

DOES THE EFFECT OF EDUCATION ON VOTER PARTICIPATION VARY BY RACE? AN  
INQUIRY INTO THE EQUALITY OF EDUCATION AND ITS STATUS AS A FUNDAMENTAL  
RIGHT.

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## Abstract

The U.S. Supreme Court has rejected the argument that education is a fundamental right guaranteed by the Constitution. Should this determination depend on whether an essential return to education – increased probability of participation in democracy by casting a vote – is offered equally for members of different races? I have used National Election Studies data from 1948 to 2000 to test whether the effect of education on voter participation varies by race. Specifically, is the increased probability of voting caused by educational attainment higher for whites than it is for blacks? I held constant characteristics related to socioeconomic status, social connectedness, and trust in government and hypothesized that there will be a statistically significant difference in an interaction between race and education. I found that at certain levels of education the positive effect of education on voter participation is less for blacks than for whites at a statistically significant level.

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## I. Introduction and Motivation

Americans regard the public schools as a most vital civic institution for the preservation of a democratic system of government. Education serves the essential function of instilling in our young an understanding of and appreciation for the principles and operation of our governmental processes. Education may instill the interest and provide the tools necessary for political discourse and debate. Indeed, it has frequently been suggested that education is the dominant factor affecting political consciousness and participation.<sup>1</sup>

Supreme Court Justice Thurgood Marshall wrote the above passage in the 1973 Court opinion *San Antonio Independent School District v. Rodriguez*, arguing that education is a fundamental right that is guaranteed by the Constitution. Though a right to education is not written into the text of the founding document, Justice Marshall argued that the Court should strictly scrutinize government actions that limit educational opportunities because of “the close relationship between education and some of our most basic constitutional values.”<sup>2</sup>

This paper seeks to analyze from a statistical perspective whether education in the United States teaches a most basic democratic value – a desire to participate in the democratic process by casting a vote – on a different level to whites than to blacks. Does the effect of education on voter participation vary by race? Furthermore, can any difference across races be explained by the extent of school segregation or variations in school quality? This topic is especially important because some have argued that U.S. public schools are increasingly segregated and unequal. One Harvard professor recently found that in the South “[f]rom 1988 to 1998, most of the progress from the previous two decades in increasing integration in the region was lost.”<sup>3</sup> It is now

possible that the state of school segregation is worse than it was before formal desegregation began.

In 1954, the Supreme Court held that segregated public schools could never be equal and ordered that public schools around the country be desegregated.<sup>4</sup> The Court actually used several statistical studies to validate its reasoning that segregation itself had an adverse impact on minority children, so, the Court argued, even in the presence of equality with the tangible elements in the school a segregated school was by definition unequal.<sup>5</sup> For a decade after *Brown*, little desegregation actually occurred. Then, for a brief period of time, the Court became active in attempting to force desegregation among state schools. Nevertheless, two key Court decisions brought about the current situation for many public school systems: separate and unequal.

In *Rodriguez*, the Court ruled that it was not unconstitutional for different school districts to have greater resources because the tax base in one school district was larger than the other. This decision made it possible for these white-flight schools to be much better funded, at a lower tax rate for its attendees, than schools that remained in poorer, minority neighborhoods. One year later in 1974, the Court ruled that it could not force inter-district desegregation unless a segregation program was or had been in effect in each of the districts.<sup>6</sup> This decision made it possible for white families to move outside of cities, or to different districts within them, and in a sense choose segregation in a way that would not be reversed by the courts.

Justice Marshall was the dissenting opinion in *Rodriguez*; the majority rejected his reasoning and ruled that education is not a fundamental right guaranteed by the Constitution. As a result, local governments have been allowed to permit a return to segregation free from intervention by the Court, prompting authors like Kozol to state, “In the inner-city schools I visit, I never see white children. Segregation has returned with a vengeance.”<sup>7</sup>

The following statistical analysis will contribute to analyzing this situation in the United States by determining whether one of the positive effects of education – increased participation in the electoral process – is predicted to be as large an effect for blacks as it is for whites. As noted in the literature review below, education has been proven to be one of the strongest explanatory factors of increased likelihood of voting. The research will seek to answer whether this return to education is as great for blacks as it is for whites, which is one way of looking at the question of whether, on the whole in American society, democracy is being taught and offered equally to both races.

## **II. Literature Review**

There is a wide body of literature on indicators of voter participation, ranging from the impact of employment status on voter behavior<sup>8</sup> to the correlation between voter participation and self-rated health.<sup>9</sup> Much of the discussion about voter turnout has centered around the declining voter turnout over the past 50 years and the “puzzle of participation” that despite an overall rise in education and income among the electorate turnout continues to decline.<sup>10</sup>

Furthermore, there have been several attempts to explain the differences in voting behavior between racial and ethnic groups, especially blacks and whites.<sup>11</sup> In the presence of so many competing theories of factors that affect an individual’s decision whether to vote, especially in the area of race, the two main tasks become determining what factors to include in the analysis and how to explain results.

Generally, there are several demographic factors that are hypothesized to contribute to an individual’s decision whether to vote: gender, family income, marital status, whether the individual has moved in the past 12 months, state of residence, union membership, race, and education.<sup>12</sup> Education is widely regarded as one of the greatest influences on voter participation; the more education an individual has, the more likely he or she is to vote.<sup>13</sup> When race is considered in the analysis, these relevant variables are often placed into a multivariate regression, a coefficient on a race indicator variable is determined, and a conclusion is made about the effect of race on voter participation. Most commonly, when holding other factors constant, blacks are

found to participate equally as likely as whites,<sup>14</sup> though black participation has been on the rise in recent years.<sup>15</sup>

Leighley provides a good overview of five theories that have sought to explain minority participation: socioeconomic status, psychological orientation, social connectedness, group identity, and group conflict.<sup>16</sup> For the purposes of this study, the first three theories are especially important.

The most popular theory for explaining voter participation is related to socioeconomic status; namely, higher education, income, and occupational status lead persons to vote more and engage in other political activities than those with lower status.<sup>17</sup> In the context of race, some have argued that once socioeconomic factors like education and income have been partialled out, blacks actually may participate more than whites.<sup>18</sup> In other words, some research seeks to explain “racial differences in political behavior on the basis of blacks lower average levels of education, occupational status, and income.”<sup>19</sup>

A measure of psychological orientation to the political environment is also important in explaining voter participation. This orientation can be measured by political interest, political efficacy, trust in government, and civic duty.<sup>20</sup> These measures are especially important to include in an analysis of minority participation because at least one author has theorized that distrust in the political system and a feeling that one’s vote does not matter actually increases the probability that blacks

will vote.<sup>21</sup> As noted below in Part III, failure to include such measures may create omitted variable bias on coefficients on education and race.

