Education and Social Desirability Bias: The Case of a Black Presidential Candidate*

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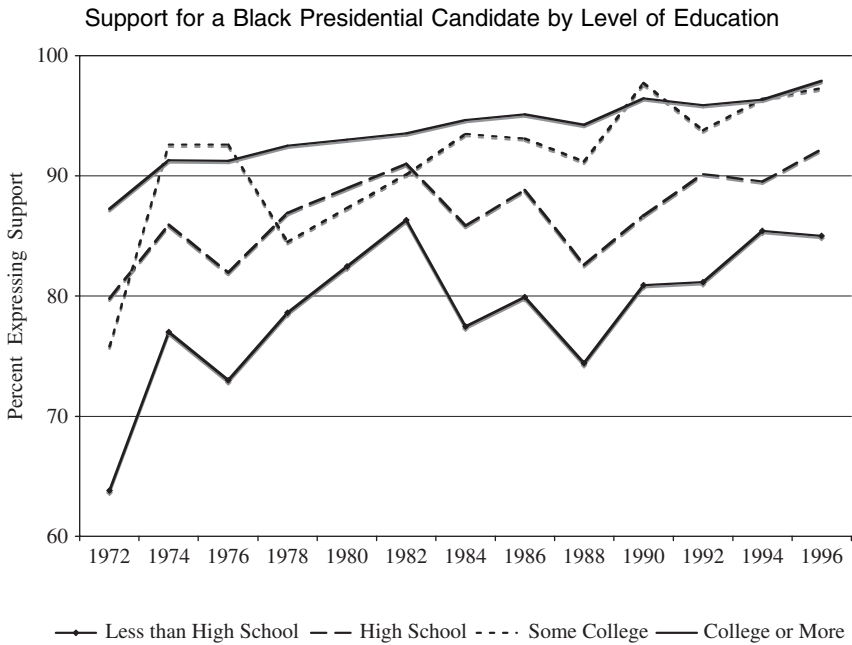
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Objective. Survey research consistently reports a positive association between educational attainment and socially tolerant attitudes, but critics hold that respondents with high levels of education may simply purport to hold attitudes seen as socially desirable. In this article, we seek to adjudicate between the claim that the association between education and social tolerance is simply an artifact of sophisticated social desirability reporting on the part of well-educated respondents and the competing theory that education has a real impact on increasing forms of social tolerance. *Methods.* Using support for a black presidential candidate as our measure of social tolerance, we utilize an innovative online list experiment to test whether high levels of support are inflated because of social desirability reporting among the educational elite. *Results.* We find no evidence of systematic overreporting of support for a black presidential candidate among respondents with high levels of education, and note that social desirability bias declines as educational attainment increases. *Conclusions.* This research bolsters arguments about the liberalizing effect of education on socially tolerant attitudes, and challenges evidence that attributes this relationship to high levels of social desirability bias.

Survey research consistently reports a positive association between educational attainment and socially tolerant attitudes, but critics argue that this association may be the result of high levels of social desirability reporting among the educational elite, rather than a true measure of social tolerance. One commonly measured estimate of social tolerance is support for a black presidential candidate, an item included in the General Social Survey (GSS) since the early 1970s. The GSS reports that support for a black presidential candidate has grown from 75 percent in 1972 to 92 percent in 1996—the year the question was terminated. As Figure 1 illustrates, support has been

FIGURE 1

Support for a Black Presidential Candidate by Level of Education

NOTE: Data for 1976, 1980, 1984, and 1992 are unavailable in the General Social Survey. Estimates of support for a black presidential candidate for these years were obtained by averaging estimates for the surrounding years (e.g., the estimate for 1992 is the average of the GSS estimates for 1991 and 1993).

trending upward over the time period for all groups, but this support varies by educational attainment, with well-educated respondents consistently expressing higher levels of support for a black presidential candidate than respondents with lower levels of education. In 1996, nearly 98 percent of respondents with a bachelor's degree or more expressed support, compared with only 85 percent of respondents with less than a high school diploma. Through an online list experiment, an innovative technique used to unobtrusively measure support for a selected research statement, the current article tests whether the observed disparities in support by education category result from social desirability reporting, or whether they illustrate true differences.

