

The Intersection of Redistricting, Race, and Participation

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The drawing of congressional district lines can significantly reduce political participation in U.S. House elections, according to recent work. But such studies have failed to explain which citizens' voting rates are most susceptible to the dislocating effects of redistricting and whether the findings are generalizable to a variety of political contexts. Building on this nascent literature and work on black political participation, we show that redistricting's negative effects on participation—measured by voter roll-off in U.S. House elections—are generally strongest among African Americans, but that black voters can be mobilized when they are redrawn into a black representative's congressional district. Our findings, based on data from 11 postredistricting elections in five states from 1992 through 2006, both expand the empirical scope of previous work and suggest that redistricting plays a previously hidden role in affecting black participation in congressional contests.

Though the literature on redistricting has traditionally been dominated by a focus on electoral outcomes (e.g., Galderisi 2005; Gelman and King 1994), recent work has begun to investigate how the drawing of district lines affects political participation. This nascent body of research has suggested that citizens redrawn into unfamiliar incumbents' districts or who live in a community split between congressional boundaries are less likely than others to vote in U.S. House elections (Hayes and McKee 2009; Winburn and Wagner 2010). As one of the most important electoral features in American politics, redistricting appears to have participatory consequences that are just now being recognized.

But these studies raise as many questions as answers. For one, we know little about *whose* participation rates are most susceptible to the dislocating effects of redistricting. And there are theoretical reasons to expect the effects to be more pronounced among groups low in socioeconomic status, such as African Americans. Moreover, this literature is based on a narrow empirical foundation, with much of the evidence for the participatory effects of redistricting emerging from studies of a single state (Texas), leaving open the question of whether the same process is at work in other political contexts.

In this article, we build on previous work on redistricting and black political participation to show how redistricting's effects are mediated by the race of both voters and representatives (e.g., Brace et al. 1995; Gay 2001; Griffin and Keane 2006; Vanderleeuw and Liu 2002; Washington 2006; Whitby 2007). We expand the scope of previous work by collecting data from 11 postredistricting elections in five states from 1992 through 2006. These 65,000 precinct-level observations allow us to investigate the incidence of voter roll-off in U.S. House elections. By focusing on roll-off, which occurs when a voter casts a ballot in a top-ticket election but fails to do so in the congressional contest, we directly tie participation rates in the House election to redistricting.

Our analyses confirm earlier findings that redistricting drives down voting rates, but we also show that its effects are strongest among African Americans. However, when precincts with large numbers of African Americans are redrawn into a black incumbent's district, voters are mobilized, reversing the negative effects of redistricting on participation. Though based on aggregate data, we also show that the findings are not a product of the ecological fallacy.

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Authors' names appear in alphabetical order. An earlier version of this article was presented at the 2009 meeting of the American Political Science Association. We thank Matt Cleary, Michael Martinez, Marc Hendershot, Dan Smith, seminar participants at the University of Florida, several anonymous referees, and the editor for helpful comments. Data are available at <http://nw08.american.edu/~dhayes/index.htm>.

American Journal of Political Science, Vol. 56, No. 1, January 2012, Pp. 115–130

The results reveal a previously hidden effect of redistricting: it can widen the existing participation gap between whites and blacks in U.S. congressional elections. But when blacks are drawn into districts with fellow African American representatives, their voting rates increase, serving to close that gap. Just as previous research shows that redistricting influences the opportunities that African Americans have to elect a coracial representative (Epstein and O'Halloran 1999a; Lublin 1997a), we find that it also affects the likelihood that they will cast a vote at all. Our results raise important and novel implications for the debate over substantive versus descriptive representation, a central controversy in the racial redistricting literature.

We begin by providing an overview of the relevant literature on redistricting and black political participation, developing hypotheses for how redistricting and race should influence voting rates. We then describe the multistate, multielection precinct-level data set we use in the empirical analysis. We then describe our results and conclude with a discussion of the implications of our findings.

Redistricting, Political Participation, and Race

The growing literature on reapportionment and participation suggests that the contours of district lines affect not only competition in U.S. House elections, but also voting rates. In an analysis of the Texas U.S. House elections of 2002–6, Hayes and McKee (2009) found that citizens redistricted into a new incumbent's district were between three and eight percentage points more likely to “roll off” in the congressional contest—that is, fail to mark a choice after having cast a vote in a top-ticket race—than citizens who were not redrawn.¹ Using similar data from Texas, Sekhon and Titiunik (2007) found in the 2004 election that voter turnout declined about four percentage points in precincts that were moved from a white to Hispanic incumbent. Winburn and Wagner (2010), using American National Election Study data and a different design, showed that the amount of geographic overlap between a congressional district and a citizen's county of

residence and media market can influence voting rates by making it less likely that residents will know their House candidates' names.

The origins of these effects appear to lie in the information costs associated with the disruptive process of redistricting (Brunell 2008; Yoshinaka and Murphy 2011), a theoretical perspective central to much work on political participation (Blais 2006; Rosenstone and Hansen 1993; Wattenberg 2000). Because congressional elections are typically low-salience affairs that rarely make headlines, incumbency is a key heuristic that assists voters in making a choice (Jacobson 2008). But redrawn citizens are significantly less likely to be able to identify their incumbent (McKee 2008), and this lack of familiarity with their current representative produces higher nonvoting rates in House contests (Hayes and McKee 2009; Winburn and Wagner 2010). Many citizens evidently prefer to abstain than cast a ballot for a candidate they know nothing about (Feddersen and Pessendorfer 1996; Wattenberg, McAllister, and Salvanto 2000). By contrast, voters who recognize their incumbent are all but certain to vote in the House race once they arrive at the polls (Hayes and McKee 2009).

But surely this must be just part of the story. Increases in information costs do not affect the political behavior of everyone equally (Jackson 1993). Citizens who are politically knowledgeable, partisan, or even moderately attentive to politics are likely able to acquire enough information about their new incumbent to feel comfortable casting a ballot (Popkin 1994). The elimination of the incumbency cue should be most costly, then, for citizens who are less educated and less politically engaged.

This perspective brings us to an intersection with the literature on race and political participation. The lower socioeconomic (SES) status of African Americans is central to explaining why blacks typically participate at lower rates than whites (Leighley 1995; Verba and Nie 1972; Verba et al. 1995). Because SES correlates with familiarity with political issues, skills needed to understand political debates, and opportunities to engage in politics, African Americans are less likely than whites to cast a ballot on election day. This implies that the information costs of redistricting, in which the useful incumbency cue is stripped away from many voters, is likely to disproportionately disadvantage lower SES minority populations. There is evidence that this informational deficit is especially pronounced with respect to redrawn African Americans, who are less likely than whites to recall or recognize the name of their representative (McKee 2008). As a result, we expect that redistricting's effect on voting rates in U.S. House elections should be more pronounced among blacks than among whites.

