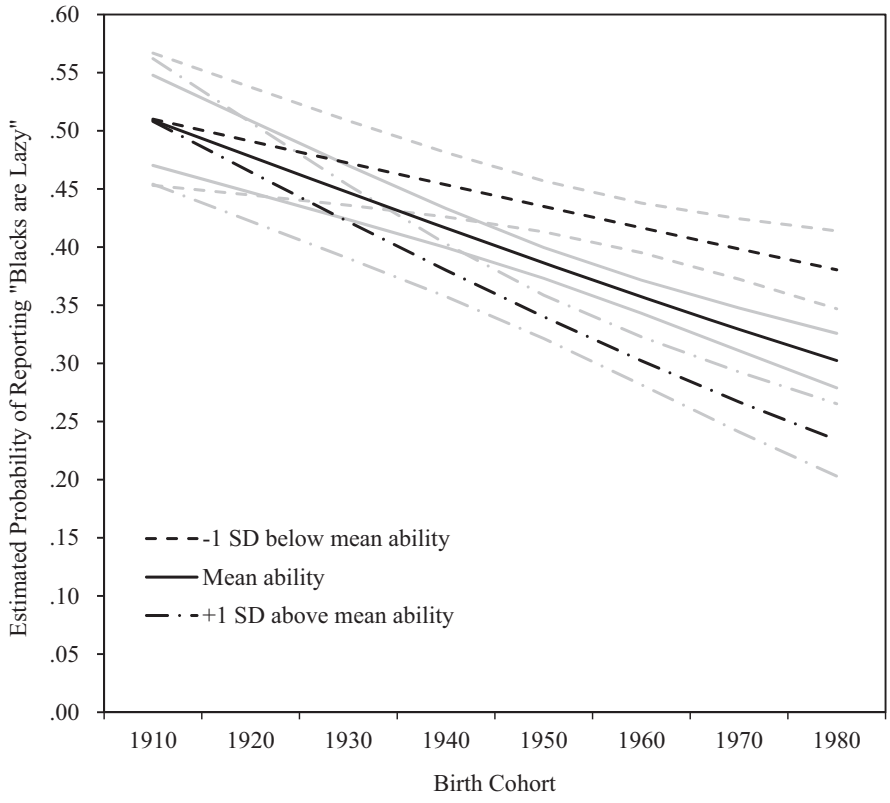

Figure 1. Estimated Probability of Reporting "Blacks are Lazy" by Verbal Ability Level and Birth Cohort

Notes: Probabilities are estimated from a logistic regression model with control variables set to their sample means. Point estimates are given by the black lines, and 95-percent confidence intervals are in grey.

and are more likely support racial equality in principle, but verbal ability still has little to no effect—and in some cases a negative effect—on support for remedial policies. These results are consistent with ideological refinement theory and are difficult to reconcile with the enlightenment perspective.

Verbal Ability and Race-Neutral Policy Attitudes

An alternative explanation for the paradoxical effects of verbal ability on racial attitudes may be that high-ability whites are indeed committed to racial equality both in principle and in practice, but compared to their low-ability counterparts, they are also better attuned to the potentially negative consequences of policies that violate individual rights. In other words, whites with more advanced abilities may oppose remedial policies for racial inequality not out of concern for protecting their own social position but rather out of a truly race-neutral concern for protecting individual rights (Sniderman and Carmines 1997; Sniderman and Piazza 1995). Another variant of the "principled conservatism" explanation contends that whites with higher abilities are better attuned to the dangers of government power and oppose policies like school busing programs because they involve a considerable expansion of the central government's role in schooling. These alternative explanations suggest that it is high-ability whites' greater commitment to race-neutral individualism, rather than their more nuanced ability to avoid anti-black attitudes while defending their own interests, that is behind the paradoxical effects of verbal ability—an interpretation that is not consistent with ideological refinement theory.