Social connectedness has also been found to significantly affect black turnout. As noted above, factors like marital status and length of residence in a community are factors commonly included in analyses of turnout. Furthermore, one author has reported that larger connectedness measures like home ownership may not be associated with black voting in presidential elections; however, she also reports that more local measures like membership in a black organization or politicized church may increase turnout.<sup>22</sup>

There does not seem to be much literature specifically studying whether the return to education on probability of voter participation is the same across racial groups. In the research discussed in this paper, the effect of education separated by racial group is mentioned only twice and the first seems to be done only in passing. It is interesting to note these two articles because they report conflicting stories of the effect of education by race. The first article compared influences on voter turnout in 1972 and 1984 and found that race and gender were more significant influences on turnout in 1984. Finding that blacks were more likely to vote than whites in 1984, the authors broke the effect of being black down by educational group, noting that the differential between blacks and whites decreased as education increased.<sup>23</sup> In other words, blacks were more likely to vote than whites the less education they had. The article did not specifically test an interaction between race and education, but rather

calculated changes in probability of voting using a regression using mostly socioeconomic and demographic factors.<sup>24</sup>

The second article came closer to specifically testing an interaction between race and education, focusing primarily on a lack of literature in studying differences in probability of voting across four racial groups. The article ran separate regressions for each ethnic group and did find higher education estimates for whites than minorities.<sup>25</sup> When running a fully interacted model, the authors only found significant differences in the effect of education on voting for Asian-Americans. However, two shortcomings need to be noted. First, the article used a survey that only included data from respondents in Texas, thus it would at least be useful to extend its research to a sample of the U.S. population as a whole. Second, like so much of the research in this area, the authors focused on whether different racial groups had varying degrees of participation, which is a different question of whether the effect of certain socioeconomic factors themselves vary by race.

### **III. Discussion of Theoretical Model and Hypotheses**

Given the lack of a statistical study specifically devoted to analyzing the effect of education on voter participation and whether that effect differs for whites and blacks, this paper will contribute significantly to both studies on voter participation and the larger question of equality of educational opportunity. The constitutional argument aside, if education increases the probability that a person will participate on this fundamental level in democracy, and if the magnitude of this increase is significantly smaller for blacks than it is for whites, then potentially the fundamental nature of a right to education should be reconsidered in the presence of voluntary resegregation.

As noted above, the question of why a person votes is one that has been studied extensively, especially in the wake of increasingly declining voter turnout.<sup>26</sup> Demographic or socioeconomic and social connectedness factors affect the probability that a person will vote. To name a few: A more educated person is more likely to vote, presumably because of heightened awareness about the political process. Union members tend to vote more than non-union members.<sup>27</sup> In general, people with higher socioeconomic status – more education, higher income, better occupation – tend to vote more than those with lower socioeconomic status.<sup>28</sup> Moreover, psychological factors like trust in government may also affect a person's decision to vote.<sup>29</sup> A measure of social connectedness, through marriage and whether he or she has moved residences recently, may also affect the decision.<sup>30</sup>

Statistical models that analyze whether a person's race affects his or her propensity to vote hold these demographic and psychological factors constant and then analyze whether a certain race is more or less likely to vote than another. Presumably, certain races are not born with a greater propensity to vote than others. If we were somehow able to create a model that held constant every possible characteristic about two persons except their race one might expect their probability of voting to be the same. As a result, it seems that all study in the arena of comparing voter participation among races must include some omitted variable bias on the race variable: If the coefficient on one race variable leads to the prediction that one race is more likely to vote than another, there must be some variable left out of the regression that drives the coefficient estimate on race. The challenge in trying to test one of these factors across races is to hold constant as much of the other factors as possible that could drive the individual's decision to vote.

Whether the positive effect of education on voter participation varies by race is a slightly different question, especially if it is possible that members of different races are receiving different quality educations. This hypothesis is one that may be studied using statistical methods and one that provides a crucial insight to lay on the background of Supreme Court jurisprudence concerning whether education is a fundamental right and the background of desegregation – and resegregation – in the half-century since *Brown*. Presumably, two identical individuals should experience the same effect of education on their probability to vote. Moreover, if these two

individuals are equally likely to vote regardless of their race, then any difference in an interaction between race and education can be attributed to a difference in education received dependant on their race. If as much is held constant between these two individuals as possible and if their return to an identical quantity of education varies, then something must be different about the quality of education the two receive.

In order to test whether the effect of one of these demographic factors varies across race, it will thus be necessary to hold as much constant about the individual as possible. In doing so, it will be possible to answer the question of whether two persons, identical in several controllable ways, increase their probability of voting because of their education level differently because of their race. The dependent variable will be whether or not a person votes. The control variables that the model will hold constant will be the demographic and psychological factors, and the independent variables that will be allowed to vary will be both race and education.

My hypothesis underlying this theoretical model is that there is a statistically significant difference between the effect of education on voter participation for whites and blacks. Another interesting question will be whether this difference is statistically different over time. To test the first hypothesis I took an average effect of the interaction over the last half century.

#### IV. Description of Data Source and Statistical Model

To test these hypotheses, I used the University of Michigan’s National Election Studies 1948–2004 Cumulative Data File (“Cumulative File” or “NES data”).<sup>31</sup> This data set includes pooled cross sections in the indicated time period. Several authors have tested effects on voter participation using NES data,<sup>32</sup> though some choose to use Census data—the Current Population Survey (“CPS data”)—to test voter participation. I conclude the NES data is better suited for these hypotheses because it includes more vote-specific variables—such as political organization membership, trust in government, and getting political information at church— than the CPS data.

In using the NES data, I intended to test the average effect of education on voter participation over this 56-year period and whether there is a statistically significant difference in this effect depending on an observation’s race.<sup>33</sup> My particular concern is whether the difference in effect of education on voter participation is statistically significant, and, if so, what is the magnitude of that difference. My statistical model for this test will be:

Figure 1  
Statistical Model

$$VOTE = \hat{\beta}_0 + \hat{\beta}_1 EDUC + \hat{\beta}_2 BLACK + \hat{\beta}_3 OTHER + \hat{\beta}_4 BLACK * EDUC + \hat{\beta}_j CONTROLS_j + u$$

where VOTE is an indicator variable =1 if the observation voted in November elections and =0 if the observation did not vote. The control variables will include: family income and indicator variables for gender, marital status, length of residence in

the community, occupation, union membership, whether the person gets information on politics at church, a measure of trust in government, whether a person belongs to a political organization, whether the person lives in the south, and the year the observation participated in the study. Given that the dependent variable VOTE is dichotomous, I will estimate the model using probit. To determine the statistical significance of the effect of the interaction, I will conduct t-tests on the coefficients of each interaction term, as well as a log-likelihood test for their joint significance.