¹ We refer to people who have been redistricted into a new incumbent's congressional district as “redrawn” citizens. Some literature refers to these as “new” voters, as this describes their relationship to a previously unfamiliar incumbent. We prefer “redrawn,” because it eliminates any confusion that could arise from the fact that “new voters” is often used to describe people who are casting ballots for the first time in their lives.

The connection between SES and African American participation, however, is not deterministic. A large literature has shown that the presence of black politicians serves to mobilize African American voters, increasing their sense of political empowerment and efficacy (Bobo and Gilliam 1990; Whitby 2007). According to Gilliam, “the presence of highly visible black elected officials raises group pride as group members receive broad psychic benefit[s] from the governing activities of black politicians” (1996, 60).

Numerous studies have confirmed the salutary participatory effects of the black voter–black candidate connection. In addition to the literature on municipal politics (see Gilliam 1996; Gilliam and Kaufmann 1998; Kaufmann 2003; Kleppner 1985; Nelson 1987), Tate (1991) found that shared identity and the presence of mobilizing agents like the black church increased black participation when Jesse Jackson sought the 1984 Democratic presidential nomination. And with the help of party and candidate outreach, the 2008 presidential campaign saw African Americans mobilized to support Barack Obama (Philpot, Shaw, and McGowen 2009). Likewise, black roll-off rates are substantially lower in campaigns involving black candidates, when black politicians hold powerful positions in government, or when elections touch on race-related issues (Herron and Sekhon 2005; Vanderleeuw and Engstrom 1987; Vanderleeuw and Liu 2002; Vanderleeuw and Sowers 2007). Presidential contests, mayoral elections in large cities, and ballot referendums on what are most likely “easy” issues (Carmines and Stimson 1980) with a racial connotation allow for enough information that black constituents are mobilized to participate at higher rates than would be predicted from a simple SES model.

While this question has been taken up less frequently at the congressional level, there is some evidence that the same process may be at work in House elections. Though Gay (2001) did not find black voters to be mobilized by black representation in Congress—only that white constituents were demobilized when represented by blacks—Griffin and Keane (2006) showed that liberal African Americans were more likely to participate in a congressional election when they have a black representative, and conservative African Americans were mobilized when their representative was not black. Voss and Lublin (2001) found evidence of black mobilization in a study of three erstwhile majority black districts (FL 3, GA 2, and GA 11) represented by black incumbents that were made majority white in 1996 to comply with court orders. Their findings are consistent with the notion that these representatives devoted more energy to mobilizing their African American constituents because redistricting

reduced the number of black voters. Related to this point, Boatright (2004) finds that incumbents actively target redrawn voters if they are aware of the contours of their new district lines.

We view redistricting as a critical link in explaining the circumstances under which African Americans will be mobilized to vote. When blacks are redrawn into a black incumbent’s district, they are probably targeted by their new representative, since these are voters he or she is likely to win.² In short, we think the specific electoral context of redistricting is critical to the voting behavior of African Americans, but the literature so far has failed to explore whether redistricting intervenes to condition the relationship between the race of voters and the race of candidates.³ The existing work thus suggests the hypothesis that black citizens redrawn into black incumbents’ districts are likely to see higher voting rates relative to their participation rates when redrawn into nonblack represented districts.

The analyses that follow test three hypotheses suggested by the literature on redistricting and black political participation. First, we provide an additional test of the basic hypothesis that redistricting suppresses participation rates. Second, we examine whether redistricting’s participatory effects are stronger among African Americans than white voters. And third, we examine whether the race of a new congressional representative following a redistricting influences black participation rates.

Data

To test these hypotheses, we compiled precinct-level election returns from five states covering 11 elections between 1992 and 2006. Each election followed a redistricting. The states are California, Florida, Georgia, North Carolina, and Texas. Our data set represents presidential and midterm contests, four Southern and one non-Southern state, decennial and mid-decade redistrictings, and redistrictings that resulted in disruptions to congressional

² Likewise, the political geography in majority black districts is clearly different. The higher concentration of racial minorities undoubtedly fosters more intricate social networks within the black community, which can stimulate greater political participation (Fenno 2003).

³ For instance, in the absence of a black incumbent, redrawn African Americans may have little incentive to cast a congressional vote because they do not think that their interests are best served by a white representative. In this vein, Tate (2003) finds that more educated and race-conscious African Americans prefer the establishment of majority black districts over the creation of race-neutral districts, which do not further the goal of electing a minority candidate.

boundaries ranging from minimal to substantial. In short, we have compiled a data set that covers an impressive diversity of political and geographic contexts. This should give us added confidence in the generalizability of our findings, assurance that is often lacking in studies of redistricting or voter roll-off that rely on single states or single election years (e.g., Desposato and Petrocik 2003; Hayes and McKee 2009; Vanderleeuw and Engstrom 1987). As we have noted, much of the work that has examined the participatory effects of redistricting has relied on election returns from the state of Texas. Without broader empirical testing, we cannot know whether such effects are widespread.

We acquired our election and demographic data from each state's official Web site or from state election officials. For each election, we used Geographic Information System (GIS) software to classify precincts into one of three categories: redrawn into a new incumbent's congressional district; remaining in the same incumbent's district; or facing an open-seat contest. To conduct this analysis, we overlaid "shapefiles" (electronic maps made available by the states and the U.S. Census Bureau) of the state's congressional districts before and after the redistricting onto a shapefile of the state's precincts. This allows us to assign each precinct to the corresponding U.S. House district boundaries as they were drawn before and after redistricting. Since we know who the congressional representative is for each district before and after redistricting, we are thus able to determine the status of each precinct: (1) redrawn, (2) same incumbent, and (3) open seat. The process is time-consuming, one of the reasons why little work has collected redistricting data of this scope and diversity.