The trends observed in the GSS are consistent with an expansive literature on the positive relationship between education and social, political, and racial tolerance. Stouffer (1955) pioneered this effort in an early study, which found a positive association between education and tolerance for atheists, socialists, and communists. Later work often countenanced Stouffer's original finding. Greeley and Sheatsley (1971) found that edu-

cation significantly increased support for racial equality, while Smith (1981) showed that higher levels of educational attainment increased tolerance for school desegregation. Using measures of racial tolerance from the GSS, Case, Greeley, and Fuchs (1989) provide evidence of a strong, positive effect of education on racially egalitarian attitudes, arguing that the diverse, cosmopolitan experiences of the well educated contribute toward their fundamental support for equal rights. Similarly, Bobo and Licari's (1989) study on the impact of education on tolerance for nonconformist social groups reinforced the positive correlation between education and social tolerance originally documented by Stouffer (1955). More recently, Wagner and Zick (1995) extend the findings beyond the U.S. context, showing an inverse relationship between education and racial prejudice in France, Britain, West Germany, and the Netherlands. Collectively, these studies reinforce the canonical view of education as a key mechanism for instilling core democratic beliefs and values, including social, political, and racial tolerance.

Yet, the link between education and tolerance has not gone unchallenged. Most notably, research by Jackman (1978) and Jackman and Muha (1984) contends that the effect of education may be limited to abstract principles of racial tolerance, rather than applied measures or policy decisions. Jackman (1978) proposes a disjuncture between professed beliefs in abstract principles of racial equality and support for actual policies to enact racial equality. Increased levels of education generate greater familiarity with the democratic principles of equality and tolerance, but do little by way of increasing support for actual policies designed to achieve this equality. Thus, Jackman argues, "the well educated are more likely to recognize those principles, to know the 'right' answers, and to believe sincerely in those answers. Such learning, however, is not very deeply embedded. In an applied situation, those principles are no more likely to influence the orientation of the well educated than of the poorly educated" (1978:322–23). As a result, the consistently reported positive association between attitudes of racial tolerance and education may be spurious, rather than substantive.

As the quote by Jackman (1978) suggests, the observed association between education and social tolerance may be inflated by social desirability bias. Social desirability bias occurs when individuals provide answers they believe to be more socially desirable, rather than revealing their true attitudes, preferences, or beliefs. Research demonstrates that this tendency to overreport socially desirable behaviors varies by educational attainment, with better-educated respondents *more* likely to report socially desirable behaviors that diverge from their *actual* behaviors. Silver, Anderson, and Abramson (1986) and Bernstein, Chadha, and Montjoy (2001) report that respondents who have completed college are the most likely to overreport voter participation. Outside of the U.S. context, Karp and Brockington (2005) similarly find that holding a university degree is strongly associated with providing a socially desirable response about voting. This pattern of differential misreporting by education categories is consistent across research fields. Jeffery

(1996) reports that men tend to increasingly underreport their body weight as their level of education increases, holding constant other demographic characteristics, while Hofferth (1999) finds that parents with more years of education overreport the amount of time spent reading to their children. As Hofferth hypothesizes, highly educated individuals might simply be more aware of social norms, and feel greater pressure to present their behavior or attitudes in alignment with these norms.

Given this research, we suspect that questions on other socially sensitive topics, like racial attitudes, are also likely to produce biased estimates, and that these biases will vary systematically by educational attainment. Several theories account for the continuing impact of racial attitudes on political behaviors. One theory purports that simple racism—or the unwillingness to support black candidates on the basis of skin color alone—remains pervasive in U.S. politics (Sigelman and Welch, 1984; Terkildsen, 1993) giving rise, in part, to the observed discrepancy between preelection public opinion polls and Election Day results. Another tradition suggests that racial prejudice operates more subtly in generating political behaviors (Krysan, 2000) as voters use preexisting assumptions about out-group members to judge potential candidates (Sigelman et al., 1995) or make subtle inferences about their policy positions when information is scarce (Citrin, Green, and Sears, 1990). Although both theories contend that racial attitudes inform political beliefs, neither theorizes about the role of education in mitigating—or exacerbating—these biases.