## V. Summary Statistics

Descriptive statistics of the voting behavior of observations in the Cumulative File shed some light on the differences between blacks and whites over the stated time period.<sup>34</sup> It is important to note that these statistics may initially have to be viewed with some caution because voting in the NES sample is a measure of self-reported voting—meaning whether the respondent told the interviewer that she voted as opposed to some validated measure of whether she actually voted. The NES sample does include a vote-validation variable—measured by validated whether the person actually voted—but it is only available for 1976 to 1990. Furthermore, over-reporting by the respondents of self-reported voting in the NES sample, especially among black respondents, is a particular concern. One author has argued, using a vote validation variable, that blacks tend to over-report at a higher percentage than whites.<sup>35</sup>

In these summary statistics, and in the regression results below, I will attempt to look at both the reported voting and the vote validation variables.<sup>36</sup> In the discussion below, the variable *vote* refers to self-reported voting and *vote validation* refers to the variable measuring whether the respondents reported voting was validated. Table 1 gives average numbers for self-reported voting for the entire sample and separates voting behavior by race and education:

Table 1  
Self-Reported Voter Participation for 1948-2004

	<b>Total frequency responses</b>	<b>frequency reported voted</b>	<b>Percent reported voted</b>
<b>All Observations</b>	43204	28977	67.07
Missing	4234		
<b>By Race</b>			
White	35771	24775	69.26
Black	4611	2603	56.45
Other	2383	1313	55.10
Missing	4673		
<b>By Education with Vote=1</b>			
8 grades or less	6587	3694	56.08
some high school (no diploma)	5964	3313	55.55
high school (diploma or equivalent)	10395	6631	63.79
high school (plus non-academic training)	3581	2600	72.61
some college (no degree; jc-level degree)	8042	5826	72.44
BA-level degree	5442	4454	81.84
Advanced degrees, incl. LLB	2124	1783	83.95
Missing	5303		

As expected, the percentage of the population that votes increases as the level of education increases. Using this average of the entire sample, a higher percentage of white respondents voted. However, consistent with research on the mobilization of black voters since the beginning of the NES study, blacks have significantly closed the voting gap. As noted below, I restricted the sample to 1968–2000 because certain important variables of interest were not available in the data set before 1968. Furthermore, missing data was discarded in each regression.<sup>37</sup> Summary statistics for each variable of interest used in the main regressions in Part VI are reported in Appendix 1.

Beginning the study at 1968 provides an integral reference point upon which to study the equality of education after the civil rights movement and the important

Supreme Court decisions discussed above. Comparing voter participation rates from 1968 and 2000 in Table 2 shows that blacks have closed the voting gap:

Table 2  
Voter Participation for 1968 and 2000

	<b>Total frequency responses</b>	<b>frequency reported voted</b>	<b>Percent reported voted</b>
<b>1968</b>			
All Observations	1391	1055	75.84
Missing	166		
By Race			
White	1240	956	77.10
Black	133	90	67.67
Other	18	9	50.00
Missing	166		
<b>2000</b>			
All Observations	1554	1182	76.06
Missing	253		
By Race			
White	1186	925	77.99
Black	161	121	75.16
Other	177	112	63.28
Missing	253		

A final comparison of note at this stage is the breakdowns for each individual race of percentage of voter participation by education. Table 3 shows the percentage of blacks and white that reported voting for each education level:

Table 3  
Voter Participation for 1946 – 2004 by race and education

	<b>Total frequency responses</b>	<b>frequency reported voted</b>	<b>percentage reported voted</b>
<b>Whites Only</b>			
8 grades or less	5156	3038	58.92
some high school (no diploma)	4668	2716	58.18
high school (diploma or equivalent)	8621	5672	65.79
high school (plus non-academic training)	3184	2354	73.93
some college (no degree; jc-level degree)	6667	4925	73.87
BA-level degree	4796	3955	82.46
advanced degrees, incl. LLB	1852	1565	84.50

<b>Blacks Only</b>			
8 grades or less	1065	474	44.51
some high school (no diploma)	907	437	48.18
high school (diploma or equivalent)	1055	601	56.97
high school (plus non-academic training)	266	170	63.91
some college (no degree; jc-level degree)	790	534	67.59
BA-level degree	309	241	77.99
advanced degrees, incl. LLB	122	102	83.61

The percentages in table 3 show that the gap in voter participation between blacks and whites actually decreases as the level of education increases. Nevertheless, these statistics do not answer the essential question of, holding all else constant, how much more likely to vote is a person with a certain level of education than a person with no education—or how much does one year of education increase the probability that a person will vote. To answer whether these effects are different by race, a probit analysis will be necessary.

## **VI. Regression Results**

Because of constraints within the data set, it was first necessary to determine which variables could be included in the analysis and in which years those variables could be studied. After running different regressions, I determined that it would be best to run the regression for the years 1968–2000 using the variables discussed below; however, I think it also important to report results using the vote validation variable as the dependent variable to illustrate some differences in the coefficients on the interaction terms.

### *A. Using the 1968–2000 Data*

To test the difference in effect of education on voter participation between blacks and whites, I chose to use the following dependent variables: race, education, income, marital status, union membership, residence in the political south, gender, a measure of the respondent's trust in government, length of residence in the community, occupation, and year respondent participated in the study. Because of the absence of variables for length of residence and occupation in earlier data sets—and income and occupation variables in later data sets—I was constrained to run the regression for the years 1968–2000.

I determined that it was essential to include length of residence and occupation in the regression—at the expense of the data from earlier years—because they both have significant effect on whether a respondent voted and leaving them out would

dramatically bias the coefficients on the interaction terms. I made this determination by running two separate regressions for the years 1968–2000, one with only the base variables (race, education, income, marital status, union membership, residence in the political south, gender, a measure of the respondent’s trust in government) and one with the base variables plus the variables for length of residence and occupation. The probit coefficients on the interaction terms, marginal effects,<sup>38</sup> and statistical significance are presented in Table 4. The marginal effects shown are the average of the effects across all observations in the sample.

Table 4  
Coefficient Estimates on Race, Education, and Interaction Terms  
Comparing regression with base variables with regression with  
base variables and residence and occupation variables

Parameter	base variables only		base variables + residence/occupation	
	Probit Estimate	Marginal Effect	Probit Estimate	Marginal Effect
intercept	0.2217** (0.0686)	0.0732	-0.2320** (0.0793)	-0.0745
Black	0.1316* (0.0651)	0.0434	0.1368* (0.0655)	0.0440
Other	-0.2348*** (0.0328)	-0.0775	-0.2242*** (0.0332)	-0.7210
hsnodip	-0.0986** (0.0363)	-0.0325	-0.0668† (0.0367)	-0.0214
hsdip	0.0923** (0.0334)	0.0305	0.1368*** (0.0340)	0.0440
hsdipplus	0.2827*** (0.0416)	0.0933	0.3334*** (0.0426)	0.1072
somecol	0.3856*** (0.0359)	0.1272	0.4439*** (0.0374)	0.1427
balevel	0.5961*** (0.0404)	0.1967	0.6435*** (0.0436)	0.2068
advdeg	0.7372*** (0.0520)	0.2433	0.7336*** (0.0561)	0.2359
black*hsnodip	-0.0711 (0.0887)	-0.0235	-0.0894 (0.0892)	-0.0287
black*hsdip	-0.1077 (0.0831)	-0.0355	-0.1286‡ (0.0836)	-0.0413

black*hsdipplus	-0.1712 (0.1198)	-0.0565	-0.1916‡ (0.1211)	-0.0616
black*somocol	-0.2543* (0.0901)	-0.0839	-0.3051*** (0.0908)	-0.0981
black*balevel	-0.1265 (0.1251)	-0.0417	-0.1834‡ (0.1263)	-0.0590
black*advdeg	-0.0052 (0.1851)	-0.0017	-0.0896 (0.1859)	-0.0288

Note: The estimates for all the variables in the regression using the base variables and the residence and occupation variables are reported in Table 5 below.