But the payoff is substantial. Much previous work has relied on imprecise measures of redrawn populations, such as the amount of overlap between a county and a congressional district, the district-level percentage of redrawn constituents, or changes in the district-level presidential vote (e.g., Abramowitz, Alexander, and Gunning 2006; Black and Black 2002; Gopoian and West 1984; Kousser 1996; McKee, Teigen, and Turgeon 2006; Petrocik and Desposato 1998; Swain, Borrelli, and Reed 1998; Winburn and Wagner 2010). But we join a growing number of studies that have been able to clearly differentiate between same-incumbent and redrawn voter populations with various units of aggregate-level data (see Ansolabehere, Snyder, and Stewart 2000 [their township-level analysis]; Desposato and Petrocik 2003 [block level]; Hayes and McKee 2009; Hood and McKee 2009; Rush 1992, 1993, 2000). Likewise, our precinct-level data allow us to be confident that every precinct we refer to as "redrawn" has indeed been placed into a congressional

district with a new incumbent.⁴ Hence, we do not have to infer that some portion of a precinct was redrawn, while some portion was not; we actually know. In all, our data set contains 65,082 precincts across the five states and 11 elections.⁵

The circumstances of each redistricting are varied. As mentioned, with the exception of California, we have data from four Southern states. This is fortuitous on two counts. First, the African American populations are relatively large in the South, which gives us an opportunity to precisely examine the differential effects of redistricting on whites and blacks. Second, the four Southern states—like others in the region—underwent multiple redistrictings because of court cases (Florida and Georgia in 1996, North Carolina in 1998 and 2000, and Texas in 2006) or as a result of political maneuvering (Georgia in 2006 and Texas in 2004). Like California in 2002, we also have the initial decennial redistricting for Florida in 1992 and Georgia, North Carolina, and Texas in 2002. We have a substantial variety of plans among these data because some were designed to maintain the electoral status quo (incumbent protection plans in California in 2002 and Texas in 2002), whereas others were drawn for legal compliance (as noted), and still others were crafted to further partisan gerrymanders (Democrats in Georgia in 2002; Republicans in Georgia in 2006 and Texas in 2004).⁶

Table 1 provides a distribution of those precincts by their redistricting status. Of all the precincts in the data set, 21% had been redrawn into new districts since the previous election, 67% remained with the same incumbent,

⁴ It is true that congressional boundaries can split precincts, but this is rarely the case. The number of split precincts is a minuscule fraction of the total. We used GIS mapping software to identify the split precincts and subsequently exclude them from our analyses.

⁵ In every election year, there are always some precincts for which we have incomplete data—such as the absence of election returns—which is usually the result of clerical errors by state election officials. We drop those observations from the data set.

⁶ In the 1990s round of redistricting, the Department of Justice, which oversees and approves districting plans under Section 5 of the Voting Rights Act (VRA), pressured Southern states to maximize their number of majority-minority districts. All four of our Southern states are either wholly or partially covered by the VRA (e.g., only a subset of counties in Florida and North Carolina are covered by Section 5, whereas all of Georgia and Texas are covered; see [www.justice.gov/crt/voting/sec 5/covered.php](http://www.justice.gov/crt/voting/sec%205/covered.php)) and North Carolina's meandering snakelike majority black District 12 became the poster child for an unconstitutional racial gerrymander as the Supreme Court ruled in *Shaw v. Reno* (1993). This opinion and subsequent rulings like *Miller v. Johnson* (1995) and *Bush v. Vera* (1996) forced all four of our Southern states to redraw their congressional boundaries at least one more time before the 2000 decennial reapportionment (Florida, Georgia, and Texas had new plans implemented for the 1996 U.S. House elections, and North Carolina had new districts for the 1998 and 2000 contests).

TABLE I Distribution of Precincts by Redistricting Status, by State Election Year

	All States	FL 1992	FL 1996	GA 1996	NC 2000	NC 2002	GA 2002	TX 2002	CA 2002	TX 2004	GA 2006	TX 2006
Redrawn	21% (13,711)	16% (737)	3% (137)	34% (801)	7% (163)	15% (399)	23% (491)	16% (1,274)	31% (5,646)	33% (2,759)	30% (805)	6% (499)
Same Incumbent	67 (43,834)	45 (2,066)	81 (4,124)	66 (1,537)	94 (2,353)	68 (1,804)	28 (613)	73 (5,985)	64 (11,609)	52 (4,346)	65 (1,760)	92 (7,637)
Open	12 (7,537)	39 (1,797)	17 (856)	0 (0)	0 (0)	17 (452)	50 (1,080)	11 (924)	5 (811)	15 (1,257)	6 (166)	3 (212)
Total	100 (65,082)	100 (4,582)	101 (5,117)	100 (2,338)	101 (2,516)	100 (2,655)	101 (2,184)	100 (8,183)	100 (18,066)	100 (8,362)	101 (2,731)	101 (8,348)

Note: Cells show percentages, with raw Ns in parentheses. Categories may not sum to 100% because of rounding.

and 12% ended up in districts without an incumbent running for reelection. The percentage in each category varies substantially across the states. For example, before the 1996 Florida presidential contest, just 3% of the state’s precincts were redrawn, whereas in Georgia in that same year, more than one-third—34%—had been redrawn. Some redistrictings are quite disruptive, and some are minimally so. Our data include a diversity of remappings in this respect.

In addition to election returns, the data set also includes information about the racial composition of the voting-age population in each precinct. This is essential if we are to estimate the effects of redistricting on different racial groups.⁷ Aggregating across all of our data, the precincts are on average 67% white, 11% black, 15% Hispanic, and 7% another ethnicity or race. The racial composition obviously varies considerably from state to state. For example, the average black voting-age population in a 2006 Georgia precinct was 25%, while in California in 2002 that figure was just 4%. This variation is a strength, in that we are able to investigate the effects of redistricting in a variety of different political and sociodemographic contexts.

We should note that we are focused in this article on African American participation, but not because we regard the behavior of other groups as less worthy of study. We do this for two reasons. First, a properly nuanced examination of not only blacks, but also of Latinos and other ethnic groups, as well as the relationships between

⁷ The race variables are based on the voting-age population for about three-quarters (48,130) of our observations. But for the remaining 16,952—from the states of Florida and Georgia—we have the racial composition at the precinct level only for registered voters. This is because these two states reported only the registered-voter population in their election files. This could be seen to create a comparability problem, since the registered voter population will be smaller, and likely more white, than the voting-age population. Fortunately, it appears that these discrepancies do not pose major problems for our analysis. First, in two cases, North Carolina in 2000 and Georgia in 2006, we have both voting-age population and registered voter data, which allow us to examine the relationship between the two variables. In North Carolina, the correlation between the black voting-age population and the black registered-voter population is 0.98; in Georgia it is 0.89. Thus, the two measures are nearly perfectly correlated. Second, and more importantly, we have run the main regressions in Table 2 separately with both sets of observations—those from Georgia and Florida, and those from the remaining states. The estimates of the effect of redistricting—both on its own and in conjunction with the size of the black population—are nearly identical in both analyses. For example, the coefficient for the variable Redrawn x Black% is slightly smaller in the Florida and Georgia models (0.49) than in the remaining states (0.71), but both are statistically significant. Thus, we are confident that the differences in measures used to estimate the racial composition of each precinct do not threaten our conclusions. The results of these analyses are available from the authors on request.

those citizens and their coracial incumbents, would be unwieldy and overwhelmingly complex for a single article. Second, the literature on black participation is substantially more developed than similar work on Latino participation, which facilitates the theoretical development and specification of our hypotheses. That said, there is no reason a similar approach could not be used to examine redistricting and other minority populations, especially as the number of Latino elected officials in the United States continues to grow (Barreto 2007; Barreto, Segura, and Woods 2004).