Studies intended to explicitly measure the impact of education on racial attitudes or voting behavior in presidential elections often fail to accurately measure the differential impact of educational attainment on social desirability bias. For instance, Kuklinski, Cobb, and Gilens (1997) use a nonintrusive technique to measure racial attitudes in the South, but their research does *not* report social desirability bias—the difference between latent and professed racial attitudes. They find that the well educated are *less* prejudiced than individuals with low levels of education—a measure of latent attitudes—but their methodology precludes them from studying which groups are the most likely to conceal their racial prejudice. Similarly, Streb et al. (2008) compare results of their list experiment on anger toward a female presidential candidate with publicly available polls to compute social desirability bias. They do *not* find a statistically significant difference in latent anger by educational attainment, but their reliance on publicly available polls—which lack information on respondents' educational attainment—prohibits them from assessing social desirability reporting for particular educational categories.

Two hypotheses emerge from the literature above. The first hypothesis is that education is positively associated with socially tolerant attitudes. Taken at face value, higher levels of education correspond with higher levels of support for socially tolerant behaviors. A second hypothesis is that education is positively associated with socially desirable reporting. When asked about

socially sensitive topics, like voting behavior or body weight, highly educated respondents are the *most* likely to misrepresent their true beliefs, attitudes, or practices in order to align themselves with existing social norms. Although the first hypothesis purports that increased education is, in fact, associated with increasingly tolerant social attitudes, the second hypothesis suggests that this association may be spurious because the well educated are more likely to profess socially tolerant attitudes to which they, in fact, do not subscribe. Using the case of a black presidential candidate, we employ a list experiment to test these hypotheses.

Data and Methods

Pioneered by Kuklinski, Cobb, and Gilens (1997) to measure social desirability bias in reporting racial attitudes in the "New South," the list experiment is an increasingly popular methodological tool for measuring social desirability bias in self-reported attitudes and behaviors.[1] The list experiment compares measures of true support for a research question with those of overt support in order to develop an estimate of social desirability bias.[2] Over the last decade, researchers have utilized the list experiment to gauge perceptions of affirmative action programs (Sniderman and Carmines, 1997), support for biological understandings of race (Brueckner, Morning, and Nelson, 2005), attitudes toward Jewish political candidates (Kane, Craig, and Wald, 2004), and support for a female presidential candidate (Streb et al., 2008).

We begin by randomly assigning each of our respondents to one of three groups. In the first group, the poll group, we ask respondents directly about their support for the research statement to obtain measures of overt support. We anticipate that *some* of these respondents will affirm their support for a black presidential candidate because they believe that an affirmative response is *socially desirable*, not because they truly support the research statement. Thus, we use this as a measurement of overt support. To obtain an estimate of true support, we utilize estimates from the control and treatment groups. Respondents in the control group are shown three statements, all related to U.S. politics but unrelated to our specific research question, and asked to indicate *how many* of the statements they support *without* revealing which

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[1]The list experiment is not without its drawbacks. Choice of research and list statements, as well as question wording and the particular format of the experiment instructions, can pose substantial difficulties for interpretation. For further discussion of these validity issues in list experiment designs, see Kuklinski, Cobb, and Gilens (1997).

[2]We use the terminology of *true* and *overt* support when referencing the results of the list treatment and the poll group, respectively. Although we acknowledge complications in claiming that our research provides *true* estimates of support, we elect to maintain this terminology throughout the article to consistently differentiate between estimates from the experiment and the poll groups.

statements they support.[3] This phrasing enables respondents to conceal
support for answers deemed socially *undesirable*. Respondents in the treat-
ment group are then shown the *same three statements* as the control group,
but with an *additional fourth statement* about support for a black presidential
candidate. Again, respondents are instructed not to indicate which state-
ments they agree with, but only how many. After determining the mean
number of agreements for each group, we then compare the mean number
of statements to which respondents in the control group agreed to the mean
number of statements to which respondents in the treatment group agreed.
Based on the assumptions of random assignment to treatment and control
groups, any difference in group means can be attributed to the experimental
"treatment"—in this case, the research question.

   For example, imagine that we observe a control group mean of 2.0,
indicating that respondents in the control group agreed, on average, with
two statements. Then, imagine that researchers observe a treatment group
mean of 2.6, indicating that, on average, respondents agreed with 2.6 of the
list statements. The difference in means is then treated as the proportion of
respondents supporting the research question, and subsequently used in our
analysis as a measure of true support. By subtracting the control group mean
from the treatment group mean, we estimate that 60 percent of respondents
truly agree with the research question.