‡ p < 0.15

† p < 0.10

\* p < 0.05

\*\* p < 0.01

\*\*\* p < 0.001

Including the length of residence and occupation variables has two significant effects. First, except for those who attended high school but did not get a diploma, including residence and occupation makes the interaction term with the specific education level more statistically significant. Though respondents in the education level of attending some college without a degree are the only ones where the interaction is statistically significant at conventional levels, the other interactions for *hsdip*, *hsdipplus*, and most notably *balevel*, become much closer to being at least marginally significant. The second important effect of including the residence and occupation variables is that the probit coefficients are larger in magnitude when the residence and occupation variables are included—again except for the *hsnodip* education level.<sup>39</sup>

Furthermore, testing for joint significance on the length of residence and occupation variables indicates that they have an extremely significant effect on

probability of voting. Conducting a log likelihood test—with the regression using residence and occupation as the unrestricted model and the regression without those variables as the restricted model—yields a chi-square statistic of 667.64, which is well above the 95% confidence interval of 14.07 for a test with seven degrees of freedom.<sup>40</sup> It is thus highly unlikely that residence and occupation have no effect on probability of voting.

There are obvious tradeoffs involved in choosing to use the residence and occupation variables, not the least of which being the result of throwing out all observations for which there is missing data for residence and occupation (there were 1,094 such cases between 1968 and 2000 in the data set). However, one final determination tipped the scale in favor of using residence and occupation in favor of the pre-1968 data: the civil rights movement and the important court cases discussed in the introduction.<sup>41</sup> Given that The Civil Rights Act of 1964 and *Rodriguez* and *Milliken* were passed or decided closely surrounding 1968, it seems appropriate to begin a study of the effect of education at this time. In theory, education is offered on a more equal basis because of this time in the country's history; thus, restricting the data to post-1968 addresses an integral question: Since we have made a more concerted effort at racial equality, does the effect of education on voter participation still vary by race?

### *B. Results from 1968–2000*

Using the base variables plus the length of residence and occupation variables in a probit analysis testing the effect of each of the variables on probability of voting indicates that the positive effect of education on voter participation is less for blacks than it is for whites at certain education levels. The probit coefficients, their corresponding marginal effects, and statistical significance are reported in Appendix 2.

As expected, each of the coefficients on the education indicator variables are statistically significant at all conventional levels, and as the level of education increases, the probability that a respondent reported voting increases. However, the interaction terms are not jointly significant in this 1968–2000 model. A log likelihood test—using a model without the interaction terms as the restricted model—yields a chi-square statistic of 12.54, which is just below the test statistic of 12.59. Thus, at just below 95% confidence, we can reject the hypothesis that the effect education across all levels does not vary by race in this model—the interaction terms are jointly significant. In other words, *the effect of education on voter participation does vary by race at statistically significant levels.*

Furthermore, one interaction term is statistically significant at conventional levels and two others are marginally significant. The individual estimate for respondents who attended some college but did not receive a college degree is highly statistically significant ( $p = 0.0008$ ). White respondents in this category are 14 percentage points more likely to vote than white respondents with 8 grades or less;

however, black respondents with some college education are only 4 percentage points more likely to vote than black respondents with 8 grades or less education. Given that the average predicted probability of voting in this model is 66.9%, this means that black respondents with some college education were almost 15% less likely to vote than whites.

This is the most significant effect in terms of statistical significance and magnitude of the marginal effect. While not significant at conventional levels, the interaction terms for respondents with a high school diploma, those with a high school diploma plus non-academic training, and those with a B.A. level degree are at least marginally significant, with a decreased effect on probability of participation between 4 and 6 percentage points.

It is also important to note that there may also be a difference in the interaction terms when the vote validation variable—a variable used to confirm whether the respondent actually voted as opposed to whether the respondent reported voting—is used as a dependent variable instead of the reported voting variable measured above. Unfortunately, the vote validation variable is only available in the data set for the years 1976–1990 (excluding 1982).

### *C. Results from 1976–1990, Using Vote as Dependent Variable*

Before comparing regressions with vote validation as dependent versus with reported voting as dependent, I compared regressions with the exact same variables

from 1976–1990 with the previous regression from above from 1968–2000. The coefficient estimates on the interaction terms from each regression are reported below:

Table 5  
Coefficient Estimates on Race, Education, and Interaction Terms  
Comparing 1968–2000 with 1976–1990

Parameter	1968–2000		1976–1990	
	Probit Estimate	Marginal Effect	Probit Estimate	Marginal Effect
Intercept	-0.2320** (0.0793)	-0.0746	-0.4306*** (0.1095)	-0.1468
black	0.1368* (0.0655)	0.0440	0.2237* (0.1014)	0.0763
other	-0.2242*** (0.0332)	-0.0721	-0.1311** (0.0477)	-0.0447
hsnodip	-0.0668† (0.0367)	-0.0215	-0.0429 (0.0570)	-0.0146
hsdip	0.1368*** (0.0340)	0.0440	0.0324 (0.0525)	0.0110
hsdipplus	0.3334*** (0.0426)	0.1072	0.2486*** (0.0638)	0.0847
somecol	0.4439*** (0.0374)	0.1427	0.3067*** (0.0571)	0.1046
balevel	0.6435*** (0.0436)	0.2069	0.4215*** (0.0660)	0.1437
advdeg	0.7336*** (0.0561)	0.2359	0.4631*** (0.0843)	0.1579
black*hsnodip	-0.0894 (0.0892)	-0.0287	-0.0989 (0.1355)	-0.0337
black*hsdip	-0.1286‡ (0.0836)	-0.0413	-0.1231 (0.1274)	-0.0420
black*hsdipplus	-0.1916‡ (0.1211)	-0.0616	-0.4463* (0.1771)	-0.1521
black*somecol	-0.3051*** (0.0908)	-0.0981	-0.4305** (0.1360)	-0.1468
black*balevel	-0.1834‡ (0.1263)	-0.0590	-0.2221 (0.1919)	-0.0757
black*advdeg	-0.0896 (0.1859)	-0.0288	-0.5221* (0.2534)	-0.1780

Note: The same set of independent variables from the regressions reported in Tables 4 and 5 (all base variables plus residence and occupation variables) were used in this regression. The coefficient estimates for these variables are not reported here.

‡ p < 0.15

† p < 0.10

\* p < 0.05

\*\* p < 0.01

\*\*\* p < 0.001

Again, the interaction terms are jointly significant. A log likelihood test—using a model without the interaction terms as the restricted model—yields a chi-square statistic of 17.04, which is well above the six degrees of freedom test statistic of 12.59. Thus, with above 95% confidence, we can reject the hypothesis that the effect education across all levels does not vary by race in this model. *It is highly unlikely that the effect of education does not vary by race in this model.*

Furthermore, more individual estimates are significant at conventional levels in this model. The most striking difference when moving from the 1968–2000 regression to the 1976–1990 regression is the drastic increase in the magnitude of the interaction terms on respondents with high school plus non-academic degrees and those with some college education. Both estimates are highly statistically significant and suggest that black respondents are predicted to receive around 15 percentage points less positive effect on their likelihood of voting as a result of the given education level. The average predicted probability of voting was 65.0% in this model; thus, blacks in these education levels were predicted to be 23% less likely to votes than whites.