Measures

Our measure of political participation in U.S. House elections is voter roll-off. Roll-off occurs when a citizen casts a vote for a top-ticket election but fails to mark a choice in a race farther down the ballot. The measure is the same as that used in previous research (e.g., Hayes and McKee 2009; Wattenberg, McAllister, and Salvanto 2000)—the ratio of House votes to votes cast in the top race on a ballot.⁸

We focus on roll-off, rather than turnout, because it allows us to more closely tie redistricting to House election participation. We assume that most individuals do not decide whether or not to turn out on the basis of the U.S. House race (although probably some do). Instead, it is the higher-profile contests (i.e., presidential, gubernatorial, and senatorial elections) that primarily drive turnout rates. Thus, the most precise way to gauge the effects of redistricting on participation is to examine the frequency with which voters who have come to the polls mark a choice in the House election, the only race that is directly affected by the redrawing of congressional lines.

In four of the elections represented in our data, the presidential race was the top contest on the ballot. In another four, the U.S. Senate race was the top-ticket item. And in the remaining three, the state's gubernatorial election was the top item.⁹ This could create comparabil-

⁸ An alternative measure would use as the denominator the total number of voters in each precinct who went to the polls. The roll-off rate would then represent the proportion of citizens who turned out but did not cast a vote in the congressional contest, rather than a measure based on a comparison of top-ticket votes to House votes. We have run our analyses using the alternative measure in a subset of our data, and the results are substantively unchanged. But we prefer the measure with the number of top-ticket ballots cast because it is more precise and more conservative.

⁹ Specifically, the presidential race was the top item in Florida in 1992 and 1996, Georgia in 1996, and Texas in 2004. The U.S. Senate race was the top-ticket item in 2002 in North Carolina, Georgia, and Texas, and in Texas in 2006. The gubernatorial race was the top

item in North Carolina in 2000, California in 2002, and Georgia in 2006. In 2000, North Carolina obviously had the presidential race as the highest item on the ballot, but the state did not report the number of votes cast in that race in their data file. Thus, we use the gubernatorial contest to estimate roll-off. This decision appears to have little consequence, as the roll-off levels are similar in the other states where the gubernatorial contest was the top-ticket item.

ity problems, since roll-off is higher when measured in relation to presidential votes than Senate or gubernatorial votes (Hayes and McKee 2009). Indeed, House roll-off in our data set averages 7.2% from presidential contests, 5.1% from Senate contests, and 3.2% from gubernatorial contests. We address this in two ways. First, we include state-year fixed effects in our regression models to account for any differences in roll-off rates that the differential measures might produce. Second, because we are primarily interested in the effect of race and redistricting, the main estimates of interest should not be compromised by any variation in overall roll-off rates across state elections.¹⁰

To account for differences in the voting-age population across precincts, we calculate roll-off as a proportion and subtract it from 1. The subtraction from 1 is necessary to create a measure interpretable in terms of nonvoting—that is, the measure increases as the difference between the number of top-ticket votes and House votes increases. The measure is:

$$1 - (\text{N of votes cast in U.S. House election} / \text{N of votes cast in top-ticket election})$$

For example, a precinct with 1,000 votes in the presidential contest and 900 votes in the U.S. House election has a 0.90 “full voting” rate and a roll-off rate of 0.10. To ease interpretation, we translate this value into a percentage—10%. It should be noted that this measure can theoretically range from -100% to $+100\%$. If there are more House votes cast than top-ticket votes in a precinct, the measure takes on negative values. In 81% of the precincts in our data set, the measure takes on positive values.¹¹

¹⁰ In the analyses we report below, we have also run models where we include dummy variables for the type of top-ticket election—presidential, Senate, and gubernatorial. Those dummies are, not surprisingly, significant—roll-off is higher in presidential contests compared to Senate and gubernatorial elections—but they do not alter the relationship among redistricting, race, and roll-off.

¹¹ States have varying ways of reporting election returns. Some report returns for all candidates in every contest. Others report precinct-level returns only for Republican and Democratic candidates. Because of that, we can calculate roll-off for all of our states only using major-party candidates in the House election. Since the frequency with which third-party candidates appear on the ballot is higher in top-ticket contests than House contests, this makes our measure a conservative one: we are not accounting for voters who prefer a third-party candidate in a Senate, gubernatorial, or presidential race but do not have the same opportunity to cast a

We also collected data on the race of incumbents from each of the congressional districts represented in our data set. We drew this information from the *Almanac of American Politics* and online sources. This allows us to test our hypothesis that the race of an incumbent representative mediates the effect of redistricting on black political participation. In all, our data set includes 20 districts represented by black incumbents, 16 of which saw voters redrawn into their districts following a redistricting.

Finally, our analysis requires accounting for many other influences on roll-off. We have collected a variety of variables that serve as controls and have merged those measures into our large database of election returns. We include a dummy variable for whether an election in a congressional district is contested, since roll-off increases substantially when a candidate faces no opposition. We also include *Congressional Quarterly's* measure of district competitiveness, as tight elections reduce roll-off. We include a variable for the total amount of candidate spending, as higher spending leads to more information for voters and less roll-off. We also control for the education level in a congressional district, as more educated communities should have less roll-off.¹² Finally, we include a dummy for a 2006 special election in Texas where voters had to choose among a list of multiple candidates on the ballot, and an indicator for two districts in Texas in 2004 (TX 19 and TX 32) where Democratic and Republican incumbents were running against one another. In the first case, we expect roll-off to increase in the special election because of the difficulty of sorting through the choices in the House contest. In the second, we suspect roll-off will be lower in a redrawn precinct with two incumbents running against one another, since these candidates will be relatively well known to voters.¹³

third-party ballot in a House election. Because of that, it may be that roll-off is actually higher than we can estimate. But we have also run analyses to examine whether the presence of third-party candidates on the ballot affects roll-off rates and find that it does not.