To assess these alternative explanations, I analyze the net effects of verbal ability on environmental policy attitudes. If verbal ability promotes a race-neutral commitment to individualism, whites with higher verbal ability would be expected to oppose not only racial policies that infringe upon individual rights

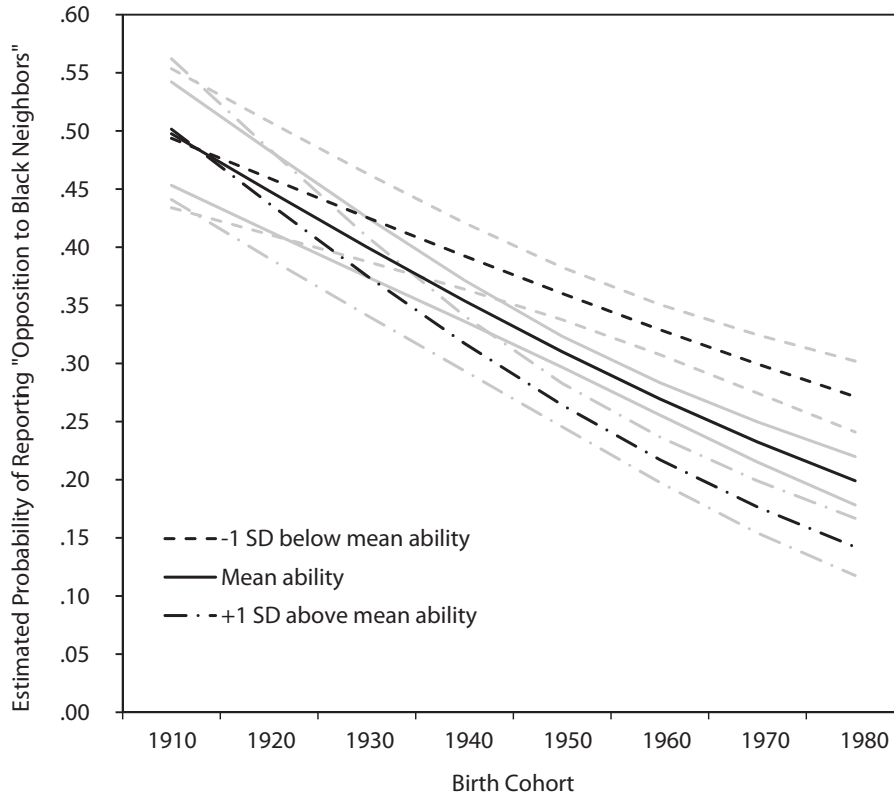

Figure 2. Estimated Probability of Reporting "Opposition to Black Neighbors" by Verbal Ability Level and Birth Cohort

Notes: Probabilities are estimated from a logistic regression model with control variables set to their sample means. Point estimates are given by the black lines, and 95-percent confidence intervals are in grey.

but also environmental policies that limit individual rights. Table 7 contains estimates from multivariate logistic regression models of three environmental policy attitudes included in select waves of the GSS. These items measure support for "much higher taxes" to fund environmental protection; support for "government laws" to protect the environment, even if these laws "interfere with people's right to make their own decisions;" and support for "government laws" to protect the environment, even if they "interfere with business's right to make their own decisions." These items are coded as binary variables, with 1 indicating a favorable attitude toward the policy and 0 indicating a neutral or unfavorable attitude.

In sharp contrast to the effects of verbal ability on racial policy attitudes, the estimates in Table 7 indicate that verbal ability has statistically significant and consistently positive effects on support for environmental policies described as requiring "much higher taxes" or "government laws" that infringe upon the rights of either individuals or businesses. These results suggest that high-ability whites are more likely than low-ability whites to favor government interventions that violate individual rights in an effort to redress misdirection on other social issues. This finding casts doubt on the alternative explanations discussed previously, and it suggests that whites with higher verbal ability may selectively draw on race-neutral values to delegitimize policies that threaten their social position.

Group Threat, Verbal Ability, and Redistributive Policy Attitudes

Another alternative explanation for the effects of verbal ability on racial policy attitudes is that high-ability whites fail to support certain racial policies not because they perceive them to threaten their own interests but rather because they perceive them to be ineffective at remediating racial inequality.

Table 6. Moderated Effects of Verbal Ability on Racial Policy Attitudes by Birth Cohort

Variable	*Cohort × Ability Interaction*		*Verbal Ability Effects for Selected Cohorts (LORs)*			
	LOR	*(SE)*	*1910*	*1930*	*1950*	*1970*
Redistributive policy attitudes						
Support government aid for blacks						
Linear term specification	.003	(.002)†	−.060	.001	.062	.124*
Dummy variable specification						
2nd ability tertile (versus 1st tertile)	.003	(.004)	−.396*	−.326**	−.256**	−.187
3rd ability tertile (versus 1st tertile)	.007	(.004)†	−.055	.086	.228*	.370**
Support school busing programs						
Linear term specification	.001	(.001)	−.215***	−.200***	−.185***	−.170***
Dummy variable specification						
2nd ability tertile (versus 1st tertile)	.005	(.003)	−.681***	−.586***	−.491***	−.395***
3rd ability tertile (versus 1st tertile)	.003	(.003)	−.420***	−.369***	−.317***	−.265*
Support racial preferences in employment						
Linear term specification	.002	(.002)	−.230*	−.190**	−.151**	−.111†
Dummy variable specification						
2nd ability tertile (versus 1st tertile)	.002	(.006)	−.810**	−.770***	−.730***	−.691***
3rd ability tertile (versus 1st tertile)	.008	(.005)	−.548*	−.383*	−.218*	−.053
Opportunity-enhancing policy attitudes						
Support open housing laws	.001	(.001)	.021	.031	.042	.052
Support tax incentives for business in black areas	NA	NA	NA	NA	NA	NA
Support spending more on black schools	NA	NA	NA	NA	NA	NA