   After estimating the proportion of true support, we compare this number
to the estimate of overt support from respondents in the poll group. The
inclusion of a poll group in our research design offers a significant meth-
odological improvement over previous list experiments.[4] The poll group
allows us to make comparisons between overt and true support *by demo-
graphic group*. In previous list experiments, measures of true support were
compared with polls conducted by other research organizations to determine
levels of social desirability reporting (see, e.g., Streb et al., 2008). This
approach has the twin disadvantage of being unable to make subgroup
comparisons *and* relying on samples selected by other researchers and/or
research organizations. Having a unique comparison group, we then cal-
culate the difference between overt support and true support to estimate the
level of social desirability bias. Using a difference in proportions test, we test
whether the proportion of respondents affirming overt support for the re-

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[3]Previous list experiments used list statements unrelated to current affairs, but we decided
to use statements related to U.S. politics. By using statements from previous list experiments
unrelated to U.S. politics (see, e.g., Streb et al., 2008), we worried that respondents would be
more likely to identify the research statement about a black presidential candidate as referring
to a *specific individual* (e.g., Barack Obama). To the extent that the research statement is
misread in this context, the experiment measures support for a particular black presidential
candidate, rather than a generic one. Thus, by including the research statement among other
statements related to U.S. politics, we intended to minimize any misreading of the research
statement that would bias our results.
   [4]Here, we follow Brueckner, Morning, and Nelson (2005) in the inclusion of a unique poll
group in the research design.

search question was significantly different from the proportion of respondents affirming true support for the research question.

Our nationally representative sample of 1,560 respondents was randomized into three groups: the poll, control, and treatment groups. Using a chi-square test, we first confirm that group assignment and educational category are statistically independent. Our chi-square test statistic confirms random assignment by educational category into our three groups (chi-square = 3.803, $p = 0.703$). Respondents in Group A ($N = 514$) were asked directly to indicate whether or not they agree with the following statement: "I am willing to support a black Presidential candidate." Responses in the poll group were treated as the equivalent of a public opinion poll to measure overt support for a black presidential candidate.

In the control group ($N = 552$), respondents were presented with a series of three statements and asked *how many* statements they supported. Respondents were specifically instructed *not* to indicate which statements they supported, but simply to select the total number. The following three statements were presented to respondents in the control group.

- I think Presidential campaigns are too costly.
- I am willing to support stronger immigration laws.
- I think the war in Iraq will ultimately make the US safer.

The three statements were presented in randomized order to control for the possibility that the ordering of statements would impact responses.

Respondents in the treatment group ($N = 494$) were presented with four statements. The first three were identical to those presented to the control group, but with an additional fourth statement, our research statement. Thus, their statements were:

- I think Presidential campaigns are too costly.
- I am willing to support stronger immigration laws.
- I think the war in Iraq will ultimately make the US safer.
- I am willing to support a black Presidential candidate

Again, the ordering of the statements was randomized to ensure that the arrangement of statements did not bias responses.

Our list experiment was conducted in conjunction with Time-Sharing Experiments for the Social Sciences, an NSF-funded program enabling social science researchers to collect original experimental data. In conjunction with TESS, samples are fielded by Knowledge Networks. Knowledge Networks utilizes random-digit dialing (RDD) to recruit a panel of survey participants. Households that agree to participate in the panel are provided with WebTV if they lack Internet access to facilitate completion of the organization's Internet-based surveys.[5] From this pool of active participants,

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[5]For more information on Knowledge Networks and TESS, visit ⟨http://www.knowledge networks.com⟩ and ⟨http://www.experimentcentral.org⟩, or see Lawless (2004:Appx. A).

TABLE 1

Distribution of Experimental Categories by Level of Education

	Total	Poll Group	Control Group	Treatment Group
Less than HS	13.33%	14.59%	12.14%	13.36%
	(208)	(75)	(67)	(66)
High school	31.73%	30.35%	34.24%	30.36%
	(495)	(156)	(189)	(150)
Some college	26.47%	25.88%	25.54%	28.14%
	(413)	(133)	(141)	(139)
College or more	28.46%	29.18%	28.08%	28.14%
	(444)	(150)	(155)	(139)
	100.00%	100.00%	100.00%	100.00%
	(1,560)	(514)	(552)	(494)

NOTE: Number of respondents listed in parentheses.