¹² Our measure, based on Census data, is the percentage of district residents with a college degree.

¹³ To be sure, we would like to have a large number of precinct-level covariates (previous voting history, partisanship, and so forth) to include in the models as controls. But our research design necessitates trade-offs. The election data that undergird our analysis are reported in vastly different ways across the states—and sometimes not reported at all. As a result, there is very little precinct-level data we could acquire for all the states. In order to conduct a multistate, multielection analysis, we are forced to give up some richness in precinct-level data, and thus have only the covariates that appear in the models. We think that the diversity of the states and elections that we include in the analysis outweigh the drawbacks associated with having relatively few controls. In addition, as reported below, we have conducted a supplemental analysis to explore whether the

Results

We are interested in the effect that redistricting has on roll-off and whether that varies by the racial composition of a precinct and in conjunction with the race of the incumbent. To determine redistricting's effects, we ran a series of regression analyses that allowed us to gauge the influence of redistricting and race on roll-off while controlling for potential confounds. The dependent variable is our measure of roll-off.

One of the key independent variables is a dummy, coded 1 for precincts that are redrawn. The models also include a dummy for open seats, making same-incumbent precincts the reference category. In the first model, we include the race variables simply as controls. In the second and third models, we interacted the redrawn dummy with the race variables. In the final model, we incorporated the race of the incumbent in a congressional district. All of our models include the controls described above, as well as fixed effects for the state election years (not shown in the tables).

The second column of Table 2 shows the results of the first, baseline model.¹⁴ Confirming the findings of previous work, redistricting increases roll-off. Compared to precincts that remained in the congressional district with a familiar incumbent, roll-off in the House race was about 1.6 percentage points higher in precincts that were redrawn into a new incumbent's district. The effect is somewhat smaller than Hayes and McKee's (2009) results from the 2002–6 Texas congressional elections, suggesting that redistricting's effects on participation vary across contexts. Of course, the result is also contingent on averaging together roll-off from states where the election at the top of the ballot is different. The effect of redistricting on House roll-off from presidential races

lack of precinct-level controls is leading us to erroneous conclusions about the causal effect of redistricting. The results suggest it is not.

¹⁴ Because we have data at different levels of aggregation (precinct and district), we estimate the models with robust (Huber-White) standard errors clustered on the congressional district. This technique accounts for dependence among the observations and inflates the standard errors for the parameter estimates (see Arceneaux and Nickerson 2009). In addition, we ran a series of random-effects models that relax the assumption of independence. These analyses confirm the original results. In the Baseline Model, the coefficient for redrawn remains positive and significant and is slightly larger at 1.7. In the Redrawn x Race Model, the key coefficient—Redrawn x % Black VAP—is slightly smaller (0.05) but remains statistically significant. In the Redrawn x Race x Incumbent Race Model, the coefficient on the three-way interaction is -0.03 and has the same level of significance ($p = 0.13$) as the current model in Table 2. Thus, the results do not change much with the random-effects model.

TABLE 2 The Effect of Redistricting, Precinct Racial Composition, and Incumbent Race on Voter Roll-Off

	Baseline Model	Redrawn x Race Model	Redrawn x Race x Incumbent Race Model
Redrawn	1.599* (0.367)	1.045* (0.518)	1.058* (0.523)
Redrawn x % Black VAP	–	0.062* (0.023)	0.061* (0.027)
Redrawn x % Hispanic VAP	–	0.026 (0.021)	0.026 (0.021)
Redrawn x % Other VAP	–	–0.049 (0.037)	–0.051 (0.037)
Black Incumbent	–	–	3.084* (1.468)
Redrawn x Black Incumbent	–	–	–0.076 (1.268)
% Black VAP x Black Incumbent	–	–	–0.109* (0.040)
Redrawn x % Black VAP x Black Incumbent	–	–	–0.043 [†] (0.038)
% Black VAP	–0.006 (0.013)	–0.014 (0.012)	0.015 (0.010)
% Hispanic VAP	0.006 (0.010)	0.002 (0.011)	–0.000 (0.010)
% Other VAP	0.055* (0.015)	0.062* (0.015)	0.056* (0.015)
Special Election	6.970* (2.057)	6.646* (2.011)	6.830* (2.015)
Two Incumbents	–0.566 (1.025)	–0.475 (1.004)	0.078 (1.083)
Contested	–20.013* (1.761)	–20.051* (1.744)	–20.080* (1.760)
Open	2.175* (0.920)	2.254* (0.921)	2.050* (0.941)
Competitiveness	–0.509 (0.353)	–0.503 (0.353)	–0.465 (0.362)
Candidate Spending (in \$100,000)	–0.017 (0.023)	–0.018 (0.022)	–0.028 (0.024)
Education	0.026 (0.024)	0.027 (0.024)	0.024 (0.024)
Constant	21.056* (1.522)	21.248* (1.549)	21.297* (1.593)
N	65,082	65,082	65,082
R ²	0.513	0.516	0.523

Note: Dependent variable is voter roll-off from the U.S. House election. Cell entries are weighted least squares coefficients. Robust standard errors are in parentheses. Models include fixed effects for state election years (not shown).

*p < .05; [†]p = .13, one-tailed.

is 2.8 percentage points, 2.5 points from Senate races, and just under 1 point from gubernatorial races. Not surprisingly, the more prominent the office at the top of the ballot, the larger the effect of redistricting on participation.

We find no evidence in the baseline model of a direct relationship between roll-off and the size of the black population in a precinct, as shown by the small and statistically insignificant coefficient on that variable. This finding dovetails with Wattenberg's (2000) national results that fail to find African Americans are generally more likely to roll off than whites, though it is at odds with other work showing that roll-off tends to be higher among blacks (e.g., Darcy and Schneider 1987; Vanderleeuw and Engstrom 1987).¹⁵ This suggests that an important factor in explaining black roll-off rates may be the political context, a possibility we explore next.

In the third column, we test whether redistricting has a differential effect on participation according to the racial composition of a precinct. To do so, we interacted the dummy for redrawn with each of the racial composition variables. If redistricting has stronger suppressive effects on the participation levels of blacks, the interaction between those two variables will be positive and significant. The interactions between Redrawn and the Hispanic and other ethnic group populations are included as points of comparison.

As hypothesized, we find that as the size of the black population in a redrawn precinct increases, so does the roll-off rate. We find no similar effects for Hispanics and members of other ethnic groups. Figure 1 displays the effect graphically, plotting the level of roll-off (Y-axis) against the size of the black voting-age population (X-axis) in both same-incumbent (dotted line) and redrawn (solid line) precincts. In same-incumbent precincts, there is virtually no relationship between race and roll-off, confirming the result from the first model. In fact, there is some weak evidence that as the black population increases in same-incumbent districts, roll-off declines, though that change (from 2.8 to 1.0 percentage points) is not statistically significant.