This increased differential in effect of education for blacks versus whites—namely that at these education levels whites are almost 23% more likely to vote than blacks—is even more cause for concern when we look at the coefficient estimate on blacks alone. Given that the coefficient on blacks is even larger in the 1976–1990 regression (blacks are 11.4% more likely to vote than whites in 1976–1990 as

compared to 6.8% in 1968–2000), it is especially strange that the return to education decreased as compared to whites. Even though blacks were more likely to vote than whites, the positive effect of education for blacks actually decreased as compared to whites.

Finally, the 1976–1990 regression also shows a drastic disparity in return to education on probability of voting for blacks at the highest levels of education. The interaction estimate for respondents with an advanced degree indicates a predication that blacks with above B.A. level degrees are actually 27.4% less likely to vote than their white counterparts.

To explain the difference between the 1968–2000 and 1976–1990 models, one would almost have to hypothesize that the disparity in effect of education on probability in voting between whites and blacks is less during the years 1968–1974 and/or 1992–2000. This must be the case because it would explain why the coefficient estimates on the interaction terms is less for the entire year range of 1968–2000 than it is for that middle chunk of 1976–1990.

To test the difference between the estimated effect of education on voting across race during 1976–1990 and the effect during 1968–1974 and 1992–2000, I ran the 1968–2000 regression again and included additional terms that interacted the original race and education interactions with dummies for the requisite year categories (e.g. 1968–1974\*black\*hsdip). This test yields interesting results. First of all, these new interactions are all jointly significant at just well above a 95% confidence level. A

log likelihood test—with a the model with all the new interactions as the unrestricted model—yields a chi square statistic of 41.72, which is well above the 95% statistic for 12 degrees of freedom (21.03). Thus, it is likely that that the interaction terms do vary by the indicated time periods. The estimates for these new interactions are reflected in Appendix 3.

It is difficult to exactly isolate the differences between the periods before and after because only the estimates on a few of the education levels are statistically significant. Furthermore, the estimates offer differing predictions for differing education levels in each of the given time periods. Nevertheless, a few of the results are worth pointing out.

It is encouraging to note that the estimates for those with some college education and those with advanced degrees were positive when interacted with the 1992–2000 time period. This suggests that the disparity in return to education has improved in these education levels. However, in looking at the other lower education levels, the results are much less encouraging.

First, the only individual estimate that is statistically significant for the 1968–1972 group is the one for those respondents who attended high school but did not earn a diploma, with the effect of the interaction being significantly less in the 1968–1974 time period than in the 1976–1990 time period. However, this difference is mitigated by the fact that the same interaction for *hsnodip* has nearly the same negative effect in the 1992–2000 time period. In effect, the disparity on return to education for this

education level is worse in both sets of surrounding years than it was in the 1976–1990 years. Furthermore, the estimate on the interaction with the 1992–2000 time period and those with a high school diploma is also negative and statistically significant. These results indicate that—at least for these education levels—the disparity in education was worse in 1992–2000 than it was in 1976–1990.<sup>42</sup>

*D. Results from 1976–1990, Using Vote Validation as Dependent Variable*

One final twist—and potentially shedding some light on the difference between interaction estimates for 1968–2000 versus 1976–1990—may be found in comparing regressions with vote as the dependent variable with vote validation as the dependent variable.<sup>43</sup> Using all of the same independent variables as the regressions above, running separate regressions with vote and votevalid as the dependent variables shows that the interaction terms for those with some college education are statistically significant but the magnitude of that effect decreases to a level similar to that predicted with the 1968–2000 data. Relevant results from each regression are reflected in the table below:

Table 6  
Coefficient Estimates on Race, Education, and Interaction Terms for 1976–1990  
Comparing Vote as Dependent with Vote Validation as Dependent Variable

Parameter	Vote		Vote Validation	
	Probit Estimate	Marginal Effect	Probit Estimate	Marginal Effect
Intercept	-0.4306*** (0.1095)	-0.1468	-0.4967*** (0.1240)	-0.1670
black	0.2237* (0.1014)	0.0763	-0.1256 (0.1137)	-0.0422
other	-0.1311** (0.0477)	-0.0447	-0.4162*** (0.0554)	-0.1400

hsnodip	-0.0429 (0.0570)	-0.0146	-0.1532* (0.0642)	-0.0515
hsdip	0.0324 (0.0525)	0.0110	0.0072 (0.0584)	0.0024
hsdipplus	0.2486*** (0.0638)	0.0847	0.0965 (0.0672)	0.0325
somecol	0.3067*** (0.0571)	0.1046	0.2176*** (0.0624)	0.0732
balevel	0.4215*** (0.0660)	0.1437	0.3969*** (0.0709)	0.1335
advdeg	0.4631*** (0.0843)	0.1579	0.4975*** (0.0895)	0.1673
black*hsnodip	-0.0989 (0.1355)	-0.0337	-0.0404 (0.1532)	-0.0136
black*hsdip	-0.1231 (0.1274)	-0.0420	-0.3437* (0.1440)	-0.1156
black*hsdipplus	-0.4463* (0.1771)	-0.1521	-0.1970 (0.1859)	-0.0663
black*somecol	-0.4305** (0.1360)	-0.1468	-0.2695† (0.1494)	-0.0906
black*balevel	-0.2221 (0.1919)	-0.0757	-0.2473 (0.1966)	-0.0832
black*advdeg	-0.5221* (0.2534)	-0.1780	-0.3225 (0.2614)	-0.1085

Note: The same set of independent variables from the regressions reported in Tables 4 and 5 (all base variables plus residence and occupation variables) were used in this regression. The coefficient estimates for these variables are not reported here.

‡ p < 0.15

† p < 0.10

\* p < 0.05

\*\* p < 0.01

\*\*\* p < 0.001

As noted above, the coefficient estimate on the interaction term for those with some college education has returned to a level similar that from the 1968–2000 data. Also, the coefficient for those with high school education plus a non-academic degree is no longer statistically significant at conventional levels. In this regression using vote validation as the dependent variable, the interaction terms are not jointly significant with a chi-square statistic equal to 8.82. Furthermore, given that the chi-square

statistic testing the joint significance of the interaction terms is less than one quarter as large as the statistic from the model from Part C above using reported voting as the dependent variable, the joint effect of education across all education levels is less likely to have an effect where vote validation is used. It is difficult to determine what this result says about the data for 1968–2000 given the discussion in Part C reflecting that the disparity in effect of education was less during 1976–1990 than in the surrounding years 1968–1974 and 1992–2000.

However, the estimates using vote validation as the dependent variable are still particularly interesting because now the interaction term for those respondents with only a high school diploma is highly statistically significant. This is especially interesting because the marginal effect for black respondents in this group is negative 11 percentage points. The average predicted probability of voting in this model is 61.0%, thus blacks with only a high school education were 18% less likely to vote than their white counterparts. Given that the marginal effect for a high school diploma in this sample is only 0.2 percentage points—i.e. that a person with a high school diploma is 0.3% more likely to have voted than a person with 8 grades or less of education—this data indicates that a black respondent with a high school education is actually 17.7% less likely to have voted than a black respondent with 8 grades or less of education.