Knowledge Networks randomly selects panel members to participate in upcoming surveys and experiments. For our list experiment, a total of 2,184 individuals were chosen to participate. The overall response rate was 71.4 percent, ultimately yielding a sample of 1,560 participants. The survey was fielded between June 7, 2007 and June 13, 2007.[6]

Table 1 provides the distribution of educational attainment within each group of our sample. As indicated, our sample is roughly evenly divided across the poll, control, and treatment groups. About 13 percent of our respondents had less than a high school education, 32 percent were high school graduates, 26 percent had attended some college, and 28 percent received a bachelor's degree or beyond.

By fielding an Internet-based study, we were able to create a research setting that minimized the conditions for social desirability reporting. Previous research suggests that the presence of an experimenter/interviewer is likely to increase social desirability reporting, as respondents feel greater social pressures in the presence of interviewers than in their absence (Evans et al., 2003; Richman et al., 1999). Likewise, more nuanced work on racial attitudes reveals privacy levels impact respondents' willingness to reveal (or conceal) racially tolerant attitudes (Krysan, 1998:511). Increasing the privacy of the research setting through Internet-based research should *decrease* socially desirable reporting. As an important caveat to our results, privacy effects have been shown to vary by education level, with better-educated respondents more susceptible to privacy effects. As a result, to the extent that our methodological decisions bias our results, we anticipate a *downward* bias in which our reported results may *underestimate* the level of social desir-

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[6]The survey was conducted nearly a year and a half before the 2008 presidential election. Nonetheless, most major candidates—including Barack Obama—had declared their candidacy by the summer of 2007.

TABLE 2

Estimated Mean Level of True Support for a Black Presidential Candidate, Total and by Educational Category

	Control Group	Treatment Group	Proportion True Support
Total	1.84	2.54	0.70**
	(0.05)	(0.06)	(0.08)
Less than HS	1.82	2.26	0.44
	(0.15)	(0.25)	(0.30)
High school	1.86	2.43	0.57**
	(0.08)	(0.10)	(0.13)
Some college	1.78	2.55	0.77**
	(0.11)	(0.09)	(0.14)
College or more	1.89	2.81	0.92**
	(0.10)	(0.09)	(0.14)

**$p < 0.01$; *$p < 0.05$.

NOTE: Standard errors in parentheses.

ability reporting when respondents are asked about a black presidential candidate.

Results

By subtracting the mean for the control group from the treatment group mean, we obtain the proportion of true support for a black presidential candidate. For the sample as a whole, the mean for the treatment group is 2.54 and the mean for the control group is 1.84 (see Table 2). By subtracting these estimates, we find that 70 percent of respondents would support a black presidential candidate.[7] We next run a difference of means test to confirm that our results are statistically significant.

True support increases monotonically with additional years of education. Only 44 percent of respondents who have not completed high school truly support the research question, while nearly 57 percent of respondents with a high school education do. The estimate increases by approximately 20 points to 77 percent for respondents with some college education. Lastly, as expected, college graduates have the highest level of true support for a black presidential candidate at 92 percent.

We next utilize estimates of overt support from the poll group to estimate the magnitude of social desirability bias for the sample as a whole, as well as by educational category. The estimate of social desirability bias is calculated

[7]These estimates are substantially lower than those reported for overt support in the General Social Survey (GSS). We expect lower levels of overt support in our research design because of the privacy effects inherent in Internet-based research.

TABLE 3

Estimates of Social Desirability Bias in Support for a Black Presidential Candidate,
Total and by Educational Category

	Proportion True Support	Proportion Overt Support	Desirability Effect
Total	0.70	0.84	0.14**
	(0.08)		(0.02)
Less than HS	0.44	0.74	0.30**
	(0.29)		(0.07)
High school	0.57	0.81	0.24**
	(0.13)		(0.04)
Some college	0.77	0.90	0.13**
	(0.14)		(0.04)
College or more	0.92	0.86	–0.06
	(0.13)		(0.03)

**$p<0.01$; *$p<0.05$.
NOTE: Standard errors in parentheses.

by subtracting the true support estimate from the overt support estimate. For the sample as a whole, overt support for a black presidential candidate is 84 percent, but true support is only 70 percent, which produces an estimated social desirability bias of 14 points (see Table 3). Using a difference in proportions test, we find that the difference between overt and true support is statistically significant ($p<0.01$).