When a precinct is redrawn, however, roll-off increases significantly as the size of the black population grows. For example, when there are no black voters in a redrawn precinct, average roll-off is 3.9%. But when the precinct is 100% black, roll-off increases to 8.3%, a shift of more than four percentage points. While this effect is not enormous, it strikes us as

substantively significant. Close elections certainly can turn on less than five percentage points, and scholarly and popular discussions of turnout often emphasize single-digit percentage-point changes as meaningful for participation, civic engagement, and democratic health (e.g., McDonald 2008). If redistricting drives down black participation in House elections by several percentage points, that is a nontrivial result. These results appear to demonstrate that redistricting's effects are conditioned by the racial composition of a precinct, serving to widen the participation gap between white and black citizens.

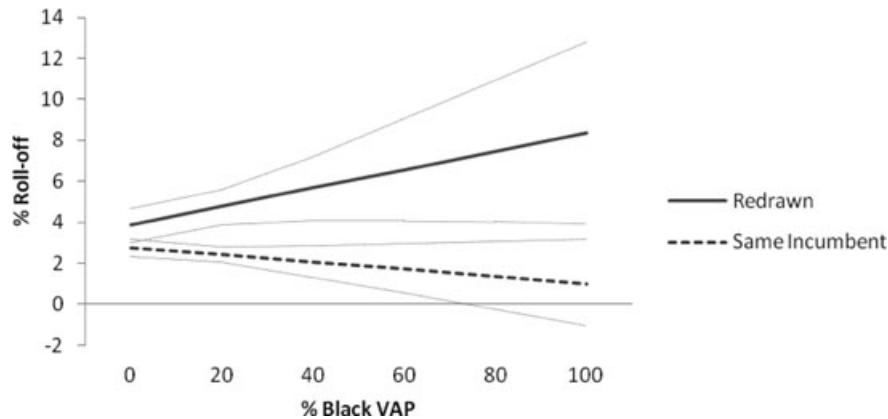
But we have also hypothesized that these effects will be mediated by the race of the incumbent. If black voters are less likely to roll off when redrawn into a black incumbent's district than when they are redrawn into a nonblack incumbent's district, then the effect shown in Figure 1 should be conditional on the race of the new incumbent. To explore that possibility, we specified a third model, whose results are presented in the fourth column of Table 2. We added a variable for whether a district's representative is black or not. We then interacted this indicator with both the redrawn dummy and the black voting-age population variable. The three-way interaction estimates whether the participatory effects of redistricting among black voters are affected by the presence of a black incumbent in the new district. The model includes the necessary constituent terms and two-way interactions.

The three-way interaction is negative. In a precinct redistricted into a congressional district with a black incumbent, roll-off *decreases* as the size of the black population increases. Thus, black voters are mobilized when drawn into a black incumbent's district, reversing the negative effects of redistricting on participation. With a p-value of 0.13, the coefficient does not reach the traditional level of statistical significance. This may be due in part to the small number of black incumbent districts in the data set. We regard this as tentative evidence in support of the black incumbent hypothesis, which we subject to further scrutiny in the analyses below.

Figure 2 presents the results graphically. The figure plots roll-off (Y-axis) against the size of the black voting-age population (X-axis) in two types of redrawn precincts: those represented by a black incumbent (solid line), and those represented by a nonblack incumbent (dotted line). In districts represented by a nonblack incumbent, the upward slope of the line shows the pattern we found earlier: as the black population increases, so does roll-off. But in stark contrast, we find the opposite pattern in black incumbent districts. As the black population of a redrawn precinct increases in

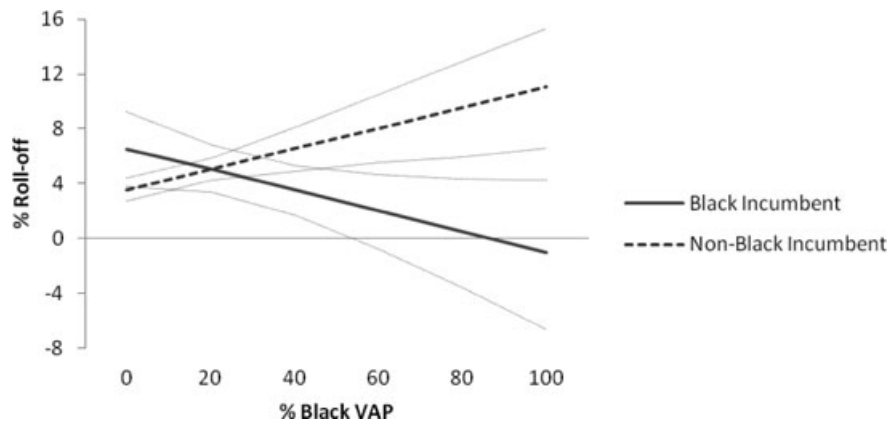
¹⁵ The only race variable to influence roll-off is the percentage of a precinct composed of other ethnic minorities.

FIGURE 1 The Effect of Redistricting on Voter Roll-Off, by the Size of the Black Voting-Age Population in a Precinct



Note: Estimates are based on the Redrawn x Race Model in Table 2. The simulations represent a contested congressional race, with the remaining control variables set at their mean values. Light gray lines are 90% confidence intervals. Simulations were calculated using *CLARIFY* (Tomz, Wittenberg, and King 2003).

FIGURE 2 The Effect on Voter Roll-Off of Having a Black Incumbent in a Redrawn Precinct, by the Size of the Black Voting-Age Population



Note: Estimates are based on the Redrawn x Race x Incumbent Race Model in Table 2. The simulations represent a contested congressional race, with the remaining control variables set at their mean values. Light gray lines are 90% confidence intervals. Simulations were calculated using *CLARIFY* (Tomz, Wittenberg, and King 2003).

these districts, roll-off actually goes down, even turning into “roll-on”—more votes in the House race than the top-ticket contest—at the highest levels of the black population. Redistricting suppresses black political participation when blacks are drawn into nonblack incumbent districts, but reverses that effect when African Americans are redrawn into black-represented districts. Of course, we must be cautious in drawing conclusions, given the narrowly insignificant coefficient and the fact that we are using aggregate data to make inferences about individual

behavior. A second set of analyses allows us to provide an additional test of the argument.¹⁶

¹⁶ One dynamic we set aside is that characteristics of voters’ pre-redistricting district may cause variation in how those voters respond to being redrawn. For instance, it may be that black voters redrawn from a nonblack incumbent’s district into a black incumbent’s district would exhibit larger decreases in roll-off than black voters redrawn between two districts represented by different black incumbents. Our research design is not well suited to address this question, in part because we suspect these effects turn on the

Addressing the Ecological Inference Problem

Because we do not have individual-level data, we face the well-known ecological inference problem—drawing conclusions from aggregate data about the behavior of individuals. In our case, it could be that the participatory effects we attribute to black voters actually stem from the behavior of other citizens. For example, if whites who live in heavily black precincts are less likely to vote in House elections following a redistricting, the effect we are ascribing to black demobilization could actually reflect a decline in white participation. While the consistency between theory and the data gives us confidence that we are not making erroneous inferences—and we regard this alternative scenario as unlikely—we want to determine whether our conclusions can be confirmed with an approach that reduces the perils of the ecological fallacy.