## VII. Policy Implications and Conclusion

While it is unfortunate that the data would not allow for a specific determination as to whether the gap between whites and blacks in the positive effect of education on voter participation is increasing or decreasing over the given time period, some important implications may be derived from the results above.<sup>44</sup> Because there may be a difference between studying a person's reporting that she voted versus studying whether she actually voted, implications from both the reported voting for 1968–2000 and the voter validation for 1976–1990 will be discussed. Ultimately, if another data set makes it possible, future research may analyze the entire 1968–2000 time period using vote validation as opposed to self-reported voting.

The main results from this study were displayed in Table 5. As in each of the reported regressions, some college education is predicted to increase the probability that a black person will vote less than it will increase the probability that a white person will vote. This effect is statistically significant at the 99.9% level. In this study, a white person with some college education—namely they got a high school diploma and started college but did not finish—is 21.4% more likely to vote than a white person with eight grades or less of education. However, a black respondent in the same situation was only predicted to be 6.7% more likely to vote than a black respondent with eight grades or less of education. In other words, a white person, similar in many respects, is almost 15% more likely to vote than a black person similarly situated. The implication of this result is striking. For those members of the

population who gave college a try, but were unable for whatever reason to finish, whites experienced a greater return to their education in terms of increased probability of voting than blacks. Also, as noted in the results section above, while not statistically significant at conventional levels, an education gap was predicted around an 85% confidence level for respondents with high school diplomas and bachelor's level degrees.

The results from the regression using voter validation as the dependent variable are also important to consider, especially in light of previous studies that have posited that blacks are more likely to over-report voting than whites in the NES data.<sup>45</sup> What is most interesting about the vote validation regression is that the coefficient estimate on the interaction term for those respondents with some college education was no longer statistically significant at conventional levels; however, the estimate on the term for those with a high school diploma was statistically significant. Most notably, black respondents with a high school education were 18% less likely to vote than white respondents with a high school education. Unfortunately, the coefficient estimate for all those in the sample with a high school diploma (white or black) was not statistically significant, so it cannot be said for sure what the effect is for a black respondent; however, it seems more than likely from the data that a black respondent with a high school education is actually less likely to vote than a black respondent with eight grades or less of education.

The policy implications from these findings may be that desegregated schools may be separate and unequal in a fundamental democratic sense. While it may be necessary to conduct further studies with data that can better measure how this effect has changed over time, these findings show that at least at some levels of education blacks are receiving less of a return to their education than are whites. Furthermore, the results suggest that at least the lower levels of education the disparity is growing and becoming more negative in more recent years. If this is the case, it may be that we as country need to rethink the way we have organized our educational system. If blacks are receiving a fundamentally different education, then either their education needs to be improved or maybe more aggressive desegregation policies need to be revisited. It may be that the legal barriers that the Supreme Court erected that many believe have facilitated the resegregation of our nation's schools need to be revisited.

Supreme Court cases like *Milliken* and *Rodriguez* decided that it was not the government's obligation to intervene because in the realm of Equal Protection jurisprudence education is not a fundamental right. However, if education—one of the greatest determinants of a person's ability or decision to participate in our democracy at the most fundamental level by casting a vote—is being offered on an unequal basis to blacks and whites, then shouldn't our government step in to intervene? If education is not a fundamental right, then what is? If the legislature is reticent, then the Court should require action.

Appendix 1: Summary Statistics, Variables of Interest for 1968–2000

<b>Variable</b>	<b>f</b>	<b>% of valid responses</b>	<b>variable description</b>
<b>Race</b>			respondent race
White	26,149	81.02	
Black	3,716	11.51	
Other	2,409	7.46	
<b>Education Level</b>			respondent education level
8 grades or less	3,876	12.05	8 grades or less of education
hsnodip	4,253	13.22	attended high school but did not receive diploma
hsdip	8,468	26.32	attended high school and earned diploma or equivalency
hsdipplus	2,843	8.84	high school diploma/equivalency plus non-academic degree
somecol	6,576	20.44	attended some college, no degree
balevel	4,183	13.00	B.A. level degree
advdeg	1,973	6.13	advanced degrees, including LLB
<b>Income Level</b>			Family income percentile range
inc0to16	4,896	16.50	0 to 16th percentile
inc17to33	4,982	16.79	17th to 33 <sup>rd</sup> percentile
inc34to67	9,961	33.57	34th to 67 <sup>th</sup> percentile
inc68to95	8,303	27.98	68th to 95 <sup>th</sup> percentile
inc96to100	1,531	5.16	96th to 100 <sup>th</sup> percentile
<b>Gender</b>			respondent gender
male	14,286	44.01	
female	18,177	55.99	
<b>Other</b>			
married	19,238	59.45	marital status
union	6,737	20.90	a member of the household is a member of a union
south	9,742	30.01	respondent lives in the political south
<b>Trust Government</b>			measure of trust in government
trustnever	522	1.78	trusts the government none of the time or almost never
trustsome	17,384	59.30	trusts the government some of the time
trustmost	9,878	33.70	trusts the government most of the time
trustdepends	506	1.73	answered that it depends whether respondent trusts government
trustalways	1,023	3.49	trusts the government all of the time
<b>Length Residence</b>			length of residence in community
resless1yr	2,697	8.38	less than one year
res1to4yrs	4,171	12.96	between 1 and 4 years
resgr4yrs	25,319	78.66	over 4 years
<b>Occupation</b>			respondent occupation
clerical	5,988	19.21	clerical or sales worker
service	10,341	33.17	skilled, semi-skilled, and service workers
laborer	738	2.37	laborers, not including farmers

farmer	892	2.86	farmers, farm managers, farm laborers, foreman
homemaker	5,159	16.55	homemakers
professional	8,060	25.85	professional or managerial profession

Appendix 2: Effect on Probability of Voting (1968–2000)

<b>Parameter</b>	<b>Probit Coefficient</b>	<b>Marginal Effect</b>
intercept	-0.2320** (0.0793)	-0.0746
black	0.1368* (0.0655)	0.0440
other	-0.2242*** (0.0332)	-0.0721
hsnodip	-0.0668† (0.0367)	-0.0215
hsdip	0.1368*** (0.0340)	0.0440
hsdipplus	0.3334*** (0.0426)	0.1072
somecol	0.4439*** (0.0374)	0.1427
balevel	0.6435*** (0.0436)	0.2069
advdeg	0.7336*** (0.0561)	0.2359
black*hsnodip	-0.0894 (0.0892)	-0.0287
black*hsdip	-0.1286‡ (0.0836)	-0.0413
black*hsdipplus	-0.1916‡ (0.1211)	-0.0616
black*somecol	-0.3051*** (0.0908)	-0.0981
black*balevel	-0.1834‡ (0.1263)	-0.0590
black*advdeg	-0.0896 (0.1859)	-0.0288
inc17to33	0.0879** (0.0302)	0.0283
inc34to67	0.1243*** (0.0290)	0.0400
inc68to95	0.2216*** (0.0330)	0.0712
inc96to100	0.3687*** (0.0522)	0.1185
married	0.1515*** (0.0202)	0.0487
union	0.0639** (0.0226)	0.0205
south	-0.1838*** (0.0196)	-0.0591

female	-0.0129 (0.0205)	-0.0041
trustnever	-0.1968* (0.0806)	-0.0633
trustsome	0.0218 (0.0477)	0.0070
trustmost	0.1027* (0.0486)	0.0330
trustdepends	-0.3205*** (0.0860)	-0.1030
reslto4yrs	0.2574*** (0.0374)	0.0827
resgr4yrs	0.6537*** (0.0312)	0.2101
clerical	-0.0595* (0.0294)	-0.0191
service	-0.1848*** (0.0279)	-0.0594
laborer	-0.3288*** (0.0602)	-0.1057
farmer	-0.0866‡ (0.0572)	-0.0278
homemaker	-0.1666*** (0.0330)	0.0536

Note: The omitted category for the education variable are respondents with 8 grades or less of education; the omitted category for the trust variable are those who responded that they always trust the government; the omitted category for occupation variables are respondents with a professional occupation. Also, coefficient estimates on each year indicator variable were used but not reported here.