Lastly, we report the magnitude of social desirability bias in estimates of support for a black presidential candidate by educational category. Respondents with low levels of education are the *most* likely to conceal their socially undesirable answer, while those with high levels of education are the *least* likely to do so. Respondents who have not completed high school have the lowest overt support (74 percent) and the lowest true support (44 percent), producing a social desirability effect of approximately 30 points. The level of social desirability bias steadily drops as years of education increases, with 24 percent of high school graduates giving a socially desirable answer and 13 percent of respondents with some college giving the socially desirable response. For college graduates, the estimate of social desirability bias is –0.06. The negative estimate of social desirability bias for college graduates results from a higher proportion of true than overt support.[8] With the exception of

[8]The experiment includes a small sample of respondents with a graduate or professional degree ($N=127$). When we exclude these respondents from our analysis and run our analysis for respondents whose highest level of education is a college degree, we find that the overt support is 92 percent, the true support is 84 percent, and the social desirability bias is 8 points. Thus, respondents with graduate and professional degrees are driving the negative social desirability results indicated above.

the highest education category, the desirability effect for each educational category is significantly different from zero at the 0.01 level.

Conclusion

This article simultaneously tests two hypotheses about the association between education and social desirability bias in estimated support for a black presidential candidate. The first hypothesis proposes that education increases socially tolerant attitudes, a proposition consistent with the position that education alters individuals' beliefs and attitudes toward nonconformist, nontraditional, or out-group individuals. The second hypothesis proposes that this positive correlation is, in fact, superficial. Rather than a truly liberalizing effect, it attributes the perceived increases in racial tolerance to the propensity of well-educated respondents to conceal their undesirable attitudes. In this scenario, education teaches individuals the dominant social norms, and applies social pressures for conformity. Testing support for a black presidential candidate through an online experiment, this article lends credibility to the first hypothesis and also calls into dispute the second hypothesis.

Given our unobtrusive estimation strategy, we believe that the measured gap in true support between college-educated respondents and those with less than a high school education points to a serious, authentic difference in racial tolerance. This gap lends strong support to the first hypothesis that education may have a liberalizing impact on measures of social tolerance, and that this observed relationship is *not* a spurious effect of social desirability bias. By comparing our unobtrusive measure of support to overt estimates of support, we can more accurately measure social desirability bias for particular demographic groups. More pointedly, following the research design originally employed by Brueckner, Morning, and Nelson (2005), we are able to accurately measure social desirability bias by educational attainment.

Our research challenges existing literature on education and social desirability bias to further grapple with the circumstances—or, perhaps, the issue areas—in which well-educated individuals tend to succumb to social desirability reporting. It is possible that *behaviors* (e.g., voting, church attendance) remain subject to social desirability reporting, but attitudes (e.g., support for nontraditional political candidates) do not. Alternatively, it is possible that some attitudes are *not* subject to social desirability reporting (e.g., support for a black presidential candidate) while others continue to be (e.g., gay marriage). Given these contrary findings relative to the established association between education and social desirability bias, we encourage a more nuanced approach—both theoretically and empirically—to unpacking this relationship. Further research would be wise to examine other socially sensitive topics to confirm that our findings by educational category hold beyond the narrow issue area addressed in this article.

In the shadow of the 2008 election, the experiment conducted in this article is also ripe for replication. Although Obama's victory represents a milestone in the history of U.S. politics, we do not yet know the impact of his candidacy on racial attitudes in the United States. Did exposure to a viable black candidate increase tolerance among the least supportive, or do Americans who expressed anxiety about a black candidate before Obama's candidacy remain uncomfortable supporting a black presidential candidate now? Immediate postelection analysis reports that pockets of voters concentrated in counties with lower levels of educational achievement voted more heavily Republican in 2008 than in 2004—a finding that suggests racial attitudes still influence voter preferences among certain subgroups (Nossiter, 2008). Still, this postelection analysis is preliminary, and offers only a glimpse at the impact of Obama's candidacy on racial attitudes. A replication of this experiment to compare before and after measures of support would enable researchers to test the impact of Americans' exposure to a viable black presidential candidate on attitudes toward one.

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