Following Herron and Sekhon (2005), we conducted an analysis with a subset of precincts from our data set that we identify as homogeneously black or white. We define homogenous precincts as those where at least 98% of the voting-age population is black or white; Herron and Sekhon (2005) variously use a standard of 97% or 99%, based on sample size considerations. We set the line at 98% because it gives us enough cases to reliably conduct our analyses, whereas a higher threshold would leave us with too few precincts with which to make valid inferences. The logic of using homogenous precincts is straightforward: because we know that nearly all voters in these precincts are of the same race, we do not have to worry that any apparent effects of redistricting on participation are attributable to the behavior of voters of another race. This approach to making statements about voting behavior with aggregate-level data is also commonly used in the courtroom (see McCrary 1990), especially in cases that examine evidence of racially polarized voting (e.g., Loewen and Grofman 1989).

Of course, this analysis does not serve as a strict, direct test of our argument about the general effects of redistricting on political behavior in conjunction with race. The social and political context of homogenous communities is decidedly distinct from the environment in more diverse areas. We want to be careful not to generalize the results of this analysis to the political behavior of citizens writ large. Instead, its primary purpose is to increase the confidence with which we can attribute the interactive effects of redistricting to members of a particular racial

mobilization efforts of incumbents who receive significant numbers of new constituents. But this process is one that merits consideration in future research.

group. Nonetheless, to the extent that our findings are consistent with the full-sample results, we can have some additional confidence that our argument about how redistricting influences participatory behavior is broadly applicable.

The second and third columns of Table 3 present regressions nearly identical to those in Table 2. The key difference is that these models include only the homogenous black ($N = 181$) and white ($N = 4,215$) precincts. If redistricting has stronger effects among black than white voters, the coefficient for the redrawn indicator should be larger in the regressions for homogenous black precincts than homogenous white precincts. Indeed, that is what the models reveal. While redistricting increases roll-off in both, the effect in black precincts is substantially larger (26 percentage points) than in white precincts (2 percentage points).

The fourth column explores the relationship more precisely by pooling the white and black precincts together and including a dummy variable coded 1 for black precincts, 0 for white precincts. We then interacted that variable with the redrawn dummy. The Redrawn \times Black Precinct coefficient shows that the effect of redistricting on roll-off is significantly larger in homogenous black precincts than in white precincts. Again, this is consistent with the findings from the full-sample analysis: redistricting has stronger effects on black participation rates in U.S. House elections.

The final column of Table 3 seeks to replicate our findings about the effect of black incumbent districts. Again, we specified interactions among Redrawn, Black Precinct, and whether the district was represented by a black incumbent. Among the sample of homogenous precincts, we have 17 districts represented by black incumbents. As shown by the negative and significant three-way interaction term, roll-off is significantly reduced when black precincts are drawn into districts with black incumbents. The substantive effect is large. Average roll-off is 19% when black precincts are drawn into non-black incumbent districts, but drops to 7% when those precincts are redrawn into black incumbent districts. We do not find a similar effect in white precincts, whose roll-off rates are virtually unaffected by the race of the incumbent. Confirming the results from Table 2, the effects of redistricting among blacks are contingent on the race of the new incumbent. Though the coefficient in Table 2 narrowly misses statistical significance, these findings among homogenous precincts give us more confidence that House voting after redistricting is substantially affected by the race of the incumbent.

In an ideal world, we would have individual-level data on redrawn voters, allowing us to examine how

TABLE 3 Predicting Roll-Off in Homogenous Black and White Precincts

	Homogenous Black Precincts	Homogenous White Precincts	Redrawn x Black Precinct	Interaction with Black Incumbent
Redrawn	26.066* (3.264)	2.195* (1.002)	2.201* (1.011)	2.322* (0.995)
Black Precinct	—	—	−3.551* (0.961)	−2.330* (0.993)
Redrawn x Black Precinct	—	—	16.535* (4.661)	15.023* (4.844)
Black Incumbent	—	—	—	−2.423 (2.513)
Redrawn x Black Incumbent	—	—	—	−2.075 (1.534)
Black Incumbent x Black Precinct	—	—	—	−2.337 (3.332)
Redrawn x Black Incumbent x Black Precinct	—	—	—	−9.163* (5.434)
Special Election	—	11.249* (2.577)	12.871* (2.542)	10.775* (2.812)
Two Incumbents	—	0.497 (0.954)	0.360 (0.916)	0.160 (1.022)
Contested	2.959 (1.821)	−14.293* (1.201)	−11.549* (1.480)	−12.293* (1.277)
Open Seat	−1.896 (1.790)	0.680 (1.379)	0.775 (1.327)	0.714 (1.326)
Competitiveness	0.641 (1.608)	−0.430 (0.671)	−0.454 (0.652)	−0.521 (0.620)
Candidate Spending (in \$100,000)	−0.432* (0.179)	0.007 (0.030)	0.002 (0.029)	0.029 (0.043)
Education	0.046 (0.060)	−0.113* (0.068)	−0.098 (0.061)	−0.098 (0.062)
Constant	−2.437 (2.094)	18.909* (2.690)	14.361* (3.173)	16.333* (2.950)
N	181	4,215	4,396	4,396
R ²	0.783	0.082	0.098	0.104

Note: Dependent variable is voter roll-off from the U.S. House election. Cell entries are weighted least squares coefficients. Robust standard errors are in parentheses. Model includes fixed effects for state election years (not shown). Homogenous precincts are defined as those with a population at least 98% black or white.