‡ p < 0.15

† p < 0.10

\* p < 0.05

\*\* p < 0.01

\*\*\* p < 0.001

Appendix 3: Effect on Probability of Voting (1968–2000), Including Interactions with Time

<b>Parameter</b>	<b>Probit Coefficient</b>	<b>Marginal Effect</b>
intercept	-0.2377** (0.0798)	-0.0763
black	0.1386* (0.0656)	0.0445
other	-0.2221*** (0.0332)	-0.0720
hsnodip	-0.0652† (0.0368)	-0.0209
hsdip	0.1400*** (0.0341)	0.0449
hsdipplus	0.3368*** (0.0426)	0.1081
somecol	0.4478*** (0.0375)	0.1437
balevel	0.6484*** (0.0437)	0.2081
advdeg	0.7395*** (0.0561)	0.2374
black*hsnodip	0.1654† (0.1058)	0.0531
black*hsdip	-0.0285 (0.0992)	-0.0091
black*hsdipplus	-0.2271‡ (0.1503)	-0.0739
black*somecol	-0.3695*** (0.1073)	-0.1186
black*balevel	-0.2028 (0.1693)	-0.0651
black*advdeg	-0.5400** (0.2241)	-0.1733
y6874*bl*hsnodip	-0.5114*** (0.1367)	-0.1642
y6874*bl*hsdip	-0.2086 (0.1600)	-0.0670
y6874*bl*hsdipplus	-0.0454 (0.2183)	-0.0146
y6874*bl*somecol	-0.0847 (0.2091)	-0.0272
y6874*bl*balevel	0.2234 (0.3638)	0.0717
y6874*bl*advdeg	5.2528 (1125.9)	1.6861
y9200*bl*hsnodip	-0.5231*** (0.1460)	-0.1679

y9200*bl*hsdip	-0.1891† (0.1100)	-0.0607
y9200*bl*hsdipplus	0.3762 (0.3149)	0.1208
y9200*bl*somecol	0.1912‡ (0.1303)	0.0614
y9200*bl*balevel	-0.0133 (0.2235)	-0.0043
y9200*bl*advdeg	1.3477** (0.5065)	0.4326

Note: The same set of independent variables from the regressions reported in tables 4 and 5 (all base variables plus residence and occupation variables) were used in this regression. The coefficient estimates for these variables are not reported here.

‡ p < 0.15

† p < 0.10

\* p < 0.05

\*\* p < 0.01

\*\*\* p < 0.001

## Notes

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<sup>1</sup> San Antonio Independent School Dist. v. Rodriguez, 411 U.S. 1, 113 (1973) (Marshall, J., dissenting) (citation omitted).

<sup>2</sup> *Id.* at 111.

<sup>3</sup> GARY ORFIELD, SCHOOLS MORE SEPARATE: CONSEQUENCES OF A DECADE OF RESEGREGATION 2 (2001). See also JONATHAN KOZOL, THE SHAME OF THE NATION: THE RESTORATION OF APARTHEID SCHOOLING IN AMERICA (2005). Kozol notes that in Prince George's County 77 percent of the students are black, 12 percent are Latino, and 7 percent are non-Hispanic white, and he argues that many most black schools are in worse shape, physically and academically, than schools in mostly white neighborhoods.

<sup>4</sup> Brown v. Bd. of Educ., 347 U.S. 483 (1954).

<sup>5</sup> *Id.* at 494 n.11. The statistical studies cited by Chief Justice Earl Warren in his unanimous decision focused on the negative psychological effects of segregation on black youths who attended segregated schools.

<sup>6</sup> Milliken v. Bradley, 418 U.S. 717 (1974).

<sup>7</sup> Anderson, Nick, *School Segregation is Back with a 'Vengeance,' Author Says*, THE WASHINGTON POST, Oct. 17, B6 (2005).

<sup>8</sup> Grafstein, Robert, *The Impact of Employment Status on Voting Behavior*, JOURNAL OF POLITICS v. 67 no. 3 (2005).

<sup>9</sup> Blakely, Tony A. et al., *Socioeconomic Inequity in Voting Participation and Self-Rated Health*, AMERICAN JOURNAL OF PUBLIC HEALTH, Vol. 91 Issue 1 (2001).

<sup>10</sup> See Reiter, Howard L., *Why Is Turnout Down?*, PUBLIC OPINION QUARTERLY, Sep 01, Vol. 43, Issue 3, p 297 (1979); Brody, Richard A., *The Puzzle of Participation in America*, in THE NEW AMERICAN POLITICAL SYSTEM (Anthony King ed., 1978); Southwell, Priscilla L. & Pirch, Kevin D., *Political Cynicism and the Mobilization of Black Voters*, SOCIAL SCIENCE QUARTERLY, v. 84 no. 4 (2003).

<sup>11</sup> See, e.g., Anderson, Barbara A. et. al., *The Effects of Race of the Interviewer of Measures of Electoral Participation by Blacks in SRC National Election Studies*, PUBLIC OPINION QUARTERLY v. 84 no.1 (1988)(finding black nonvoters who lived in predominantly black neighborhoods and who were interviewed by black nonvoters were more likely to report falsely that they voted than black respondents interviewed by white interviewers); Bobo, Lawrence & Gilliam, Franklin D. Jr., *Race, Sociopolitical Participation, and Black Empowerment*, THE AMERICAN POLITICAL SCIENCE REVIEW (1990)(finding blacks in high-black-empowerment areas are more active than their white counterparts and blacks in low-empowerment areas); Carsey, Thomas M., *The Contextual Effects of Race on White Voter Behavior: The 1989 New York City Mayoral Election*, THE JOURNAL OF POLITICS, v. 57 (1995)(finding whites more likely to vote for black candidates as the level of black voter density in a given area increases); Danigelis, Nicholas L., *Black Political Participation in the United States: Some Recent Evidence*, AMERICAN SOCIOLOGICAL REVIEW, v. 43 no. 5 (1978)(finding blacks in strongly intolerant political climate less likely to register and vote than those in supportive political environments); Leighley, Jan E. & Vedlitz, Arnold, *Race, Ethnicity, and Political Participation: Competing Models and Contrasting Explanations*, THE JOURNAL OF POLITICS v. 61 n. 4 (1999)(evaluating five models of participation to explain differences in turnout across white, black, Latino, and Asian-American groups); Southwell, *supra* note 10 (finding political cynicism and distrust appears to increase the propensity of blacks to vote, in direct contrast to the behavior of whites).