Notes: Data come from white respondents to the 1972-2010 waves/ballots of the General Social Survey that included racial attitude items and the verbal ability test. Estimates are from logistic regression models that control for age, period, cohort, geographic region, education, father's education, mother's education, and father's occupational status. Results are combined estimates from ten multiple imputation data sets.
$^{\dagger}p < .10$ $^{*}p < .05$ $^{**}p < .01$ $^{***}p < .001$ (two-sided tests of no effect)

Table 7. Effects of Verbal Ability on Environmental Policy Attitudes

Variable	*LOR (SE)*	*OR (SE)*	*Marginal Effects (SE)*
To protect environment, respondent would . . .			
Support much higher taxes	.136 (.044)**	1.146 (.050)**	.030 (.010)**
Support govt laws over individual initiative	.114 (.053)*	1.121 (.060)*	.023 (.011)*
Support govt laws over business initiative	.215 (.069)**	1.239 (.085)**	.020 (.006)**

Notes: Data come from white respondents to the 1972-2010 waves/ballots of the General Social Survey that included the environmental attitude items and the verbal ability ($N = 3{,}693$). Effect estimates are based on logistic regression models that control for age, period, cohort, geographic region, education, father's education, mother's education, and father's occupational status. Results are combined estimates from ten multiple imputation data sets.
$^{\dagger}p < .10$ $^{*}p < .05$ $^{**}p < .01$ $^{***}p < .001$ (two-sided tests of no effect)

In other words, the remedial policies considered in this study may not actually reduce segregation, attenuate discrimination, or equalize access to resources, and thus high-ability whites may oppose these policies owing to heightened concerns about their effectiveness.

To assess whether group threat, rather than concerns about efficacy, underlie the effects of verbal ability on racial policy attitudes, I analyze differences in these effects across subgroups of whites that vary in the degree to which certain redistributive policies pose an immediate threat to their interests. The same redistributive policy is not equally threatening to all members of a dominant group. For example, white parents with school-aged children are likely more sensitive to school busing programs than whites without school-aged children. Similarly, working age whites who are not currently employed are likely more sensitive to racial preferences in employment than whites who are gainfully employed because they may be actively engaged in an employment search or at least may reasonably anticipate one in the near future. If whites with higher ability are better equipped to understand, analyze, and act on their interests, then the negative effects of verbal ability on racial policy support should be stronger among those subgroups for which these policies pose a greater threat. If, on the other hand, higher abilities simply promote a heightened concern about the effectiveness of these policies at realizing racial equality in practice, then there is little reason to expect this pattern of effect moderation.

Table 8 presents estimates of subgroup differences in the effects of verbal ability on support for school busing programs and racial preferences in employment. Specifically, the upper panel of Table 8 presents estimates from models of support for school busing that include an interaction between verbal ability and a dummy variable indicating whether a respondent has school-aged children. The lower panel presents estimates from models of support for racial preferences in employment that include an interaction between verbal ability and a dummy variable indicating whether a respondent is not currently employed (but also not retired). Results suggest that the negative effects of verbal ability on support for school busing and racial preferences are significantly stronger among those subgroups of whites who are more directly threatened by these policies—parents with school-aged children and those who are not currently employed, respectively.

Although it is difficult to rigorously adjudicate without gathering new data, these findings are generally consistent with the argument that opposition to redistributive policies among high-ability whites is driven by a heightened awareness of group threat and self-interest rather than a heightened concern about policy effectiveness. They are also more consistent with prior research on racial policy attitudes among whites, in which concerns about policy efficacy have not emerged as an important explanatory factor (Harrison et al. 2006; Kluegel and Smith 1983; Krysan 2000; Sears, Hensler, and Speer 1979; Sears, Sidanius, and Bobo 2000; Tuch and Martin 1997). Nevertheless, these results should be interpreted cautiously because they are not based on direct measurement or manipulation of group threat and because both parental and employment status are themselves affected by verbal ability, meaning that a causal interpretation of these estimates requires more stringent assumptions (Elwert 2013).