*p < .05, one-tailed.

voting behavior varies by race. But nationally representative surveys taken following redistrictings—such as the 1992 and 2002 American National Election Studies—do not include sufficient numbers of minorities who have been redistricted to permit an investigation of black participation rates (Hayes and McKee 2009). Thus, we are limited to the aggregate-level analysis we present here. But we note how similar the results in Table 3 are to those in Table 2. To be sure, this does not completely eliminate the possibility that our inferences could be

wrong. But by replicating our full-sample analysis with precincts where we know the effects cannot be caused by the behavior of citizens of other racial groups—since they simply don't live in these precincts—we have added a considerable measure of confidence to those findings.

At the same time, we have not eliminated all threats to our causal interpretation. It could be that some other factor at the precinct level—for which we do not have comparable data across the states—could be the cause of

increases in roll-off and the interaction with race. With the data at hand, we cannot completely rule out that possibility. We did, however, conduct a difference-in-difference analysis on a subset of our data, examining roll-off pre- and postredistricting in the same precincts in Florida and Texas, as a way of controlling for other factors that we cannot measure directly.¹⁷ The results of the analysis—described in detail in the supplemental information—are not unequivocal, but they provide some evidence to support our interpretation that redistricting leads to higher roll-off.

Ultimately, the consistency between our theoretical framework and the empirical results presented here suggests the strong possibility of a causal link, as does our previous analysis of survey data. In a series of studies, we have found at the individual level a clear relationship between redistricting and a lack of familiarity with House incumbents, controlling for a host of potential confounds, such as education, partisanship, and other variables known to be associated with political awareness and participation (Hayes and McKee 2009; Hood and McKee 2009; McKee 2008). And critically, even in the presence of these controls, redistricting leads to higher rates of nonvoting in House elections (Hayes and McKee 2009). In other words, when data are available that allow us to control for potential alternative explanations, the connection between redistricting and participation persists, strongly suggesting a causal link. Even though our precinct-level analysis lacks similar controls, the accumulation of evidence points to the conclusion that redistricting drives down voting in U.S. House elections.

Discussion and Conclusion

With a large precinct-level data set spanning five states and 11 elections, we have expanded the scope of previous research by demonstrating that redistricting increases nonvoting rates in U.S. House contests. We have also pushed that finding further, showing that the effect is magnified as the African American population grows. But we also find—in our main analysis and by examining a subset of precincts in which we can avoid ecological inference problems—that this latter effect is restricted to districts represented by nonblack incumbents. When African Americans are redrawn into a black representative's district, the negative effects of redistricting on participation are mitigated. Depending on the circumstances, redistricting can serve to either widen or narrow the participation gap between blacks and whites. While

much work has examined race, redistricting, and voting in congressional elections, no previous research has shown how tightly race and redistricting are connected to participation.

Our results speak to an important debate in American politics over descriptive versus substantive representation in the context of redistricting. The findings give additional credence to the argument that descriptive representation—the linking of voters and elected officials of the same race—has salutary benefits for political participation (e.g., Banducci, Donovan, and Karp 2004; Griffin and Keane 2006; Whitby 2007). For advocates of higher black voting rates in congressional elections, district plans that draw black voters into districts with black incumbents appear to be effective vehicles for promoting participation.

But it is difficult to unconditionally advocate for descriptive representation on the grounds that it promotes voting in House elections. The problem, well documented by Epstein and O'Halloran (1999a, 1999b, 2000; see also Cameron, Epstein, and O'Halloran 1996), is that due to partisan differences in the voting behavior of blacks and whites, it is impossible to maximize both descriptive and substantive representation in the U.S. Congress. Concentrating African Americans in fewer districts in order to practically guarantee the election of a black candidate aids the election of Republicans contesting neighboring and consequently whiter districts (Brace, Grofman, and Handley 1987; Bullock 1983; Hill 1995; Lublin and Voss 2000), which results in policy outcomes that often do not serve the interests of African American communities (see Overby and Cosgrove 1996).

Despite some disagreement as to how high the black percentage of a district needs to be in order to elect an African American (see the debate between Epstein and O'Halloran 1999b and Lublin 1999), it remains true that most black representatives are elected in majority black districts, or at least majority-minority districts (Grofman 1998; Lublin 1997b; Philpot and Walton 2007). Indeed, 15 of the 20 black incumbents in our data set represented majority-minority districts. Furthermore, most African American representatives hail from Southern states where voting behavior is the most racially polarized—meaning the percentage of black constituents typically needs to be relatively high to ensure black representation. Theoretically, it is possible to create majority-minority districts that do not reduce the likelihood of electing nonminority Democrats in neighboring districts (see Grose 2011; Shotts 2001), but this is not the reality in Southern contexts because the white electorate has moved so strongly in favor of the Republican Party (Hayes and McKee 2008; McKee 2010). The redistrictings of the 1990s, which saw

¹⁷ We thank an anonymous reviewer for the suggestion.

Democratic districting plans lead to the capture of many seats by Republican candidates, highlight the paradox (Grofman and Brunell 2005; McKee 2010; Petrocik and Desposato 1998).

By placing our findings in the context of what has transpired in contemporary congressional elections, it becomes evident that drawing blacks into majority-minority districts, despite the beneficial effects on participation, cannot be advocated unconditionally. Such plans would likely spur higher voting rates among African Americans in House elections, but it would also probably lead to more victories for the GOP, an outcome that most African Americans would not support.

We would agree with others who point out that substantive versus descriptive representation is not simply a trade-off in terms of quantity, but it is also about quality. Black representation is certainly qualitatively different from white representation. Furthermore, black representation itself exhibits considerable variation tied to the racial composition of congressional districts (Canon 1999; Grose 2005),¹⁸ and African Americans' demand for descriptive representation varies with respect to education and racial identity (Tate 2003).

Racial disparities in participation raise concerns because the history of black suffrage is intimately tied to past restrictions designed to mute the political voice of minorities, an injustice that was of course most prominent under the American South's Jim Crow system of racial segregation. No longer can the political influence of black constituents be artificially limited by state-sanctioned electoral shenanigans (i.e., the literacy test, poll tax, and the white primary) or redistricting plans that dilute black voting strength. But as we have shown, the simple act of placing black precincts into districts with a new representative who is not black has a negative effect on U.S. House voting. And yet voters are mobilized when redistricting places African American populations into districts represented by a fellow African American. So in the end, our findings provide additional grist for the mill in the debate over the representational dilemma: the conflicting positive and negative consequences attributable to descriptive versus substantive representation. Our contribution is to demonstrate that questions of participation, especially in the context of redistricting, have an important part to play in that debate.

¹⁸ Unlike most of the research on descriptive representation, Grose (2005) analyzes the behavior of black members of Congress who represent majority white districts.

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