<sup>12</sup> See Tenn, Steven, *An Alternative Measure of Relative Education to Explain Voter Turnout*, JOURNAL OF POLITICS v. 67 no. 1 at 277 (2005); see also, e.g., Stoker, Laura & Jennings, M. Kent, *Life-Cycle Transitions and Political Participation: The Case of Marriage*, THE AMERICAN POLITICAL SCIENCE REVIEW, v. 89 no. 2 (1995)(finding marriage tends to depress participation though the greater effect is that partners tend to adjust their activity level to be more like each other).

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- <sup>13</sup> See NORMAN H. NIE ET AL., *EDUCATION AND DEMOCRATIC CITIZENSHIP IN AMERICA* (1996); RAYMOND E. WOLFINGER & STEVEN J. ROSENSTONE, *WHO VOTES?* (1980).
- <sup>14</sup> See, e.g., Leighley, *supra* note 11, at 1101.
- <sup>15</sup> See Southwell, *supra* note 10.
- <sup>16</sup> Leighley, *supra* note 11, at 1094–97.
- <sup>17</sup> See *id* at 1094, citing MARGARET M. CONWAY, *POLITICAL PARTICIPATION IN THE UNITED STATES* (1991); Leighley, Jan E. & Nagler, Jonathan, *Individual and Systemic Influences on Turnout: Who Votes? 1984*, *THE JOURNAL OF POLITICS*, v. 54 no. 3 (1992); see also Danigelis, *supra* note 11, at 757, citing Olsen, Marvin E., *SOCIAL AND POLITICAL PARTICIPATION OF BLACKS*, *AMERICAN SOCIOLOGICAL REVIEW*, v. 35 at 682 (1970).
- <sup>18</sup> Bobo, *supra* note 11.
- <sup>19</sup> *Id.* at 378. Bobo and Gilliam sought to challenge this socioeconomic model by testing whether measures of black empowerment, measured as control of the mayor’s office, is a greater measure of black participation.
- <sup>20</sup> Leighley, *supra* note 11, at 1094.
- <sup>21</sup> See Southwell, *supra* note 10, at 915 (arguing that more blacks are registering to vote, more black registrants are actually voting, and that political cynicism, as measured by distrust in government, “has had a mobilizing effect on blacks, in direct contrast to the insignificant effect of this attitude on voter turnout among whites”).
- <sup>22</sup> Tate, Katherine, *Black Political Participation in the 1984 and 1988 Presidential Elections*, *AMERICAN POLITICAL SCIENCE REVIEW*, v. 85 no. 4 (1991); but see Cassel, Carol A., *Voluntary Associations, Churches, and Social Participation Theories of Turnout*, *SOCIAL SCIENCE QUARTERLY*, v. 80 no.3 (1999)(arguing that church involvement does not increase black nor white predispositions to vote).
- <sup>23</sup> Leighley, *supra* note 17, at 727 tbl. 2.
- <sup>24</sup> *Id.* at 725 tbl. 1.
- <sup>25</sup> Leighley, *supra* note 11, at 1103 tbl. 1.
- <sup>26</sup> See *supra* notes 10-12 and accompanying text.
- <sup>27</sup> See Grafstein, *supra* note 8, at 816 tbl. 1.
- <sup>28</sup> See *supra* note 17 and accompanying text.
- <sup>29</sup> See *supra* notes 20-21 and accompanying text.
- <sup>30</sup> See *supra* notes 12 and 22 and accompanying text.
- <sup>31</sup> See ANES Cumulative Data File, available at <http://www.umich.edu/~nes/studypages/cdf/cdf.htm>.
- <sup>32</sup> See, e.g., Anderson, *supra* note 11; Leighley, *supra* note 17. See also, e.g., Lavine, Howard, *The Electoral Consequences of Ambivalence Toward Presidential Candidates*, *AMERICAN JOURNAL OF POLITICAL SCIENCE*, v. 45 no. 4, p. 915-29 (2001).
- <sup>33</sup> However, as noted in the results section below, I was only able to study the effect from 1968–2000.
- <sup>34</sup> text to keep footnote.
- <sup>35</sup> See Leighley, *supra* note 17, at 726; Anderson, *supra* note 11, at 61–64. Some authors have chosen to use the vote variable as reported and simply offer the caveat that a certain measure of a positive coefficient on a black variable may be due to the misreporting. See Leighley, *supra* note 17, at 726.
- <sup>36</sup> The vote validation variable is equal to 1 if the respondent’s vote was validated and equal to 0 if it was confirmed that the respondent actually did not vote.
- <sup>37</sup> Unfortunately, I was not able to address the problem of missing data in this study. In all instances, I discarded observations that had missing data for any of the variables in the sample. If there is a correlation between those with missing data for certain variables and vote or vote validation variables, then certain coefficients would be biased. However, if the missing data is random across the sample, then estimates would be unbiased. In the 1968–2000 sample, there were a total of 32,463 observations; however, the regression run and reported in Appendix two only used 24,863 observations. There were missing observations for race (189), education (291), family income (2,790), marital status (102), union

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membership (230), trust in government (3,150), length of residence (276), occupation (1,285), and reported voting (2,383). The most major concerns would be family income, trust in government, occupation, and reported voting, and whether those observations that were missing values were correlated with a certain level of each variable. This might affect results because people who don't report income might be in lower income brackets; those who don't report trust may be ones who don't trust the government and thus didn't answer the question; those who don't report occupation may have an occupation about which they are embarrassed; and those who don't report voting may be persons who did not vote. Nevertheless, it seems that problems with missing data would mostly bias the coefficients on those specific variables, but may not have an affect on the race or education variables. Ultimately, future studies may address this issue and determine if these missing values bias the results in this paper in any significant way.

<sup>38</sup> Marginal effects were calculated by multiplying the probit coefficient by a standardization factor. This standardization factor is equal to the average of  $\exp(-.5*xbpr*xbpr)/\sqrt{2*3.1459}$ , where  $xbpr$  is the value of the explanatory variable times the coefficient estimate, computed for each observation in the sample. For the calculus proof behind this standardization factor and the SAS code used to determine it, see Pascale, Guy, *Calculating Marginal Probabilities in Proc Probit*, Memorial Health Alliance, available at <http://www.ats.ucla.edu/stat/SAS/library/nesug98/p007.pdf>.

<sup>39</sup> This is consistent with the assumption that excluding the residence and occupation variables make the coefficients on the interaction terms biased upwards.

<sup>40</sup> The log likelihood of the restricted regression (without residence and occupation variables) is -14457.62; the log likelihood of the unrestricted regression (with residence and occupation) is -14123.80. The -2 log likelihood test is equal to -2 times the log likelihood from the restricted regression minus -2 times the log likelihood of the unrestricted regression.

<sup>41</sup> See *supra* note 6 and accompanying text.

<sup>42</sup> And remember, it was negative in the 1974–1990 time period as well.

<sup>43</sup> Vote validation is only available in the data set for the years 1976–1990 and is not available for 1982.

<sup>44</sup> Furthermore, future studies may wish to find different data that not only provide more respondents in requisite time periods to address this problem—and isolate individual year affects—but also to allow for studying some years before 1968.

<sup>45</sup> See *supra* note 34 and accompanying text.