DISCUSSION

The impact of cognitive ability on racial attitudes is a contested topic in the social sciences. Enlightenment theory contends that higher cognitive ability is linked to mental processes that are less vulnerable to the faulty, uninformed, and inflexible generalizations that underlie prejudicial attitudes. It also contends that cognitive ability promotes a genuine commitment to liberalism, defined in terms of a greater willingness to make personal sacrifices to improve the welfare of unrelated others. The ideological refinement perspective, by contrast, contends that dominant group members with higher cognitive ability are no more committed to the welfare of others than those with lower ability. It argues that high-ability whites are simply better equipped to recognize and act in accordance with their group interests and to mount a more sophisticated ideational defense of their group's social position that avoids the appearance of intergroup negativism.

Table 8. Moderated Effects of Verbal Ability on Racial Policy Attitudes by Parental and Labor Force Status

Variable	*LOR*	*(SE)*
Support school busing programs		
Linear term specification		
Verbal ability	−.161	(.030)***
Parental status × ability interaction	−.111	(.055)*
Dummy variable specification		
2nd ability tertile (versus 1st tertile)	−.464	(.068)***
3rd ability tertile (versus 1st tertile)	−.290	(.075)***
Parental status × 2nd tertile	−.158	(.121)
Parental status × 3rd tertile	−.161	(.133)
Support racial preferences in employment		
Linear term specification		
Verbal ability	−.058	(.053)
Labor force status × ability interaction	−.351	(.046)***
Dummy variable specification		
2nd ability tertile (versus 1st tertile)	−.658	(.114)***
3rd ability tertile (versus 1st tertile)	−.069	(.118)
Labor force status × 2nd tertile	−.198	(.223)
Labor force status × 3rd tertile	−.531	(.247)*

Notes: Data come from white respondents to the 1972-2010 waves/ballots of the General Social Survey that included racial attitude items and the verbal ability test. Effect estimates are based on logistic regression models that control for age, period, cohort, geographic region, education, father's education, mother's education, and father's occupational status. Results are combined estimates from ten multiple imputation data sets.

$^{\dagger}p < .10$ $^{*}p < .05$ $^{**}p < .01$ $^{***}p < .001$ (two-sided tests of no effect)

To help shed new light on this debate, the present study extends research on cognitive ability and racial attitudes in several distinct ways. It is the first to estimate the impact of verbal ability—one specific dimension of cognitive ability—on a large set of racial attitudes that includes measures not only of anti-black prejudice but also of attitudes toward racial equality in principle and toward a variety of remedial policies for racial inequality. In addition, it is also the first to investigate cohort heterogeneity in the effects of verbal ability on racial attitudes. The results from this analysis provide a more rigorous assessment of the enlightenment and ideological refinement perspectives than is available in prior research.

Findings indicate that whites with higher verbal ability are significantly less likely than comparable whites with lower ability to report anti-black prejudice. In addition, high-ability whites, compared with low-ability whites, are significantly more likely to support racial integration in principle and to acknowledge discrimination against blacks. But despite their more favorable views about blacks, greater support for racial equality in principle, and greater awareness of discrimination, whites with higher verbal ability are generally no more likely than their counterparts with lower ability to support specific policies designed to realize racial equality in practice. In fact, whites with higher ability are significantly less likely than whites with lower ability to support school busing programs and workplace racial preferences, although the relationship between verbal ability and policy support is not strictly monotonic.

Results also suggest that the liberalizing effects of verbal ability on anti-black prejudice and views about racial equality in principle emerged slowly over time through a process of cohort replacement. Attitudinal differences by verbal ability level are much less pronounced and in some cases completely

muted among cohorts socialized well before the 1950s and 1960s, while higher verbal ability is closely linked to rejection of overtly prejudicial attitudes among cohorts socialized during or after the 1950s and 1960s.

Taken together, these results are difficult to reconcile with enlightenment theory. Although high-ability whites give more liberal responses than low-ability whites with respect to anti-black prejudice and support for racial equality in principle, they do not report more liberal attitudes about concrete policies intended to redress racial inequality. Even fairly benign opportunity-enhancing policies, such as open housing laws designed to protect blacks from discrimination on the part of prejudicial homeowners, receive no more support from high-ability whites than from low-ability whites, net of confounding factors. While nearly all whites with higher verbal abilities say that "whites have no right to segregate their neighborhoods," about half of this group report that they would not vote for a law intended to prevent prejudicial real estate practices. The paradoxical effects of verbal ability on attitudes related to prejudice, principles, and policies complicate enlightenment theory claims that more advanced cognitive abilities promotes a genuine commitment to racial egalitarianism.

It is also difficult to reconcile the pattern of cohort heterogeneity observed in this study with the enlightenment theoretical framework. According to this perspective, the liberalizing impact of cognitive abilities on anti-black prejudice is not simply due to differential sensitivity to the normative environment. Rather, it is linked to complex mental processes, such as the ability to process information from multiple points of view without relying on rigid simplifying schema, which should operate, at least in part, independently of extant norms or patterns of intergroup conflict. In this analysis, however, nontrivial effects of verbal ability on anti-black prejudice emerge primarily among cohorts socialized during or after the civil rights movement, when the normative environment and patterns of racial conflict changed substantially in the United States. Because enlightenment theory lacks a framework for incorporating social and contextual contingencies that may dampen or amplify the operation of individual cognitive processes, its explanatory power with respect to intergroup attitudes is limited.

The results of this study are more consistent with ideological refinement theory. Differences in the effects of verbal ability across racial attitude domains and across birth cohorts suggest that whites with higher verbal ability began to avoid anti-black attitudes after they came to be widely viewed as inflammatory and offensive. Over the same period, high-ability whites did not become any more supportive of policies designed to challenge systemic racial inequalities. This pattern of results is consistent with the ideological refinement argument that high-ability whites are simply more sophisticated than their low-ability peers when it comes to protecting their advantaged social position.

Although the effects of verbal ability on racial attitudes observed in this study are generally consistent with ideological refinement theory, it is difficult to completely rule out alternative explanations. For example, one alternative explanation could be that the civil rights movement was a consciousness-raising event that presented whites with new information about the impoverished living conditions and unfair treatment of blacks in the United States. Because cognitive ability is associated with greater responsiveness to new information, high-ability whites may have been better equipped than low-ability whites to change their racial attitudes in response to information brought to light through civil rights activism. This alternative account cannot be discounted without gathering additional data, but its core premises lack a degree of face validity. It is unlikely that prior to the civil rights movement high-ability whites were simply unaware of the unequal treatment that whites and blacks regularly received in nearly all domains of life. Furthermore, it is unclear why high-ability whites would revise their prejudicial attitudes and principled views about racial equality in response to this consciousness-raising event yet would not support specific policies designed to eliminate racial inequality. Nevertheless, future research will require new data to provide a more definitive assessment of alternative explanations.

An important limitation of this study is that it relies on the GTVIT—a comparatively unsophisticated measure of just a single dimension of cognitive ability. While the GTVIT has good psychometric properties, is highly correlated with more general measures of cognitive ability, and has effects on

racial attitudes similar to those based on an alternative measure of abstract reasoning ability (see Part C of the Online Appendix for details), this test is still less comprehensive and reliable than other cognitive assessments because it consists of only ten vocabulary questions administered in an uncontrolled setting. Future research should further explore the empirical patterns identified in this study using more comprehensive tests of cognitive ability.

Are smart people less racist? The findings from this study suggest that there is no simple answer to this question. Low-ability whites, together with high-ability whites from cohorts born earlier in the twentieth century, show a pattern of racial attitudes that is more consistent with elements of "old-fashioned racism"—characterized by overt prejudice and support for black-white inequality in both principle and practice—than is the pattern of attitudes prevalent among high-ability whites from more recent birth cohorts. This latter group, by contrast, holds a set of racial attitudes that is more consistent, at least in part, with elements of symbolic racism (Kinder and Sears 1981; Sears 1988), laissez-faire racism (Bobo et al. 1997), and color-blind racism (Bonilla-Silva 2003; Bonilla-Silva 2006). This study extends prior theory and research on different forms of "new racism" by suggesting that they may be developed and propagated by cognitively sophisticated members of a dominant group. If racism is ultimately about "a dominant group striving to maintain its systemic advantages" against "minorities fighting to subvert the status quo" (Bonilla-Silva 2006:131), then a strong interpretation of these results is that whites with higher cognitive ability are simply more sophisticated racists than their counterparts with lower ability. At the very least, the results of this study cast doubt on the argument that cognitive ability is inherently liberalizing and suggest that a reassessment of the enlightenment framework is in order.

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